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Registration No. 333-171300

PROSPECTUS

6,200,000 Shares

Common Stock

$7.00 per share

We are offering 6,200,000 shares of our common stock. This is our initial public offering, and no public market currently exists for our common stock. The initial public offering price is $7.00 per common share. Our common stock has been approved for listing on The NASDAQ Global Market under the symbol "NLNK."

Investing in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 10.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

	PER SHARE	TOTAL
Public offering price	$ 7.00	$ 43,400,000
Underwriting discounts and commissions	$ 0.49	$ 3,038,000
Proceeds, before expenses, to NewLink Genetics Corporation	$ 6.51	$ 40,362,000

Stine Seed Farm, Inc., an existing stockholder, has indicated an interest in purchasing up to $15 million of the shares of common stock to be sold in this offering at the public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters may determine to sell more, less or no shares in this offering to this stockholder, or this stockholder may determine to purchase more, less or no shares in this offering.

Delivery of the shares of common stock is expected to be made on or about November 16, 2011. We have granted the underwriters an option for a period of 30 days to purchase, on the same terms and conditions set forth above, up to an additional 930,000 shares of our common stock to cover overallottments, if any. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $3,493,700 and the total proceeds to us, before expenses, will be $46,416,300.

Joint Book-Running Managers

Stifel Nicolaus Weisel **Canaccord Genuity**

Baird **Cantor Fitzgerald & Co.**

The date of this prospectus is November 10, 2011.

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You should rely only on the information contained in this prospectus and any related free writing prospectus we may authorize to be delivered to you. We have not, and the underwriters have not, authorized any person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. Neither this prospectus nor any related free writing prospectus is an offer to sell, nor are they seeking an offer to buy, these securities in any jurisdiction where the offer or solicitation is not permitted. The information contained in this prospectus is accurate only as of the date on the front cover of this prospectus and the information in any free writing prospectus that we may provide you in connection with this offering is accurate only as of the date of that free writing prospectus, and information may have changed since those dates.

For investors outside the United States: Neither we nor any of the underwriters has done anything that would permit this offering or possession or distribution of this prospectus or any free writing prospectus we may provide to you in connection with this offering in any jurisdiction where action for that purpose is required, other than in the United States. You are required to inform yourselves about and to observe any restrictions relating to this offering and the distribution of this prospectus and any such free writing prospectus outside of the United States.

PROSPECTUS SUMMARY

The items in the following summary are described in more detail later in this prospectus. This summary does not contain all of the information you should consider. Before investing in our common stock, you should read the entire prospectus carefully, including the "Risk Factors" beginning on page 10, the "Business" section beginning on page 79, which more fully describes our product candidates and the status of our clinical trials and the financial statements and related notes beginning on page F-1. Unless the context indicates otherwise, as used in this prospectus, the terms "NewLink," "the Company," "we," "us" and "our" refer to NewLink Genetics Corporation.

Overview

We are a biopharmaceutical company focused on discovering, developing and commercializing novel immunotherapeutic products to improve cancer treatment options for patients and physicians. Our portfolio includes biologic and small-molecule immunotherapy product candidates intended to treat a wide range of oncology indications. Our product candidates are designed with an objective to harness multiple components of the innate immune system to combat cancer, either as a monotherapy or in combination with current treatment regimens, without incremental toxicity. Our product candidates use allogeneic (non-patient specific) cells from previously established cell lines rather than cells derived from the patient. We believe our approach enables a simpler, more consistent and scalable manufacturing process than therapies based on patient specific tissues or cells. Our lead product candidate, HyperAcute Pancreas cancer immunotherapy, or HyperAcute Pancreas, is being studied in a Phase 3 clinical trial in surgically-resected pancreatic cancer patients. This trial is an open-label, randomized, controlled, multi-center Phase 3 clinical trial, evaluating approximately 700 Stage I and Stage II surgically-resected pancreatic cancer patients, according to the American Joint Committee on Cancer classification system, or AJCC system, who have no detectable disease by a CT scan. The clinical trial is being performed under a Special Protocol Assessment, or SPA, with the U.S. Food and Drug Administration, or FDA. We initiated this trial in May 2010 based on encouraging interim data from a 70-patient Phase 2 clinical trial in surgically-resected pancreatic cancer patients and have enrolled 200 patients at 55 clinical sites in the United States as of October 25, 2011. We plan to complete the first and second interim analyses of data from our Phase 3 clinical trial in late 2012 and 2013, respectively, and to complete enrollment in 2013. We have also received Fast Track and Orphan Drug designations from the FDA for HyperAcute Pancreas for the adjuvant treatment of surgically-resected pancreatic cancer.

We completed enrollment of our 70-patient Phase 2 clinical trial for HyperAcute Pancreas in surgically-resected pancreatic cancer in February 2010. In this open label, non-randomized trial, HyperAcute Pancreas was given in doses of either 100 million cells or 300 million cells approximately twice monthly for six months in combination with the standard-of-care treatment regimen, which consisted of gemcitabine chemotherapy plus 5-FU based chemoradiotherapy. The interim data from this clinical trial indicate that HyperAcute Pancreas may improve disease-free and overall survival when given to patients in combination with standard-of-care following complete resection of detectable disease. As of May 10, 2011, all patients had reached at least 12 months of follow-up with a median follow-up period of approximately 21 months. The study met its primary objective with an established median disease free survival of 14.2 months. The most recent analyses of the secondary endpoint of overall survival showed one-year overall survival to be 86%. In addition, as of May 10, 2011, interim efficacy data for the 26 patients receiving high dose HyperAcute Pancreas immunotherapy demonstrated a median disease-free survival of 15.3 months and a one-year overall survival rate of 96%. HyperAcute Pancreas has also demonstrated a favorable safety profile to date.

The American Cancer Society has estimated that approximately 43,000 new cases of pancreatic cancer will be diagnosed in the United States in 2010. Pancreatic cancer has generally been recognized as an aggressive form of cancer that often remains undiagnosed in its earlier stages. As a result, the National Cancer Institute estimates a 96% mortality rate is associated with this disease, and the American Cancer

Society estimates one-year and five-year survival rates of 24% and 5%, respectively. HyperAcute Pancreas initially targets patients with localized tumors that can be removed surgically, or resected. According to eMedicine, a healthcare reference website run by WebMD containing peer-reviewed articles on diseases and medical topics, approximately 20% of patients in the United States are eligible for resection at initial diagnosis. These earlier stage, resected patients have significantly better prognoses than patients with later-stage disease since they tend to have better nutritional and immune status and significantly lower amounts of micro-metastatic and residual disease. A study published in the *Journal of the American Medical Association* showed that resection followed by chemotherapy or chemoradiotherapy, known as adjuvant therapy, extends median survival to approximately 18 months. We believe the addition of HyperAcute Pancreas to adjuvant standard-of-care has the potential to improve median disease-free survival and overall survival in resected pancreatic cancer patients.

In addition to HyperAcute Pancreas, we and our collaborators have completed patient enrollment for a Phase 1/2 clinical trial evaluating our HyperAcute Lung cancer immunotherapy product candidate, or HyperAcute Lung, for non-small cell lung cancer, or NSCLC, and a Phase 2 clinical trial for our HyperAcute Melanoma cancer immunotherapy product candidate, or HyperAcute Melanoma. In the Phase 1/2 single arm, open label HyperAcute Lung clinical trial, we administered our product candidate as a monotherapy in 54 patients with refractory, recurrent or metastatic nonresectable NSCLC. In the Phase 2 portion, the 28 patients evaluated for clinical response received injections of 300 million cells every two weeks for up to eight doses. We performed an interim analysis of the 28 patients on December 9, 2010, which showed median overall survival of 11.3 months and a one-year survival rate of 46%. Based on our analysis of data from comparable precedent clinical trials of similar patients, we would have expected a median overall survival of approximately eight months. In an interim analysis of 45 patients, HyperAcute Lung demonstrated a favorable safety profile and no dose limiting toxicities. We are conducting this Phase 1/2 study at the National Cancer Institute, or NCI. We anticipate initiating a Phase 2B/3 clinical trial in advanced NSCLC patients in the first half of 2012 and completing the first interim analysis in 2013.

HyperAcute Melanoma is being studied in an investigator-initiated, fully-enrolled 25-patient Phase 2 clinical trial for the treatment of advanced melanoma in combination with an eight-week course of PEG-Intron, a man-made immune modulator. The treatment consists of 12 weekly injections of HyperAcute Melanoma with PEG-Intron being co-administered in weeks five through 12. As of September 8, 2011, interim analysis shows encouraging results, with all of the patients developing low levels of autoimmune antibodies and four out of 25 of the patients developing vitiligo, an autoimmune condition in which the patient's immune system attacks melanoctyes in the skin. In previous melanoma immunotherapy studies, vitiligo has been correlated with favorable response to therapy. HyperAcute Melanoma has demonstrated good tolerability and a favorable safety profile to date. We anticipate announcing the results from this trial in the second half of 2011. We anticipate initiating a Phase 2B clinical trial in melanoma in 2012.

Our HyperAcute Pancreas, Lung and Melanoma product candidates are based on our HyperAcute immunotherapy technology, which is designed to stimulate the human immune system by exploiting a natural barrier present in humans that protects against infection being transmitted from other mammals. This barrier is related to the enzyme, alpha (1,3) galactosyl transferase, or a-GT, which is expressed in the cells of lower mammals but not present in human or other Old World primate cells. The presence of this enzyme results in the expression of a non-human form of carbohydrate called alpha (1,3) galactosyl carbohydrates, or a-Gal, on the surface of affected cells. Introducing a-Gal expressing cells to the human or primate immune system activates an immune response from antibodies against a-Gal. Antibodies directed against the a-Gal epitope are potentially the most abundant natural antibody in humans and represent approximately 1% of circulating human antibodies.

Our HyperAcute immunotherapy product candidates are composed of irradiated, live, allogeneic human cancer cells modified to express the gene that makes a-Gal epitopes. This exposure to a-Gal stimulates the human immune system to attack and destroy the immunotherapy cells on which a-Gal is

present by activating complement, an important component of the immune system that is capable of cell destruction. After destruction, we believe the resulting cellular fragments bound by anti-a-Gal antibodies are processed by the immune system to elicit an enhanced multi-faceted immune response to tumor-associated antigens common to both the immunotherapy and the patient's tumor cells.

In addition to our HyperAcute product candidates, we are developing d-1-methyltryptophan, or D-1MT, a small-molecule, orally bioavailable product candidate from our proprietary indoleamine-(2,3)-dioxygenase, or IDO, pathway inhibitor technology. In preclinical models, IDO pathway inhibitors have shown anti-tumor effects in combination with radiotherapy, chemotherapy, targeted therapy or immunotherapy. Through our collaboration with the NCI, we are studying D-1MT in various chemotherapy and immunotherapy combinations in two Phase 1B/2 safety and efficacy clinical trials. The first clinical trial has primary endpoints that assess the safety and efficacy of D-1MT in combination with an Ad-p53 autologous dendritic cell vaccine for solid malignancies with p53 mutations, such as lung, breast and colon cancers. The second clinical trial has primary endpoints that assess safety and efficacy of D-1MT in combination with Taxotere® for patients with advanced stage solid tumors for which Taxotere is the standard-of-care, such as metastatic breast, prostate, ovarian and lung cancers. We anticipate announcing preliminary data from these trials by the end of 2011.

Investment Highlights

We believe the following are the key attributes of our company:

- Our lead product candidate, HyperAcute Pancreas, is in a Phase 3 clinical trial based on encouraging interim Phase 2 survival data in surgically-resected pancreatic cancer patients.
- Our novel HyperAcute technology has a wide range of anti-cancer applications including two additional product candidates, HyperAcute Lung and HyperAcute Melanoma, in active clinical development.
- We have in-house manufacturing capabilities for our HyperAcute product candidates that we believe are sufficient to support clinical development and initial commercialization of HyperAcute Pancreas in the United States.
- Our lead IDO pathway inhibitor product candidate is in clinical development in combination with multiple alternative therapies, including Taxotere.
- We have an extensive intellectual property portfolio.

Our Strategy

Our strategy is to discover, develop and commercialize immunotherapeutic products for the treatment of cancer where the needs of patients are unmet by current therapies. The critical components of our business strategy include:

- Complete the Phase 3 clinical trial of HyperAcute Pancreas, our lead immunotherapy product candidate, and gain regulatory approval.
- Develop sales and marketing infrastructure to commercialize our HyperAcute Pancreas product candidate in the United States and establish commercial partnerships in other regions.
- Advance our HyperAcute Lung and HyperAcute Melanoma product candidates through additional clinical trials.
- Expand our manufacturing capabilities for our HyperAcute immunotherapy product candidates.
- Investigate our HyperAcute immunotherapy technology in additional oncology indications.
- Develop and commercialize D-1MT, our small-molecule product candidate, for the treatment of various oncology indications.

Our Risks

We are a development stage biopharmaceutical company, and our business and ability to execute our business strategy are subject to a number of risks of which you should be aware before you decide to buy our common stock. In particular, you should consider the following risks, which are discussed more fully in "Risk Factors" beginning on page 10:

- To date, we have not completed clinical development for any of our products candidates and we do not have a product candidate that has been approved for sale by the FDA.
- Our near term prospects are highly dependent on HyperAcute Pancreas. If we fail to demonstrate efficacy in clinical trials, fail to obtain regulatory approval or fail to successfully commercialize HyperAcute Pancreas, our business would be harmed and the value of our securities would likely decline.
- If our product candidates do not meet safety and efficacy endpoints in clinical trials, they will not receive regulatory approval, and we will be unable to market them. We have not tested any of our product candidates in controlled clinical trials.
- Our HyperAcute product candidates are based on a novel technology, which may raise development issues we may not be able to resolve, regulatory issues that could delay or prevent approval or personnel issues that may keep us from being able to develop our product candidates.
- While we have negotiated an SPA with the FDA relating to our HyperAcute Pancreas Phase 3 clinical trial, the SPA does not guarantee any particular outcome from regulatory review of the trial or the product candidate, including any regulatory approval.
- We may face delays in completing our clinical trials and we may not be able to complete them at all.
- Regulatory authorities may not approve our product candidates even if they meet safety and efficacy endpoints in clinical trials.
- Our product candidates are being and will be studied in clinical trials co-sponsored by the NCI and in investigator-initiated clinical trials, which means we have little control over the conduct of such trials.
- We will need to develop or acquire additional capabilities in order to commercialize any product candidates that obtain FDA approval, and we may encounter unexpected costs or difficulties in doing so.
- As of June 30, 2011, we had $6 million in outstanding debt under a forgivable loan agreement with the Iowa Department of Economic Development, of which $4.7 million may be accelerated and require repayment as early as March 18, 2012.
- Failure to attract and retain key personnel could impede our ability to develop our products and to obtain new collaborations or other sources of funding.
- We have never manufactured our product candidates at commercial scale, and there can be no assurance that such products can be manufactured in compliance with regulations at a cost or in quantities necessary to make them commercially viable.
- We replicate all biological cells for our products internally and utilize a single manufacturing site to manufacture our clinical product candidates. Any disruption in the operations of our manufacturing facility would have a significant negative impact on our ability to manufacture products for clinical testing and would result in delays, increased costs or losses.
- The industry within which we operate and our business are subject to extensive regulation, which is costly, time consuming and may subject us to unanticipated delays.
- We compete in an industry characterized by extensive research and development efforts and rapid technological progress. New discoveries or commercial developments by our competitors could render our potential products obsolete or non-competitive.
- If we are unable to protect our proprietary rights or to defend against infringement claims, we may not be able to compete effectively or operate profitably.
- We have a history of net losses, including net losses of $8.3 million, $16.2 million and $10.0 million for the six months ended June 30, 2011, and the years ended December 31, 2010 and December 31,

2009, respectively. As of June 30, 2011, we had an accumulated deficit of $71.7 million. We expect to continue to incur increasing net losses for the foreseeable future, and we may never achieve or maintain profitability.

- We will require substantial additional capital in the future. If additional capital is not available, we will have to delay, reduce or cease operations.

Corporate Information

We were incorporated as NewLink Genetics Corporation in Delaware on June 4, 1999. Our principal executive offices are located at 2503 South Loop Drive, Ames, IA 50010, and our telephone number is (515) 296-5555. Our website address is *www.linkp.com*. The information contained in or that can be accessed through our website is not part of this prospectus.

HyperAcute® and NewLink Genetics® are registered trademarks of ours. Other trademarks and tradenames set forth herein are property of their respective owners. Registered trademarks and tradenames will be accompanied by the "®" designation only on their first reference.

The Offering

Common stock offered	6,200,000 shares (or 7,130,000 shares if the underwriters' overallotment option is exercised in full).
Common stock to be outstanding after this offering	20,582,002 shares (or 21,512,002 shares if the underwriters' overallotment option is exercised in full).
Use of proceeds	We intend to use the net proceeds from this offering to fund clinical trials and other research and development activities for HyperAcute Pancreas, our other HyperAcute immunotherapy product candidates and our IDO pathway inhibitor product candidate and for working capital and other general corporate purposes.
Risk factors	You should read the "Risk Factors" section of this prospectus beginning on page 10 for a discussion of factors to consider carefully before deciding to invest in shares of our common stock.
NASDAQ Global Market symbol	NLNK

The number of shares of common stock to be outstanding after this offering is based on 14,382,002 shares of common stock outstanding as of June 30, 2011, after giving effect to the conversion of all our outstanding shares of preferred stock into shares of common stock upon the completion of this offering, and excludes:

- 554,272 shares of common stock issuable upon the exercise of outstanding options under our 2000 Equity Incentive Plan, or 2000 Plan, as of June 30, 2011 having a weighted average exercise price of $1.89 per share;
- 2,547,512 shares of common stock issuable upon the exercise of outstanding options under our 2009 Equity Incentive Plan, as amended, or 2009 Plan, as of June 30, 2011 having a weighted average exercise price of $3.14 per share, which includes 50,373 shares of common stock issuable upon the exercise of options that were issued in connection with our acquisition of the minority interest in BioProtection Systems Corporation, or BPS, in exchange for outstanding options to purchase the Series B common stock of BPS;

- 731,532 additional shares of common stock reserved for future issuance under our 2009 Plan, as amended and restated, plus any annual increases in the number of shares of common stock reserved for future issuance under this plan pursuant to the "evergreen provision" in such plan, as more fully described in the "Executive Compensation—Employee Benefit Plans—2009 Equity Incentive Plan" of this prospectus, of which 494,011 shares of common stock are issuable upon the exercise of options that were granted effective November 10, 2011, upon pricing of this offering;
- 238,095 shares of common stock reserved for future issuance under our 2010 Non-Employee Directors' Stock Award Plan, or Directors' Plan, which became effective immediately upon the execution and delivery of the underwriting agreement for this offering; and
- 214,285 shares of common stock reserved for future issuance under our 2010 Employee Stock Purchase Plan, or 2010 Purchase Plan, which will become effective upon the closing of this offering.

Unless otherwise noted, the information in this prospectus assumes:

- the conversion of all our outstanding shares of preferred stock into 10,710,850 shares of common stock upon the completion of this offering;
- the filing of our amended and restated certificate of incorporation and the adoption of our amended and restated bylaws upon the completion of this offering;
- no exercise of the underwriters' over-allotment option; and
- a one-for-2.1 reverse stock split of our common stock, which was effective on October 25, 2011.

Stine Seed Farm, Inc., an existing stockholder, has indicated an interest in purchasing up to $15 million of the shares of common stock to be sold in this offering at the public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters may determine to sell more, less or no shares in this offering to this stockholder, or this stockholder may determine to purchase more, less or no shares in this offering.

Summary Financial Data

The following tables summarize certain of our financial data. The summary statement of operations data for the years ended December 31, 2008, 2009 and 2010 are derived from our audited financial statements included elsewhere in this prospectus. The summary statement of operations data for the six months ended June 30, 2010 and 2011 and the balance sheet data as of June 30, 2011 have been derived from our unaudited interim financial statements, which are included elsewhere in this prospectus. The unaudited interim financial statements have been prepared on the same basis as the audited financial statements and, in the opinion of management, reflect all adjustments, consisting primarily of normal recurring adjustments, necessary to fairly present our financial position as of June 30, 2011, and the results of operations for the six months ended June 30, 2010 and 2011. Our historical results of operations and financial condition are not necessarily indicative of the results or financial condition that may be expected in the future. The summary financial data set forth below should be read together with our financial statements and related notes, "Selected Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this prospectus.

	Years Ended December 31,			Six Months Ended June 30,	
	2008	2009	2010	2010	2011
	(in thousands, except per share data)			(unaudited)	(unaudited)
Statement of operations data:					
Grant revenue	$ 633	$ 934	$ 2,079	$ 730	$ 1,141
Operating expenses:					
Research and development(1)	5,790	7,578	12,666	5,696	6,975
General and administrative(1)	3,938	3,705	6,074	2,284	2,452
Total operating expenses	9,728	11,283	18,740	7,980	9,427
Loss from operations	(9,095)	(10,349)	(16,661)	(7,250)	(8,286)
Other income and expense:					
Miscellaneous income	42	19	71	8	1
Interest income	213	132	75	23	8
Interest expense	(2)	(9)	(47)	(19)	(15)
Other income, net	253	142	99	12	(6)
Net loss	(8,842)	(10,207)	(16,562)	(7,238)	(8,292)
Less net loss attributable to noncontrolling interest(2)	—	233	349	151	1
Net loss attributable to NewLink	$ (8,842)	$ (9,974)	$ (16,213)	$ (7,087)	$ (8,291)
Net loss per share—basic and diluted	$ (2.84)	$ (3.16)	$ (4.84)	$ (2.23)	$ (2.27)
Weighted average shares outstanding—basic and diluted	3,115	3,160	3,352	3,195	3,642
Pro forma as adjusted net loss per share—basic and diluted (unaudited)(3)			$ (0.80)		$ (0.40)
Weighted average pro forma as adjusted shares outstanding (unaudited)(3)			20,286		20,575

	As of June 30, 2011		
	Actual	(unaudited) Pro Forma	Pro Forma As Adjusted
		(in thousands)	
Balance sheet data:			
Cash, cash equivalents, and certificates of deposit(4)	$ 9,800	$ 9,800	$ 48,837
Working capital	3,255	3,255	40,742
Total assets	17,315	17,315	54,802
Notes payable and obligations under capital leases	7,260	7,260	7,260
Convertible preferred stock	76,302	—	—
Deficit accumulated during the development stage	(71,680)	(71,680)	(71,680)
Total (deficit) equity	$ (67,845)	$ 7,427	$ 44,914

(1) Research and development and general and administrative expenses were corrected for misclassification and immaterial errors in 2008, 2009 and 2010. See note 3 in the notes to the consolidated financial statements included in this prospectus.

(2) Further explanation is described under the caption "Noncontrolling Interest" in note 2(o) to the consolidated financial statements included in this prospectus.

(3) Pro forma as adjusted net loss per share and weighted average pro forma as adjusted shares outstanding assume the conversion of all our outstanding convertible preferred stock into an aggregate of 10,710,850 shares of common stock as of January 1, 2010.

(4) As of September 30, 2011, our preliminary estimate of actual cash, cash equivalents, and certificates of deposit was $6.3 million.

The summary pro forma and pro forma as adjusted balance sheet data above gives effect to the following transactions as if they had occurred as of June 30, 2011:

- on a pro forma basis (i) the issuance of 55,238 shares of Series E preferred stock in connection with our acquisition of the minority interest in our majority owned subsidiary, BPS, which were issued on August 12, 2011 after the closing of the acquisition; (ii) the conversion of all of our outstanding convertible preferred stock into an aggregate of 10,710,850 shares of common stock, which will take place automatically upon the closing of this offering in accordance with the terms of our preferred stock; and (iii) the issuance of 22,603 shares of common stock issuable as of October 21, 2011 as dividends on shares of Series AA preferred stock; and
- on a pro forma as adjusted basis the issuance and sale of 6,200,000 shares of common stock in this offering at the initial public offering price of $7.00 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us and the receipt by us of the proceeds of such sale.

The table above does not include:

- 554,272 shares of common stock issuable upon the exercise of outstanding options under our 2000 Plan, as of June 30, 2011 having a weighted average exercise price of $1.89 per share;
- 2,547,512 shares of common stock issuable upon the exercise of outstanding options under our 2009 Plan as of June 30, 2011 having a weighted average exercise price of $3.14 per share, which includes 50,373 shares of common stock issuable upon the exercise of options that were issued in connection with our acquisition of the minority interest in BPS in exchange for outstanding options to purchase the Series B common stock of BPS;
- 731,532 additional shares of common stock reserved for future issuance under our 2009 Plan, as amended and restated, plus any annual increases in the number of shares of common stock reserved for future issuance under this plan pursuant to the "evergreen provision" in such plan, as more fully described in the "Executive Compensation—Employee Benefit Plans—2009 Equity Incentive Plan"

section of this prospectus, of which 494,011 shares of common stock are issuable upon the exercise of options that were granted effective November 10, 2011, upon pricing of this offering;

- 238,095 shares of common stock reserved for future issuance under our Directors' Plan, which became effective immediately upon the execution and delivery of the underwriting agreement for this offering; and
- 214,285 shares of common stock reserved for future issuance under our 2010 Purchase Plan, which will become effective upon the closing of this offering.

RISK FACTORS

Investing in our common stock involves a high degree of risk. In evaluating our business, investors should carefully consider the following risk factors. These risk factors contain, in addition to historical information, forward-looking statements that involve risks and uncertainties. Our actual results could differ significantly from the results discussed in the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed below. The order in which the following risks are presented is not intended to reflect the magnitude of the risks described. The occurrence of any of the following risks could have a material adverse effect on our business, financial condition, results of operations and prospects. In that case, the trading price of our common stock could decline, and you may lose all or part of your investment.

Business Risks

Risks Relating to Clinical Development and Commercialization of Our Product Candidates

Our near term prospects are highly dependent on HyperAcute Pancreas. If we fail to complete, or demonstrate safety and efficacy in, clinical trials, fail to obtain regulatory approval or fail to successfully commercialize HyperAcute Pancreas, our business would be harmed and the value of our securities would likely decline.

We must be evaluated in light of the uncertainties and complexities affecting a development stage biopharmaceutical company. We have not completed clinical development for any of our products. Our most advanced product candidate is HyperAcute Pancreas. The United States Food and Drug Administration, or FDA, must approve HyperAcute Pancreas before it can be marketed or sold. Our ability to obtain FDA approval of HyperAcute Pancreas depends on, among other things, completion of our Phase 3 clinical trial, whether our Phase 3 clinical trial of HyperAcute Pancreas demonstrates statistically significant achievement of the clinical trial endpoints with no significant safety issues and whether the FDA agrees that the data from our Phase 3 clinical trial of HyperAcute Pancreas is sufficient to support approval. The final results of our Phase 3 clinical trials of HyperAcute Pancreas may not meet the FDA's requirements to approve the product for marketing, and the FDA may otherwise determine that our manufacturing processes, facilities or raw materials are insufficient to warrant approval. We may need to conduct more clinical trials than we currently anticipate. Furthermore, even if we do receive FDA approval, we may not be successful in commercializing HyperAcute Pancreas. If any of these events occur, our business could be materially harmed and the value of our common stock would likely decline.

If our product candidates do not meet safety and efficacy endpoints in clinical trials, they will not receive regulatory approval, and we will be unable to market them. We have not tested any of our product candidates in controlled clinical trials.

The clinical development and regulatory approval process is expensive and time-consuming. The timing of any future product approval cannot be accurately predicted. If we fail to obtain regulatory approval for our current or future product candidates, we will be unable to market and sell them and therefore we may never be profitable.

As part of the regulatory process, we must conduct clinical trials for each product candidate to demonstrate safety and efficacy to the satisfaction of the FDA and other regulatory authorities abroad. The number and design of clinical trials that will be required varies depending on the product candidate, the condition being evaluated, the trial results and regulations applicable to any particular product candidate.

Prior clinical trial program designs and results are not necessarily predictive of future clinical trial designs or results. Initial results may not be confirmed upon full analysis of the detailed results of a trial. Product candidates in later stage clinical trials may fail to show the desired safety and efficacy despite having progressed through initial clinical trials with acceptable endpoints.

In particular, there have been no control groups in our clinical trials conducted to date. While comparisons to results from other reported clinical trials can assist in predicting the potential efficacy of our HyperAcute Pancreas product candidate, there are many factors that affect the outcome for patients in clinical trials, some of which are not apparent in published reports, and results from two different trials cannot always be reliably compared. As a result, we are studying HyperAcute Pancreas in combination with the current standard-of-care in direct comparison to the current standard-of-care alone in the same trial and will need to show a statistically significant benefit when added to the current standard-of-care in order for HyperAcute Pancreas to be approved as a marketable drug. Patients in our Phase 3 study who do not receive HyperAcute Pancreas may not have results similar to patients studied in the other studies we have used for comparison to our Phase 2 studies. If the patients in our Phase 3 study who receive standard-of-care without HyperAcute Pancreas have results which are better than the results predicted by the other large studies, we may not demonstrate a sufficient benefit from the HyperAcute Pancreas to allow the FDA to approve it for marketing.

Our HyperAcute product candidates are based on a novel technology, which may raise development issues we may not be able to resolve, regulatory issues that could delay or prevent approval or personnel issues that may keep us from being able to develop our product candidates.

Our HyperAcute product candidates are based on our novel HyperAcute immunotherapy technology. In the course of developing this technology and these product candidates, we have encountered difficulties in the development process. There can be no assurance that additional development problems will not arise in the future which we may not be able to resolve or which may cause significant delays in development.

Regulatory approval of novel product candidates such as ours can be more expensive and take longer than for other, more well-known or extensively studied pharmaceutical or biopharmaceutical products, due to our and regulatory agencies' lack of experience with them. This may lengthen the regulatory review process, require us to conduct additional studies or clinical trials, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of these product candidates or lead to significant post-approval limitations or restrictions. For example, the two cell lines that comprise HyperAcute Pancreas are novel and complex therapeutics that we have endeavored to better characterize so that their identity, strength, quality, purity and potency may be compared among batches created from different manufacturing methods. We currently lack the manufacturing capacity necessary for larger-scale production. If we make any changes to our current manufacturing methods or cannot design assays that satisfy FDA's expectations regarding the equivalency of such therapeutics in the laboratory, the FDA may require us to undertake additional clinical trials.

The novel nature of our product candidates also means that fewer people are trained in or experienced with product candidates of this type, which may make it difficult to find, hire and retain capable personnel for research, development and manufacturing positions.

Our Special Protocol Assessment, or SPA, with the FDA relating to our HyperAcute Pancreas Phase 3 clinical trial does not guarantee any particular outcome from regulatory review of the trial or the product candidate, including any regulatory approval.

The protocol for our HyperAcute Pancreas Phase 3 clinical trial was reviewed by the FDA under its SPA process, which allows for FDA evaluation of a clinical trial protocol intended to form the primary basis of an efficacy claim in support of a New Drug Application, or NDA, and provides an agreement that the study design, including trial size, clinical endpoints and/or data analyses are acceptable to the FDA. However, the SPA agreement is not a guarantee of approval, the FDA retains the right to require additional Phase 3 testing and we cannot be certain that the design of, or data collected from, the HyperAcute Pancreas Phase 3 clinical trial will be adequate to demonstrate the safety and efficacy of HyperAcute Pancreas for the treatment of patients with pancreatic cancer, or otherwise be sufficient to

support FDA or any foreign regulatory approval. In addition, the survival rates, duration of response and safety profile required to support FDA approval are not specified in the HyperAcute Pancreas Phase 3 clinical trial protocol and will be subject to FDA review. Although the SPA agreement calls for review of interim data at certain times prior to completion, there is no assurance that any such review, even if such interim data is positive, will result in early approval. Further, the SPA agreement is not binding on the FDA if public health concerns unrecognized at the time the SPA agreement was entered into become evident, other new scientific concerns regarding product safety or efficacy arise, or if we fail to comply with the agreed upon trial protocols. In addition, the SPA agreement may be changed by us or the FDA on written agreement of both parties, and the FDA retains significant latitude and discretion in interpreting the terms of the SPA agreement and the data and results from the HyperAcute Pancreas Phase 3 clinical trial. As a result, we do not know how the FDA will interpret the parties' respective commitments under the SPA agreement, how it will interpret the data and results from the HyperAcute Pancreas Phase 3 clinical trial, or whether HyperAcute Pancreas will receive any regulatory approvals as a result of the SPA agreement or the HyperAcute Pancreas Phase 3 clinical trial. Therefore, significant uncertainty remains regarding the clinical development and regulatory approval process for HyperAcute Pancreas for the treatment of patients with pancreatic cancer.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we must focus on research programs and product candidates for the specific indications that we believe are the most scientifically and commercially promising. As a result, we have in the past determined to let certain of our development projects remain idle including by allowing Investigational New Drug applications, or INDs, to lapse into inactive status, and we may in the future decide to forego or delay pursuit of opportunities with other product candidates or other indications that later prove to have greater scientific or commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable scientific or commercial products or profitable market opportunities. In addition, we may spend valuable time and managerial and financial resources on research programs and product candidates for specific indications that ultimately do not yield any scientifically or commercially viable products. If we do not accurately evaluate the scientific and commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in situations where it would have been more advantageous for us to retain sole rights to development and commercialization.

We may face delays in completing our clinical trials, and we may not be able to complete them at all.

We have not completed all the clinical trials necessary to support an application with the FDA for approval to market any of our product candidates. Our current and future clinical trials may be delayed or terminated as a result of many factors, including:

- delays or failure in reaching agreement on acceptable clinical trial contracts or clinical trial protocols with prospective sites;
- regulators or institutional review boards may not authorize us to commence a clinical trial;
- regulators or institutional review boards may suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or concerns about patient safety;
- we may suspend or terminate our clinical trials if we believe that they expose the participating patients to unacceptable health risks;
- slower than expected patient enrollment or lack of a sufficient number of patients that meet the enrollment criteria for our clinical trials;
- patients may not complete clinical trials due to safety issues, side effects, dissatisfaction with the product candidate, or other reasons;

- difficulty in maintaining contact with patients after treatment, preventing us from collecting the data required by our study protocol;
- product candidates may demonstrate a lack of efficacy during clinical trials;
- governmental or regulatory delays, failure to obtain regulatory approval or changes in regulatory requirements, policy and guidelines;
- competition with ongoing clinical trials and scheduling conflicts with participating clinicians; and
- delays in achieving study endpoints and completing data analysis for a trial.

In addition, we rely on academic institutions, physician practices and clinical research organizations to conduct, supervise or monitor some or all aspects of clinical trials involving our product candidates. We have less control over the timing and other aspects of these clinical trials than if we conducted the monitoring and supervision entirely on our own. Third parties may not perform their responsibilities for our clinical trials on our anticipated schedule or consistent with a clinical trial protocol or applicable regulations. We also may rely on clinical research organizations to perform our data management and analysis. They may not provide these services as required or in a timely or compliant manner.

Moreover, our development costs will increase if we are required to complete additional or larger clinical trials for the HyperAcute product candidates, D-1MT or other product candidates prior to FDA approval. If the delays or costs are significant, our financial results and ability to commercialize the HyperAcute product candidates, D-1MT or other future product candidates will be adversely affected.

If we encounter difficulties enrolling patients in our clinical trials, our clinical trials could be delayed or otherwise adversely affected.

Clinical trials for our product candidates require us to identify and enroll a large number of patients with the disease under investigation. We may not be able to enroll a sufficient number of patients, or those with required or desired characteristics to achieve diversity in a study, to complete our clinical trials in a timely manner. Patient enrollment is affected by factors including:

- severity of the disease under investigation;
- design of the trial protocol;
- the size of the patient population;
- eligibility criteria for the study in question;
- perceived risks and benefits of the product candidate under study;
- availability of competing therapies and clinical trials;
- efforts to facilitate timely enrollment in clinical trials;
- patient referral practices of physicians;
- the ability to monitor patients adequately during and after treatment; and
- proximity and availability of clinical trial sites for prospective patients.

In particular, the inclusion of critically ill patients in our clinical trials may result in deaths or other adverse medical events for reasons that may not be related to the product candidate we are testing or, in those trials where our product candidate is being tested in combination with one or more other therapies, for reasons that may be attributable to such other therapies, but which can nevertheless negatively affect clinical trial results. In addition, we have experienced difficulties enrolling patients in certain of our smaller clinical trials due to lack of referrals and may experience similar difficulties in the future.

If we have difficulty enrolling a sufficient number or diversity of patients to conduct our clinical trials as planned, we may need to delay or terminate ongoing or planned clinical trials, either of which would have an adverse effect on our business.

Regulatory authorities may not approve our product candidates even if they meet safety and efficacy endpoints in clinical trials.

We have discussions with and obtain guidance from regulatory authorities regarding certain aspects of our clinical development activities. These discussions are not binding commitments on the part of regulatory authorities. Under certain circumstances, regulatory authorities may revise or retract previous guidance during the course of our clinical activities or after the completion of our clinical trials. A regulatory authority may also disqualify a clinical trial in whole or in part from consideration in support of approval of a potential product for commercial sale or otherwise deny approval of that product. Prior to regulatory approval, a regulatory authority may elect to obtain advice from outside experts regarding scientific issues and/or marketing applications under a regulatory authority review. In the United States, these outside experts are convened through the FDA's Advisory Committee process, which would report to the FDA and make recommendations that may differ from the views of the FDA; should an Advisory Committee be convened, it would be expected to lengthen the time for obtaining regulatory approval, if such approval is obtained at all.

The FDA and other foreign regulatory agencies can delay, limit or deny marketing approval for many reasons, including:

- a product candidate may not be considered safe or effective;
- our manufacturing processes or facilities may not meet the applicable requirements; and
- changes in their approval policies or adoption of new regulations may require additional work on our part.

Any delay in, or failure to receive or maintain, approval for any of our product candidates could prevent us from ever generating meaningful revenues or achieving profitability.

Our product candidates may not be approved even if they achieve their endpoints in clinical trials. Regulatory agencies, including the FDA, or their advisors may disagree with our trial design and our interpretations of data from preclinical studies and clinical trials. Regulatory agencies may change requirements for approval even after a clinical trial design has been approved. Regulatory agencies also may approve a product candidate for fewer or more limited indications than requested or may grant approval subject to the performance of post-marketing studies. In addition, regulatory agencies may not approve the labeling claims that are necessary or desirable for the successful commercialization of our product candidates.

We may be required to suspend, repeat or terminate our clinical trials if they are not conducted in accordance with regulatory requirements, the results are negative or inconclusive or the trials are not well designed.

Clinical trials must be conducted in accordance with the FDA's current Good Clinical Practices, or cGCP, or other applicable foreign government guidelines and are subject to oversight by the FDA, other foreign governmental agencies and Institutional Review Boards at the medical institutions where the clinical trials are conducted. In addition, clinical trials must be conducted with product candidates produced under current Good Manufacturing Practices, or cGMP, and may require large numbers of test subjects. Clinical trials may be suspended by the FDA, other foreign governmental agencies, or us for various reasons, including:

- deficiencies in the conduct of the clinical trials, including failure to conduct the clinical trial in accordance with regulatory requirements or clinical protocols;
- deficiencies in the clinical trial operations or trial sites;
- the product candidate may have unforeseen adverse side effects;
- the time required to determine whether the product candidate is effective may be longer than expected;

- fatalities or other adverse events arising during a clinical trial due to medical problems that may not be related to clinical trial treatments;
- the product candidate may not appear to be more effective than current therapies;
- the quality or stability of the product candidate may fall below acceptable standards; or
- insufficient quantities of the product candidate to complete the trials.

In addition, changes in regulatory requirements and guidance may occur and we may need to amend clinical trial protocols to reflect these changes. Amendments may require us to resubmit our clinical trial protocols to Institutional Review Boards for reexamination, which may impact the costs, timing or successful completion of a clinical trial. Due to these and other factors, our HyperAcute product candidates, D-1MT and other product candidates could take a significantly longer time to gain regulatory approval for any additional indications than we expect or we may never gain approval for additional indications, which could reduce our revenue by delaying or terminating the commercialization of our HyperAcute product candidates, D-1MT and other product candidates for additional indications.

Our product candidates are being and will be studied in clinical trials co-sponsored by the National Cancer Institute, or NCI, and in investigator-initiated clinical trials, which means we have little control over the conduct of such trials.

Our D-1MT product candidate is being studied in a two Phase 1B/2 clinical trials co-sponsored by the National Cancer Institute. We are also currently providing clinical supply of our HyperAcute Melanoma product candidate in support of a Phase 2 investigator-initiated clinical trial. We expect to continue to supply and otherwise support similar trials in the future. However, because we are not the sponsors of these trials, we do not control the protocols, administration or conduct of these trials and, as a result, are subject to risks associated with the way these types of trials are conducted, in particular should any problems arise. These risks include difficulties or delays in communicating with investigators or administrators, procedural delays and other timing issues and difficulties or differences in interpreting data.

If we cannot demonstrate the safety of our product candidates in preclinical and/or other non-clinical studies, we will not be able to initiate or continue clinical trials or obtain approval for our product candidates.

In order to move a product candidate not yet being tested in humans into a clinical trial, we must first demonstrate in preclinical testing that the product candidate is safe. Furthermore, in order to obtain approval, we must also demonstrate safety in various preclinical and non-clinical tests. We may not have conducted or may not conduct in the future the types of preclinical and other non-clinical testing ultimately required by regulatory authorities, or future preclinical tests may indicate that our product candidates are not safe for use in humans. Preclinical testing is expensive, can take many years and have an uncertain outcome. In addition, success in initial preclinical testing does not ensure that later preclinical testing will be successful. We may experience numerous unforeseen events during, or as a result of, the preclinical testing process, which could delay or prevent our ability to develop or commercialize our product candidates, including:

- our preclinical testing may produce inconclusive or negative safety results, which may require us to conduct additional preclinical testing or to abandon product candidates that we believed to be promising;
- our product candidates may have unfavorable pharmacology, toxicology or carcinogenicity;
- our product candidates may cause undesirable side effects; and
- the FDA or other regulatory authorities may determine that additional safety testing is required.

Any such events would increase our costs and could delay or prevent our ability to commercialize our product candidates, which could adversely impact our business, financial condition and results of operations.

Even if approved, the HyperAcute product candidates, D-1MT or any other product we may commercialize and market may be later withdrawn from the market or subject to promotional limitations.

We may not be able to obtain the labeling claims necessary or desirable for the promotion of our products. We may also be required to undertake post-marketing clinical trials. If the results of such post-marketing studies are not satisfactory, the FDA or a comparable agency in a foreign country may withdraw marketing authorization or may condition continued marketing on commitments from us that may be expensive and/or time consuming to fulfill. In addition, if we or others identify adverse side effects after any of our products are on the market, or if manufacturing problems occur, regulatory approval may be withdrawn and reformulation of our products, additional clinical trials, changes in labeling of our products and additional marketing applications may be required. Any reformulation or labeling changes may limit the marketability of our products.

We will need to develop or acquire additional capabilities in order to commercialize any product candidates that obtain FDA approval, and we may encounter unexpected costs or difficulties in doing so.

We will need to acquire additional capabilities and effectively manage our operations and facilities to successfully pursue and complete future research, development and commercialization efforts. Currently, we have no experience in preparing applications for marketing approval, commercial-scale manufacturing, managing of large-scale information technology systems or managing a large-scale distribution system. We will need to add personnel and expand our capabilities, which may strain our existing managerial, operational, regulatory compliance, financial and other resources. To do this effectively, we must:

- train, manage and motivate a growing employee base;
- accurately forecast demand for our products; and
- expand existing operational, financial and management information systems.

We plan to increase our manufacturing capacity and seek FDA approval for our production process simultaneously with seeking approval for sale of our HyperAcute Pancreas product candidate. Should we not receive timely approval of our production process, our ability to produce the immunotherapy products following regulatory approval for sale could be delayed, which would further delay the period of time when we would be able to generate revenues from the sale of such products, if we are even able to generate revenues at all.

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our product candidates, we may be unable to generate significant product revenue.

We do not have a sales organization and have no experience in the sales and distribution of pharmaceutical products. There are risks involved with establishing our own sales capabilities and increasing our marketing capabilities, as well as entering into arrangements with third parties to perform these services. Developing an internal sales force is expensive and time consuming and could delay any product launch. On the other hand, if we enter into arrangements with third parties to perform sales, marketing and distribution services, our product revenues or the profitability of these product revenues to us are likely to be lower than if we market and sell any products that we develop ourselves.

We may establish our own specialty sales force and/or engage other biopharmaceutical or other healthcare companies with established sales, marketing and distribution capabilities to sell, market and distribute any future products. We may not be able to establish a specialty sales force or establish sales,

marketing or distribution relationships on acceptable terms. Factors that may inhibit our efforts to commercialize any future products without strategic partners or licensees include:

- our inability to recruit and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to or persuade adequate numbers of physicians to prescribe any future products;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

Because the establishment of sales, marketing and distribution capabilities depends on the progress towards commercialization of our product candidates, and because of the numerous risks and uncertainties involved with establishing those capabilities, we are unable to predict when, if ever, we will establish our own sales, marketing and distribution capabilities. If we are not able to partner with third parties and are unsuccessful in recruiting sales, marketing and distribution personnel or in building the necessary infrastructure, we will have difficulty commercializing our product candidates, which would adversely affect our business and financial condition.

Failure to attract and retain key personnel could impede our ability to develop our products and to obtain new collaborations or other sources of funding.

Because of the specialized scientific nature of our business, our success is highly dependent upon our ability to attract and retain qualified scientific and technical personnel, consultants and advisors. We are highly dependent on the principal members of our scientific and management staff, particularly Dr. Charles J. Link, Jr. The loss of his services might significantly delay or prevent the achievement of our research, development, and business objectives. We do not maintain key-man life insurance with respect to any of our employees, nor do we intend to secure such insurance.

We will need to recruit a significant number of additional personnel in order to achieve our operating goals. In order to pursue our product development and marketing and sales plans, we will need to hire additional qualified scientific personnel to perform research and development, as well as personnel with expertise in clinical testing, government regulation, manufacturing, marketing and sales. We also rely on consultants and advisors to assist in formulating our research and development strategy and adhering to complex regulatory requirements. We face competition for qualified individuals from numerous pharmaceutical and biotechnology companies, universities and other research institutions. There can be no assurance that we will be able to attract and retain such individuals on acceptable terms, if at all. If the personnel that have contingently agreed to join us do not join us it will be difficult or impossible for us to execute our business plan in a timely manner. Additionally, our facilities are located in Iowa, which may make attracting and retaining qualified scientific and technical personnel from outside of Iowa difficult. We have two forgivable loans totaling $6.4 million as of June 30, 2011 that are contingent on us creating jobs in Iowa. If we leave Iowa or fail to create the required number of jobs in Iowa, we may be required to pay back some or all of those loans. The failure to attract and retain qualified personnel, consultants and advisors could have a material adverse effect on our business, financial condition and results of operations.

Risks Relating to Manufacturing Activities

We have never manufactured our product candidates at commercial scale, and there can be no assurance that such products can be manufactured in compliance with regulations at a cost or in quantities necessary to make them commercially viable.

We have no experience in commercial-scale manufacturing, the management of large-scale information technology systems or the management of a large-scale distribution system. We may develop our manufacturing capacity in part by expanding our current facilities. This activity would require

substantial additional funds and we would need to hire and train significant numbers of qualified employees to staff these facilities. We may not be able to develop commercial-scale manufacturing facilities that are sufficient to produce materials for additional later-stage clinical trials or commercial use.

If we are unable to manufacture or contract for a sufficient supply of our product candidates on acceptable terms, or if we encounter delays or difficulties in the scale-up of our manufacturing processes or our relationships with other manufacturers, our preclinical and human clinical testing schedule would be delayed. This in turn would delay the submission of product candidates for regulatory approval and thereby delay the market introduction and subsequent sales of any products that receive regulatory approval, which would have a material adverse effect on our business, financial condition and results of operations. Furthermore, we or our contract manufacturers must supply all necessary documentation in support of our Biologics License Application, or BLA, or New Drug Application, or NDA, on a timely basis and must adhere to Good Laboratory Practice, or GLP and cGMP regulations enforced by the FDA through its facilities inspection program. If these facilities cannot pass a pre-approval plant inspection, the FDA approval of the products will not be granted.

We and our contract manufacturers are subject to significant regulation with respect to manufacturing of our products.

All entities involved in the preparation of a therapeutic drug for clinical trials or commercial sale, including our existing contract manufacturer for D-1MT and the components used in the HyperAcute product candidates, are subject to extensive regulation. Components of a finished therapeutic product approved for commercial sale or used in late-stage clinical trials must be manufactured in accordance with cGMP. These regulations govern manufacturing processes and procedures (including record keeping) and the implementation and operation of quality systems to control and assure the quality of investigational products and products approved for sale. Our facilities and quality systems and the facilities and quality systems of some or all of our third party contractors must pass a pre-approval inspection for compliance with the applicable regulations as a condition of regulatory approval of the HyperAcute product candidates, D-1MT or any of our other potential products. In addition, the regulatory authorities may, at any time, audit or inspect a manufacturing facility involved with the preparation of the HyperAcute product candidates, D-1MT or our other potential products or the associated quality systems for compliance with the regulations applicable to the activities being conducted. The regulatory authorities also may, at any time following approval of a product for sale, audit our manufacturing facilities or those of our third party contractors. If any such inspection or audit identifies a failure to comply with applicable regulations or if a violation of our product specifications or applicable regulations occurs independent of such an inspection or audit, we or the relevant regulatory authority may require remedial measures that may be costly and/or time consuming for us or a third party to implement and that may include the temporary or permanent suspension of a clinical trial or commercial sales or the temporary or permanent closure of a facility. Any such remedial measures imposed upon us or third parties with whom we contract could materially harm our business.

We currently rely on relationships with third-party contract manufacturers, which limits our ability to control the availability of, and manufacturing costs for, our product candidates in the near-term.

We will rely upon contract manufacturers for D-1MT, and for components of the HyperAcute product candidates, for commercial sale if any are approved for sale. Problems with any of our facilities or processes, or our contract manufacturers' facilities or processes, could prevent or delay the production of adequate supplies of antigen, components or finished HyperAcute product candidates or D-1MT. This could delay or reduce commercial sales and materially harm our business. We do not currently have experience with the manufacture of products at commercial scale, and may incur substantial costs to develop the capability to manufacture products at commercial scale. Any prolonged delay or interruption in the operations of our facilities or our contract manufacturers' facilities could result in cancellation of

shipments, loss of components in the process of being manufactured or a shortfall in availability of a product. A number of factors could cause interruptions, including the inability of a supplier to provide raw materials, equipment malfunctions or failures, damage to a facility due to natural disasters, changes in regulatory requirements or standards that require modifications to our manufacturing processes, action by the regulatory authorities or by us that results in the halting or slowdown of production of components or finished product due to regulatory issues, a contract manufacturer going out of business or failing to produce product as contractually required or other similar factors. Because manufacturing processes are highly complex and are subject to a lengthy regulatory approval process, alternative qualified production capacity and sufficiently trained or qualified personnel may not be available on a timely or cost-effective basis or at all. Difficulties or delays in our contract manufacturers' production of drug substances could delay our clinical trials, increase our costs, damage our reputation and cause us to lose revenue and market share if we are unable to timely meet market demand for any products that are approved for sale.

Further, if our contract manufacturers are not in compliance with regulatory requirements at any stage, including post-marketing approval, we may be fined, forced to remove a product from the market and/or experience other adverse consequences, including delays, which could materially harm our business.

We use hazardous materials in our business and must comply with environmental laws and regulations, which can be expensive.

Our research and development involves the controlled use of hazardous materials, chemicals, various active microorganisms and volatile organic compounds, and we may incur significant costs as a result of the need to comply with numerous laws and regulations. We are subject to laws and regulations enforced by the FDA, the Drug Enforcement Agency, foreign health authorities and other regulatory requirements, including the Occupational Safety and Health Act, the Environmental Protection Act, the Toxic Substances Control Act, the Food, Drug and Cosmetic Act, the Resource Conservation and Recovery Act, and other current and potential federal, state, local and foreign laws and regulations governing the use, manufacture, storage, handling and disposal of our products, materials used to develop and manufacture our product candidates, and resulting waste products. Although we believe that our safety procedures for handling and disposing of such materials, and for killing any unused microorganisms before disposing of them, comply with the standards prescribed by state and federal regulations, the risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of such an accident, we could be held liable for any damages that result and any such liability could exceed our resources.

We replicate all biological cells for our products internally and utilize a single manufacturing site to manufacture our clinical product candidates. Any disruption in the operations of our manufacturing facility would have a significant negative impact on our ability to manufacture products for clinical testing and would result in increased costs and losses.

We have thus far elected to replicate all biological cells for our products internally using a complex process. The disruption of our operations could result in manufacturing delays due to the inability to purchase the cell lines from outside sources. We have only one manufacturing facility in which we can manufacture clinical products. In the event of a physical catastrophe at our manufacturing or laboratory facilities, we could experience costly delays in reestablishing manufacturing capacity, due to a lack of redundancy in manufacturing capability.

Our current manufacturing facility contains highly specialized equipment and utilizes complicated production processes developed over a number of years, which would be difficult, time-consuming and costly to duplicate. Any prolonged disruption in the operations of our manufacturing facility would have a significant negative impact on our ability to manufacture products for clinical testing on our own and would cause us to seek additional third-party manufacturing contracts, thereby increasing our development costs. We may suffer losses as a result of business interruptions that exceed the coverage available under our insurance policies or any losses may be excluded under our insurance policies. Certain events, such as

natural disasters, fire, political disturbances, sabotage or business accidents, which could impact our current or future facilities, could have a significant negative impact on our operations by disrupting our product development efforts until such time as we are able to repair our facility or put in place third-party contract manufacturers to assume this manufacturing role.

We recently transferred our manufacturing operation to a new facility. We have experienced bacterial and mycoplasm contaminations in lots produced at the previous facility and we destroyed the contaminated lots and certain overlapping lots. We may have contaminated lots at our new facility and we will destroy any contaminated lots that we detect.

Our facilities are located in areas where floods and tornados are known to occur, and the occurrence of a flood, tornado or other catastrophic disaster could damage our facilities and equipment, which could cause us to curtail or cease operations.

Our facilities are located in Ames, Iowa, which is susceptible to floods and tornados, and our facilities are therefore vulnerable to damage or disruption from floods and tornados. We are also vulnerable to damage from other types of disasters, such as power loss, fire and similar events. If any disaster were to occur, our ability to operate our business could be seriously impaired. We currently carry business personal property insurance in the amount of $6.25 million in the aggregate, but this policy does not cover disasters such as floods and earthquakes. We may not have adequate insurance to cover our losses resulting from disasters or other similar significant business interruptions, and we do not plan to purchase additional insurance to cover such losses due to the cost of obtaining such coverage. Any significant losses that are not recoverable under our insurance policies could seriously impair our business and financial condition.

Risks Relating to Regulation of Our Industry

The industry within which we operate and our business are subject to extensive regulation, which is costly, time consuming and may subject us to unanticipated delays.

The research, design, testing, manufacturing, labeling, marketing, distribution and advertising of biologic and pharmaceutical products such as our product candidates are subject to extensive regulation by governmental regulatory authorities in the United States and other countries. The drug development and approval process is generally lengthy, expensive and subject to unanticipated delays. Data obtained from preclinical and clinical testing are subject to varying interpretations that could delay, limit or prevent regulatory approval. In addition, delays or rejections may be encountered based upon changes in regulatory policy for product approval during the period of development and regulatory review of each submitted application for approval. To obtain approval for a product candidate, we must demonstrate to the satisfaction of the regulatory authorities that the product candidate is safe, pure, potent and effective, which typically takes several years or more depending upon the type, complexity and novelty of the product and requires the expenditure of substantial resources. There can be no assurance that we will not encounter problems in clinical trials that would cause us or the regulatory authorities to delay or suspend clinical trials. Any such delay or suspension could have a material adverse effect on our business, financial condition and results of operations.

There can be no assurance that clinical studies for any of our product candidates currently under development will be completed successfully or within any specified time period, if at all. Further, there can also be no assurance that such testing will show any product to be safe, pure, potent or effective. There can be no assurance that we will not encounter problems in clinical trials that will cause us to delay or suspend clinical trials.

Regardless of how much time and resources we devote to development of a product candidate, there can be no assurance that regulatory approval will be obtained for that product candidate. To date, the FDA has approved only one active cellular cancer immunotherapy product, even though several have been, and currently are in, clinical development. Further, even if such regulatory approval is obtained, we, our

products and any contract manufacturers or commercial collaborators of ours will be subject to continual regulatory review in both the United States and other countries. Later discovery of previously unknown problems with regard to a product, distributor or manufacturer may result in restrictions, including withdrawal of the product from the market and/or disqualification or decertification of the distributor or manufacturer.

We cannot predict when, if ever, we might submit for regulatory review our product candidates currently under development. Once we submit our potential products for review, there can be no assurance that regulatory approvals for any pharmaceutical products developed by us will be granted on a timely basis, if at all.

The FDA and comparable agencies in foreign countries impose substantial requirements on the introduction of new biologic and pharmaceutical products through lengthy and detailed preclinical and clinical testing procedures, sampling activities and other costly and time-consuming compliance procedures. Clinical trials are vigorously regulated and must meet requirements for FDA review and oversight and requirements under GCP guidelines. A new drug may not be marketed in the United States until the FDA has approved it. There can be no assurance that we will not encounter delays or rejections or that the FDA will not make policy changes during the period of product development and FDA regulatory review of each submitted BLA and NDA. A delay in obtaining or failure to obtain such approvals would have a material adverse effect on our business, financial condition and results of operations. Even if regulatory approval were obtained, it would be limited as to the indicated uses for which the product may be promoted or marketed. A marketed product, its manufacturer and the facilities in which it is manufactured are subject to continual review and periodic inspections. If marketing approval is granted, we would be required to comply with FDA requirements for manufacturing, labeling, advertising, record keeping and reporting of adverse experiences and other information. In addition, we would be required to comply with federal and state anti-kickback and other health care fraud and abuse laws that pertain to the marketing of pharmaceuticals. Failure to comply with regulatory requirements and other factors could subject us to regulatory or judicial enforcement actions, including product recalls or seizures, injunctions, withdrawal of the product from the market, civil penalties, criminal prosecution, refusals to approve new products and withdrawals of existing approvals, as well as enhanced product liability exposure, any of which could have a material adverse effect on our business, financial condition and results of operations. Sales of our products outside the United States will be subject to foreign regulatory requirements governing clinical trials, marketing approval, manufacturing and pricing. Non-compliance with these requirements could result in enforcement actions or penalties or could delay introduction of our products in certain countries.

The requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement outside the United States vary greatly from country to country. The time required to obtain approvals outside the United States may differ from that required to obtain FDA approval. We may not obtain foreign regulatory approvals on a timely basis, or at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other countries or by the FDA and foreign regulatory authorities could require additional testing. Failure to comply with these regulatory requirements or obtain required approvals could impair our ability to develop foreign markets for our products and may have a material adverse effect on our results of operations and financial condition.

We are also subject to laws generally applicable to businesses, including but not limited to, federal, state and local regulations relating to wage and hour matters, employee classification, mandatory healthcare benefits, unlawful workplace discrimination and whistle-blowing. Any actual or alleged failure to comply with any regulation applicable to our business or any whistle-blowing claim, even if without merit, could result in costly litigation, regulatory action or otherwise harm our business, results of operations, financial condition, cash flow and future prospects.

The availability and amount of reimbursement for our product candidates, if approved, and the manner in which government and private payors may reimburse for our potential product, are uncertain.

In both United States and foreign markets, sales of our proposed products will depend in part on the availability of reimbursement from third-party payors such as government health administration authorities, private health insurers and other organizations. Our future levels of revenues and profitability may be affected by the continuing efforts of governmental and third party payors to contain or reduce the costs of health care. We cannot predict the effect that private sector or governmental health care reforms may have on our business, and there can be no assurance that any such reforms will not have a material adverse effect on our business, financial condition and results of operations.

In addition, in both the United States and elsewhere, sales of prescription drugs are dependent in part on the availability of reimbursement to the consumer from third-party payors, such as government and private insurance plans. Third-party payors are increasingly challenging the price and cost-effectiveness of medical products and services. Significant uncertainty exists as to the reimbursement status of newly approved health care products. There can be no assurance that our proposed products will be considered cost-effective or that adequate third-party reimbursement will be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development. Legislation and regulations affecting the pricing of pharmaceuticals may change before any of our proposed products are approved for marketing. Adoption of such legislation could further limit reimbursement for medical products and services. As a result, we may elect not to market future products in certain markets.

Moreover, while we are in clinical trials, we will not be reimbursed for any of our materials used during the clinical trials.

The biopharmaceutical industry is subject to significant regulation and oversight in the United States, in addition to approval of products for sale and marketing.

In addition to FDA restrictions on marketing of biopharmaceutical products, several other types of state and federal laws have been applied to restrict certain marketing practices in the biopharmaceutical industry in recent years. These laws include anti-kickback statutes and false claims statutes.

The federal health care program anti-kickback statute prohibits, among other things, knowingly and willfully offering, paying, soliciting, or receiving remuneration to induce or in return for purchasing, leasing, ordering, or arranging for the purchase, lease, or order of any health care item or service reimbursable under Medicare, Medicaid, or other federally financed healthcare programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers and formulary managers on the other. Although there are a number of statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exemption or safe harbor. Our practices may not in all cases meet all of the criteria for safe harbor protection from anti-kickback liability.

Federal false claims laws prohibit any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, or knowingly making, or causing to be made, a false statement to get a false claim paid. Recently, several pharmaceutical and other health care companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of marketing of the product for unapproved, and thus non-reimbursable, uses. The majority of states also have statutes or regulations similar to the federal anti-kickback law and false claims laws, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor. Sanctions under these federal and

state laws may include civil monetary penalties, exclusion of a manufacturer's products from reimbursement under government programs, criminal fines and imprisonment.

Because of the breadth of these laws and the narrowness of the safe harbors, it is possible that some of our business activities could be subject to challenge under one or more of these laws, which could have a material adverse effect on our business, financial condition and results of operations.

Multi-jurisdictional regulations, including those establishing our ability to price products, may negatively affect our sales and profit margins.

We expect to face pricing pressure globally from managed care organizations, institutions and government agencies and programs, which could negatively affect the sales and profit margins for our HyperAcute product candidates, D1-MT or any other of our product candidates that are approved for marketing. For example, in the United States, the Medicare Modernization Act contains a prescription drug benefit for individuals who are eligible for Medicare. The prescription drug benefit became effective on January 1, 2006 and has resulted in increased use of generics and increased purchasing power of those negotiating on behalf of Medicare recipients, which in turn may result in increased pricing pressure on our products.

Health care reform measures could adversely affect our business.

In the United States and foreign jurisdictions, there have been a number of legislative and regulatory changes to the healthcare system that could affect our future results of operations. In particular, there have been and continue to be a number of initiatives at the United States federal and state levels that seek to reduce healthcare costs. Most recently, in March 2010 the Patient Protection and Affordable Health Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively the PPACA, was enacted, which includes measures to significantly change the way health care is financed by both governmental and private insurers. Among the provisions of the PPACA of greatest importance to the pharmaceutical and biotechnology industry are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs, beginning in 2011;
- new requirements to report certain financial arrangements with physicians and others, including reporting any "transfer of value" made or distributed to prescribers and other healthcare providers and reporting any investment interests held by physicians and their immediate family members during each calendar year beginning in 2012, with reporting starting in 2013;
- a licensure framework for follow-on biologic products;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;
- creation of the Independent Payment Advisory Board which, beginning in 2014, will have authority to recommend certain changes to the Medicare program that could result in reduced payments for prescription drugs and those recommendations could have the effect of law even if Congress does not act on the recommendations; and
- establishment of a Center for Medicare Innovation at the Centers for Medicare & Medicaid Services to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending beginning by January 1, 2011.

Many of the details regarding the implementation of the PPACA are yet to be determined, and at this time, it remains unclear the full effect that the PPACA would have on our business. In particular, there is uncertainty surrounding the applicability of the biosimilars provisions under the PPACA to our HyperAcute product candidates. The FDA is only now soliciting public comment and conducting hearings to assist them in drafting regulations under the PPACA. It is not certain that we will receive 12 years of

marketing exclusivity for any of our products. The regulations that are ultimately promulgated and their implementation are likely to have considerable impact on the way we conduct our business and may require us to change current strategies.

Individual states have become increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access, and marketing cost disclosure and transparency measures, and designed to encourage importation from other countries and bulk purchasing. Legally-mandated price controls on payment amounts by third-party payors or other restrictions could harm our business, results of operations, financial condition and prospects. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs. This could reduce ultimate demand for our products or put pressure on our product pricing, which could negatively affect our business, results of operations, financial condition and prospects.

In addition, given recent federal and state government initiatives directed at lowering the total cost of healthcare, Congress and state legislatures will likely continue to focus on healthcare reform, the cost of prescription drugs and biologics and the reform of the Medicare and Medicaid programs. While we cannot predict the full outcome of any such legislation, it may result in decreased reimbursement for drugs and biologics, which may further exacerbate industry-wide pressure to reduce prescription drug prices. This could harm our ability to generate revenues. In addition, legislation has been introduced in Congress that, if enacted, would permit more widespread importation or re-importation of pharmaceutical products from foreign countries into the United States, including from countries where the products are sold at lower prices than in the United States. Such legislation, or similar regulatory changes, could put competitive pressure on our ability to profitably price our products, which, in turn, could adversely affect our business, results of operations, financial condition and prospects. Alternatively, in response to legislation such as this, we might elect not to seek approval for or market our products in foreign jurisdictions in order to minimize the risk of re-importation, which could also reduce the revenue we generate from our product sales. It is also possible that other legislative proposals having similar effects will be adopted.

Furthermore, regulatory authorities' assessment of the data and results required to demonstrate safety and efficacy can change over time and can be affected by many factors, such as the emergence of new information, including on other products, changing policies and agency funding, staffing and leadership. We cannot be sure whether future changes to the regulatory environment will be favorable or unfavorable to our business prospects. For example, average review times at the FDA for marketing approval applications have fluctuated over the last ten years, and we cannot predict the review time for any of our submissions with any regulatory authorities. In addition, review times can be affected by a variety of factors, including budget and funding levels and statutory, regulatory and policy changes.

Financial Risks

We have a history of net losses. We expect to continue to incur increasing net losses for the foreseeable future, and we may never achieve or maintain profitability.

We are not profitable and have incurred significant net losses in each year since our inception, including net losses of $8.3 million, $16.2 million, $10.0 million and $8.8 million for the six months ending June 30, 2011, and the years ended December 31, 2010, 2009 and 2008, respectively. As of June 30, 2011, we had an accumulated deficit of $71.7 million. Our losses have resulted principally from costs incurred in our discovery and development activities. We anticipate that our operating losses will substantially increase over the next several years as we expand our discovery, research and development activities, including the Phase 2 and Phase 3 clinical development of the HyperAcute product candidates and Phase 2 clinical development of D-1MT.

Because of the numerous risks and uncertainties associated with biopharmaceutical product development and commercialization, we are unable to accurately predict the timing or amount of future expenses or when, or if, we will be able to achieve or maintain profitability. Currently, we have no products approved for commercial sale, and to date we have not generated any product revenue. We have financed our operations primarily through the sale of equity securities, government grants, economic development loans and capital lease and equipment financing. The size of our future net losses will depend, in part, on the rate of growth or contraction of our expenses and the level and rate of growth, if any, of our revenues. Our ability to achieve profitability is dependent on our ability, alone or with others, to complete the development of our products successfully, obtain the required regulatory approvals, manufacture and market our proposed products successfully or have such products manufactured and marketed by others and gain market acceptance for such products. There can be no assurance as to whether or when we will achieve profitability.

We will require substantial additional capital in the future. If additional capital is not available, we will have to delay, reduce or cease operations.

Development of our HyperAcute product candidates, D-1MT and any other product candidates will require substantial additional funds to conduct research, development and clinical trials necessary to bring such product candidates to market and to establish manufacturing, marketing and distribution capabilities. Our future capital requirements will depend on many factors, including, among others:

- the scope, rate of progress, results and costs of our preclinical studies, clinical trials and other research and development activities;
- the scope, rate of progress and costs of our manufacturing development and commercial manufacturing activities;
- the cost, timing and outcomes of regulatory proceedings (including FDA review of any BLA or NDA we file);
- payments required with respect to development milestones we achieve under our in-licensing agreements;
- the costs involved in preparing, filing, prosecuting, maintaining and enforcing patent claims;
- the costs associated with commercializing our product candidates, if they receive regulatory approval;
- the cost and timing of developing our ability to establish sales and marketing capabilities;
- competing technological efforts and market developments;
- changes in our existing research relationships;
- our ability to establish collaborative arrangements to the extent necessary;
- revenues received from any existing or future products; and
- payments received under any future strategic partnerships.

We anticipate that we will continue to generate significant losses for the next several years as we incur expenses to complete our clinical trial programs for our product candidates, build commercial capabilities, develop our pipeline and expand our corporate infrastructure. We believe that the net proceeds from this offering, together with our existing cash and cash equivalents and marketable securities, will allow us to fund our operating plan through at least the end of 2013. However, our operating plan may change as a result of factors currently unknown to us.

There can be no assurance that our revenue and expense forecasts will prove to be accurate, and any change in the foregoing assumptions could require us to obtain additional financing earlier than anticipated. There is a risk of delay or failure at any stage of developing a product candidate, and the time required and costs involved in successfully accomplishing our objectives cannot be accurately predicted. Actual drug research and development costs could substantially exceed budgeted amounts, which could force us to delay, reduce the scope of or eliminate one or more of our research or development programs.

We are party to license agreements with various parties pursuant to which we have obtained licenses to certain patents, patent applications and other intellectual property related to our product candidates and product development efforts. Pursuant to most of these license agreements, we are obligated to make aggregate payments ranging from around $200,000 to $2.8 million per license (and in some cases, for each product candidate in such license) upon achievement of development and regulatory approval milestones specified in the applicable license. The timing of our achievement of these events and corresponding milestone payments to our licensors are subject to factors relating to the clinical and regulatory development and commercialization of our product candidates, many of which are beyond our control. We may become obligated to make a milestone payment when we do not have the cash on hand to make such payment, which could require us to delay our clinical trials, curtail our operations, scale back our commercialization or marketing efforts or seek funds to meet these obligations on terms unfavorable to us.

We may never be able to generate a sufficient amount of product revenue to cover our expenses. Until we do, we expect to seek additional funding through public or private equity or debt financings, collaborative relationships, capital lease transactions or other available financing transactions. However, there can be no assurance that additional financing will be available on acceptable terms, if at all, and such financings could be dilutive to existing stockholders. Moreover, in the event that additional funds are obtained through arrangements with collaborative partners, such arrangements may require us to relinquish rights to certain of our technologies, product candidates or products that we would otherwise seek to develop or commercialize ourselves.

If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our research or development programs. Our failure to obtain adequate financing when needed and on acceptable terms would have a material adverse effect on our business, financial condition and results of operations.

We have outstanding debt which may be accelerated as early as March 18, 2012.

In March 2005, we entered into a $6.0 million forgivable loan agreement with the Iowa Department of Economic Development, or the IDED. Under the agreement, in the absence of default, there will be no principal or interest payments due until the completion date for the project, which is March 18, 2012, under the current one-year extension granted by the IDED. The project is to provide us with financial assistance for research and product development activities at our Iowa State University Research Park facility. The project calls for the creation of 315 jobs at the time of commercialization and retention of 35 jobs with total project expenditures of $189.9 million for clinical trials, research and development activities, building construction, equipment purchases, and other working capital needs. As of June 30, 2011, we believe we had created 43 jobs, retained 35 jobs and incurred $70.1 million of project expenditures. If, as of March 18, 2012, the IDED determines we have fulfilled all the job creation and maintenance terms and project expenditure requirements of the loan agreement, the loan will be forgiven. However, on the project completion date we will be required to repay the greater of either approximately $17,000 for each of the 350 jobs we fail to create and maintain as of that date or a percentage of the $6.0 million advanced under the agreement equal to the percentage of any shortfall in our obligation to expend $189.9 million of project expenditures. Five years following the project completion date, we will be required to repay approximately $17,000 for each of the 350 jobs the IDED determines we failed to maintain as of that date. In the event of default, including failure to repay any amounts under the loan when due, we will be required to repay the note including 6% interest per annum beginning at the date of default. We are also obligated to maintain our business in the State of Iowa while amounts remain outstanding under this loan.

We have not currently fulfilled the requirements for loan forgiveness under this agreement. Absent an amendment granted by the IDED, as of June 30, 2011, we would have to repay up to $4.7 million on or after March 18, 2012. There is no guarantee that the IDED will agree to further extend the completion date under the agreement. If the amounts under the loan become due in March 2012, it would likely have a material adverse affect on our cash position. Additionally, under the agreement, we are obligated to pay a

minimum of 0.25% royalties on all gross revenues of any products we bring to market with a cumulative maximum royalty amount due of $3.2 million. Substantially all of our assets are pledged to secure this loan.

In March 2010, we entered into a $400,000 forgivable loan agreement with the City of Ames, Iowa and the Ames Chamber of Commerce, in order to help finance the construction of new facilities within the Ames city limits. In the absence of a default, there are no principal or interest payments due until the expected completion date for the project, which is March 10, 2015. The project calls for us to create or retain at least 70 full-time jobs located in Ames, Iowa as of March 10, 2012 and to create or retain at least 150 full-time positions located in Ames, Iowa as of March 10, 2015. The agreement also calls for us to enter into a five-year building lease with option for extension for an additional five years of not less than 20,000 square feet within the corporate limits of the City of Ames by March 10, 2015. If, as of March 10, 2015, we have fulfilled the terms of the loan agreement, the loan will be forgiven. If on March 10, 2012 and March 10, 2015, we have failed to create or retain at least 70 full-time jobs and 150 full-time jobs in Ames, Iowa, respectively, we will be required to repay approximately $3,100 per job not created or retained following the respective date. As of June 30, 2011, we had created or retained an aggregate of 76 full-time jobs in Ames, Iowa. As of June 30, 2011, $300,000 of the total $400,000 forgivable loan was advanced to us with the final $100,000 pending certification to the City of Ames regarding the creation of a threshold level of jobs. In the event of default, including failure to repay any amounts under the loan when due, we will be required to repay the note including 6.5% interest per annum beginning at the date of default.

We have not met the full job creation requirements of these loans as of the present date. If we cannot or do not comply with these and all other requirements under these loans, we may be obligated to pay principal and interest on these loans immediately. If we are unable to meet our obligations to service our debt and fund our business, we may be forced to reduce or delay capital expenditures, seek additional debt financing or equity capital, restructure or refinance our debt or sell assets. We cannot assure you that we would be able to obtain additional financing, refinance existing debt or sell assets on satisfactory terms or at all.

Even though we have received governmental support in the past, we may not continue to receive support at the same level or at all.

We have received significant financial assistance from state and local governments, primarily in the form of forgivable loans. There can be no assurance that we will continue to receive the same level of assistance from these or other government agencies, if at all.

Through our subsidiary, BioProtection Systems Corporation, or BPS, we also have ongoing contracts and grants with the United States Department of Defense and National Institutes of Health, respectively. The termination of a United States government grant, contract or relationship as a result of our failure to satisfy any of our obligations under the grants or contracts would have a negative impact on our operations and harm our reputation and ability to procure government contracts. Additionally, there can be no assurance that we will secure comparable contracts with, or grants from, the United States government in the future.

Risks Relating to Competitive Factors

We compete in an industry characterized by extensive research and development efforts and rapid technological progress. New discoveries or commercial developments by our competitors could render our potential products obsolete or non-competitive.

New developments occur and are expected to continue to occur at a rapid pace, and there can be no assurance that discoveries or commercial developments by our competitors will not render some or all of our potential products obsolete or non-competitive, which would have a material adverse effect on our business, financial condition and results of operations.

We expect to compete with fully integrated and well-established pharmaceutical and biotechnology companies in the near and long term. Most of these companies have substantially greater financial, research and development, manufacturing and marketing experience and resources than we do and represent substantial long-term competition for us. Such companies may succeed in discovering and developing pharmaceutical products more rapidly than we do or pharmaceutical products that are safer, more effective or less costly than any that we may develop. Such companies also may be more successful than we are in production and marketing. Smaller companies may also prove to be significant competitors, particularly through collaborative arrangements with large pharmaceutical and established biotechnology companies. Academic institutions, governmental agencies and other public and private research organizations also conduct clinical trials, seek patent protection and establish collaborative arrangements for the development of oncology products.

We will face competition based on product efficacy and safety, the timing and scope of regulatory approvals, availability of supply, marketing and sales capabilities, reimbursement coverage, price and patent position. There can be no assurance that our competitors will not develop safer and more effective products, commercialize products earlier than we do, or obtain patent protection or intellectual property rights that limit our ability to commercialize our products.

There can be no assurance that our issued patents or pending patent applications, if issued, will not be challenged, invalidated or circumvented or that the rights granted thereunder will provide us with proprietary protection or a competitive advantage.

Our competitors may develop and market products that are less expensive, more effective, safer or reach the market sooner than our product candidates, which may diminish or eliminate the commercial success of any products we may commercialize.

The biopharmaceutical industry is highly competitive. There are many public and private biopharmaceutical companies, public and private universities and research organizations actively engaged in the discovery and research and development of products for cancer. Given the significant unmet patient need for new therapies, oncology is an area of focus for large and small companies as well as research institutions. As a result, there are and will likely continue to be extensive research and substantial financial resources invested in the discovery and development of new oncology products. In addition, there are a number of multinational pharmaceutical companies and large biotechnology companies currently marketing or pursuing the development of products or product candidates targeting the same cancer indications as our product candidates, and several large public biopharmaceutical companies have approved or are developing cancer immunotherapy products, including Dendreon Corporation, Bristol-Myers Squibb Company, GlaxoSmithKline plc, Merck & Co., Merck KGaA and Sanofi-Aventis.

There are several marketed products indicated for pancreatic cancer, including Eli Lilly and Company's Gemzar®, Astellas Pharma's Tarceva®, Teva Pharmaceutical Industries Limited's streptozocin, and fluorouracil, or 5-FU, and mitomycin which are marketed by several generic pharmaceutical firms. There are numerous marketed therapeutics indicated for NSCLC, including Roche AG's Avastin®, Eli Lilly's Alimta® and Gemzar, Astellas Pharma's Tarceva, AstraZeneca's Iressa®, and Sanofi-Aventis' Taxotere and Eloxatin, as well as generically available platinum-based chemotherapeutics (cisplatin and carboplatin) and mitotic inhibitors (paclitaxel and venorelbine). There are also several marketed therapeutics indicated for advanced melanoma, including Merck's Intron A and Novartis/Prometheus Laboratories' Proleukin®, as well as cisplatin and dacarbazine, which are available generically. Bristol-Myers Squibb's immunotherapy ipilimumab was recently approved by the FDA as was Roche/Daiichi Sankyo's drug, vemurafenid.

In addition, there are a number of companies with active clinical trials ongoing in pancreatic cancer including AB Science SA, Amgen Inc., Astellas Pharma, BioSante Pharmaceuticals, Inc., Celgene Corporation, Immunomedics, Inc., Lorus Therapeutics Inc., Sanofi-Aventis and Threshold Pharmaceuticals, Inc., a number of companies with active clinical trials ongoing in NSCLC, including

Abbott Laboratories, Amgen, Bristol-Myers Squibb, Boehringer Ingelheim, BioNumerik Pharmaceuticals, Inc., Celgene, GlaxoSmithKline, NovaRx Corporation, Onyx Pharmaceuticals, Inc., Pfizer Inc. and Regeneron Pharmaceuticals, Inc., and a number of companies with active clinical trials ongoing in advanced melanoma, including Amgen, Astellas Pharma, Eli Lilly, Onyx, Roche, Synta Pharmaceuticals Corp., and Vical Inc. among other companies.

Many of our competitors, either alone or with their strategic partners, have substantially greater financial, technical and human resources than we do and significantly greater experience in the discovery and development of drugs, obtaining FDA and other regulatory approvals, and the commercialization of those products. Accordingly, our competitors may be more successful in obtaining approval for drugs and achieving widespread market acceptance. Our competitors' drugs may be more effective, or more effectively marketed and sold, than any drug we may commercialize and may render our product candidates obsolete or non-competitive before we can recover the significant expenses of developing and commercializing any of our product candidates. We anticipate that we will face intense and increasing competition as new drugs enter the market and advanced technologies become available.

There are many different approaches to using immunotherapies to treat cancer, including anti-idiotype, whole cell, DNA, peptide/antigen, viral, tumor lysate, shed antigens, and dendritic cell. Cancer immunotherapies are also distinguished by whether or not they are derived from autologous or allogeneic sources. Each of the various approaches to cancer immunotherapy have potential advantages and disadvantages based on factors such as their immunostimulatory mechanisms, formulation characteristics, manufacturing requirements, and treatment regimens.

We also compete with other clinical-stage companies and institutions for clinical trial participants, which could reduce our ability to recruit participants for our clinical trials. Delay in recruiting clinical trial participants could adversely affect our ability to bring a product to market prior to our competitors. Further, research and discoveries by others may result in breakthroughs that render our HyperAcute product candidates, D-1MT or our other potential products obsolete even before they begin to generate any revenue.

In addition, our competitors may obtain patent protection or FDA approval and commercialize products more rapidly than we do, which may impact future sales of any of our products that receive marketing approval. If the FDA approves the commercial sale of any of our products, we will also be competing with respect to marketing capabilities and manufacturing efficiency, areas in which we have limited or no experience. We expect that competition among products approved for sale will be based, among other things, on product efficacy, price, safety, reliability, availability, patent protection, and sales, marketing and distribution capabilities. Our profitability and financial position will suffer if our products receive regulatory approval, but cannot compete effectively in the marketplace.

If any of our product candidates are approved and commercialized, we may face competition from generic products if the product candidate is a small molecule drug, or biosimilars if the product candidate is a biologic. The route to market for generic versions of small molecule drugs was established with the passage of the Hatch-Waxman Amendments in 1984 and for biosimilars with the passage of the PPACA in March 2010. The PPACA establishes a pathway for the FDA approval of follow-on biologics and provides 12 years of marketing exclusivity for reference products and an additional six months of exclusivity if pediatric studies are conducted. In Europe, the European Medicines Agency has issued guidelines for approving products through an abbreviated pathway, and biosimilars have been approved in Europe. If a biosimilar version of one of our potential products were approved in the United States or Europe, it could have a negative effect on sales and gross profits of the potential product and our financial condition.

Our biodefense product candidates face significant competition for United States government funding for both development and procurement of medical countermeasures for biological, chemical and nuclear threats, diagnostic testing systems and other emergency preparedness countermeasures. Competitors include Emergent BioSolutions, SIGA Technologies, AVI Biopharma, Pharmathene, Acambis, Bavarian Nordic AS, and Novartis. Academic institutions, government agencies, private research organizations and

public research organizations are also conducting research and filing patents toward commercialization of products. In addition, we may not be able to compete effectively if our product candidates do not satisfy government procurement requirements with respect to biodefense products.

Our products may not be accepted in the marketplace; therefore, we may not be able to generate significant revenue, if any.

Even if the HyperAcute product candidates, D-1MT or any of our other potential products are approved for sale, physicians and the medical community may not ultimately use them or may use them only in applications more restricted than we expect. Our products, if successfully developed, will compete with a number of traditional products and immunotherapies manufactured and marketed by major pharmaceutical and other biotechnology companies. Our products will also compete with new products currently under development by such companies and others. Physicians will prescribe a product only if they determine, based on experience, clinical data, side effect profiles and other factors, that it is beneficial as compared to other products currently in use. Many other factors influence the adoption of new products, including marketing and distribution restrictions, course of treatment, adverse publicity, product pricing, the views of thought leaders in the medical community and reimbursement by government and private third party payors.

Risks Relating to Our Arrangements with Third Parties

We rely on third parties to conduct our preclinical studies and our clinical trials. If these third parties do not perform as contractually required or expected, we may not be able to obtain regulatory approval for our product candidates, or we may be delayed in doing so.

We do not have the ability to conduct preclinical studies or clinical trials independently for our product candidates. We must rely on third parties, such as contract research organizations, medical institutions, academic institutions, clinical investigators and contract laboratories, to conduct our preclinical studies and clinical trials. We are responsible for confirming that our preclinical studies are conducted in accordance with applicable regulations and that each of our clinical trials is conducted in accordance with its general investigational plan and protocol. The FDA requires us to comply with GLP for conducting and recording the results of our preclinical studies and cGCP for conducting, monitoring, recording and reporting the results of clinical trials, to assure that data and reported results are accurate and that the clinical trial participants are adequately protected. Our reliance on third parties does not relieve us of these responsibilities. If the third parties conducting our clinical trials do not perform their contractual duties or obligations, do not meet expected deadlines, fail to comply with cGCP, do not adhere to our clinical trial protocols or otherwise fail to generate reliable clinical data, we may need to enter into new arrangements with alternative third parties and our clinical trials may be more costly than expected or budgeted, extended, delayed or terminated or may need to be repeated, and we may not be able to obtain regulatory approval for or commercialize the product candidate being tested in such trials.

Further, if our contract manufacturers are not in compliance with regulatory requirements at any stage, including post-marketing approval, we may be fined, forced to remove a product from the market and/or experience other adverse consequences, including delays, which could materially harm our business.

If we fail to enter into any needed collaboration agreements for our product candidates, we may be unable to commercialize them effectively or at all.

To successfully commercialize the HyperAcute product candidates or D-1MT, we will need substantial financial resources as well as expertise and physical resources and systems. We may elect to develop some or all of these physical resources and systems and expertise ourselves or we may seek to collaborate with another company that can provide some or all of such physical resources and systems as well as financial resources and expertise. Such collaborations are complex and any potential discussions may not result in a definitive agreement for many reasons. For example, whether we reach a definitive agreement for a

collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration, and the proposed collaborator's evaluation of a number of factors. Those factors may include the design or results of our clinical trials, the potential market for the HyperAcute product candidates and D-1MT, the costs and complexities of manufacturing and delivering the HyperAcute product candidates and D-1MT to patients, the potential of competing products, the existence of uncertainty with respect to ownership or the coverage of our technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge and industry and market conditions generally. If we were to determine that a collaboration for the HyperAcute product candidates or D-1MT is necessary and were unable to enter into such a collaboration on acceptable terms, we might elect to delay or scale back the commercialization of the HyperAcute product candidates or D-1MT in order to preserve our financial resources or to allow us adequate time to develop the required physical resources and systems and expertise ourselves.

If we enter into a collaboration agreement we consider acceptable, the collaboration may not proceed as quickly, smoothly or successfully as we plan. The risks in a collaboration agreement include the following:

- the collaborator may not apply the expected financial resources, efforts or required expertise in developing the physical resources and systems necessary to successfully commercialize the HyperAcute product candidates or D-1MT;
- the collaborator may not invest in the development of a sales and marketing force and the related infrastructure at levels that ensure that sales of the HyperAcute product candidates or D-1MT reach their full potential;
- disputes may arise between us and a collaborator that delay the commercialization or adversely affect its sales or profitability of the HyperAcute product candidates or D-1MT; or
- the collaborator may independently develop, or develop with third parties, products that could compete with the HyperAcute product candidates or D-1MT.

If we enter into one or more collaborations for our HyperAcute product candidates, D-1MT or any of our other product candidates, we will be dependent on our collaborators' performance of their responsibilities and their cooperation with us. Our collaborators may not perform their obligations under our agreements with them or otherwise cooperate with us. We cannot control whether our collaborators will devote the necessary resources to the activities contemplated by our collaborative agreements, nor can we control the timing of their performance. Our collaborators may choose to pursue existing or alternative technologies in preference to those being developed in collaboration with us. Disputes may arise between us and our collaborators that delay the development and commercialization of our product candidates that are difficult and costly to resolve, or may not be resolved. In addition, a collaborator for the HyperAcute product candidates or D-1MT may have the right to terminate the collaboration at its discretion. Any termination may require us to seek a new collaborator, which we may not be able to do on a timely basis, if at all, or require us to delay or scale back the commercialization efforts. The occurrence of any of these events could adversely affect the commercialization of the HyperAcute product candidates or D-1MT and materially harm our business and stock price by delaying the sale of any product that may be approved by the FDA, by slowing the growth of such sales, by reducing the profitability of the product and/or by adversely affecting the reputation of the product.

We rely on a single manufacturer for a key component used in the manufacture of our HyperAcute immunotherapy product candidates, which could impair our ability to manufacture and supply our products.

The manufacturing process for our HyperAcute immunotherapy product candidates has one component that we obtain from a single manufacturer. If we utilize an alternative manufacturer, we may be required to demonstrate comparability of the drug product before releasing the product for clinical use. The loss of our current supplier could result in manufacturing delays for the component substitution, and we may need to accept changes in terms or price from our existing supplier in order to avoid such delays.

We may explore strategic partnerships that may never materialize or may fail.

We may, in the future, periodically explore a variety of possible strategic partnerships in an effort to gain access to additional product candidates or resources. At the current time, we cannot predict what form such a strategic partnership might take. We are likely to face significant competition in seeking appropriate strategic partners, and these strategic partnerships can be complicated and time consuming to negotiate and document. We may not be able to negotiate strategic partnerships on acceptable terms, or at all. We are unable to predict when, if ever, we will enter into any additional strategic partnerships because of the numerous risks and uncertainties associated with establishing strategic partnerships.

If we enter into one or more strategic partnerships, we may be required to relinquish important rights to and control over the development of our product candidates or otherwise be subject to unfavorable terms.

Any future strategic partnerships we enter into could subject us to a number of risks, including:

- we may be required to undertake the expenditure of substantial operational, financial and management resources;
- we may be required to issue equity securities that would dilute our existing stockholders' percentage ownership;
- we may be required to assume substantial actual or contingent liabilities;
- we may not be able to control the amount and timing of resources that our strategic partners devote to the development or commercialization of our product candidates;
- strategic partners may delay clinical trials, provide insufficient funding, terminate a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new version of a product candidate for clinical testing;
- strategic partners may not pursue further development and commercialization of products resulting from the strategic partnering arrangement or may elect to discontinue research and development programs;
- strategic partners may not commit adequate resources to the marketing and distribution of our product candidates, limiting our potential revenues from these products;
- disputes may arise between us and our strategic partners that result in the delay or termination of the research, development or commercialization of our product candidates or that result in costly litigation or arbitration that diverts management's attention and consumes resources;
- strategic partners may experience financial difficulties;
- strategic partners may not properly maintain or defend our intellectual property rights or may use our proprietary information in a manner that could jeopardize or invalidate our proprietary information or expose us to potential litigation;
- business combinations or significant changes in a strategic partner's business strategy may also adversely affect a strategic partner's willingness or ability to complete its obligations under any arrangement;
- strategic partners could decide to move forward with a competing product candidate developed either independently or in collaboration with others, including our competitors; and
- strategic partners could terminate the arrangement or allow it to expire, which would delay the development and may increase the cost of developing our product candidates.

Risks Relating to Protecting Our Intellectual Property

If we are unable to protect our proprietary rights or to defend against infringement claims, we may not be able to compete effectively or operate profitably.

Our success will depend, in part, on our ability to obtain patents, operate without infringing the proprietary rights of others and maintain trade secrets, both in the United States and other countries. Patent matters in the biotechnology and pharmaceutical industries can be highly uncertain and involve complex legal and factual questions. Accordingly, the validity, breadth, and enforceability of our patents

and the existence of potentially blocking patent rights of others cannot be predicted, either in the United States or in other countries.

There can be no assurance that we will discover or develop patentable products or processes or that patents will issue from any of the currently pending patent applications or that claims granted on issued patents will be sufficient to protect our technology or adequately cover the actual products we may actually sell. Potential competitors or other researchers in the field may have filed patent applications, been issued patents, published articles or otherwise created prior art that could restrict or block our efforts to obtain additional patents. There also can be no assurance that our issued patents or pending patent applications, if issued, will not be challenged, invalidated, rendered unenforceable or circumvented or that the rights granted hereunder will provide us with proprietary protection or competitive advantages. Our patent rights also depend on our compliance with technology and patent licenses upon which our patent rights are based and upon the validity of assignments of patent rights from consultants and other inventors that were, or are, not employed by us.

In addition, competitors may manufacture and sell our potential products in those foreign countries where we have not filed for patent protection or where patent protection may be unavailable, not obtainable or ultimately not enforceable. In addition, even where patent protection is obtained, third party competitors may challenge our patent claims in the various patent offices, for example via opposition in the European Patent Office or reexamination or interference proceedings in the United States Patent and Trademark Office, or USPTO. The ability of such competitors to sell such products in the United States or in foreign countries where we have obtained patents is usually governed by the patent laws of the countries in which the product is sold.

We will incur significant ongoing expenses in maintaining our patent portfolio. Should we lack the funds to maintain our patent portfolio or to enforce our rights against infringers, we could be adversely impacted. Even if claims of infringement are without merit, any such action could divert the time and attention of management and impair our ability to access additional capital and/or cost us significant funds to defend.

Recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.

On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to United States patent law. These include provisions that affect the way patent applications will be prosecuted and may also affect patent litigation. The United States Patent and Trademark Office is currently developing regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act will not become effective until one year or 18 months after its enactment. Accordingly, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

We may be subject to litigation with respect to the ownership and use of intellectual property that will be costly to defend or pursue and uncertain in its outcome.

Our success also will depend, in part, on our refraining from infringing patents or otherwise violating intellectual property owned or controlled by others. Pharmaceutical companies, biotechnology companies, universities, research institutions, and others may have filed patent applications or have received, or may obtain, issued patents in the United States or elsewhere relating to aspects of our technology. It is uncertain whether the issuance of any third-party patents will require us to alter our products or processes, obtain licenses, or cease certain activities. Some third-party applications or patents may conflict with our

issued patents or pending applications. Any such conflict could result in a significant reduction of the scope or value of our issued or licensed patents.

In addition, if patents issued to other companies contain blocking, dominating or conflicting claims and such claims are ultimately determined to be valid, we may be required to obtain licenses to these patents or to develop or obtain alternative non-infringing technology and cease practicing those activities, including potentially manufacturing or selling any products deemed to infringe those patents. If any licenses are required, there can be no assurance that we will be able to obtain any such licenses on commercially favorable terms, if at all, and if these licenses are not obtained, we might be prevented from pursuing the development and commercialization of certain of our potential products. Our failure to obtain a license to any technology that we may require to commercialize our products on favorable terms may have a material adverse impact on our business, financial condition and results of operations.

Litigation, which could result in substantial costs to us (even if determined in our favor), may also be necessary to enforce any patents issued or licensed to us or to determine the scope and validity of the proprietary rights of others. Under the Abbreviated New Drug Application provisions of U.S. law, after four years from the date marketing approval is granted to us by the FDA for a patented drug, a generic drug company may submit an Abbreviated New Drug Application to the FDA to obtain approval to market in the United States a generic version of the drug patented by us. If approval were given to the generic drug company, we would be required to promptly initiate patent litigation to prevent the marketing of such generic version prior to the normal expiration of the patent. There can be no assurance that our issued or licensed patents would be held valid by a court of competent jurisdiction or that any generic drug would be found to infringe our patents.

In addition, if our competitors file patent applications in the United States that claim technology also claimed by us, we may have to participate in interference proceedings to determine priority of invention. These proceedings, if initiated by the USPTO, could result in substantial cost to us, even if the eventual outcome is favorable to us. Such proceedings can be lengthy, are costly to defend and involve complex questions of law and fact the outcomes of which are difficult to predict. An adverse outcome with respect to a third party claim or in an interference proceeding could subject us to significant liabilities, require us to license disputed rights from third parties, or require us to cease using such technology, any of which could have a material adverse effect on our business, financial condition and results of operations.

We also rely on trade secrets to protect technology, especially where patent protection is not believed to be appropriate or obtainable or where patents have not issued. We attempt to protect our proprietary technology and processes, in part, with confidentiality agreements and assignment of invention agreements with our employees and confidentiality agreements with our consultants and certain contractors. There can be no assurance that these agreements will not be breached, that we would have adequate remedies for any breach, or that our trade secrets will not otherwise become known or be independently discovered by competitors. We may fail in certain circumstances to obtain the necessary confidentiality agreements, or their scope or term may not be sufficiently broad to protect our interests.

If our trade secrets or other intellectual property become known to our competitors, it could result in a material adverse effect on our business, financial condition and results of operations. To the extent that we or our consultants or research collaborators use intellectual property owned by others in work for us, disputes may also arise as to the rights to related or resulting know-how and inventions.

Risks Relating to Our Exposure to Litigation

We are exposed to potential product liability or similar claims, and insurance against these claims may not be available to us at a reasonable rate in the future.

Our business exposes us to potential liability risks that are inherent in the testing, manufacturing and marketing of human therapeutic products. Clinical trials involve the testing of product candidates on human subjects or volunteers under a research plan, and carry a risk of liability for personal injury or death to patients due to unforeseen adverse side effects, improper administration of the product candidate, or other factors. Many of these patients are already seriously ill and are therefore particularly vulnerable to further illness or death.

We currently carry clinical trial liability insurance in the amount of $5 million in the aggregate, but there can be no assurance that we will be able to maintain such insurance or that the amount of such insurance will be adequate to cover claims. We could be materially and adversely affected if we were required to pay damages or incur defense costs in connection with a claim outside the scope of indemnity or insurance coverage, if the indemnity is not performed or enforced in accordance with its terms, or if our liability exceeds the amount of applicable insurance. In addition, there can be no assurance that insurance will continue to be available on terms acceptable to us, if at all, or that if obtained, the insurance coverage will be sufficient to cover any potential claims or liabilities. Similar risks would exist upon the commercialization or marketing of any products by us or our partners.

Regardless of their merit or eventual outcome, product liability claims may result in:

- decreased demand for our product;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial volunteers;
- costs of litigation;
- distraction of management; and
- substantial monetary awards to plaintiffs.

We may become involved in securities class action litigation that could divert management's attention and adversely affect our business and could subject us to significant liabilities.

The stock markets have from time to time experienced significant price and volume fluctuations that have affected the market prices for the common stock of biopharmaceutical companies. These broad market fluctuations as well a broad range of other factors, including the realization of any of the risks described in this "Risk Factor," section of this prospectus, may cause the market price of our common stock to decline. In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because biotechnology and pharmaceutical companies generally experience significant stock price volatility. We may become involved in this type of litigation in the future. Litigation often is expensive and diverts management's attention and resources, which could adversely affect our business. Any adverse determination in any such litigation or any amounts paid to settle any such actual or threatened litigation could require that we make significant payments.

Offering Risks

We do not know whether a market will develop for our common stock or what the market price of our common stock will be and, as a result, it may be difficult for you to sell your shares of our common stock.

Before this offering, there was no public trading market for our common stock and there can be no assurance that a regular trading market will develop and continue after this offering or that the market price of our common stock will not decline, perhaps substantially, below the initial public offering price. The initial public offering price has been determined through negotiations between us and the representatives of the underwriters and may not be indicative of the market price of our common stock following this offering. Among the factors considered in such negotiations were prevailing market conditions; our results of operations and financial condition; financial and operating information and market valuations with respect to other companies that we and the representatives of the underwriters believe to be comparable or similar to us; the present state of our development; and our future prospects. See the "Underwriting" section of this prospectus for additional information. If you purchase shares of our common stock, you may not be able to resell those shares at or above the initial public offering price. We cannot predict the extent to which investor interest in our company will lead to the development of an active trading market on The NASDAQ Global Market or otherwise or how liquid that market might become. If a market for our common stock does not develop or is not sustained, it may be difficult for you

to sell your shares of common stock at an attractive price or at all. Further, an inactive market may also impair our ability to raise capital by selling shares of our common stock and may impair our ability to enter into strategic partnerships or acquire companies or products by using our shares of common stock as consideration. We cannot predict the prices at which our common stock will trade. It is possible that in one or more future periods our results of operations may be below the expectations of public market analysts and investors and, as a result of these and other factors, the price of our common stock may fall.

The market price of our common stock may be highly volatile, and you may not be able to resell your shares at or above the initial public offering price.

The trading price of our common stock is likely to be highly volatile and could be subject to wide fluctuations in price in response to various factors, many of which are beyond our control, including those described elsewhere in this "Risk Factors" section in this prospectus and the following:

- new products, product candidates or new uses for existing products introduced or announced by our strategic partners, or our competitors, and the timing of these introductions or announcements;
- actual or anticipated results from and any delays in our clinical trials, including our Phase 3 clinical trial of our HyperAcute Pancreas product candidate, as well as results of regulatory reviews relating to the approval of our product candidates;
- variations in the level of expenses related to any of our product candidates or clinical development programs, including relating to the timing of invoices from, and other billing practices of, our clinical research organizations and clinical trial sites;
- the results of our efforts to discover, develop, acquire or in-license additional product candidates or products;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures and capital commitments;
- additions or departures of key scientific or management personnel;
- conditions or trends in the biotechnology and biopharmaceutical industries;
- actual or anticipated changes in earnings estimates, development timelines or recommendations by securities analysts; actual and anticipated fluctuations in our quarterly operating results;
- the financial projections we may provide to the public, any changes in these projections or our failure to meet these projections;
- deviations from securities analysts' estimates or the impact of other analyst ratings downgrades by any securities analysts who follow our common stock;
- other events or factors, including those resulting from war, incidents of terrorism, natural disasters or responses to these events;
- changes in accounting principles;
- discussion of us or our stock price by the financial and scientific press and in online investor communities;
- general economic and market conditions and other factors that may be unrelated to our operating performance or the operating performance of our competitors, including changes in market valuations of similar companies; and
- sales of common stock by us or our stockholders in the future, as well as the overall trading volume of our common stock.

In addition, the stock market in general and the market for biotechnology and biopharmaceutical companies in particular have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. These broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance. In the past, following periods of volatility in the market, securities class-action litigation has

often been instituted against companies. Such litigation, if instituted against us, could result in substantial costs and diversion of management's attention and resources, which could materially and adversely affect our business and financial condition.

Our principal stockholders and management own a significant percentage of our stock and will be able to exercise significant influence over matters subject to stockholder approval.

As of June 30, 2011, our executive officers, directors and principal stockholders, together with their respective affiliates, owned approximately 48.0% of our common stock, including shares issuable upon conversion of our preferred stock and shares subject to outstanding options and warrants that are exercisable within 60 days after June 30, 2011, and we expect that upon completion of this offering, that same group will continue to hold at least 34.7% of our outstanding common stock. Accordingly, even after this offering, these stockholders will be able to exert a significant degree of influence over our management and affairs and over matters requiring stockholder approval, including the election of our Board of Directors, future issuances of our common stock or other securities, declarations of dividends on our common stock and approval of other significant corporate transactions. This concentration of ownership could have the effect of delaying or preventing a change in our control or otherwise discouraging a potential acquirer from attempting to obtain control of us, which in turn could have a material and adverse effect on the fair market value of our common stock. In addition, sales of shares beneficially owned by executive officers and directors and their affiliates could be viewed negatively by third parties and have a negative impact on our stock price. Moreover, we cannot assure you as to how these shares will may be distributed and subsequently voted.

A significant portion of our total outstanding shares may be sold into the public market in the near future, which could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time after the expiration of the lock-up agreements described in the "Underwriting" section of this prospectus. These sales, or the market perception that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. After this offering, we will have 20,582,002 shares of common stock outstanding based on the number of shares outstanding as of June 30, 2011. This includes the 6,200,000 shares that we are selling in this offering, which may be resold in the public market immediately (except as described below), and 14,382,002 shares that are currently outstanding, of which 13,624,101 are currently restricted as a result of securities laws or lock-up agreements but will be able to be sold, subject to any applicable volume limitations under federal securities laws with respect to affiliate sales, in the near future as set forth below, and 757,901 may be resold to the public immediately.

Number of Shares and % of Total Outstanding	Date Available for Sale into Public Market
6,957,901 shares, or 33.8%	On the date of this prospectus. However, to the extent existing stockholders who have signed lock-up agreements purchase shares in this offering, for example Stine Seed Farm, Inc. and participants in the directed share program, such shares will be subject to the provisions of such lock-up agreements.
13,624,101 shares, or 66.2%	180 days after the date of this prospectus, subject to extension in specified instances, due to lock-up agreements between the holders of these shares and the underwriters. However, the representatives of the underwriters can waive the provisions of these lock-up agreements and allow these stockholders to sell their shares at any time.

In addition, as of June 30, 2011, there were 3,101,784 shares subject to outstanding options and an additional 731,532 shares reserved for future issuance under our employee benefit plans, of which 494,011 shares are issuable upon the exercise of options that were granted effective November 10, 2011, upon pricing of the this offering. All of the foregoing shares will become eligible for sale in the public market to the extent permitted by any applicable vesting requirements, the lock-up agreements and Rules 144 and 701 under the Securities Act of 1933, as amended, or the Securities Act. Moreover, after this offering, holders of an aggregate of 10,317,800 shares of our common stock will have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. If such holders, by exercising their registration rights, cause a large number of securities to be registered and sold into the public market, these sales could have an adverse effect on the market price for our common stock. We also intend to register all shares of common stock that we may issue under our employee benefit plans. Once we register these shares, they can be freely sold in the public market upon issuance, subject to the lock-up agreements and the restrictions imposed on our affiliates under Rule 144.

You will incur immediate and substantial dilution as a result of this offering.

If you purchase common stock in this offering, you will incur immediate and substantial dilution of $4.82 per share, representing the difference between the initial public offering price of $7.00 per share and our pro forma net tangible book value per share after giving effect to this offering and the conversion of all outstanding shares of our convertible preferred stock upon the closing of this offering. Moreover, we issued warrants and options in the past to acquire common stock at prices significantly below the initial public offering price. As of June 30, 2011, there were 3,101,784 shares subject to outstanding options with a weighted average exercise price of $2.92 per share. To the extent that these outstanding options are ultimately exercised, you will incur further dilution.

We will incur significant increased costs as a result of operating as a public company, and our management will be required to devote substantial time to meet compliance obligations.

As a public company, we will incur significant legal, accounting and other expenses that we did not incur as a private company. We will be subject to the reporting requirements of the Securities Exchange Act of 1934, or the Exchange Act, the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, as well as rules subsequently implemented by the Securities and Exchange Commission, or SEC, and The NASDAQ Stock Market, or NASDAQ, that impose significant requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls and changes in corporate governance practices. The Exchange Act will require, among other things, that we file annual, quarterly and current reports with respect to our business and financial condition. In addition, on July 21, 2010, the Dodd-Frank Wall Street Reform and Protection Act, or the Dodd-Frank Act, was enacted. There are significant corporate governance and executive compensation-related provisions in the Dodd-Frank Act that require the SEC to adopt additional rules and regulations in these areas such as "say on pay" and proxy access. The requirements of these rules and regulations will increase our legal and financial compliance costs, make some activities more difficult, time-consuming or costly and may also place undue strain on our personnel, systems and resources. Our management and other personnel will need to devote a substantial amount of time to these new compliance initiatives. In addition, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. As a result, it may be more difficult for us to attract and retain qualified people to serve on our Board of Directors, our board committees or as executive officers.

Failure to achieve and maintain effective internal controls in accordance with Section 404 of the Sarbanes-Oxley Act could have a material adverse effect on our ability to produce accurate financial statements and on our stock price.

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002, we will be required to publish a report by our management on our internal control over financial reporting. We have not been subject to these requirements in the past. The internal control report must contain (a) a statement of management's responsibility for establishing and maintaining adequate internal control over financial reporting, (b) a statement identifying the framework used by management to conduct the required evaluation of the effectiveness of our internal control over financial reporting, (c) management's assessment of the effectiveness of our internal control over financial reporting as of the end of our most recent fiscal year, including a statement as to whether or not internal control over financial reporting is effective, and (d) a statement that our independent registered public accounting firm has issued an attestation report on internal control over financial reporting.

To achieve compliance with Section 404 within the prescribed period, we will be engaged in a process to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to dedicate internal resources, engage outside consultants and adopt a detailed work plan to (a) assess and document the adequacy of internal control over financial reporting, (b) take steps to improve control processes where appropriate, (c) validate through testing that controls are functioning as documented, and (d) implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, we can provide no assurance as to our, or our independent registered public accounting firm's, conclusions with respect to the effectiveness of our internal control over financial reporting under Section 404. There is a risk that neither we nor our independent registered public accounting firm will be able to conclude within the prescribed timeframe that our internal control over financial reporting is effective as required by Section 404. This could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our financial statements.

We do not expect to pay any cash dividends for the foreseeable future. Investors in this offering may never obtain a return on their investment.

You should not rely on an investment in our common stock to provide dividend income. We do not anticipate that we will pay any cash dividends to holders of our common stock in the foreseeable future. Instead, we plan to retain any earnings to maintain and expand our existing operations. In addition, our ability to pay cash dividends is currently prohibited by the terms of one of our debt financing arrangements, and any future debt financing arrangement may contain terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any return on their investment. As a result, investors seeking cash dividends should not purchase our common stock.

We have broad discretion in the use of the net proceeds of this offering and may not use them effectively.

We expect to use the net proceeds from this offering primarily to fund the development activities for our HyperAcute immunotherapy product candidates. We also expect to use a portion of the proceeds to support the research and development of our other product candidates and the balance, if any, for working capital and other general corporate purposes, and any of the purposes described in the "Use of Proceeds" section of this prospectus. However, our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common stock. The failure by management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our common stock to decline and delay the development of our product candidates. Pending

their use, we may invest the net proceeds from this offering in a manner that does not produce income or that loses value.

Provisions in our certificate of incorporation, our by-laws or Delaware law might discourage, delay or prevent a change in control of our company or changes in our management and, therefore, depress the trading price of our common stock.

Provisions of our certificate of incorporation, our by-laws or Delaware law may have the effect of deterring unsolicited takeovers or delaying or preventing a change in control of our company or changes in our management, including transactions in which our stockholders might otherwise receive a premium for their shares over then current market prices. In addition, these provisions may limit the ability of stockholders to approve transactions that they may deem to be in their best interest. These provisions include:

- the division of our Board of Directors into three classes with staggered, three-year terms;
- advance notice requirements for stockholder proposals and nominations;
- the inability of stockholders to act by written consent or to call special meetings;
- limitation on the ability of stockholders to remove directors or amend our by-laws; and
- the ability of our Board of Directors to designate the terms of and issue new series of preferred stock without stockholder approval, which could include the right to approve an acquisition or other change in our control or could be used to institute a rights plan, also known as a poison pill, that would work to dilute the stock ownership of a potential hostile acquirer, likely preventing acquisitions that have not been approved by our Board of Directors.

In addition, Section 203 of the Delaware General Corporation Law prohibits a publicly-held Delaware corporation from engaging in a business combination with an interested stockholder, generally a person which together with its affiliates owns, or within the last three years has owned, 15% of our voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner.

The existence of the foregoing provisions and anti-takeover measures could limit the price that investors might be willing to pay in the future for shares of our common stock. They could also deter potential acquirers of our company, thereby reducing the likelihood that you could receive a premium for your common stock in an acquisition.

Our stockholders may be diluted, and the prices of our securities may decrease, by the exercise of outstanding stock options and warrants or by future issuances of securities by us.

We may issue additional common stock, preferred stock, restricted stock units, or securities convertible into or exchangeable for our common stock. Furthermore, substantially all shares of common stock for which our outstanding stock options or warrants are exercisable are, once they have been purchased, eligible for immediate sale in the public market. The issuance of additional common stock, preferred stock, restricted stock units, or securities convertible into or exchangeable for our common stock or the exercise of stock options or warrants would dilute existing investors and could adversely affect the price of our securities. In addition, such securities may have rights senior to the rights of the securities purchased in this offering.

Our ability to use our net operating loss carryforwards and certain other tax attributes is limited by Sections 382 and 383 of the Internal Revenue Code.

Sections 382 and 383 of the Internal Revenue Code limit a corporation's ability to utilize its net operating loss carryforwards and certain other tax attributes (including research credits) to offset any future taxable income or tax if the corporation experiences a cumulative ownership change of more than 50% over any rolling three year period. State net operating loss carryforwards (and certain other tax

attributes) may be similarly limited. An ownership change can therefore result in significantly greater tax liabilities than a corporation would incur in the absence of such a change and any increased liabilities could adversely affect the corporation's business, results of operations, financial condition and cash flow.

Based on a preliminary analysis, we believe that, from its inception through December 31, 2009, NewLink experienced Section 382 ownership changes in September 2001 and March 2003. These two ownership changes limit NewLink's ability to utilize its federal net operating loss carryforwards (and certain other tax attributes) that accrued prior to the 2003 ownership change. In addition, the net operating loss carryforwards (and certain other tax attributes) of our subsidiary may be limited by Sections 382 and 383 as a result of a prior ownership change of the subsidiary.

Additional analysis will be required to determine whether changes in our ownership since December 31, 2009 and/or changes in our ownership that will result from this offering have caused or will cause another ownership change to occur, and the conclusions will depend on the terms of this offering and other information that may not be available to us until after this offering has occurred. Any such change could result in significant limitations on all of our net operating loss carryforwards and other tax attributes.

Even if another ownership change has not occurred and does not occur as a result of this offering, additional ownership changes may occur in the future as a result of events over which we will have little or no control, including purchases and sales of our equity by our 5% stockholders, the emergence of new 5% stockholders, additional equity offerings or redemptions of our stock or certain changes in the ownership of any of our 5% stockholders.

Accounting pronouncements may impact our reported results of operations and financial position.

United States generally accepted accounting principles, or GAAP, and related implementation guidelines and interpretations can be highly complex and involve subjective judgments. Changes in these rules or their interpretation, the adoption of new pronouncements or the application of existing pronouncements to changes in our business could significantly alter our reported financial statements and results of operations.

If securities or industry analysts do not publish research or publish inaccurate or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend in part on the research and reports that securities or industry analysts publish about us or our business. We do not currently have and may never obtain research coverage by securities and industry analysts. If no securities or industry analysts commence coverage of our company, the trading price for our stock would be negatively impacted. If we obtain securities or industry analyst coverage and if one or more of the analysts who covers us downgrades our stock, publishes inaccurate or unfavorable research about our business, our stock price would likely decline. If one or more of these analysts ceases coverage of us or fails to publish reports on us regularly, demand for our stock could decrease, which could cause our stock price and trading volume to decline.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, contained in this prospectus, including statements regarding our strategy, future operations, future financial position, future revenues, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue," "contemplate," or the negative of these terms or other similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this prospectus include, among other things, statements about:

- our plans to develop and commercialize our product candidates;
- our ongoing and planned preclinical studies and clinical trials, including the timing for completion of enrollment and outcome of our Phase 3 clinical trial for HyperAcute Pancreas;
- the timing of release of data from ongoing clinical studies;
- the timing of and our ability to obtain and maintain regulatory approvals for our product candidates;
- the clinical utility of our products;
- our plans to leverage our existing technologies to discover and develop additional product candidates;
- our ability to quickly and efficiently identify and develop product candidates;
- our commercialization, marketing and manufacturing capabilities and strategy;
- our intellectual property position;
- the potential benefits of strategic collaboration agreements and our ability to enter into strategic arrangements;
- our estimates regarding expenses, future revenues, capital requirements and needs for additional financing; and
- other risks and uncertainties, including those listed under the caption "Risk Factors."

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this prospectus, particularly in the "Risk Factors" section, that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make.

You should read this prospectus and the documents that we reference in this prospectus and have filed as exhibits to the registration statement of which this prospectus is a part completely and with the understanding that our actual future results may be materially different from what we expect.

The forward-looking statements in this prospectus represent our views as of the date of this prospectus. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

We obtained the industry, market and competitive position data in this prospectus from our own internal estimates and research as well as from industry and general publications and research surveys and studies conducted by third parties. Industry publications, studies and surveys generally state that they have

been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe that our internal estimates and research and the industry publications, studies and surveys are reliable, this data involves a number of assumptions and you are cautioned not to give undue weight to such estimates, research, publications, studies and surveys.

USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of 6,200,000 shares of common stock in this offering will be approximately $37.5 million (or approximately $43.5 million if the underwriters' over-allotment option is exercised in full), after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

The principal purposes of this offering are to obtain additional capital to support our operations, to create a public market for our common stock and to facilitate our future access to the public equity markets. We intend to use approximately $12.0 million of the net proceeds from this offering to fund to completion our Phase 3 clinical trial and related development activities for HyperAcute Pancreas, approximately $18.0 million to fund clinical and related development activities for our other HyperAcute immunotherapy product candidates, approximately $5.0 million to fund clinical and related development activities for our IDO pathway inhibitor product candidates and the remainder for working capital and other general corporate purposes. Our other HyperAcute immunotherapy product candidates have either started or completed Phase 1 clinical trials or completed the patient enrollment portion of Phase 2 clinical studies. Our IDO pathway inhibitor product candidates are in Phase 1 clinical trials and in multiple Phase 1/2 clinical trials. We intend to use the net proceeds from this offering to fund the completion of each of these ongoing studies. Although it is difficult to predict future liquidity requirements, we believe that the net proceeds from this offering, together with our existing cash and cash equivalents and marketable securities, will allow us to fund our operations through at least the end of 2013.

This expected use of net proceeds from this offering represents our intentions based upon our current plans and business conditions. The amounts and timing of our actual expenditures depend on numerous factors, including the ongoing status and enrollment and site participation rates of, standard of care applicable to and results from clinical trials and other studies, as well as any strategic collaborations that we may enter into with third parties for our product candidates and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

Pending use of the proceeds from this offering, we intend to invest the proceeds in a variety of capital preservation investments, including short-term, investment-grade and interest-bearing instruments.

DIVIDEND POLICY

We have never declared or paid any dividends on our common stock. We anticipate that we will retain all of our future earnings, if any, for use in the operation of our business and do not anticipate paying cash dividends in the foreseeable future.

CAPITALIZATION

The following table sets forth our capitalization as of June 30, 2011:

- on an actual basis;
- on a pro forma basis (i) to give effect to the issuance of 55,238 shares of Series E preferred stock in connection with our acquisition of the minority interest in our majority owned subsidiary, BPS, which were issued on August 12, 2011, after the closing of the acquisition; (ii) the conversion of all of our outstanding convertible preferred stock into an aggregate of 10,710,850 shares of common stock, which will take place automatically upon the closing of this offering in accordance with the terms of our preferred stock; and (iii) the issuance of 22,603 shares of common stock issuable as of October 21, 2011 as dividends on shares of Series AA preferred stock; and
- on a pro forma as adjusted basis to give further effect to the issuance and sale of 6,200,000 shares of common stock in this offering at the initial public offering price of $7.00 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us and the receipt by us of the proceeds of such sale.

You should read this table together with our consolidated financial statements and the related notes appearing at the end of this prospectus, the sections entitled "Selected Consolidated Financial Data" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" and other financial information contained in this prospectus.

	As of June 30, 2011 (unaudited)		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in thousands, except per share data)		
Cash, cash equivalents, and certificates of deposit(1)	$ 9,800	$ 9,800	$ 48,837
Redeemable preferred stock, $0.01 par value:			
Series AA preferred stock: 1,217,175 shares issued and outstanding actual; no shares issued or outstanding, pro forma or pro forma as adjusted	$ 2,191	$ —	$ —
Series AAA preferred stock: 377,410 shares issued and outstanding, actual; no shares issued or outstanding, pro forma or pro forma as adjusted	849	—	—
Series B preferred stock: 2,191,193 shares issued and outstanding, actual; no shares issued or outstanding, pro forma or pro forma as adjusted	5,478	—	—
Series BB preferred stock: 1,883,337 shares issued and outstanding, actual; no shares issued or outstanding, pro forma or pro forma as adjusted	8,004	—	—
Series C preferred stock: 6,000,000 shares issued and outstanding, actual; no shares issued or outstanding, pro forma or pro forma as adjusted	30,000	—	—
Series D preferred stock: 1,500,000 shares issued and outstanding, actual; no shares issued or outstanding, pro forma or pro forma as adjusted	7,500	—	—
Series E preferred stock: 680,998 shares issued and outstanding actual; no shares issued and outstanding, pro forma and pro forma as adjusted	21,250	—	—
Equity:			
Series A preferred stock, $0.01 par value: 420,000 shares issued and outstanding, actual; no shares issued or outstanding, pro forma or pro forma as adjusted	1,030	—	—
Common stock, $.01 par value: 3,648,677 shares issued and outstanding, actual; and 14,382,002 shares issued and outstanding, pro forma and 20,582,002 shares issued and outstanding, pro forma as adjusted	36	144	206
Additional paid-in capital	2,769	78,963	116,388
Deficit accumulated during the development stage	(71,680)	(71,680)	(71,680)
Total (deficit) equity	(67,845)	7,427	44,914
Total capitalization	$ 7,427	$ 7,427	$ 44,914

(1) As of September 30, 2011, our preliminary estimate of actual cash, cash equivalents, and certificates of deposit was $6.3 million.

The table above does not include:

- 554,272 shares of common stock issuable upon the exercise of outstanding options under our 2000 Equity Incentive Plan, or 2000 Plan, as of June 30, 2011 having a weighted average exercise price of $1.89 per share;

- 2,547,512 shares of common stock issuable upon the exercise of outstanding options under our 2009 Equity Incentive Plan, as amended, or 2009 Plan, as of December 31, 2010 having a weighted average exercise price of $3.14 per share, which includes 50,373 shares of common stock issuable upon the exercise of options that were issued in connection with our acquisition of the minority interest in BPS in exchange for outstanding options to purchase the Series B common stock of BPS;
- 731,532 additional shares of common stock reserved for future issuance under our 2009 Plan, as amended and restated, plus any annual increases in the number of shares of common stock reserved for future issuance under this plan pursuant to the "evergreen provision" in such plan, as more fully described in the "Executive Compensation—Employee Benefit Plans—2009 Equity Incentive Plan" section of this prospectus, of which 494,011 shares of common stock are issuable upon the exercise of options that were granted effective November 10, 2011, upon pricing of this offering;
- 238,095 shares of common stock reserved for future issuance under our 2010 Non-Employee Directors' Stock Award Plan, or Directors' Plan, which became effective immediately upon the execution and delivery of the underwriting agreement for this offering; and
- 214,285 shares of common stock reserved for future issuance under our 2010 Employee Stock Purchase Plan, or 2010 Purchase Plan, which will become effective upon the closing of this offering.

DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted immediately to the extent of the difference between the initial public offering price per share of our common stock and the net tangible book value per share of our common stock after this offering.

Our historical net tangible book value (deficit) as of June 30, 2011 was $(68.9) million or $(18.88) per share of our common stock. Our historical net tangible book value (deficit) per share represents the amount of our total tangible assets less total liabilities and convertible preferred stock, divided by the number of shares of common stock outstanding.

Our pro forma net tangible book value (deficit) as of June 30, 2011 was $7.4 million or $0.52 per share of our common stock, after giving effect to (i) the issuance of 55,238 shares of Series E preferred stock in connection with our acquisition of the minority interest in our majority owned subsidiary, BPS, which were issued on August 12, 2011 after the closing of the acquisition; (ii) the conversion of all of our outstanding convertible preferred stock into an aggregate of 10,710,850 shares of common stock, which will take place automatically upon the closing of this offering in accordance with the terms of our preferred stock; and (iii) the issuance of 22,603 shares of common stock issuable as of October 21, 2011 as dividends on shares of Series AA preferred stock. Pro forma net tangible book value (deficit) per share represents the amount of our total tangible assets less total liabilities and convertible preferred stock, divided by the total number of shares of common stock outstanding.

Our pro forma as adjusted net tangible book value as of June 30, 2011 would have been $44.9 million, or $2.18 per share, after giving effect to the issuance and sale by us of 6,200,000 shares of common stock in this offering at the initial public offering price of $7.00 per share, less underwriting discounts and commissions and estimated offering expenses payable by us. This represents an immediate increase in pro forma net tangible book value per share of $1.66 to existing stockholders and immediate dilution of $4.82 in pro forma net tangible book value per share to new investors purchasing common stock in this offering. Dilution per share to new investors is determined by subtracting pro forma as adjusted net tangible book value per share after this offering from the initial public offering price per share paid by new investors. The following table illustrates this dilution on a per share basis:

Initial public offering price per share of common stock	$	7.00
Pro forma net tangible book value per share as of June 30, 2011		0.52
Increase per share attributable to new investors		1.66
Pro forma as adjusted net tangible book value per share after this offering		2.18
Dilution per share to new investors	$	4.82

If the underwriters exercise their over-allotment option, the pro forma as adjusted net tangible book value will increase to $2.37 per share, representing an immediate increase to existing stockholders of $1.85 per share and an immediate dilution of $4.63 per share to new investors. If any shares are issued upon exercise of outstanding options or warrants, you will experience further dilution.

The following table summarizes, on the pro forma as adjusted basis described above as of June 30, 2011, the difference between the number of shares of common stock purchased from us, the total effective cash consideration paid to us and the average price per share paid to us by our existing stockholders and by investors purchasing shares of our common stock in this offering at the initial public offering price of $7.00 per share, before deducting underwriting discounts and commissions and estimated offering expenses

payable by us. As the table below shows, investors purchasing shares of our common stock in this offering will pay an average price per share substantially higher than our existing stockholders paid.

	Shares Purchased		Total Consideration		Average Price per Share
	Number	Percentage	Amount	Percentage	
Existing stockholders	14,382,002	69.9%	$ 79,872	64.8%	$ 5.55
New investors	6,200,000	30.1	43,400	35.2	7.00
Total	20,582,002	100.0%	$ 123,272	100.0%	$ 5.99

Except as otherwise indicated, the discussion and tables above assume no exercise of the underwriters' overallotment option or any outstanding options or warrants. If the underwriters' overallotment option is exercised in full, the number of shares of common stock held by existing stockholders will be reduced to 66.9% of the total number of shares of common stock to be outstanding after this offering, and the number of shares of common stock held by investors participating in this offering will be further increased to 7,130,000 or 33.1% of the total number of shares of common stock to be outstanding after this offering.

Stine Seed Farm, Inc., a current stockholder, has indicated an interest in purchasing up to $15 million of the shares of our common stock in this offering at the public offering price. The information set forth above does not reflect the potential purchase of any shares in this offering by this stockholder.

The number of shares purchased from us by existing stockholders is based on 3,648,549 shares of common stock outstanding as of June 30, 2011, and excludes:

- 554,272 shares of common stock issuable upon the exercise of outstanding options under our 2000 Plan as of June 30, 2011 having a weighted average exercise price of $1.89 per share;
- 2,547,512 shares of common stock issuable upon the exercise of outstanding options under our 2009 Plan as of June 30, 2011 having a weighted average exercise price of $3.14 per share, which includes 50,373 shares of common stock issuable upon the exercise of options that were issued in connection with our acquisition of the minority interest in BPS in exchange for outstanding options to purchase the Series B common stock of BPS;
- 731,532 additional shares of common stock reserved for future issuance under our 2009 Plan as amended and restated, plus any annual increases in the number of shares of common stock reserved for future issuance under this plan pursuant to the "evergreen provision" in such plan, as more fully described in the "Executive Compensation—Employee Benefit Plans—2009 Equity Incentive Plan" section of this prospectus, of which 494,011 shares of common stock are issuable upon the exercise of options that were granted effective November 10, 2011, upon the pricing of this offering;
- 238,095 shares of common stock reserved for future issuance under our 2010 Non-Employee Directors' Stock Award Plan, or Directors' Plan, which became effective immediately upon the execution and delivery of the underwriting agreement for this offering; and
- 214,285 shares of common stock reserved for future issuance under our 2010 Employee Stock Purchase Plan, or 2010 Purchase Plan, which will become effective upon the closing of this offering.

To the extent that outstanding options or warrants are exercised, you will experience further dilution. If all our outstanding stock options and outstanding warrants had been exercised as of June 30, 2011, assuming the treasury stock method, our pro forma net tangible book value as of June 30, 2011 would have been approximately $7.4 million or $0.46 per share of our common stock, and the pro forma net tangible book value after giving effect to this offering would have been $2.00 per share, representing additional dilution in our pro forma net tangible book value per share to new investors of $0.18.

In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that we raise additional capital by issuing equity securities or convertible debt, your ownership will be further diluted.

SELECTED FINANCIAL DATA

You should read the following selected consolidated financial data together with our financial statements, the related notes appearing at the end of this prospectus and the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this prospectus.

We derived the annual consolidated financial data from our audited financial statements, the last three years of which are included elsewhere in this prospectus. Our unaudited interim consolidated financial statements have been prepared on the same basis as the annual consolidated financial statements and include all adjustments, which include only normal recurring adjustments, necessary for the fair presentation of the information set forth therein. We derived the summary statement of operations data for the years ended December 31, 2006 and 2007 and the balance sheet data as of December 31, 2006, 2007 and 2008 from our audited financial statements not included in this prospectus. We derived the interim consolidated financial data from our unaudited interim consolidated financial statements included elsewhere in this prospectus.

Our historical results for any prior period are not necessarily indicative of results to be expected in any future period, and our results for any interim period are not necessarily indicative of results for a full fiscal year.

	Years Ended December 31,					Six Months Ended June 30,	
	2006	2007	2008	2009	2010	2010	2011
	(in thousands, except per share data)					(unaudited)	(unaudited)
Statement of operations data:							
Grant revenue	$ 198	$ —	$ 633	$ 934	$ 2,079	$ 730	$ 1,141
Operating expenses:							
Research and development(1)	4,183	5,756	5,790	7,578	12,666	5,696	6,975
General and administrative(1)	2,040	2,364	3,938	3,705	6,074	2,284	2,452
Total operating expenses	6,223	8,120	9,728	11,283	18,740	7,980	9,427
Loss from operations	(6,025)	(8,120)	(9,095)	(10,349)	(16,661)	(7,250)	(8,286)
Other income and expense:							
Miscellaneous income	72	87	42	19	71	8	1
Forgiveness of debt	224	—	—	—	—		
Interest income	414	454	213	132	75	23	8
Interest expense	(3)	(1)	(2)	(9)	(47)	(19)	(15)
Other income, net	707	540	253	142	99	12	(6)
Net loss	(5,318)	(7,580)	(8,842)	(10,207)	(16,562)	(7,238)	(8,292)
Less net loss attributable to noncontolling interest(2)	—	—	—	233	349	151	1
Net loss attributable to NewLink	$ (5,318)	$ (7,580)	$ (8,842)	$ (9,974)	$ (16,213)	$ (7,087)	$ (8,291)
Net loss per share—basic and diluted	$ (1.75)	$ (2.46)	$ (2.84)	$ (3.16)	$ (4.84)	$ (2.23)	$ (2.27)
Weighted average shares outstanding—basic and diluted	3,033	3,076	3,115	3,160	3,352	3,195	3,642
Pro forma net loss per share—basic and diluted (unaudited)(3)					$ (1.15)		$ (0.58)
Weighted average pro forma shares outstanding (unaudited)(3)					14,086		14,375

	As of December 31,					As of June 30,
	2006	2007	2008	2009	2010	2011
			(in thousands)			(unaudited)
Balance sheet data:						
Cash, cash equivalents, and certificates of deposit(4)	$ 8,825	$ 16,238	$ 8,126	$ 17,209	$ 12,841	$ 9,800
Working capital	5,421	(1,007)	7,186	15,657	11,377	3,255
Total assets	10,054	17,358	10,526	22,667	20,078	17,315
Notes payable and obligations under capital leases	5,001	6,000	6,008	6,113	7,294	7,260
Convertible preferred stock	17,664	17,664	35,583	55,164	62,775	76,302
Deficit accumulated during the development stage	(20,778)	(28,359)	(37,202)	(47,176)	(63,389)	(71,680)
Total deficit	$ (15,331)	$ (22,832)	$ (31,565)	$ (40,786)	$ (52,019)	$ (67,845)

(1) Research and development and general and administrative expenses were corrected for misclassification and immaterial errors in 2008, 2009 and 2010. See note 3 in the notes to the consolidated financial statements included in this prospectus.

(2) Further explanation is described under the caption "Noncontrolling Interest" in note 2(o) in the consolidated financial statements included in this prospectus.

(3) Pro forma net loss per share and weighted average pro forma as adjusted shares outstanding assume the conversion of all our outstanding convertible preferred stock into an aggregate of 10,710,850 shares of common stock as of January 1, 2010.

(4) As of September 30, 2011, our preliminary estimate of cash, cash equivalents, and certificates of deposit was $6.3 million.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of our operations together with our financial statements and the related notes to those statements included later in this prospectus. In addition to historical financial information, this discussion contains forward-looking statements reflecting our current plans, estimates, beliefs and expectations that involve risks and uncertainties. As a result of many important factors, particularly those set forth under the "Cautionary Note Regarding Forward-Looking Statements" and "Risk Factors" sections of this prospectus, our actual results and the timing of events may differ materially from those anticipated in these forward-looking statements.

Overview

We are a biopharmaceutical company focused on discovering, developing and commercializing novel immunotherapeutic products to improve cancer treatment options for patients. Our portfolio includes biologic and small-molecule immunotherapy product candidates to treat a wide range of oncology indications. Our lead product candidate, HyperAcute Pancreas, is being studied in a Phase 3 clinical trial in surgically-resected pancreatic cancer patients that is being performed under a Special Protocol Assessment, or SPA, with the United States Food and Drug Administration, or FDA. We initiated this trial based on encouraging Phase 2 data that suggests improvement in both disease-free and overall survival. We have three additional product candidates in clinical development, including HyperAcute Lung, which is being studied in a Phase 1/2 clinical trial conducted at the National Cancer Institute, or NCI, and HyperAcute Melanoma, which is being studied in an investigator-initiated Phase 2 clinical trial. To date, our HyperAcute product candidates have been dosed in more than 200 cancer patients, either as a monotherapy or in combination with other therapies, and have demonstrated a favorable safety profile.

Our HyperAcute product candidates are based on our proprietary HyperAcute immunotherapy technology, which is designed to stimulate the human immune system. Our product candidates are designed with an objective to harness multiple components of the innate immune system to combat cancer, either as a monotherapy or in combination with current treatment regimens without incremental toxicity. We are also conducting small-molecule based research and development with an aim to produce new drugs capable of breaking the immune system's tolerance to cancer through inhibition of the indoleamine-(2,3)-dioxygenase, or IDO, pathway. We are currently studying our lead IDO pathway inhibitor product candidate, d-1-methyltryptophan, or D-1MT, in collaboration with the National Cancer Institute, or NCI, in multiple Phase 1B/2 clinical trials. We believe that our immunotherapeutic technologies will enable us to discover, develop and commercialize multiple product candidates that can be used either alone or in combination to enhance or potentially replace current therapies to treat cancer with underserved patient populations and significant market potential.

We are a development stage company and have incurred significant losses since our inception. As of June 30, 2011, we had an accumulated deficit of $71.7 million. We incurred a net loss of $8.3 million and $7.1 million for the six months ended June 30, 2011 and June 30, 2010, respectively, and $16.2 million, $10.0 million and $8.8 million for the years ended December 31, 2010, December 31, 2009, and December 31, 2008, respectively. We expect our losses to increase over the next several years as we advance into late-stage clinical trials and pursue regulatory approval of our product candidates. In addition, if one or more of our product candidates are approved for marketing, we will incur significant expenses for the initiation of commercialization activities.

Financial Overview

Revenues

From our inception through June 30, 2011, we have not generated any revenue from product sales. We have generated $5.0 million in grant revenue from our inception through June 30, 2011, which is primarily

attributable to research and development being performed by our subsidiary, BioProtection Systems Corporation, or BPS, under contracts and grants with the Department of Defense, or DOD, and the National Institutes of Health, or NIH.

In the future, we may generate revenue from a variety of sources, including product sales if we develop products which are approved for sale, license fees, and milestone, research and development and royalty payments in connection with strategic collaborations or licenses of our intellectual property. We expect that any revenue we generate will fluctuate from quarter to quarter as a result of the timing and amount of license fees, research and development reimbursements, milestone and other payments we may receive under potential strategic collaborations, and the amount and timing of payments we may receive upon the sale of any products, if approved, to the extent any are successfully commercialized. We do not expect to generate revenue from product sales for several years, if ever. If we fail to complete the development of our product candidates in a timely manner or to obtain regulatory approval for them, our ability to generate future revenue, and our results of operations and financial position, would be materially adversely affected.

Research and Development Expenses

Research and development expenses consist of expenses incurred in connection with the discovery and development of our product candidates. These expenses consist primarily of:

- employee-related expenses, which include salaries, bonuses, benefits and share-based compensation;
- the cost of acquiring and manufacturing clinical trial materials;
- expenses incurred under agreements with contract research organizations, investigative sites and consultants that conduct our clinical trials and a substantial portion of our preclinical studies;
- facilities, depreciation of fixed assets and other allocated expenses, which include direct and allocated expenses for rent and maintenance of facilities and equipment;
- license fees for and milestone payments related to in-licensed products and technology; and
- costs associated with non-clinical activities and regulatory approvals.

We expense research and development expenses as incurred.

Product candidates in late stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size, duration and complexity of later stage clinical trials. We plan to increase our research and development expenses for the foreseeable future as we seek to complete development of our most advanced product candidates, and to further advance our earlier-stage research and development projects. From our inception through December 31, 2010, and June 30, 2011, we have incurred $46.1 million and $53.0 million, respectively, in research and development expenses. The following tables summarize our research and development expenses for the periods indicated:

Research and Development Expenses by Product
(in thousands)

	Years Ended December 31,			Six Months Ended June 30,		Cumulative from June 4, 1999 (inception) through June 30, 2011
	2008	2009	2010	2010	2011	
HyperAcute immunotherapy technology	$ 3,247	$ 4,943	$ 8,760	$ 3,911	$ 4,815	$ 37,916
IDO pathway inhibitor technology	1,679	1,706	2,509	1,136	1,396	9,657
Other research and development	864	929	1,397	649	764	5,465
Total research and development expenses	$ 5,790	$ 7,578	$ 12,666	$ 5,696	$ 6,975	$ 53,038

Research and Development Expenses by Category
(in thousands)

	Years Ended December 31,			Six Months Ended June 30,		Cumulative from June 4, 1999 (inception) through June 30, 2011
	2008	2009	2010	2010	2011	
Compensation	$ 2,573	$ 4,063	$ 5,965	$ 2,947	$ 3,305	$ 26,991
Equipment, supplies and occupancy	1,804	1,976	4,364	1,710	2,254	17,533
Outside clinical and other	1,413	1,539	2,337	1,039	1,416	8,514
Total research and development expenses	$ 5,790	$ 7,578	$ 12,666	$ 5,696	$ 6,975	$ 53,038

At this time, we cannot accurately estimate or know the nature, specific timing or costs necessary to complete clinical development activities for our product candidates. We are subject to the numerous risks and uncertainties associated with developing biopharmaceutical products including the uncertain cost and outcome of ongoing and planned clinical trials, the possibility that the FDA or another regulatory authority may require us to conduct clinical or non-clinical testing in addition to trials that we have planned, rapid and significant technological changes, frequent new product and service introductions and enhancements, evolving industry standards in the life sciences industry and our future need for additional capital. In addition, we currently have limited clinical data concerning the safety and efficacy of our product candidates. A change in the outcome of any of these variables with respect to the development of any of our product candidates could result in a significant change in the costs and timing of our research and development expenses.

General and Administrative Expenses

General and administrative expenses consist principally of salaries and related costs for personnel in executive, finance, business development, information technology, legal and human resources functions. Other general and administrative expenses include facility costs not otherwise associated with research and development expenses, intellectual property prosecution and defense costs and professional fees for legal, consulting, auditing and tax services.

We anticipate that our general and administrative expenses will continue to increase over the next several years for, among others, the following reasons:

- we expect our general and administrative expenses to increase as a result of increased payroll, expanded infrastructure and higher consulting, legal, auditing and tax services and investor relations costs, and director and officer insurance premiums associated with being a public company;
- we expect to incur increased general and administrative expenses to support our research and development activities, which we expect to expand as we continue to advance the clinical development of our product candidates; and
- we may also begin to incur expenses related to the planned sales and marketing of our product candidates in anticipation of commercial launch before we receive regulatory approval, if any, of a product candidate.

Interest Income and Interest Expense

Interest income consists of interest earned on our cash and cash equivalents and certificates of deposit. The primary objective of our investment policy is capital preservation. We expect our interest income to increase as we invest the net proceeds from the offering pending their use in our operations.

Interest expense consists primarily of interest, amortization of debt discount and amortization of deferred financing costs associated with our loans payable.

Tax Loss Carryforwards

The valuation allowance for deferred tax assets as of June 30, 2011 and December 31, 2010, 2009 and 2008 was $16.4 million, $15.0 million, $11.6 million and $10.0 million, respectively. The net change in the total valuation allowance for the six-months ended June 30, 2011 and the years ended December 31, 2010, 2009 and 2008 was an increase of $1.4 million, $3.4 million, $1.6 million and $2.5 million, respectively. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected taxable income, and tax planning strategies in making this assessment. Valuation allowances have been established for the entire amount of the net deferred tax assets as of June 30, 2011 and December 31, 2010, 2009 and 2008, due to the uncertainty of future recoverability.

As of June 30, 2011 and December 31, 2010, we had federal net operating loss carryforwards of $66.5 million and $62.1 million and federal research credit carryforwards of $2.6 million and $2.1 million, respectively, that expire at various dates from 2020 through 2030. Sections 382 and 383 of the Internal Revenue Code limit a corporation's ability to utilize its net operating loss carryforwards and certain other tax attributes (including research credits) to offset any future taxable income or tax if the corporation experiences a cumulative ownership change of more than 50% over any rolling three year period. State net operating loss carryforwards (and certain other tax attributes) may be similarly limited. An ownership change can therefore result in significantly greater tax liabilities than a corporation would incur in the absence of such a change and any increased liabilities could adversely affect the corporation's business, results of operations, financial condition and cash flow.

Based on a preliminary analysis, we believe that, from its inception through December 31, 2009, NewLink experienced Section 382 ownership changes in September 2001 and March 2003. These two ownership changes limit NewLink's ability to utilize its federal net operating loss carryforwards (and certain other tax attributes) that accrued prior to the 2003 ownership change. In addition, the net operating loss carryforwards (and certain other tax attributes) of our subsidiary may be limited by Sections 382 and 383 as a result of a prior ownership change of the subsidiary.

Additional analysis will be required to determine whether changes in our ownership since December 31, 2009 and/or changes in our ownership that will result from this offering have caused or will cause another ownership change to occur, and the conclusions will depend on the terms of this offering and other information that may not be available to us until after this offering has occurred. Any such change could result in significant limitations on all of our net operating loss carryforwards and other tax attributes.

Even if another ownership change has not occurred and does not occur as a result of this offering, additional ownership changes may occur in the future as a result of events over which we will have little or no control, including purchases and sales of our equity by our 5% stockholders, the emergence of new 5% stockholders, additional equity offerings or redemptions of our stock or certain changes in the ownership of any of our 5% stockholders.

Income tax expense was $0 for the six months ended June 30, 2011 or the years ended December 31, 2010, 2009 and 2008. Income tax expense differs from the amount that would be expected after applying the statutory United States federal income tax rate primarily due to changes in the valuation allowance for deferred taxes.

Critical Accounting Policies and Significant Judgments and Estimates

We have prepared our financial statements in accordance with United States generally accepted accounting principles. Our preparation of these financial statements requires us to make estimates,

assumptions and judgments that affect the reported amounts of assets, liabilities, expenses and related disclosures at the date of the financial statements, as well as revenues and expenses during the reporting periods. We evaluate our estimates and judgments on an ongoing basis. We base our estimates on historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results could therefore differ materially from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in note 2 to our financial statements included later in this prospectus, we believe the following accounting policies to be critical to the judgments and estimates used in the preparation of our financial statements.

Expenses Accrued Under Contractual Arrangements with Third Parties; Accrued Clinical Expenses

As part of the process of preparing our financial statements, we are required to estimate our accrued expenses. This process involves reviewing open contracts and purchase orders, communicating with our applicable personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of actual cost. The majority of our service providers invoice us monthly in arrears for services performed. We make estimates of our accrued expenses as of each balance sheet date in our financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and make adjustments if necessary. Examples of estimated accrued clinical expenses include:

- fees paid to contract research organizations in connection with clinical trials;
- fees paid to investigator sites in connection with clinical trials;
- fees paid to contract manufacturers in connection with the production of clinical trial materials; and
- fees paid to vendors in connection with preclinical development activities.

We base our expenses related to clinical trials on our estimates of the services received and efforts expended pursuant to contracts with multiple research institutions and contract research organizations that conduct and manage clinical trials on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of clinical trial milestones. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual accordingly. Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in us reporting amounts that are too high or too low in any particular period.

Stock-Based Compensation

Stock Option Valuation. We are required to estimate the grant-date fair value of stock options issued to employees and recognize this cost over the period these awards vest. We estimate the fair value of each option granted using the Black-Scholes option pricing model. Generally, we have issued employee awards that vest over time. For these awards, we record compensation cost on a straight-line basis over the vesting period. We issue awards which typically vest 20% to 25% on the first anniversary date of issuance with the remaining options vesting ratably over the next 36 to 48 months, as determined by the Board of Directors at the time of grant.

We have issued awards to nonemployee consultants and advisers. All grants to nonemployees are valued using the same fair value method that we use for grants to employees. The compensation cost on these awards is recognized through the later of the vesting of the award or completion of services by the nonemployee.

The following table summarizes our assumptions used in the Black-Scholes model for option grants during the last three years and the six months ended June 30, 2011:

Black-Scholes Model Assumptions

	Years Ended December 31,			Six Months Ended June 30,
	2008	2009	2010	2011
Exercise price	$2.10	$2.10	$2.96-$4.01	$7.16-$10.02
Expected volatility	54.5%-67.2%	69.4%	59.8%-68.1%	64.5%-67.7%
Expected term (in years)	5.5-7.5	7.5	5.0-7.5	5.4-7.5
Risk-free interest rate	1.5%-3.3%	1.6%	2.3%-3.5%	2.1%-3.1%
Expected dividend yield	0.0%	0.0%	0.0%	0.0%

Exercise Price. Our stock options are granted with an exercise price at or above the then current fair value of our common stock as determined by the Board of Directors. As an input to making this determination, the Board of Directors obtained a third-party valuation. See "Common Stock Fair Value" below.

Expected Volatility. Since prior to this offering we were a privately-held company, the estimated future expected volatility for each stock option valuation utilizes volatility rates of similar publicly traded companies considered to be in the same peer group. The volatility is calculated over a period of time commensurate with the expected term for the options granted.

Expected Term (in Years). The expected term of a stock option is the period of time for which the option is expected to be outstanding. We have a large number of options outstanding. There is no secondary market for our outstanding stock options and they contain only basic terms. Therefore, we used a simplified method of determining expected term by selecting the midpoint between the date upon which they would be fully vested in accordance with their terms and the anticipated forfeiture date as the expected term for the employee and non-employee director grants. For other non-employee grants, the contractual life of the option was used.

Risk-Free Interest Rate. We use the average yield on current United States Treasury instruments with terms that approximate the expected term of the stock options being valued.

Expected Dividend Yield. The expected dividend yield for all of our stock option grants is 0%, as we have not declared a cash dividend since inception, and do not expect to do so in the foreseeable future.

Forfeitures. The stock-based compensation expense recognized has been reduced for estimated forfeitures. The estimated forfeiture rate is based on historical experience of our option plan, which we expect to continue at the current level, and any adjustments in the forfeiture rate in the future will result in a cumulative adjustment in the period that this estimate is changed. Ultimately, the total compensation expense recognized for any given stock-based award over its vesting period will only be for those shares that actually vest.

Common Stock Fair Value. Due to the absence of an active market for our common stock, the fair value of our common stock for purposes of determining the exercise price for stock option grants was determined by our Board of Directors, with the assistance of our management, in good faith based on a number of objective and subjective factors including:

- the prices of our convertible preferred stock sold to outside investors in arms-length transactions, and the rights, preferences and privileges of our convertible preferred stock as compared to those of our common stock, including the liquidation preference of our convertible preferred stock;
- our results of operations, financial position and the status of our research and development efforts;

- our stage of development and business strategy;
- the lack of liquidity of our private stock as a private company;
- valuations performed by an unrelated valuation specialist prepared in accordance with methodologies outlined in the AICPA Technical Practice Aid, "*Valuation of Privately-Held-Company Equity Securities Issued as Compensation*";
- the likelihood of achieving a liquidity event for the shares of our common stock and underlying stock options, such as an initial public offering, given prevailing market conditions;
- the material risks related to our business; and
- the composition of and changes to our management team.

Common Stock Valuations. After taking into account management's recommendations based on the valuation reports prepared by the Mentor Group, Inc., a third-party valuation specialist, our Board of Directors adopted valuations of our common stock as of December 31, 2007, 2008 and 2009, March 31, 2010, June 30, 2010, September 30, 2010 and December 31, 2010. The valuations used the probability-weighted expected return method, or PWERM, to allocate our estimated enterprise value between our preferred stock and common stock. This method is generally considered appropriate to use when there are several distinct liquidity scenarios to be considered. Under the PWERM, we analyzed the value of our company using several scenarios, which included an initial public offering ("IPO Scenario"), sale of the Company ("Sale Scenario"), remaining a private enterprise ("Private Company Scenario") and a liquidation of the assets ("Liquidation Scenario").

In determining the value of the equity under each scenario, the traditional approaches to valuation were considered. We utilized the discounted cash flow method to provide a reliable means of representing the fair value of the equity through the potential operating results of the Company on a going concern basis. This method was utilized in the Private Company Scenario. We also considered the capital market approach. This approach was utilized because we were able to identify publicly traded guideline companies we considered sufficiently comparable to the Company. The capital market approach was used in the IPO Scenario. The asset accumulation approach was considered and utilized in the Liquidation Scenario. The business transaction approach was utilized because data was available on the sale of entire businesses that we considered to be comparable to the Company. We used this approach in the Sale Scenario.

We determined the value of our preferred stock and common stock under each scenario by allocating the equity value to each class of stock and discounting the value back to the present using a risk-adjusted discount rate. We then weighted the present value of the common stock under each scenario based upon the probability of each scenario occurring in order to determine a final indication of value for the common stock.

After calculating the estimated values of our preferred stock and common stock in each scenario, we then tested our expected pre-money enterprise values for our IPO and Sale Scenarios using the guideline public company, or GPC, method within the market approach. We believe this two-step approach is consistent with the guidance set forth by the American Institute of Certified Public Accountants in the AICPA Technical Practice Aid, "Valuation of Privately-Held-Company Equity Securities Issued as Compensation," which we refer to as the AICPA Practice Aid.

As described in the AICPA Practice Aid, the market approach is one of three generally accepted valuation approaches. The market approach, and more specifically the GPC method within that approach, considers market transactions in businesses to develop measures that can be used in the valuation of the subject business. We believe that this method is useful if adequate information is available. Guideline public companies are publicly traded companies that provide a reasonable basis for comparison to the characteristics of the company being valued. Once these guideline companies have been identified, the GPC method then consists of developing ratios of value, or market multiples, based on the traded market value of each selected public company, as well as operating performance and financial condition indicators such as revenues, earnings and cash flow.

Valuation models require the input of highly subjective assumptions, and the valuation model we used is not the only valuation model available. Therefore, we cannot assure the accuracy of any particular valuation of our stock. Because our common stock has characteristics significantly different from that of publicly traded common stock and because changes in the subjective input assumptions can materially affect the fair value estimate, the models we used do not, in management's opinion, necessarily provide a reliable, single measure of the fair value of our common stock, and we will not use them to value our common stock once this offering is complete.

The Mentor Group, Inc. performed two distinct valuations for two different purposes for all valuations prior to the December 31, 2010 valuation. The valuation described below was performed for the purpose of calculating compensation expense for options grants pursuant to ASC 718 (formerly FAS 123R). A separate valuation was performed for purposes of determining the fair market value of our common stock for purposes of Section 409A of the Code, and was used to establish the exercise price of stock options. The valuations resulted in different fair values for accounting and tax purposes, reflecting differences in the applicable standards and guidance. The two values at December 31, 2010 were identical.

Liquidity Scenarios. For all of the valuations we considered a number of different liquidity scenarios, including an initial public offering of our common stock and an acquisition of our company. In all of these scenarios, the proceeds of the liquidation event were sufficient to provide a return to the holders of common stock. For each of the acquisition scenarios, we assumed different enterprise valuations and different dates and, consistent with the PWERM, in the acquisition scenarios we took into account the liquidation preferences that would be payable to the shares of our convertible preferred stock before any distribution of proceeds to holders of our common stock. We also considered that the holders of certain series of the convertible preferred stock would have the right to participate, after payment of the convertible preferred stock liquidation preference, in receiving their pro rata share of remaining proceeds payable to the common stock, up to a maximum amount per share of convertible preferred stock set forth in our certificate of incorporation. We also assigned a probability to an additional scenario in which we would be dissolved for no value and no proceeds would be available for any stockholder. In this scenario, we assumed that the common stock had a value of zero, since no proceeds would be available for distribution to the holders of common stock. The probability weightings assigned to these scenarios for our 2009 valuation were lower than those used in the prior retrospective valuations because, by that time, we had determined that an initial public offering or sale of the Company at a higher valuation was more likely.

IPO and Acquisition Scenarios in which Holders of Common Stock Will Realize a Return. For all of the valuations, we assigned probabilities to successful IPO Scenarios and to Sale Scenarios that would result in a return to the holders of our common stock. We considered that our success in completing either an initial public offering or sale that resulted in a return to the holders of our common stock would be dependent upon our realization of clinical milestones, together with our execution of our business plan and a receptive marketplace. For each of the valuations, the assumptions as to our enterprise value in the acquisition scenarios were the same as in the IPO Scenarios but, consistent with the PWERM, in the acquisition scenarios we took into account the liquidation preferences that would be payable to the shares of our convertible preferred stock before any distribution of proceeds to holders of our common stock. We also considered that the holders of the convertible preferred stock would have the right to participate, after payment of the convertible preferred stock liquidation preference, in receiving their pro rata share of remaining proceeds payable to the common stock, up to a maximum amount per share of convertible preferred stock set forth in our certificate of incorporation. As a result, the values per share of our common stock in the acquisition scenarios were less than the corresponding values per share of common stock in the IPO Scenarios.

Guideline Public Companies Analysis. We have completed an analysis using a set of guideline public companies. We noted that the assumed values for our company we used in our IPO Scenarios fell within the observed range of initial public offering values for the identified companies. We selected a subset of the

public companies we considered to be most similar to our company. We determined that each of the selected public companies was comparable to our company at the respective valuation dates because they are small capitalization companies engaged in either small molecule research or vaccines that are generally either in a pre-commercial stage or in the early stages of commercialization. As of each valuation date, we evaluated the market value of these companies' equity, excluding cash, and noted that these values were consistent with the enterprise values that we assumed as part of our IPO Scenarios and acquisition scenarios under the PWERM.

To analyze our valuation for each of our acquisition scenarios, we utilized the guideline transaction method. In this analysis, we reviewed approximately 20 companies in the biotechnology industry and compared the multiples from these transactions to the implied multiples for the acquisition scenarios. We calculated the median multiples of the transactions for enterprise value to sales, enterprise value to earnings before interest, taxes, depreciation and amortization and enterprise value to earnings before interest and taxes. We believe that the proprietary product mix and potential growth will increase the multiples from normalized multiples paid in the industry. However, we utilized multiples at or below the median multiples. Consequently, we have kept the market multiples within a reasonable range of the median market multiples for similar companies.

Discount Rate. Once we had allocated the per share values to our common stock and to each series of our convertible preferred stock at each of the future dates in our various scenarios, we calculated the present values of each per share amount to the valuation date, using a discount rates ranging from 46% to 67%. We believe that the discount rates selected are consistent with the required rates of return described in the AICPA Practice Aid for companies in a similar stage of development to us. Under the criteria set forth in the AICPA Practice Aid, for the valuations for the years ending December 31, 2007, 2008 and 2009, we determined that our company was no longer in the start-up stage but had generally not progressed beyond the first or early stage of development. Under the criteria set forth in the AICPA Practice Aid, for the periods ending March 31, 2010, June 30, 2010, and September 30, 2010, we determined that the Company was in the first or early stage of development from a technology-risk point of view and the bridge or initial public offering stage of development from a time-to-liquidity point of view.

Additionally, for the December 31, 2009 valuation, the discount rate we used to determine the value of the common stock was lower than in the prior retrospective valuations because we believed that our stage of development had progressed during 2009 under the framework described in the AICPA Practice Aid. For example, we made additional progress in our product development during 2009, including the receipt of interim data from our Phase 2 clinical trial of HyperAcute Pancreas. We closed our $7.5 million Series D preferred stock financing and had the final closing of our $30 million Series C preferred stock financing in July 2009 and September 2009, respectively.

Fair Value Estimates

After taking into account all of the assumptions and estimates described in our application of the PWERM and the GPC method within the market approach, we determined the fair value of our common stock to be approximately $2.02 per share as of December 31, 2007, approximately $2.00 per share as of December 31, 2008, approximately $4.24 per share as of December 31, 2009, approximately $4.37 per share as of March 31, 2010, approximately $4.73 per share as of June 30, 2010, approximately $8.44 per share as of September 30, 2010 and approximately $10.02 per share as of December 31, 2010. The following table

lists grants of options to purchase shares of common stock with GAAP measurement dates in 2009, 2010 and 2011 with the exception of items noted (6), (7), (8) and (9) below.

Options Granted on Shares of Common Stock					
Approval Date(1)	GAAP Measurement Date(2)	Number of shares	Exercise price per share	Common Stock values	Intrinsic value per share
July 16, 2008	September 2, 2009	173,304	$ 2.10	$ 2.21	$ 0.11
August 6, 2008	September 2, 2009	233,327	2.10	2.21	0.11
May 13, 2009	September 2, 2009	1,079,519	2.10	2.21	0.11
December 4, 2009(3)	March 3, 2010	812,617	2.96	4.37	1.41
March 3, 2010	June 2, 2010	478,669	3.07	4.73	1.66
June 2, 2010	October 8, 2010	6,189	4.01	8.44	4.43
October 8, 2010(4)	January 19, 2011	12,615	7.16	10.02	2.86
December 9, 2010(5)	April 14, 2011	76,185	10.02	10.02	—
January 19, 2011	January 19, 2011	33,804	10.02	10.02	—
April 14, 2011	April 14, 2011	11,902	10.02	10.02	—
April 14, 2011(6)	November 10, 2011	406,632	7.00	7.00	—
July 29, 2011(7)	November 10, 2011	15,951	7.00	7.00	—
October 7, 2011(8)	November 10, 2011	47,619	7.00	7.00	—
October 19, 2011(9)	November 10, 2011	23,809	$ 7.00	$ 7.00	$ —

(1) The Approval Date is the date on which the Board of Directors authorized, and we had a legal obligation to issue, an option grant.

(2) The GAAP Measurement Date is the first date at which the number of shares and exercise price per share were known and the awards were communicated to all recipients. The GAAP Measurement Date occurs subsequent to the Approval Date due to the timing of the completion and approval of third-party valuation reports of our common stock. We utilize the common stock value from the most recent valuation report that has been completed and approved at the time of the GAAP Measurement Date. Due to the significance of the number of option grants on September 2, 2009, management also obtained a third-party valuation on that date.

(3) The options granted on December 4, 2009 are not reflected in the disclosure in note 13 of the financial statements for the period ended December 31, 2009 as the measurement date had not yet occurred under GAAP. The GAAP Measurement Date did not occur until March 3, 2010, which was the date the exercise price per share was determined for accounting purposes based on completion and approval of the December 31, 2009 common stock valuation report and the awards were communicated to all recipients.

(4) The options granted on October 8, 2010 are not reflected in the disclosure in note 13 of the financial statements for the period ended December 31, 2010 as the measurement date had not yet occurred under GAAP. The GAAP Measurement Date did not occur until January 19, 2011, which was the date the exercise price per share was determined for accounting purposes based on completion and approval of the September 30, 2010 common stock valuation report and the awards were communicated to all recipients. These option grants are expected to result in the recognition of approximately $19,000 in share-based compensation expense during the year ended December 31, 2011.

(5) The options granted on December 9, 2010, are not reflected in the disclosure in note 13 of the financial statements for the period ended December 31, 2010 as the measurement date had not yet occurred under GAAP. The GAAP Measurement Date did not occur until April 14, 2011, which was the date the exercise price per share based on completion and approval of the December 31, 2010

common stock valuation report and the awards were communicated to all recipients. We do not believe the fair value of our common stock on April 14, 2011 was materially different than the value at December 31, 2010; therefore the December 31, 2010 value was used to measure the stock option award. These options grants are expected to result in the recognition of approximately $210,000 in share-based compensation expense during the year ended December 31, 2011.

(6) Certain options approved on April 14, 2011 are not reflected in the disclosure in note 13 of the financial statements for the period ended June 30, 2011 as the measurement date had not yet occurred under GAAP. The GAAP Measurement Date did not occur until November 10, 2011, upon the pricing of this offering. These option grants are expected to result in the recognition of approximately $264,000 in share-based compensation expense during the year ended December 31, 2011.

(7) Subsequent to June 30, 2011, certain options were approved on July 29, 2011 and are not reflected in the disclosure in note 13 of the financial statements for the period ended June 30, 2011 as the measurement date had not yet occurred under GAAP. The GAAP Measurement Date did not occur until November 10, 2011, upon the pricing of this offering. These option grants are expected to result in the recognition of approximately $17,000 in share-based compensation expense during the year ended December 31, 2011.

(8) Subsequent to June 30, 2011, certain options were approved on October 7, 2011 and are not reflected in the disclosure in note 13 to the financial statements for the period ended June 30, 2011 as the measurement date had not yet occurred under GAAP. The GAAP Measurement Date did not occur until November 10, 2011, upon the pricing of this offering. This option grant is expected to result in $170,000 in share-based compensation expense during the year ending December 31, 2011.

(9) Subsequent to June 30, 2011, certain options were approved on October 19, 2011 and are not reflected in the disclosure in note 13 to the financial statements for the period ended June 30, 2011 as the measurement date had not yet occurred under GAAP. The GAAP Measurement Date did not occur until November 10, 2011, upon the pricing of this offering. This option grant is expected to result in $23,000 in share-based compensation expense during the year ending December 31, 2011.

The following table summarizes the significant assumptions used by our valuation consultant in the PWERM pricing model used to determine the fair value of our common stock as of the date indicated.

	12/31/2008	12/31/2009	3/31/2010	6/30/2010	9/30/2010	12/31/2010
PWERM weightings						
Private company	20.0%	20.0%	20.0%	20.0%	25.0%	30.0%
Merger or acquisition	30.0%	30.0%	30.0%	30.0%	25.0%	15.0%
Initial Public Offering	5.0%	30.0%	30.0%	30.0%	40.0%	45.0%
Liquidation	45.0%	20.0%	20.0%	20.0%	10.0%	10.0%
Value by method						
Private company scenario	$ 1.49	$ 3.49	$ 3.74	$ 4.41	$ 8.86	$ 9.81
Merger or acquisition	4.73	6.20	6.13	6.49	9.83	12.20
Initial Public Offering	5.57	5.61	5.92	6.28	9.41	11.66
Liquidation	—	—	—	—	—	—
Weighted value						
Private company scenario	$ 0.30	$ 0.70	$ 0.75	$ 0.89	$ 2.22	$ 2.94
Merger or acquisition	1.42	1.86	1.84	1.95	2.46	1.83
Initial Public Offering	0.28	1.68	1.78	1.89	3.76	5.25
Liquidation	—	—	—	—	—	—
	$ 2.00	$ 4.24	$ 4.37	$ 4.73	$ 8.44	$ 10.02
Lack of marketability discount	45%	30%	30%	15%	15%	0%

The estimated per share fair value of our common stock increased from January 1, 2009 to December 31, 2009 from $2.00 to $4.24. This increase in estimated fair value primarily reflected operational factors, including advancement of Hyperacute Lung, Hyperacute Pancreas and Hyperacute Melanoma Phase 2 clinical trials and concurrent increases in our enrollment for these trials from 20 patients in 2008 to 71 patients in 2009. We also initiated the treatment phase of our Phase 1 clinical trial in D-1MT. Data on D-1MT was presented at the annual meeting of the American Society of Clinical Oncologists, or ASCO, during this period. The increase is also due to our improving financial strength. During this period, BPS signed a $3.7 million contract with the federal government to study HyperAcute technology in the infectious disease setting. We also raised an additional $12 million in our existing Series C preferred stock financing and $7.5 million in a new Series D preferred stock financing. External factors that increased the estimated fair value included Dendreon Corporation's announcement that its Provenge immunotherapy product candidate demonstrated a survival benefit in its Phase 3 clinical trial.

The estimated per share fair value of our common stock increased from January 1, 2010 to March 31, 2010 from $4.24 to $4.37. This increase primarily reflected continued progress in our ongoing clinical trials, including the receipt of the FDA's letter of concurrence related to our Special Protocol Assessment request for our HyperAcute Pancreas Phase 3 clinical trial.

The estimated per share fair value of our common stock increased from April 1, 2010 to June 30, 2010 from $4.37 to $4.73 per share. This increase primarily reflected the encouraging data received from our ongoing HyperAcute Pancreas and HyperAcute Melanoma Phase 2 clinical trials and acceptance for presentation at the ASCO annual meeting in June 2010. We also treated our first patient in our HyperAcute Pancreas Phase 3 clinical trial during this period. In addition, prior to 2010, we had manufactured all of our HyperAcute cancer immunotherapy product candidates in a small good manufacturing practice, or GMP, laboratory setting and in April 2010, we began to occupy our first commercial scale GMP manufacturing facility. External factors that affected estimated fair value during this period included the FDA's May 2010 approval of Dendreon Corporation's Provenge.

The estimated per share fair value of our common stock increased from July 1, 2010 to September 30, 2010 from $4.73 to $8.44 per share. This increase was primarily due to our initiating the process associated with this offering with an organizational meeting on September 8, 2010. Additionally, in July 2010, we negotiated acceleration of the development milestones associated with our prior acquisition of OncoRx Corporation.

The estimated per share fair value of our common stock increased from October 1, 2010 to December 31, 2010 from $8.44 to $10.02 per share. This increase is due to many factors. As of December 31, 2010, we had nearly completed follow-up data on the HyperAcute Pancreas Phase 2 clinical trial, which was used to support our ongoing HyperAcute Pancreas Phase 3 clinical trial. In December 2010, we negotiated the acquisition of the noncontrolling interest in BPS. In October 2010, we received both Orphan Drug and Fast Track designations from the FDA for HyperAcute Pancreas. In December 2010, we raised $7.7 million in a new Series E preferred stock financing and completed the initial filing of our Registration Statement on Form S-1 associated with this offering. As of December 31, 2010, we had enrolled 60 patients and initiated 30 sites in our ongoing HyperAcute Pancreas Phase 3 clinical trial.

Based on the initial public offering price of $7.00 per share, the intrinsic value of stock options outstanding at June 30, 2011, would have been $13.0 million, of which $8.5 million and $4.5 million related to stock options that were vested and unvested, respectively, at that date. An additional 494,011 shares of common stock are issuable upon the exercise of options that were granted effective November 10, 2011, upon pricing of this offering.

Results of Operations

Six Months Ended June 30, 2011 and 2010

Revenues. Revenues for the six months ended June 30, 2011 were $1.1 million, increasing from $730,000 for the same period in 2010. The increase in revenue of $370,000 was due to increased progress on research by BPS under various DOD contracts and NIH grants.

Research and Development Expenses. Research and development expenses for the six months ended June 30, 2011 were $7.0 million, increasing from $5.7 million for the same period in 2010. The $1.3 million increase was primarily due to a $540,000 increase in equipment and supplies costs including direct development expenses for our clinical trial activities and other expenses, accompanied by a $360,000 increase in personnel-related expenses and a $380,000 increase in depreciation and amortization expense.

General and Administrative Expenses. General and administrative expenses for the six months ended June 30, 2011 were $2.5 million, increasing from $2.3 million for the same period in 2010. The $168,000 increase was primarily due to a $152,000 increase in personnel expenses, a $16,000 increase in occupancy-related and other costs.

Interest Income and Expense. Interest expense for the six months ended June 30, 2011 was $15,000, compared to $19,000 for the same period in 2010. Interest income for the six months ended June 30, 2011 was $8,000, compared to $23,000 for the same period in 2010. The $15,000 decrease was due to a decrease in interest rates partially offset by an increase in our average cash balances.

Other Income (Expense). Miscellaneous income, net for the six months ended June 30, 2011 was $1,000, compared to $8,000 for the same period in 2010.

Years Ended December 31, 2010, 2009 and 2008

Certain immaterial corrections were recorded, which impacted the results for the years ended December 31, 2010, 2009, and 2008. See note 3.

Revenues. Revenues for the year ended December 31, 2010 were $2.1 million, increasing from $934,000 for the same period in 2009. The increase in revenue of $1.1 million was due to an increase in billings of $860,000 by BPS under various DOD contracts and NIH grants and the receipt of $240,000 in section 48D income tax credits by NewLink.

Revenues for the year ended December 31, 2009 were $934,000, increasing from $633,000 for the same period in 2008. The increase in revenue of $301,000 was primarily due to increased billings by BPS under various DOD contracts and NIH grants.

The DOD contracts and NIH grants provide us with cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Revenues are recognized in the period during which the related costs are incurred, provided that the conditions under which the cost reimbursement was provided have been met and we have only perfunctory obligations outstanding. As of December 31, 2010, $3.3 million in funding remained under the terms of these agreements.

Research and Development Expenses. Research and development expenses for the year ended December 31, 2010 were $12.7 million, increasing from $7.6 million for the same period in 2009. The $5.1 million increase was due to a $2.4 million increase in equipment, supplies and occupancy costs including the acquisition of in-process research and development, accompanied by a $1.9 million increase in personnel-related expenses and a $800,000 increase in outside clinical and other expenses including direct development expenses for our clinical trial activities.

Research and development expenses for the year ended December 31, 2009 were $7.6 million, increasing from $5.8 million for the same period in 2008. The $1.8 million increase was primarily due to a $1.5 million increase in personnel-related expenses, accompanied by a $172,000 increase in equipment, supplies, and occupancy costs, and a $126,000 increase in outside clinical and other costs.

General and Administrative Expenses. General and administrative expenses for the year ended December 31, 2010 were $6.1 million, increasing from $3.7 million for the same period in 2009. The $2.4 million increase was primarily due to a $1.0 million increase in professional fees, a $864,000 increase in personnel-related expenses, a $129,000 increase in equipment, supplies and occupancy costs, and a $374,000 increase in other costs.

General and administrative expenses for the year ended December 31, 2009 were $3.7 million, decreasing from $3.9 million for the same period in 2008. The $233,000 decrease was primarily due to a $151,000 decrease in other expenses accompanied by an $86,000 decrease in personnel-related expenses offset by a $4,000 increase in equipment, supplies and occupancy costs.

Interest Income and Expense. Interest expense for the year ended December 31, 2010 was $47,000, compared to $9,000 for the same period in 2009. The $38,000 increase was due to increased borrowings under notes payable and capital lease obligations. Interest income for the year ended December 31, 2010 was $75,000, compared to $132,000 for the same period in 2009. The $57,000 decrease was primarily due to a decrease in interest rates, partially offset by an increase in our average cash balances.

Interest expense for the year ended December 31, 2009 was $9,000, compared to $2,000 for the same period in 2008. Interest income for the year ended December 31, 2009 was $132,000, compared to $213,000 for the same period in 2008. The $81,000 decrease was primarily due to a decrease in interest rates.

Other Income (Expense). Miscellaneous income, net for the year ended December 31, 2010 was $71,000, compared to $19,000 for the same period in 2009. Miscellaneous income, net for the year ended December 31, 2009 was $19,000, compared to $42,000 for the same period in 2008.

Liquidity and Capital Resources

We have funded our operations principally through the private placement of equity securities, debt financing and interest income. As of June 30, 2011, we have received proceeds, net of offering costs, of $76.3 million from the issuance of convertible preferred stock, including $7.5 million from the sale of 1.5 million shares of Series D preferred stock in July 2009, $30.0 million from the sale of 6.0 million shares of Series C preferred stock in during the course of 2008 and 2009, and $21.4 million from the sale of 684,624 shares of Series E preferred stock during the course of 2010 and the first half of 2011 of which $8.6 million was issued to acquire the minority interest in BPS. As of June 30, 2011, we had cash, cash equivalents and certificates of deposit of approximately $9.8 million. As of September 30, 2011, our preliminary estimate of cash, cash equivalents and certificates of deposit was approximately $6.3 million. The following table sets forth the primary sources and uses of cash for each of the periods set forth below:

Sources and Uses of Cash
(in thousands)

	Years Ended December 31,			Six Months Ended June 30,	
	2008	2009	2010	2010	2011
Net cash used in development activities	$ (8,885)	$ (9,140)	$ (13,270)	$ (5,560)	$ (7,891)
Net cash (used in) provided by investing activities	(3,127)	(1,545)	(2,709)	(2,515)	1,965
Net cash provided by financing activities	17,930	19,626	11,334	1,430	4,904
Net increase (decrease) in cash and cash equivalents	$ 5,918	$ 8,941	$ (4,645)	$ (6,645)	$ (1,022)

For the six months ended June 30, 2011 and 2010, we used cash of $7.9 million and $5.6 million for our development activities, respectively. During 2010, 2009 and 2008, our development activities used cash of $13.3 million, $9.1 million and $8.9 million, respectively. The use of cash in all periods primarily resulted from our net losses adjusted for non-cash items and changes in operating assets and liabilities. The increase in cash used for the year ended 2010 resulted from an increase in research and development activities and general and administrative expenses. The increase in cash used for the year ended 2009 resulted from an increase in research and development activities offset by a decrease in general and administrative expenses.

For the six months ended June 30, 2011 and 2010, our investing activities provided (used) cash of $2.0 million and $(2.5) million, respectively. The cash provided by investing activities in the six months ended June 30, 2011 was primarily due to the sale of investments for net proceeds of $2.0 million. The cash used by investing activities in the six months ended June 30, 2010 was primarily a result of the purchases of property and equipment of $2.8 million related to the expansion of our manufacturing facilities at our corporate headquarters, as well as the purchase of $250,000 of investments offset by the repayment of $500,000 of notes receivable from related parties. During 2010, 2009 and 2008, our investing activities used cash of $(2.7) million, $(1.5) million and $(3.1) million, respectively. The use of cash for the year ended December 31, 2010 was primarily the result of the purchases of property and equipment of $2.9 million related to the expansion of our manufacturing facilities at our corporate headquarters. The use of cash for the years ended 2009 and 2008 was primarily the net result of the purchase of investments accompanied by the purchases of property and equipment of $1.4 million and $427,000, respectively.

For the six months ended June 30, 2011 and 2010, our financing activities provided $4.9 million and $1.4 million, respectively. The cash provided by financing activities in the six months ended June 30, 2011 was primarily due to the sale and issuance of Series E Preferred stock for net proceeds of $5.0 million offset by payments on long-term financing obligations of $100,000. The cash provided by financing activities in the six months ended June 30, 2010 was primarily due to $1.1 million in proceeds from notes payable and $300,000 cash received from noncontrolling interest investment. During 2010, 2009 and 2008,

our financing activities provided $11.3 million, $19.6 million and $17.9 million, respectively. The cash provided by financing activities in the year ended December 31, 2010 was primarily due to the sale and issuance of Series E preferred stock for net proceeds of $7.8 million along with the exercise of a warrant for net proceeds of $2.0 million, proceeds from loans payable of $1.1 million and cash received from noncontrolling interest investment of $911,000. The cash provided in 2009 was primarily a result of the continued sale and issuance of Series C preferred stock along with 1.5 million shares of Series D preferred stock for net proceeds of $19.6 million. The cash provided by financing activities in 2008 was primarily due to the sale and issuance of Series C preferred stock for net proceeds of $17.9 million.

Series E Preferred Stock

On December 13, 2010 we completed the sale of 248,320 shares of our Series E preferred stock at a price per share of $31.25, which resulted in aggregate proceeds of $7.8 million. On June 20, 2011, we issued and sold to an investor an additional 160,000 shares of Series E preferred stock at a purchase price of $31.25 per share, which resulted in gross proceeds of $5.0 million. Each share of Series E preferred stock will convert into approximately 5.252 shares of our common stock.

On January 7, 2011, we acquired the minority interest in BPS. We issued 276,304 shares of our Series E preferred stock as consideration for this acquisition of which 221,066 shares were issued on January 7, 2011 and 55,238 shares were issued on August 12, 2011.

Loan Agreements

March 2005 Iowa Department of Economic Development Loan

In March 2005, we entered into a $6.0 million forgivable loan agreement with the Iowa Department of Economic Development, or the IDED. Under the agreement, in the absence of default, there will be no principal or interest payments due until the completion date for the project, which is March 18, 2012, under the current one-year extension granted by the IDED. The project is to provide assistance to the Company for research and product development activities at its Iowa State University Research Park facility. The project calls for the creation of 315 positions and retention of 35 positions with total project expenditures of $189.9 million for clinical trials, research and development activities, building construction, equipment purchases, and other working capital needs. As of June 30, 2011, we believe we have created 43 jobs, retained 35 jobs and incurred approximately $70.1 million of project expenditures.

If, as of March 18, 2012, which is the current project completion date under the agreement, the IDED determines we have fulfilled all the job creation and maintenance terms and project expenditure requirements of the loan agreement, the loan will be forgiven. However, on the project completion date we will be required to repay the greater of approximately $17,000 for each of the 350 jobs we fail to create and maintain as of that date or a percentage of the $6 million advanced under the agreement equal to the percentage of any shortfall in our obligation to expend $189.9 million of project expenditures. As of June 30, 2011, we had $4.7 million in outstanding debt subject to repayment. Five years following the project completion date, we will be required to repay approximately $17,000 for each of the 350 jobs the IDED determines we fail to maintain as of that date. In the event of default, including failure to repay any amounts under the loan when due, we will be required to repay the note including 6% interest per annum beginning at the date of default.

Under the agreement, we are obligated to pay a minimum of 0.25% royalties on all gross revenues of our products with a cumulative maximum royalty amount due of $3.2 million. Royalties we pay will first offset amounts we are required to repay for amounts of the loan not forgiven and then go toward reducing the total cumulative royalty to be paid. We are also obligated to maintain our business in the State of Iowa while amounts remain outstanding under the loan. Substantially all of our assets are pledged against this loan and we are required to submit audited financial statements within 90 days of year-end. We have failed to meet this covenant each year and have obtained a waiver from the IDED each year.

The original project completion date for the project was March 18, 2010 and was initially extended to March 18, 2011 by amendment to the agreement approved by the IDED. Based on our progress on the project we requested and received a second extension of the project completion date to March 18, 2012.

September 2007 IDED High Quality Job Creation Program Tax Credit

In September 2007, we entered into a master contract and associated funding agreement, or HQJC Agreement, with the IDED under its high quality job creation program. We amended the HQJC Agreement in 2010 to extend the dates by which certain job creation and investment requirements were to be met to March 18, 2011.

The terms of the HQJC Agreement, as amended, require us by March 18, 2012, to make a qualifying investment in real estate or depreciable assets of at least $2.0 million, to finalize the lease of our new executive offices and manufacturing facilities and to create at least 45 new full time equivalent jobs in Iowa of which at least 14 must be high quality, or HQJC jobs. In order to qualify as high quality jobs, the jobs created must be at a compensation levels that exceed the county average hourly wage of $17.31. We fulfilled two of the three requirements by March 18, 2010. We have made a qualified investment in real estate and finalized the lease of our new offices and manufacturing facility. As of June 30, 2011, we have created 44 new jobs of which 27 were HQJC jobs. In addition, we are required to retain the HQJC jobs through March 18, 2013. If we fail to meet this requirement we will be required to repay all tax credits received under the HQJC Agreement. As of June 30, 2011, we had maintained our base employment of 34 full time equivalent jobs in addition to the 44 newly created jobs.

Under the HQJC Agreement, we received a tax credit of $414,000, which was refunded to us between March 2006 and October 2009. Under the HQJC Agreement, the IDED may require us to repay the entire amount of the tax credit upon certain events of default, which include our experiencing a substantial layoff, relocating a substantial portion of our business or our research and development outside of Iowa, failing to offer certain employee benefits or failing to reinvest at least 1.0% of our pre-tax profits from our Iowa facility in research and development in Iowa. In addition, prior notice and consent of the IDED is required during the term of the HQJC Agreement for any material changes in our business or our research and development activities.

March 2010 City of Ames Forgivable Loan

In March 2010, we entered into a $400,000 forgivable loan agreement with the City of Ames, Iowa and the Ames Chamber of Commerce, jointly, as lenders. The project provides us with financial assistance to construct new facilities within the Ames city limits. In the absence of a default, there are no principal or interest payments due until the expected completion date for the project, which is March 10, 2015.

The project calls for our creating or retaining at least 70 full-time jobs located in Ames, Iowa as of March 10, 2012 and the creation or maintenance of at least 150 full-time positions located in Ames, Iowa as of March 10, 2015. The agreement also calls for our entering into a five-year building lease with the option for extension for an additional five years of not less than 20,000 square feet within the corporate limits of the City of Ames by March 10, 2015. If, as of March 10, 2015, we have fulfilled the terms of the loan agreement, the loan will be forgiven. If on March 10, 2012 and March 10, 2015, we have failed to create or retain at least 70 full-time jobs and 150 full-time jobs in Ames, Iowa, respectively, we will be required to repay approximately $3,100 per job not created or retained following the respective date. As of June 30, 2011, we had created or retained an aggregate of 76 full-time jobs in Ames, Iowa. As of June 30, 2011, $300,000 of the total $400,000 forgivable loan was advanced to us with the final $100,000 pending certification to the City of Ames regarding the creation of a threshold level of jobs. In the event of default, including failure to repay any amounts under the loan when due, we will be required to repay the note, including 6.5% interest per annum, beginning at the date of default.

Operating Capital Requirements

We anticipate that we will continue to generate significant operating losses for the next several years as we incur expenses related to the research and development of our HyperAcute immunotherapy and IDO pathway inhibitor product candidates, build commercial capabilities and expand our corporate infrastructure. We believe that the net proceeds from this offering, together with our existing cash and cash equivalents and certificates of deposit, will allow us to fund our operations through at least the end of 2013.

We may seek to sell additional equity or debt securities or obtain a credit facility if our available cash and cash equivalents are insufficient to satisfy our liquidity requirements or if we develop additional opportunities to do so. The sale of additional equity and debt securities may result in additional dilution to our shareholders. If we raise additional funds through the issuance of debt securities or preferred stock, these securities could have rights senior to those of our common stock and could contain covenants that would restrict our operations. We may require additional capital beyond our currently forecasted amounts. Any such required additional capital may not be available on reasonable terms, if at all. If we were unable to obtain additional financing, we may be required to reduce the scope of, delay or eliminate some or all of our planned research, development and commercialization activities, which could harm our business.

Because of the numerous risks and uncertainties associated with research, development and commercialization of biopharmaceutical products, we are unable to estimate the exact amounts of our working capital requirements. Our future funding requirements will depend on many factors, including, but not limited to:

- the scope, progress, results and costs of clinical trials for our product candidates, and discovery and development activities related to new product candidates;
- the timing of, and the costs involved in, obtaining regulatory approvals for our product candidates;
- the cost of commercialization activities if any of our product candidates are approved for sale, including marketing, sales and distribution costs;
- the cost of manufacturing our product candidates and any products we commercialize;
- our ability to establish and maintain strategic partnerships, licensing or other arrangements and the financial terms of such agreements;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims, including litigation costs and the outcome of such litigation; and
- the timing, receipt and amount of sales of, or royalties on, our future products, if any.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations at June 30, 2011:

Contractual Obligations Due
(in thousands)

	Total	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years
Short and long-term debt (including interest)	$ 7,071	$ 6,113	$ 225	$ 501	$ 232
Operating lease obligations	1,046	303	540	203	—
Capital lease obligations	303	74	189	36	4
Total contractual cash obligations	$ 8,420	$ 6,490	$ 954	$ 740	$ 236

In October of 2009, the Company entered into a new lease for additional space that expires in 2015. Under the terms of the lease, the Company has the option to extend the lease for three additional five-year periods upon the same terms as the base lease. The Company is currently in discussions with the same lessor to add approximately 26,000 square feet of additional space under substantially the same terms as the lease that was entered into in October of 2009.

Under the license agreements described below in "Financial Obligations Related to Licensing and Development—In-Licensing Agreements," we are obligated to make potential milestone payments as listed in the following table. These obligations are contingent upon achieving the applicable milestone event, the timing of which cannot presently be determined.

Licensor	Aggregate potential milestone payments
Drexel University	$1 million per licensed product
Lankenau Institute for Medical Research under the IDO-1 Agreement(1)	$1.36 million per licensed product
Lankenau Institute for Medical Research under the LIMR IDO-2 Agreement(1)	$1.52 million per licensed product, subject to reductions if milestones also qualify under the IDO-1 Agreement
Lankenau Institute for Medical Research under the 2009 LIMR Agreement(1)	$610,000 per licensed product, subject to reductions if milestones also qualify under the IDO-1 Agreement or LIMR IDO-2 Agreement
Medical College of Georgia	$2.8 million per licensed product
University of British Columbia	$1.8 million per licensed product
Regents of the University of California	$285,000 per licensed product
Her Majesty the Queen in Right of Canada	C$205,000 per licensed product

(1) As defined below in the "Financial Obligations Related to Licensing and Development—In-Licensing Agreements" section of this prospectus.

To date, we have made payments in an aggregate amount of approximately $2.9 million under all of the in-licensing agreements listed in the "Financial Obligations Related to Licensing and Development—In-licensing Agreements" section of this prospectus.

Financial Obligations Related to Licensing and Development

In-Licensing Agreements

We are subject to a number of licensing agreements with respect to certain of the technologies that underlie our intellectual property. Unless otherwise noted, these agreements typically provide that we have exclusive rights to the use and sublicensing of the technologies in question for the duration of the intellectual property patent protection in question, subject to us meeting our financial and other contractual obligations under the agreements. Certain of the key licensing agreements with significant financial obligations include the following:

Central Iowa Health Systems. We are a party to a license agreement, or the CIHS Agreement, dated August 2, 2001, with the Central Iowa Health System, or CIHS. The CIHS Agreement grants to us an exclusive, worldwide license to make, have made, use, import, sell and offer for sale products that are covered by certain CIHS patent rights, proprietary information and know-how relating to our HyperAcute immunotherapy technology. In partial consideration of the license under the CIHS Agreement, we entered into a stock purchase agreement with CIHS, under which we issued to CIHS shares of our common stock and granted CIHS certain rights related to ownership of such shares.

In addition, we must reimburse CIHS for out-of-pocket costs incurred for patent prosecution and maintenance. If we commercialize a licensed product, we also have the obligation to pay CIHS royalties as

a low single-digit percentage of net sales of the licensed product, subject to annual minimum royalties and a reduction for any royalty payments we must make to third parties. If we grant a sublicense under the licenses granted by CIHS, we must pay to CIHS a percentage of certain consideration paid by the sublicensee to us. Under the CIHS Agreement, we must use commercially reasonable efforts to develop and commercialize licensed products, to obtain necessary regulatory approvals and to launch and market such products in specified markets.

Drexel University. We are party to a license agreement, or the Drexel Agreement, dated October 13, 2004 with Drexel University, or Drexel. The Drexel Agreement grants us, and our affiliates, an exclusive, worldwide license, under specified Drexel patent rights relating to compositions and methods for vaccines based on a-Gal epitopes, to make, have made, use, import, sell and offer for sale vaccine products that are covered by such patent rights, or that use related Drexel technical information, for use in the diagnosis and treatment of cancer, viral and other infectious disease.

In consideration of our license under the Drexel Agreement, we have paid and are obligated to continue to pay specified license fees, potential milestone payments in an aggregate amount up to approximately $1 million for each licensed product, annual license maintenance fees, reimbursement of patent prosecution costs, and royalty payments as a low single-digit percentage of "net sales" of any licensed product that is commercialized, subject to minimum royalty payments. Royalty rates vary depending on the type of licensed product, the territory where it is sold and whether the licensed product is combined with other technologies. In addition, if we grant a sublicense under the license granted by Drexel, we must pay Drexel a percentage of the consideration paid by the sublicensee to us. In accordance with a development plan included in the Drexel Agreement, we are obligated to use commercially reasonable efforts to develop and market products covered by the license as soon as practicable.

Lankenau Institute for Medical Research—IDO-1. We are a party to a license agreement dated July 7, 2005, as amended May 22, 2006 and September 11, 2007, or the IDO-1 Agreement, with Lankenau Institute for Medical Research, or LIMR. The IDO-1 Agreement grants us an exclusive, worldwide license, under specified LIMR patent rights relating to inhibitors of indoleamine 2,3-dioxygenase, or IDO-1, and related LIMR technology, to make, have made, use, and sell products that are covered by such patent rights for use in the field of animal and human therapeutics and diagnostics.

In consideration of the license grant, we are obligated to pay to LIMR specified license fees, annual license maintenance fees, reimbursement of past patent prosecution costs, potential milestone payments in an aggregate amount up to approximately $1.36 million for each licensed product, and royalties as a low single-digit percentage of net sales of the licensed products if a licensed product is commercialized. In addition, if we grant a sublicense under the IDO-1 Agreement, we must to pay to LIMR a percentage of the consideration received by us from the sublicensee. Under the IDO-1 Agreement, we are obligated to use commercially reasonable efforts to develop and market the licensed products, and to achieve certain milestones by agreed-upon deadlines.

Medical College of Georgia. We are a party to a License Agreement dated September 13, 2005, or the MCGRI Agreement, with Medical College of Georgia Research Institute, or MCGRI, which was amended on April 27, 2006 and February 13, 2007. The MCGRI Agreement grants us, including our affiliates, an exclusive, worldwide license, under specified MCGRI patent rights and related technology to make, have made, use, import, sell and offer for sale products that are covered by licensed patent rights or incorporates or uses licensed technology in all medical applications.

In consideration of such license grant, we are obligated to pay to MCGRI specified license fees (including issuing shares of our common stock), annual license maintenance fees, reimbursement of patent prosecution costs, potential milestone payments in an aggregate amount up to approximately $2.8 million per licensed product, and royalties as a single-digit percentage of net sales of the licensed products, subject to minimum royalty payments and royalty rates depending on the type of license product. In addition, if we grant a sublicense under the license granted by MCGRI, we must pay to MCGRI a percentage of the

consideration we receive from the sublicensee. Under the agreement, we are obligated to make certain investments toward the further development of licensed products within specified time periods.

University of British Columbia. We are a party to a license agreement dated February 1, 2007, or the UBC License, with the University of British Columbia, or UBC. The UBC License grants us an exclusive, worldwide license, under specified UBC patent rights relating to IDO-1 inhibitors and related technology, to make, have made, use, import, sell and offer for sale products that are covered by licensed patent rights or incorporates or uses licensed technology. In addition, the UBC License grants us an option to obtain an exclusive, worldwide license to new IDO-1 inhibitors related technology developed during the term of the agreement.

In consideration of the license grant, we must pay to UBC specified license fees, annual payment and license maintenance fees, reimbursement of patent prosecution costs, potential milestone payments in an aggregate amount up to approximately $1.8 million per licensed product, and royalties in a range of 10% or less of net revenue of the licensed product if a licensed product is commercialized, which royalty rate varies depending on the type of license product and field of use. In addition, if we grant a sublicense under the licenses granted by UBC, we may be required to pay to UBC a percentage of certain consideration we receive from the sublicensee. We are obligated to use our commercially reasonable efforts to develop and market the licensed products, and to achieve certain specific development milestones by agreed-upon deadlines.

LIMR—IDO-2. We are a party to a license agreement, or the LIMR IDO-2 Agreement, executed December 21, 2007 with LIMR. The LIMR IDO-2 Agreement grants us an exclusive, worldwide license, under specified LIMR patent rights relating to inhibitors of the target indoleamine 2,3 dioxygenase-2, or IDO-2, and under related LIMR know-how or technology, to make, have made, use, import, sell and offer for sale products and services that are covered by such patent rights, for all uses.

In consideration of the license grant, we have paid to LIMR an upfront license fee and annual license maintenance fees, and are obligated to pay LIMR annual license maintenance fees, potential milestone payments in an aggregate amount up to approximately $1.52 million per licensed product, subject to reductions if milestones also qualify under the IDO-1 Agreement, and, if a licensed product is commercialized, royalties as a low single-digit percentage of "net sales" of the licensed product, subject to reduction for our royalty payments to third parties. In addition, if we grant a sublicense under the licenses granted by LIMR, we must pay to LIMR a percentage of the consideration paid by the sublicensee to us. Under the LIMR IDO-2 Agreement, we have agreed to use our commercially reasonable efforts to develop and exploit products covered by the license.

2009 LIMR Exclusive License Agreement. We are a party to a license agreement, or the 2009 LIMR Agreement, dated April 23, 2009 with LIMR. The 2009 LIMR Agreement grants us an exclusive, worldwide license, under specified LIMR patent rights relating to IDO inhibitors, and under related LIMR know-how or technology, to make, have made, use, import, sell and offer for sale products and services that are covered by such patent rights, for all uses. In consideration of such license grant, we are obligated to pay LIMR potential milestone payments in an aggregate amount up to approximately $610,000 per licensed product, subject to reductions if milestones also qualify under the IDO-1 Agreement or LIMR IDO-2 Agreement, and royalties as a low single-digit percentage of "net sales" of the licensed product, subject to reduction for our royalty payments to third parties and to LIMR under the IDO-1 Agreement or LIMR IDO-2 Agreement. In addition, if we grant a sublicense under the licenses granted by LIMR, we must pay to LIMR a percentage of the consideration paid by the sublicensee to us.

Bresagen Patent License Agreement. We are a party to a license agreement, or the Bresagen Agreement, dated March 1, 2006 with Bresagen Xenograft Marketing Ltd, or Bresagen. The Bresagen Agreement grants us a non-exclusive, non-sublicensable license to specified Bresagen patent rights for use in testing microbial and cancer vaccines in the U.S. In consideration of such license grant, we are obligated to pay Bresagen an up front license fee and an annual license fee.

Regents of the University of California License Agreement. BPS is a party to a license agreement dated July 29, 2008, or the California License, with the Regents of the University of California, or California. The California License grants BPS an exclusive, worldwide license, under specified California patent rights relating to technology based on yellow fever virus, to make, use, import, sell and offer for sale products that are covered by licensed patent rights in the field of human healthcare.

In consideration of the license grant, BPS must pay to California a specified license issue fee, annual license maintenance fees, patent prosecution costs, potential milestone payments in an aggregate amount up to approximately $285,000 per licensed product, and royalties as a low single-digit percentage of net sales of the licensed product, which royalty rate varies depending on the territory. In addition, if BPS grants a sublicense under the licenses granted by California, BPS may be required to pay to California a percentage of certain consideration BPS receives from the sublicensee. BPS is obligated to use commercially reasonable efforts to develop and market the licensed products, and to achieve certain milestones by agreed-upon deadlines.

Her Majesty the Queen in Right of Canada License Agreement. BPS is a party to a license agreement dated May 4, 2010, or the Canada License, with the Her Majesty the Queen in Right of Canada, or Canada. The Canada License grants BPS a worldwide, personal, non-transferable, sole, revocable, royalty-bearing license for commercialization of specified Canada patent rights relating to technology based on rVSV.

In consideration of the license grant, BPS must pay to Canada a specified patent and signing fees, annual license maintenance fees, patent prosecution costs, potential milestone payments in an aggregate amount up to approximately C$205,000 per licensed product, and royalties as a low single-digit percentage of the sales price of the licensed products sold by BPS, which royalty rate varies depending on the type of licensed product. In addition, if BPS grants a sublicense under the licenses granted by Canada, BPS is required to pay to Canada a percentage of certain consideration BPS receives from the sublicensee. BPS is obligated to use commercially reasonable efforts to develop and market the licensed products.

Collaborative Agreements with Medical Institutions

We have entered into numerous agreements with various medical institutions for the performance of clinical trials for various products. They typically call for the payment of fees by us for the performance of the clinical trials and the maintenance of confidentiality as to the associated technology.

We have entered into a letter of intent, or LOI, dated May 7, 2007 for a Cooperative Research & Development Agreement, or CRADA, with the NCI regarding certain IDO development efforts, which have consisted to date of primarily preclinical and Phase 1 clinical development of D-1MT. The LOI permits us to conduct informal joint research with the NCI pending formal approval of the CRADA. In the absence of an approved CRADA, we do not have any rights to inventions or raw data generated by NCI. We do have the right to use any clinical data generated under the LOI for exclusive use in obtaining regulatory approval.

If the CRADA is approved, it will have retroactive effect to the date that the last party executed the LOI, which is May 23, 2007, for any inventions that may be made pursuant to the joint research under the LOI. The financial obligations under the LOI will be defined in the CRADA when and if one is executed relating to this program. The term of the LOI has been extended until May 23, 2012. The CRADA is currently under active negotiation and the informal joint research is continuing. If the NCI discontinued

support under the LOI, we would take over completing the development of D-1MT without federal support.

Patents and Trademarks

As noted above, we presently have an extensive portfolio of patents and patent applications (and certain trademark registrations) with the United States Patent and Trademark Office. During the six-months ended June 30, 2011 and June 30, 2010, we incurred expenses related to the filing, maintenance, and initiation of our patent portfolio of $185,000 and $332,000, respectively, for a decrease of 44% for the 2011 period as compared to the same period in 2010. During the fiscal years ending December 31, 2010, 2009 and 2008, these expenses totaled $722,000, $424,000 and $457,000. These expenses increased by $298,000 or 70% for 2010 compared to 2009. We anticipate these expenses will continue to increase into 2012.

OncoRx Acquisition

On June 21, 2005, we acquired all of the stock of OncoRx Corporation for $120,000 in cash and an agreement to deliver 371,720 shares of the our common stock, due in four installments upon successful completion of specified milestones as set forth in the agreement. On July 29, 2010, we entered into an amendment of this stock purchase agreement to reduce the remaining shares payable under the third and fourth installments by accelerating the payment of such installments to the effective date of the amendment. In consideration for our accelerated stock payment, we received a 30% discount on the remaining shares payable, reducing our total shares payable under the agreement by 74,344 shares. Through this acquisition, we acquired the fundamental technology for our IDO pathway inhibitor product candidates, subject to the licensing agreement with LIMR as set forth in "In-Licensing Agreements," above.

BioProtection Systems Corporation

We formed BioProtection Systems Corporation, or BPS, as a subsidiary in 2005 to research, develop and commercialize vaccines to control the spread of emerging lethal viruses and infectious diseases, improve the efficacy of existing vaccines and provide rapid response prophylactic and therapeutic treatment for pathogens that might be targeted to the human population through acts of bioterrorism. At December 31, 2010, we owned shares of BPS Series A common stock representing approximately 64% of BPS's common stock on an as-converted basis, assuming conversion into BPS Series B common stock of all outstanding BPS Series A and BPS Series B preferred stock. On December 1, 2010, we entered into an agreement to acquire all of the noncontrolling interest in BPS, as described in more detail below.

BPS has financed its operations since inception through a combination of stock sales to and loans from the Company, sales of preferred stock to investors, and government contracts. We hold 7,000,000 shares of Series A common stock in BPS. These shares have a preference of $0.10 per share over the BPS Series B common stock, which is held primarily by officers and current and former employees. BPS has raised an aggregate of $3.5 million from the sale of 1,444,721 shares of Series A preferred stock and 555,930 shares of Series B preferred stock. Each share of BPS Series B preferred stock and each share of BPS Series A preferred stock is entitled to receive $1.75 in preference to the shares of common stock upon a liquidation or sale of BPS.

BPS borrowed $2.5 million from us pursuant to a convertible secured promissory note dated September 1, 2009. On December 1, 2010, the note was converted into 1,785,714 shares of BPS Series B preferred stock at a price of $1.40 per share, which represents a 20% discount to the price per share paid by other purchasers of Series B preferred stock. Upon conversion of the note into Series B preferred stock, the Company owned 64% of the common stock assuming the conversion of all Series A and Series B preferred stock into Series B common stock.

BPS has entered into government contracts under which it recognized revenue of $734,000 in 2009, $1.6 million in 2010, and $968,000 in the six months ended June 30, 2011.

Prior to the closing of our acquisition of the minority interest in BPS, BPS maintained an independent stock option plan. Pursuant to its plan, Gordon Link was granted an option to purchase up to 30,000 shares of Series B common stock at an exercise price of $0.10 per share on September 18, 2008 and Ken Lynn was granted an option to purchase up to 30,000 shares of Series B common stock at an exercise price of $0.10 per share on January 20, 2009. The following options to purchase Series B common stock were exercised at $0.05 per share in September 2006 and purchased by the following officers and/or directors of the Company:

Name	Shares
Charles J. Link, Jr., M.D.	1,500,000
Nicholas N. Vahanian, M.D.	400,000
Thomas A. Raffin, M.D.	50,000
Ernest J. Talarico, III	50,000

Dr. Charles Link and Dr. Vahanian delivered notes to BPS in the principal amounts of $75,000 and $20,000, respectively, in September 2006, bearing interest at 5.01% per annum, in order to purchase their shares of BPS Series B common stock under the stock options. As of November 17, 2010, Dr. Link and Dr. Vahanian had repaid the remaining principal and interest owed under the notes. For a more detailed description of these loans, see "Executive and Director Compensation—Indebtedness of Management and Related Agreements." Dr. Link serves as CEO of BPS, and Dr. Vahanian serves as Chief Medical Officer of BPS.

Acquisition of BioProtection Systems Corporation

On January 7, 2011, we acquired all of the minority interest in BPS, by merging a newly-formed subsidiary of ours with BPS, with BPS as the surviving corporation. In connection with this transaction, we issued an aggregate of 276,304 shares of our Series E preferred stock to the former holders of BPS Series B common stock, BPS Series A preferred stock and BPS Series B preferred stock (other than the Company). 221,066 of the shares of our Series E preferred stock were issued to the holders of the BPS Series B common stock, BPS Series A preferred stock and BPS Series B preferred stock upon the closing of the merger. The remaining 55,238 shares of our Series E preferred stock were issued on August 12, 2011, there being no indemnity claims made under the merger agreement. As a result of this transaction, BPS became a wholly-owned subsidiary of the Company and our note was converted into Series B preferred stock of BPS. All options to purchase shares of BPS stock became options to purchase a total of 50,641 shares of our common stock.

In connection with this transaction, shares of our Series E preferred stock were issued to our officers and directors as follows:

Name	Shares of Series E Preferred Stock Issued at Closing of the Merger	Shares of Series E Preferred Stock Issued August 12, 2011
Charles J. Link, Jr., M.D.	41,568	10,392
Nicholas N. Vahanian, M.D.	11,085	2,771
Thomas A. Raffin, M.D.	1,386	346
Ernest J. Talarico, III	1,386	346

In addition, the following directors and officers of NewLink who are also directors or officers of BPS exchanged their BPS stock options for options to acquire shares of NewLink common stock as follows:

Name	Options to Acquire BPS Series B Common Stock	Options to Acquire NewLink Common Stock
Charles J. Link, Jr., M.D.	20,000	2,564
Nicholas N. Vahanian, M.D.	20,000	2,564
Thomas A. Raffin, M.D.	50,000	6,410
Ernest J. Talarico, III	45,000	5,770

The acquisition of BPS was recommended by a special committee of our Board of Directors consisting of Dr. Alexander and Messrs. Lundquist and Saluri, none of whom served as directors of BPS. Dr. Alexander and Mr. Saluri did not own any shares or options in BPS. The David Lundquist Revocable Trust owned shares of Series A Preferred Stock in BPS.

Related Party Transactions

In connection with his employment with us, Mr. Gordon Link was required to relocate from Colorado to Iowa. Pending the sale of his home in Colorado, we agreed to loan him the funds necessary to purchase a new home. He borrowed $500,000 from us on July 28, 2008, which bore interest at the IRS applicable federal rate of 2.42% per annum. As of May 11, 2010, Mr. Link had repaid the principal on the loan and accrued interest of $10,052 was forgiven.

On May 2, 2008, Dr. Charles Link borrowed $225,000 from us at an interest rate of 6% per annum, with all accrued interest and principal due May 1, 2009. On January 22, 2009, we granted Dr. Link a bonus of $78,149, which was applied to the principal due on the loan. On April 24, 2009, Dr. Link repaid the remaining principal and accrued interest on the loan.

On April 24, 2009, Dr. Link borrowed $350,000 from us at an interest rate of 6% per annum, with all accrued interest and principal due May 1, 2011. On May 7, 2010, the note plus accrued interest of $25,170 was forgiven, effective as of July 2, 2010, and an additional bonus of $180,226 was granted to cover the resulting tax liability. To offset the forgiveness and the bonus payment, outstanding options held by Dr. Link to purchase our common stock were modified to increase the aggregate exercise price by an amount equal to the amount of the forgiveness plus the bonus paid, and Dr. Link agreed to exercise the higher priced options prior to exercising any lower priced options to purchase our common stock.

Dr. Vahanian borrowed $31,500 from us at an interest rate of 6.71% per annum. On July 1, 2010, the note plus accrued interest of $10,000 was forgiven, effective as of July 2, 2010, and a bonus of $12,010 was granted to cover the resulting tax liability. To offset the forgiveness and the bonus payment, outstanding options held by Dr. Vahanian to purchase our common stock were modified to increase the aggregate exercise price by an amount equal to the amount of the forgiveness plus the bonus paid, and Dr. Vahanian agreed to exercise the higher priced options prior to exercising any lower priced options to purchase our common stock.

On August 20, 2008, Dr. Vahanian borrowed $125,000 from us at an interest rate of 6% per annum, with all accrued interest and principal due March 1, 2009. On January 22, 2009, we granted Dr. Vahanian a bonus of $55,037, which was applied to the principal due on the loan. On April 24, 2009, Dr. Vahanian repaid the remaining principal and accrued interest on the loan.

Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under Securities and Exchange Commission, or SEC, rules.

Recent Accounting Pronouncements

In April 2009, the Financial Accounting Standards Board, or FASB, issued guidance that expands the fair value disclosures required for financial instruments to interim reporting periods for publicly traded companies, including disclosure of the significant assumptions used to estimate the fair value of financial instruments. We adopted this guidance effective June 30, 2010. The adoption did not impact our financial position or results of operations.

In January 2010, the FASB issued guidance to amend the disclosure requirements related to recurring and nonrecurring fair value measurements. The amended guidance requires disclosure of transfers of assets and liabilities between Level 1 and Level 2 of the fair value measurement hierarchy, including the reasons and the timing of the transfers and information on purchases, sales, issuances, and settlements on a gross basis in the reconciliation of the assets and liabilities measured under Level 3 of the fair value measurement hierarchy. The Company adopted the new disclosure requirements on January 1, 2010, except for the requirement concerning gross presentation of Level 3 activity, which is effective for fiscal years beginning after December 15, 2010. The adoption of the Level 1 and Level 2 disclosure guidance did not have an impact on the Company's consolidated financial position or results of operations.

In recent exposure drafts, the International Accounting Standards Board (IASB) and the FASB proposed a new approach to the accounting for leases. From a lessee's perspective, the exposure drafts propose to abolish the distinction between operating and finance/capital leases. In its place, a right-of-use model would be used. This proposal, as currently written, would require the lessee to recognize an asset for its right to use the underlying leased asset and a liability for its obligation to make lease payments. This would lead to an increase in assets and liabilities for leases currently classified as an operating lease and could also lead to a change in timing as to when the expense is recognized. This exposure draft is not yet finalized.

In June 2011, the FASB issued Accounting Standards Update ASU 2011-05, an amendment of the Codification Topic 220, *Comprehensive Income*. ASU 2011-05 increases the prominence of items reported in other comprehensive income and eliminates the option to present components of other comprehensive income as part of the statement of changes in stockholders' equity. ASU 2011-05 requires that all non-owner changes in stockholders' equity be presented either in a single continuous statement of comprehensive income or in two separate but consecutive statements. ASU 2011-05 will be effective retrospectively for fiscal years, and interim periods within those years, beginning after December 15, 2011, with earlier adoption permitted. ASU 2011-5 is effective for the Company beginning January 1, 2012. The adoption of ASU 2011-05 will not have a material effect on the Company's financial statements.

Internal Control Over Financial Reporting

Assessing our staffing and training procedures to improve our internal control over financial reporting is an ongoing process. We are not currently required to comply with Section 404 of the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, and are therefore not required to make an assessment of the effectiveness of our internal control over financial reporting. Further, our independent registered public accounting firm has not been engaged to express, nor have they expressed, an opinion on the effectiveness of our internal control over financial reporting.

For the year ending December 31, 2011, pursuant to Section 404 of the Sarbanes-Oxley Act, management will be required to deliver a report that assesses the effectiveness of our internal control over financial reporting. Under current SEC rules, our independent registered public accounting firm will also be required to deliver an attestation report on the effectiveness of our internal control over financial reporting beginning with the year ending December 31, 2012, unless we qualify for an exemption as a non-accelerated filer under the Dodd-Frank Wall Street Reform and Consumer Protection Act, enacted on July 21, 2010.

Basic and Diluted Net Loss Attributable to Common Stockholders per Common Share

We calculated net loss per share in accordance with Accounting Standards Codification (ASC) 260, *Earnings per Share*. We have determined that the Series A, Series AA, Series AAA, Series B, Series BB, Series C and Series D preferred stock represent participating securities in accordance with ASC 260. However, since we operate at a loss, and losses are not allocated to the preferred stock, the two class method does not affect our calculation of earnings per share. We had a net loss for all periods presented; accordingly, the inclusion of common stock options and warrants would be anti-dilutive.

Dilutive common stock equivalents would include the dilutive effect of convertible securities, common stock options, warrants for convertible securities and warrants for common stock equivalents. Potentially dilutive common stock equivalents total approximately 13.8 million, 11.4 million, 9.1 million and 5.8 million as of June 30, 2011 and December 31, 2010, 2009 and 2008, respectively. Potentially dilutive common stock equivalents were excluded from the diluted earnings per share denominator for all periods because of their anti-dilutive effect. Therefore, the weighted average shares used to calculate both basic and diluted earnings per share are the same.

Quantitative and Qualitative Disclosures About Market Risks

We are exposed to market risk related to changes in interest rates. As of June 30, 2011 and June 30, 2010, we had cash and cash equivalents and certificates of deposit of $9.8 million and $10.8 million, respectively, consisting of money market funds and bank certificates of deposit. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of United States interest rates, particularly because our investments are in short-term marketable securities. Our certificates of deposit are subject to interest rate risk and will fall in value if market interest rates increase. Due to the short-term duration of our investment portfolio and the low risk profile of our investments, an immediate 10% change in interest rates would not have a material effect on the fair market value of our portfolio. We have the ability to hold our certificates of deposit until maturity, and therefore we would not expect our operating results or cash flows to be affected to any significant degree by the effect of a change in market interest rates on our investments. We do not currently have any auction rate securities.

Our long-term debt and our capital lease obligations bear interest at fixed rates. Any change in interest rates would have an immaterial (or no) impact on our financial statements.

BUSINESS

Overview

We are a biopharmaceutical company focused on discovering, developing and commercializing novel immunotherapeutic products to improve cancer treatment options for patients and physicians. Our portfolio includes biologic and small-molecule immunotherapy product candidates intended to treat a wide range of oncology indications. Our lead product candidate, HyperAcute Pancreas cancer immunotherapy, or HyperAcute Pancreas, is being studied in a Phase 3 clinical trial in surgically-resected pancreatic cancer patients that is being performed under a Special Protocol Assessment, or SPA, with the United States Food and Drug Administration, or FDA. We initiated this trial based on encouraging interim Phase 2 data that suggests improvement in both disease-free and overall survival. We have also received Fast Track and Orphan Drug designations from the FDA for this product candidate for the adjuvant treatment of surgically-resected pancreatic cancer. We have three additional product candidates in clinical development, including our HyperAcute Lung cancer immunotherapy, or HyperAcute Lung, which is being studied in a Phase 1/2 clinical trial conducted at the National Cancer Institute, or NCI, and our HyperAcute Melanoma cancer immunotherapy, or HyperAcute Melanoma, which is being studied in an investigator-initiated Phase 2 clinical trial. To date, our HyperAcute product candidates have been dosed in more than 200 cancer patients either as a monotherapy or in combination with other therapies and have demonstrated a favorable safety profile.

Our HyperAcute product candidates are based on our proprietary HyperAcute immunotherapy technology, which is designed to stimulate the human immune system. Our HyperAcute product candidates use allogeneic (non-patient specific) cells from previously established cell lines rather than cells derived from the patient. We believe our approach enables a simpler, more consistent and scalable manufacturing process than therapies based on patient specific tissues or cells. Our product candidates are designed with an objective to harness multiple components of the innate immune system to combat cancer, either as a monotherapy or in combination with current treatment regimens, without incremental toxicity. We are also conducting small-molecule based research and development with an aim to produce new drugs capable of breaking the immune system's tolerance to cancer through inhibition of the indoleamine-(2,3)-dioxygenase, or IDO, pathway. We are currently studying our lead IDO pathway inhibitor product candidate, d-1-methyltryptophan, or D-1MT, in collaboration with the NCI, in two Phase 1B/2 clinical trials. We believe that our immunotherapeutic technologies will enable us to discover, develop and commercialize multiple product candidates that can be used either alone or in combination with current therapies to treat cancer.

Our HyperAcute Cancer Immunotherapy Product Candidates

We initiated our Phase 3 clinical trial for HyperAcute Pancreas in May 2010. We expect to evaluate approximately 700 surgically-resected pancreatic cancer patients in this clinical trial and have enrolled 200 patients at 55 clinical sites in the United States as of October 25, 2011. We plan to complete the first and second interim analyses of data from our Phase 3 clinical trial for HyperAcute Pancreas in late 2012 and 2013, respectively, and to complete patient enrollment in 2013.

The interim data from our fully-enrolled 70-patient Phase 2 pancreatic cancer clinical trial suggests that HyperAcute Pancreas may improve disease-free and overall survival when given in addition to standard-of-care treatment to patients following complete resection of detectable disease. As of May 10, 2011, all patients had reached at least 12 months of follow-up with a median follow-up period of approximately 21 months. The study met its primary objective with an established median disease-free survival of 14.2 months. The most recent analyses of the secondary endpoint of overall survival showed one-year overall survival to be 86%. As of May 10, 2011, interim efficacy data for the 26 patients receiving high dose therapy demonstrated median disease-free survival of 15.3 months and a one-year overall survival rate of 96%. To date, HyperAcute Pancreas has demonstrated good tolerability and a favorable

safety profile. The most common treatment-related adverse reactions (reported by at least 5% of patients) for HyperAcute Pancreas were injection site reaction (58%), fatigue (20%), induration (17%), nausea (8%), pruritus (7%), fever (7%), urticaria (6%), anemia (6%) and decreased white blood cell count (6%). There have been no reported grade four adverse events attributed to HyperAcute Pancreas, and less than 8% of the patients treated with HyperAcute Pancreas have experienced a grade three serious adverse event characterized by the investigators as possibly or probably attributable to our product candidate. The NCI's common terminology criteria, or CTC, categorizes adverse events into five grades, where grade one is mild, grade two is moderate, grade three is severe, grade four is life-threatening and grade five is death.

Our second most advanced product candidate, HyperAcute Lung, is in a Phase 1/2 clinical trial that is fully enrolled with 54 patients for the treatment of refractory, recurrent or metastatic nonresectable non-small cell lung cancer, or NSCLC. We performed an interim analysis of the 28 patients evaluated in the Phase 2 portion of the study on December 9, 2010, which showed median overall survival of 11.3 months and a one-year survival rate of 46%. Based on our analysis of data from comparable precedent clinical trials of similar patients, we would have expected a median overall survival of approximately eight months. In an interim analysis of 45 patients, HyperAcute Lung demonstrated a favorable safety profile and no dose limiting toxicities. The most common treatment-related adverse reactions (reported by at least 5% of patients) for HyperAcute Lung were injection site reaction (92%), induration (56%), fatigue (25%), urticaria (12%), anemia (7%), pruritus (7%), lymphopenia (7%), elevated serum amylase (5%), edema (5%), skin pain (5%) and dyspnea (5%). There have been no reported CTC grade four adverse events attributed to HyperAcute Lung and less than 13% of the patients treated with HyperAcute Lung have experienced a CTC grade three serious adverse event characterized by the investigators as possibly or probably attributable to our product candidate. This trial is being conducted at the NCI. We are currently evaluating alternative designs for a Phase 2B/3 clinical trial in NSCLC with an adaptive design, which we plan to initiate in the first half of 2012 and on which we plan to complete the first interim analysis in 2013.

Our HyperAcute Melanoma product candidate is being studied in an investigator-initiated, fully enrolled 25 patient Phase 2 clinical trial for the treatment of advanced melanoma in combination with an eight-week course of PEG-Intron, a man-made immune modulator. As of September 8, 2011, interim analysis shows encouraging results, with all of the patients developing low levels of autoimmune antibodies and four out of 25 patients developing vitiligo. Vitiligo is an autoimmune condition in which the patient's immune system attacks melanoctyes in the skin, which are the cells that may turn into melanoma cancer cells. Vitiligo has previously been correlated with a favorable response to therapy in other melanoma immunotherapy studies. To date, HyperAcute Melanoma has demonstrated good tolerability and a favorable safety profile, with no systemic, drug-related serious adverse events characterized by the investigators as possibly or probably attributable to our product candidate. The most common non-serious adverse events reported were local injection site skin reactions, induration, diarrhea and nausea. We anticipate announcing results of the completed clinical trial in the second half of 2011. We anticipate initiating a Phase 2B clinical trial in melanoma in 2012.

Our HyperAcute Cancer Immunotherapy Technology

We believe our HyperAcute immunotherapies operate by exploiting a natural barrier present in humans that protects against infection being transmitted from other mammals. This barrier is related to the enzyme, alpha (1,3) galactosyl transferase, or a-GT, which is expressed in the cells of lower mammals but not present in human or other Old World primate cells. The presence of this enzyme results in the expression of a non-human form of carbohydrate called alpha (1,3) galactosyl carbohydrates, or a-Gal, on the surface of affected cells. Introducing a-Gal-expressing cells to the human or primate immune system activates an immune response from antibodies against a-Gal. Antibodies directed against the a-Gal epitope are potentially the most abundant natural antibody in humans and represent approximately 1% of circulating human antibodies.

Our HyperAcute immunotherapy product candidates are composed of irradiated, live, allogeneic human cancer cells modified to express the gene that makes a-Gal epitopes. This exposure to a-Gal stimulates the human immune system to attack and destroy the immunotherapy cells on which a-Gal is present by activating complement, an important component of the immune system that is capable of cell destruction. After destruction, we believe the resulting cellular fragments bound by anti a-Gal antibodies are processed by the immune system to elicit an enhanced multi-faceted immune response to tumor-associated antigens, or TAAs, common to both the immunotherapy and the patient's tumor cells.

We believe our proprietary HyperAcute immunotherapy technology offers several advantages over prior immunotherapy approaches. Specifically, our HyperAcute immunotherapy technology is designed to:

- harness the human body's innate immune response to a-Gal to fight cancer;
- utilize a complex targeted approach that is multi-faceted and involves combined antibody-mediated and multi-cellular responses; and
- use allogeneic (non-patient specific) cells from previously-established cell lines, which enables a simpler, more consistent and scalable manufacturing process than therapies based on autologous (patient specific) tissues or cells.

Our IDO Pathway Inhibitor Product Candidate

In addition to our HyperAcute product candidates, we are developing D-1MT, a small-molecule, orally bioavailable product candidate designed to inhibit the IDO pathway. In preclinical models, IDO pathway inhibitors have shown anti-tumor effects in combination with radiotherapy, chemotherapy, targeted therapy or immunotherapy. Through our collaboration with the NCI, we are studying D-1MT in two Phase 1B/2 safety and efficacy clinical trials in various chemotherapy and immunotherapy combinations. One clinical trial combines D-1MT with an Ad-p53 autologous dendritic cell vaccine for solid malignancies with p53 mutations, such as lung, breast and colon cancers. The other clinical trial involves the combined use of D-1MT and Taxotere for patients with advanced stage solid tumors for which Taxotere is the standard-of-care treatment, such as metastatic breast, prostate, ovarian and lung cancers. We anticipate announcing preliminary data from these clinical trials by the end of 2011.

Investment Highlights

We are a biopharmaceutical company with a pipeline of product candidates based on our proprietary immunotherapeutic technologies that are intended to address significant unmet medical needs in the treatment of cancer. We believe the following are the key attributes of our company:

Our lead product candidate, HyperAcute Pancreas, is in a Phase 3 clinical trial based on encouraging interim Phase 2 survival data in surgically-resected pancreatic cancer patients. We are currently enrolling patients in a Phase 3 clinical trial of our lead product candidate, HyperAcute Pancreas, which is being performed under an SPA with the FDA. If approved, we believe the addition of HyperAcute Pancreas as an adjuvant therapy has the potential to be an important component of treatment for surgically-resected pancreatic cancer, an indication with high mortality rates and limited treatment alternatives. The Phase 2 clinical trial for HyperAcute Pancreas met its primary objective with an established median disease-free survival of 14.2 months. The most recent analyses of the secondary endpoint of overall survival showed one-year overall survival to be 86%. As of May 10, 2011, interim efficacy data for the 26 patients receiving high dose HyperAcute Pancreas immunotherapy demonstrated a median disease-free survival of 15.3 months and a one-year overall survival rate of 96%. Median overall survival has not yet been reached for this population. We have also received Fast Track and Orphan Drug designations for this product candidate.

Our novel HyperAcute immunotherapy technology has a wide range of anti-cancer applications including two additional product candidates, HyperAcute Lung and HyperAcute Melanoma, in active clinical development. We believe our technology is broadly applicable to many types of solid tumors. We have fully enrolled both a 54-patient Phase 1/2 clinical trial for our HyperAcute Lung product candidate in NSCLC at the NCI as well as an investigator-initiated, 25-patient Phase 2 clinical trial for our HyperAcute Melanoma product candidate in advanced melanoma. In addition, we are evaluating our HyperAcute technology in preclinical models for the treatment of other cancer types. To date, our HyperAcute product candidates have been dosed in more than 200 cancer patients and have demonstrated good tolerability and a favorable safety profile.

We have in-house manufacturing capabilities for our HyperAcute product candidates that we believe are sufficient to support clinical development and initial commercialization of HyperAcute Pancreas in the United States. Our HyperAcute product candidates rely on established cell lines and can be produced at our current facility in Ames, Iowa through a cost-effective and scalable production process. Our HyperAcute product candidates do not require patients to donate cellular material, which permits an easier scale-up of the manufacturing process as compared to autologous therapies. We believe that our current and planned manufacturing facilities will be adequate to supply the initial commercial quantities of HyperAcute Pancreas, if approved, in the United States.

Our lead IDO pathway inhibitor product candidate is in clinical development in combination with multiple alternative therapies, including Taxotere. Our lead IDO pathway inhibitor drug candidate is D-1MT, which is currently being evaluated in two Phase 1B/2 clinical trials co-sponsored by the NCI. The first clinical trial combines D-1MT with an Ad-p53 autologous dendritic cell vaccine for solid malignancies with p53 mutations, such as lung, breast and colon cancers. The second clinical trial combines D-1MT with Taxotere for patients with advanced stage solid tumors for which Taxotere is the standard-of-care, such as metastatic breast, prostate, ovarian and lung cancers. D-1MT has shown favorable drug-like properties and has demonstrated anti-tumor activity in animal models in combination with traditional chemotherapy. We are also conducting preclinical research to identify new IDO pathway inhibitors.

We have an extensive intellectual property portfolio. We own or license 69 issued/granted patents, including those validated internationally, and 61 pending United States and foreign patent applications covering six patent families relating to HyperAcute technology, 19 patent families relating to IDO inhibitor immune response modulators and five other patent families not related to either our HyperAcute technology or IDO product candidates. We believe the intellectual property pertaining to our HyperAcute technology offers broad protection in this field. In addition, we believe we have broad protection pertaining to immune response modulators, with market exclusivity for the use of D-1MT to treat cancer until 2027 in the United States.

Our Strategy

Our strategy is to discover, develop and commercialize immunotherapeutic products for the treatment of cancer where the needs of patients are unmet by current therapies. The critical components of our business strategy include:

Complete the Phase 3 clinical trial of HyperAcute Pancreas, our lead immunotherapy product candidate, and gain regulatory approval. HyperAcute Pancreas is currently in Phase 3 clinical development in patients with surgically-resected pancreatic cancer. This clinical trial, which was initiated in May 2010, is an approximately 700-patient randomized clinical trial being performed under an SPA with the FDA. We have enrolled 200 patients at 55 clinical sites in the United States as of October 25, 2011. We plan to complete the first and second interim analyses in late 2012 and 2013, respectively, and to complete patient enrollment in 2013.

Develop sales and marketing infrastructure to commercialize our HyperAcute Pancreas product candidate in the United States and establish commercial partnerships in other regions. We currently own or exclusively license all rights to our HyperAcute product candidates. We intend to commercialize some or all of our HyperAcute product candidates, including HyperAcute Pancreas, in the United States by building an initial specialty sales force of approximately 50 to 100 representatives with a focused marketing effort directed to medical and surgical oncologists. We intend to seek collaborations to develop and commercialize our HyperAcute product candidates outside of the United States, and may seek collaborations for selected indications within the United States.

Advance our HyperAcute Lung and HyperAcute Melanoma product candidates through additional clinical trials. Based on the clinical trial data generated to date by HyperAcute Lung and HyperAcute Melanoma, we plan to pursue further clinical development of these product candidates. We have convened a panel of thought leaders in lung cancer to assist us in planning a Phase 2B/3 clinical trial for NSCLC with an adaptive design, which we plan to initiate during the first half of 2012. We are also currently working to develop clinical trial designs to further study the efficacy of HyperAcute Melanoma either as a stand-alone or combination therapy and we plan to initiate a Phase 2B clinical trial in 2012.

Expand our manufacturing capabilities for our HyperAcute product candidates. We manufacture HyperAcute Pancreas at our facility in Ames, Iowa and believe our current and planned manufacturing facilities will be adequate to support the initial U.S. commercialization efforts for that product. We intend to maintain control over manufacturing for our HyperAcute product candidates for the U.S. market and may need to expand our manufacturing capacity in the future if more than one of our products are approved.

Investigate our HyperAcute technology in additional oncology indications. We have developed a process to discover and develop new tumor-specific HyperAcute cancer immunotherapies. In addition to our lead programs in pancreatic cancer, lung cancer and melanoma, we intend to pursue clinical development of this technology in other tumor types.

Develop and commercialize D-1MT, a small-molecule product candidate, in cancer. In collaboration with the NCI, we have initiated two Phase 1B/2 clinical trials to evaluate use of D-1MT in combination with other approved therapies for solid tumor indications. We also plan to initiate multiple clinical trials of our D-1MT product candidate in combination with other approved and development-stage cancer therapies, including immunotherapies such as our HyperAcute Lung and HyperAcute Melanoma product candidates.

Cancer Market Overview

Cancer is the second-leading cause of death in the United States with an estimated 569,000 deaths in 2010 according to the American Cancer Society. Despite a number of advancements in the diagnosis and treatment of cancer over the past decade, overall five-year survival rates from all cancer types is 68% for the period spanning 1999-2005 according to the American Cancer Society.

Cancer is characterized by abnormal cells that grow and proliferate, forming masses called tumors. Under certain circumstances, these proliferating cells can metastasize, or spread, throughout the body and produce deposits of tumor cells called metastases. As the tumors grow, they may cause tissue and organ failure and, ultimately, death. To be effective, cancer therapies must eliminate or control the growth of the cancer.

The specialized cells of the immune system recognize specific chemical structures called antigens. Generally, foreign antigens trigger an immune response that results in the removal of disease-causing agents from the body. Cancer cells, however, frequently display antigens that are also found on normal cells. The immune system may not be able to distinguish between tumors and normal cells and, thus, may

be unable to mount a strong anti-cancer response. Tumors also have various defense mechanisms that may prevent the immune system from fully activating.

Current therapies, such as surgery, radiation, hormone treatments and chemotherapy, do not address this evasive characteristic of cancer and may not have the desired therapeutic effect. Active immunotherapies stimulate the immune system, the body's natural mechanism for fighting disease, and may overcome some of the limitations of current standard-of-care cancer therapies.

Limitations of Current Cancer Therapies

We believe current cancer treatment alternatives suffer from a number of limitations that impair their effectiveness in improving patient survival and overall quality of life including:

- *Toxicity.* Chemotherapeutic agents are highly toxic to the human body and often cause a variety of side effects, which may include nausea and vomiting, bleeding, anemia and mucositis. Targeted therapeutics may have fewer systemic toxicities, but still tend to have off-target effects such as gastrointestinal inflammation, severe skin reactions and breathing difficulties. These effects limit a patient's ability to tolerate treatment thereby depriving the patient of the potential benefit of additional treatments or treatment combinations that might otherwise destroy or prevent the growth of cancer cells. Once educated as to the limited efficacy, limited increased survival and potentially significant toxicity of existing treatment alternatives, patients diagnosed with terminal cancer often choose to limit or forego therapy in order to avoid further compromising their quality of life. Patients with advanced stage cancer often cannot tolerate cancer therapy, and certain therapies have been shown to hasten death in some cases as the patient's health deteriorates.
- *Mechanism of action.* While many current therapeutic approaches may be effective against a particular target, the overall impact of these therapies on treating cancer is limited because the abundance and diversity of tumor cells are believed to enable cancers to adapt and become resistant to these treatments over time resulting in reduced longer-term efficacy.
- *Short-term approach.* Incremental survival benefit is the primary objective of many currently marketed and development-stage cancer therapeutics. In general, many drugs show modest impact on overall survival or only affect progression-free survival. Other than surgical tumor removal, curative intent is often not a focus or realistic potential outcome of many current cancer therapies.
- *Immune system suppression.* Cancer is difficult to treat in part because cancer cells use sophisticated strategies to evade the immune system. Current approaches to cancer treatment generally involve introduction of an agent, such as a chemical, an antibody or radiation. These agents cause cell apoptosis (programmed cell death) or inhibit the proliferation of all cells, including immune cells, thereby indirectly suppressing the immune system. A weakened immune system not only further inhibits the body's natural ability to fight cancer, but also causes patients to become more susceptible to infections and other diseases.

Our Potential Solution: HyperAcute Immunotherapy

We believe our HyperAcute immunotherapy has the following advantages over existing therapies, which may enable us to develop commercial products that extend both survival and quality of life for cancer patients:

- *Robust, innate immune response.* Our HyperAcute immunotherapy technology is designed to fight cancer by activating the human body's naturally protective and rapid immune response to the a-Gal carbohydrate.
- *Complex, multi-targeted approach.* We believe our HyperAcute immunotherapy technology attacks cancer through several mechanisms. Initially, by introducing allogeneic, whole cancer cells incorporating a-Gal to the body, our HyperAcute immunotherapy is designed to teach the immune system to attack specific cancer cells, such as pancreas, lung or melanoma cancer cells, with both

antibody mediated and cellular immune responses. Secondly, by using multiple whole cancer cell lines, our HyperAcute immunotherapy targets multiple tumor proteins simultaneously, which we believe increases the probability of stimulating an effective immune response to the heterogeneous cells that are present in cancer.

- *Favorable safety profile.* We have not observed significant additional systemic toxicities when HyperAcute immunotherapy has been added to chemotherapy regimens. There have been no CTC grade four serious adverse events attributed to HyperAcute Pancreas, HyperAcute Lung or HyperAcute Melanoma. Our HyperAcute immunotherapy technology is designed to stimulate a natural immune response to specific cancer cells with the objective to decrease the risks of off-target effects. Data generated to date suggests that patients can tolerate the addition of our HyperAcute product candidates to standard chemotherapy and radiation therapy.
- *Broad applicability.* We believe that the novel mechanism of action, good tolerability and favorable safety profile will enable our HyperAcute product candidates to have potential benefits across multiple disease stages and tumor types and in combination with other therapies. Our HyperAcute immunotherapy technology can be targeted to additional specific tumor types by modifying cells from the cancer type of interest.
- *Potential application as single agent adjuvant therapy.* We believe many patients who are too ill to tolerate chemotherapy due to the associated toxicities may be able to benefit from our HyperAcute product candidates. We also believe that the safety profile of our HyperAcute immunotherapies may make them suitable for use in patients with low risk of recurrence or metastasis who choose not to receive chemotherapy due to its toxicity relative to the potential therapeutic benefits.

Our Product Pipeline

The chart below summarizes our current product candidates and their stages of development.

Product Candidate	Phase of Development	Indication	Upcoming Milestone
HyperAcute Immunotherapy Technology			
HyperAcute Pancreas	Phase 3	Adjuvant to standard-of-care in surgically-resected pancreatic cancer	End of 2012: 1st interim analysis 2013: 2nd interim analysis 2013: Complete enrollment
HyperAcute Lung	Phase 1/2 enrollment complete	Advanced NSCLC	1st half 2012: Initiate Phase 2B/3 clinical trial
HyperAcute Melanoma	Phase 2 enrollment complete(1)	Advanced melanoma in combination with PEG-Intron	2013: 1st interim analysis 2nd half 2011: Update Phase 2 clinical trial results 2012: Initiate Phase 2B clinical trial
Additional HyperAcute cancer immunotherapies	Lead optimization	To be determined	2012: Initiate Phase 1 clinical trial
IDO Pathway Inhibitor Technology			
D-1MT	Phase 1B/2(2)	2nd-line metastatic solid tumors in combination with p53 adenovirus	End of 2011: Announce preliminary data
	Phase 1B/2(2)	2nd-line metastatic solid tumors in combination with Taxotere	End of 2011: Announce preliminary data
Additional IDO Pathway Inhibitor Candidates	Lead optimization	To be determined	To be determined

(1) Investigator-initiated

(2) Co-sponsored by the National Cancer Institute

Our HyperAcute Pancreas Cancer Immunotherapy Product Candidate

Our lead product candidate, HyperAcute Pancreas, is in a Phase 3 clinical trial being performed under an SPA with the FDA. We have also received Fast Track and Orphan Drug designations for this product candidate for the adjuvant treatment of surgically-resected pancreatic cancer. HyperAcute Pancreas consists of equal doses of two separate allogeneic pancreatic cancer cell lines engineered to express a-Gal. Although cells making up naturally occurring pancreatic tumors in patients do not express a-Gal, the tumor cells share other molecules, called tumor-specific or tumor-associated antigens, with the genetically altered pancreatic cancer cells contained in HyperAcute Pancreas. We believe the molecules that are shared by both the patient's tumor cells and HyperAcute Pancreas immunotherapy cells allow the antibodies and immune cells that develop against the HyperAcute Pancreas immunotherapy cells to target and destroy the patient's own tumor cells as well. Each of the modified cell lines is grown in large cultures, harvested, irradiated and packaged. Approximately 150 million cells of each HyperAcute Pancreas cell line are given by intradermal injection with each treatment. A series of up to 12 treatments using both cell lines over a period of six months was used in our Phase 2 clinical trial. In our Phase 3 protocol, we are adding an additional series of six maintenance treatments, to be given during the next six months.

Market Opportunity

The American Cancer Society estimates that approximately 43,000 new cases of pancreatic cancer were diagnosed in the United States in 2010. Pancreatic cancer has generally been recognized as an aggressive form of cancer with non-specific initial symptoms, making it difficult to diagnose at an early stage. Due to the difficulty in diagnosis and the aggressive nature of this cancer, the National Cancer Institute estimates a 96% mortality rate is associated with this disease, and the American Cancer Society estimates one-year and five-year overall survival rates of about 24% and 5%, respectively.

Pancreatic cancer can generally be divided into three broad categories: (1) local disease, in which the cancer is confined to the pancreas and can be removed surgically, which is called resection; (2) locally advanced disease, in which the cancer has spread locally and may or may not be eligible for resection because it has invaded tissues that should not be removed, such as key nerves and arteries; and (3) metastatic disease, in which the tumor has spread beyond the region of the pancreas.

According to eMedicine, a healthcare reference website run by WebMD containing peer-reviewed articles on diseases and medical topics, approximately 20% of pancreatic cancer patients in the United States are eligible for resection at initial diagnosis. These earlier stage, resected patients have significantly better prognoses than patients with later stage disease since they tend to have better nutritional and immune status and significantly lower amounts of micro-metastatic and residual disease. A study published in the *Journal of the American Medical Association*, or *JAMA*, in March 2008 showed that resection followed by chemotherapy or chemoradiotherapy, known as adjuvant therapy, extends median survival to approximately 18 months. We believe the addition of HyperAcute Pancreas to adjuvant standard-of-care has the potential to improve median disease-free survival and overall survival in resected pancreatic cancer patients.

Patients with locally advanced nonresectable disease represent an additional 30% of patients at diagnosis and are generally treated with chemotherapy or chemoradiotherapy. We plan to initiate a clinical trial to test the safety and efficacy of HyperAcute Pancreas in locally advanced, nonresectable pancreatic cancer patients. We believe patients with locally advanced nonresectable disease may also benefit from the addition of HyperAcute Pancreas to standard-of-care.

Clinical Trials

Phase 3 Clinical Trial

In May 2010, we initiated our Phase 3 clinical trial for HyperAcute Pancreas. This trial is an open-label, randomized, controlled, multi-center Phase 3 clinical trial, evaluating approximately 700 Stage I and Stage II surgically-resected pancreatic cancer patients, according to the American Joint Committee on

Cancer classification system, or AJCC system, who have no detectable disease by a CT scan. The primary endpoint of the clinical trial is overall survival, with secondary endpoints of disease-free survival, safety, toxicity and immunological responses. Based on our discussions with the FDA, we plan to enroll up to 722 patients and believe this number of patients will enable us to demonstrate statistically significant improvement in median overall survival at the end of the trial. Additional patients will be accrued, if needed, to maintain adequate numbers for statistical significance. As of October 25, 2011, 200 patients had been enrolled at 55 U.S. based clinical sites. We are actively recruiting additional major medical centers, with high volume of pancreatic cancer surgeries, to participate in this clinical trial.

Current adjuvant standard-of-care regimens for post-resection pancreatic cancer patients include gemcitabine alone or a combination of gemcitabine plus 5-FU based chemoradiotherapy. In our Phase 3 clinical trial, 50% of the patients will receive standard adjuvant therapy with HyperAcute Pancreas and 50% will receive standard adjuvant therapy without HyperAcute Pancreas. Data from our Phase 2 clinical trial demonstrated a statistically significant improvement in disease-free survival at one year for the high dose (300 million cells) arm of the study. Therefore, we selected the 300 million cell dose as the treatment dose for our Phase 3 clinical trial. In addition, we reasoned empirically that considering the observed dose response, higher doses of treatment might provide further benefit. We therefore modified the treatment schedule for all patients receiving HyperAcute Pancreas to increase the number of immunotherapy treatments from 12 to up to 18 treatments given every two weeks over a period of approximately six months followed by six monthly injections. Patients in the study are being monitored with periodic imaging to check for recurrences for at least five years after surgery or until death occurs.

The clinical trial includes interim evaluations for both overall survival and disease-free survival when approximately one-half of the expected number of deaths have occurred and, if needed, again when approximately three-quarters of the expected number of deaths have occurred. Our SPA specifies that if results show a highly statistically significant effect on survival we may stop the trial and apply for marketing approval. Our statistical modeling indicates that a 45% or 30% improvement in overall survival, relative to controls through the period when one-half or three-quarters, respectively, of the expected number of deaths have occurred, would be highly statistically significant. Overall survival refers to the duration of life after surgery. Disease-free survival refers to the period of time after surgical resection when no evidence of disease is detected.

When initially diagnosed, patients eligible for our Phase 3 clinical trials have localized tumors that can potentially be completely removed based upon strict imaging criteria. In addition, the patients are generally strong enough to survive a major surgical procedure that involves an inherent significant risk of death. Patients are not eligible to participate in this trial until pathology and post-operative imaging studies indicate that they are without clinical evidence of residual tumor as observed by a CT scan. As a result, patients admitted to the trials have minimal residual tumor burden and possess generally intact immune systems, characteristics that we believe improve the likelihood of meaningful response.

Phase 2 Clinical Trial

We have completed enrollment of a 70-patient open-label, two-armed Phase 2 clinical trial in which HyperAcute Pancreas was given in doses of either 100 million cells or 300 million cells approximately twice monthly for six months in combination with the standard-of-care treatment regimen, which consisted of gemcitabine chemotherapy plus 5-FU based chemoradiotherapy. We enrolled patients for this clinical trial at 16 different sites including some of the leading cancer centers in the United States. Patients in this clinical trial had been diagnosed with Stage I and Stage II pancreatic adenocarcinoma, according to the AJCC system, and subsequently underwent surgical resection to remove all visible tumors with curative intent. There were no other exclusion criteria relative to pre-operative disease status. The primary endpoint of this clinical trial was to evaluate disease-free survival with secondary endpoints of overall survival and toxicity. We enrolled the final patient in March 2010.

We designed this clinical trial to add HyperAcute Pancreas immunotherapy to the standard-of-care treatment regimen defined in RTOG 97-04 (Regine et al., 2008) as adjuvant 5-FU chemoradiotherapy plus gemcitabine and to perform a dose-finding analysis of cohorts receiving bi-weekly HyperAcute Pancreas doses of 100 million or 300 million cells. Our objectives are to demonstrate a clinical benefit by addition of HyperAcute Pancreas to RTOG 97-04 standard adjuvant therapy alone and to determine if a superior dosing regimen can be identified.

We enrolled 44 patients in the 100 million cell dose cohort, or low dose group, and 26 patients in the 300 million cell dose cohort, or high dose group. The baseline patient characteristics of both cohorts were similar in terms of age, gender and disease state.

As of May 10, 2011, all patients had reached at least 12 months of follow-up with a median follow-up period of approximately 21 months. To date, HyperAcute Pancreas has demonstrated good tolerability and a favorable safety profile. There have been no reported CTC grade four adverse events attributed to HyperAcute Pancreas, and less than 8% of the patients treated with HyperAcute Pancreas have experienced a CTC grade three serious adverse event characterized by the investigators as possibly or probably attributable to the product candidate. The most common non-serious adverse events observed were fatigue, local injection site skin reactions and injection site pain. The nature and frequency of the adverse events observed in this clinical trial are consistent with the adverse events observed in all clinical trials for HyperAcute Pancreas. When HyperAcute Pancreas was given in combination with gemcitabine and 5-FU based chemoradiotherapy, approximately 4% of patients experienced CTC grade three lymphopenia, 3% of patients experienced CTC grade three pain, less than 2% of patients experienced CTC grade three pancreatitis and less than 2% experienced CTC grade three fatigue, adverse events possibly or in the case of fatigue, probably attributable to our product candidate according to the principal investigators.

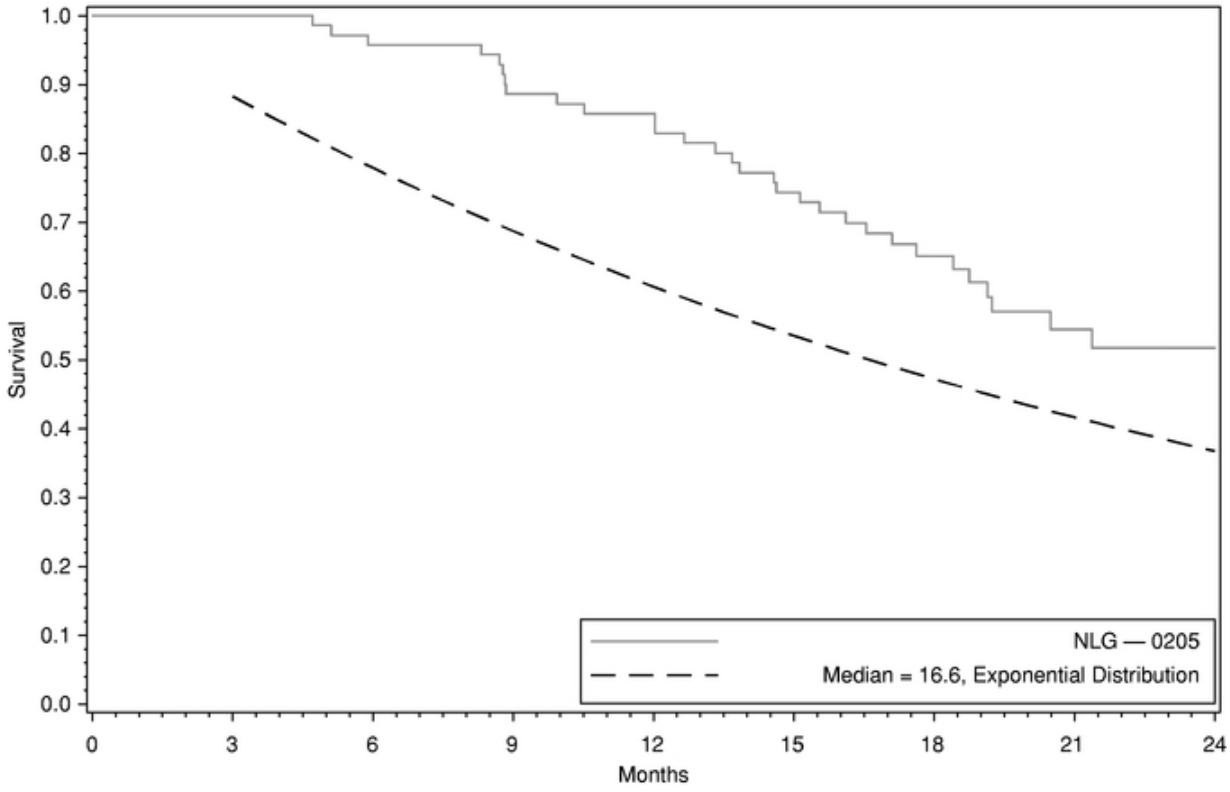
The study met its primary objective with an established median disease-free survival of 14.2 months. There was a statistically significant difference in disease-free survival at one year between the high and low dose groups (p=.02). The most recent analyses of the secondary endpoint of overall survival showed one-year overall survival to be 86% and a Kaplan-Meier estimate predicts a median overall survival at 24.4 months. Data from the high and low dose HyperAcute Pancreas treatment groups demonstrated a one-year disease-free survival of 81% and 52%, and a one-year overall survival rate of 96% and 80% for the respective cohorts. These results compare favorably to the outcomes of prior clinical trials in surgically resected pancreatic cancer patients. Of these clinical trials, we believe the study known as RTOG 97-04, a 538-patient (451 evaluable patients) clinical trial conducted by the Radiation Therapy Oncology Group, is the most comparable with respect to baseline patient characteristics and treatment regimen even though our trial population had a higher frequency of lymphatic node invasion (68% vs. 81% in our trial). One treatment arm in RTOG 97-04 received gemcitabine chemotherapy plus 5-FU based chemoradiotherapy, which is the current standard-of-care treatment regimen, and we believe this treatment arm provides the best comparison to our NLG-0205 study. In RTOG 97-04, the 221 patients in the standard-of-care treatment arm had one-year disease-free survival of less than 50% and a one-year overall survival rate of 69% based on Kaplan-Meier analysis.

Kaplan-Meier Analysis

Kaplan-Meier analysis is a statistical method of predicting survival rates. As shown in the graph below, the Kaplan-Meier-calculated overall survival in our Phase 2 clinical trial, referred to as NLG-0205, compares favorably to data from RTOG 97-04. The dotted line depicts overall survival of successfully resected pancreatic cancer patients derived from the published data of RTOG 97-04 in which the one year survival rate was 69% for the 221 patients receiving gemcitabine plus 5-FU based chemoradiotherapy. The solid line represents the Kaplan-Meier estimated survival curve for patients in our Phase 2 clinical trial as of May 10, 2011. At 12 months after surgery overall survival for the combined patient population in NLG-0205 is 86%. The Kaplan-Meier estimate of median overall survival is 24.4 months for the combined patient population in NLG-0205 versus 16.6 months predicted by the Memorial Sloan Kettering Cancer

Center nomogram (Brennan et al., 2005), as discussed below, of our actual patient characteristics and 18.8 months for RTOG 97-04 patients (based on 221 patients receiving gemcitabine plus 5-FU based chemoradiotherapy).

Kaplan-Meier Plot of Overall Survival for NLG-0205 Versus Expected Distribution



Data from the NLG-0205 study has been stratified into high dose and low dose groups on the basis of statistically significant differential responses to HyperAcute Pancreas immunotherapy. We believe 300 million cells is the largest practically attainable treatment dose based on clinician observation; however, we have tested a 100 million cell dose as a means to reduce the number of injections needed during therapy. The patterns of response in patients treated with these two doses have become distinct during the study.

Patients in the high dose group of NLG-0205 demonstrated an improved disease-free survival compared to patients in the low dose group or the current standard-of-care RTOG 97-04 chemoradiotherapy protocol alone. The median disease-free survival in NLG-0205 high dose patients is projected to be 15.3 months based on data as of September 1, 2011 versus an estimated median disease-free survival of 11.4 months for the 221 patients receiving gemcitabine plus 5-FU based chemoradiotherapy in RTOG 97-04. The apparent difference in disease progression is most prominent at earlier time points during active immunotherapy and persists beyond the completion of treatment.

The maturing data from NLG-0205 do not yet allow calculation of median overall survival but demonstrate a statistically significant difference between high and low dose groups in terms of disease-free survival (p=0.02). In addition, an increased overall survival at one year for 300 million cell dose patients is approaching (but has not yet achieved) the level of statistical significance observed compared to low dose patients (96% vs. 80%, p=0.053). These data demonstrate that patients in the high dose group have both a higher disease-free survival and a trend towards higher overall survival at one year compared to patients in the low dose group. Notably, patients treated at both dose levels in NLG-0205 compare favorably to the

63% one-year overall survival calculated by the Memorial Sloan Kettering Cancer Center nomogram (Brennan et al., 2005), as discussed below, of the NLG-0205 patient population. Furthermore, both dose levels in NLG-0205 compare favorably to the 69% one-year overall survival observed for the 221 patients who received gemcitabine plus 5-FU based chemoradiotherapy in the RTOG 97-04 study.

	Disease-Free Survival at 1 year	Overall Survival at 1 year
Brennan et al., 2005 nomogram	Not Applicable	63%
RTOG 97-04 (221 patients)	<50%*	69%
NLG-0205—100 million cell dose group	52%	80%
NLG-0205—300 million cell dose group	81%	96%

* Disease-free survival at 1 year was not reported. However, from the median disease-free survival of 11.4 months, we have inferred that disease-free survival at 1 year is less than 50%.

After reviewing these data that cumulatively suggest a significant dosage effect, we have amended our Phase 3 clinical trial protocol to increase the duration of therapy to 12 months in an effort to further delay recurrence and improve overall survival.

Analysis of Historical Controls

Baseline patient characteristics are key factors to consider in reviewing clinical trials. Not all patients have an identical disease state and, in the context of surgically-resected pancreatic cancer patients, certain patient characteristics have been shown to have a significant impact on a patient's prognosis of disease progression and survival. Prognostic indicators for Stage I/II pancreatic cancer have been analyzed during the development of the AJCC system. The principal prognostic indicators have been validated and demonstrate that baseline data on tumors, nodal involvement and metastasis inform meaningful predictions of likely outcomes for patients. These characteristics include:

Nodal status: refers to the presence of cancer in the nearby lymph nodes. When cancer enters the lymph nodes, there is an increased risk that the cancer will spread, or metastasize, to other regions of the body via the lymphatic system. As such, nodal status is an indicator of disease progression and thereby a prognostic indicator of survival. A study completed by Hsu et al. and published in the *Annals of Surgical Oncology* in 2010 reported that resected pancreatic cancer patients who received adjuvant chemoradiotherapy with positive lymph nodes prior to resection had a median overall survival 8.5 months less than that of patients with negative nodes. Further, a study conducted by Lim et al. published in *Annals of Surgery* in 2003 demonstrated that patients with greater than four positive lymph nodes had median overall survival 9.4 months less than that of patients with no positive lymph nodes.

Degree of local invasion: refers to the extension of tumors into peripancreatic tissues including neural, vascular, or lymphatic structures or surrounding organs. Larger, higher-staged tumors are associated with a higher degree of local invasion, advanced disease and a poorer prognosis. As it relates to pancreatic cancer, patients with smaller, less invasive tumors have a greater median overall survival as reported by Gebhardt et al. in *Langenbeck's Archives of Surgery* in 2000. In the Gebhardt study, patients with pancreatic cancer that had invaded the lymph vessels, blood vessels and perineural tissues had a median overall survival of 16.8 months, 7.2 months and 4.8 months less, respectively, than patients with cancer that had not invaded these tissues.

Tumor stage: refers to the size and peripancreatic extension of pancreatic cancer. T1 is defined as less than two centimeters in diameter and limited to the pancreas; T2 is defined as greater than two centimeters in diameter and limited to the pancreas; T3 is defined as a tumor that has extended beyond the pancreas; and T4 tumors are defined as unresectable. The T3 tumor stage is associated with poorer prognosis and increased risk of death compared to T1-T2 tumors in resected pancreatic

cancer patients who receive adjuvant chemoradiotherapy as reported by Hsu et al., where T3 patients had a median overall survival that was 8.3 months less than T1-T2 patients.

Tumor grade: refers to abnormalities of cancer cells relative to healthy cells. Tumor cells considered undifferentiated, or having a higher tumor grade, have little to no resemblance to the cells from which they originated (in this case pancreatic cells). Tumors classified as G1 or G2 are considered low grade tumors with well and moderately differentiated cells, respectively. Tumors classified as G3 or G4 are considered high grade tumors with poorly or undifferentiated cells, respectively. Many factors are considered in determining tumor grade, including the structure and growth pattern of the cells. Tumor grade is determined by a pathologist via biopsy of the tumor. Higher degrees of cancer cell abnormality are associated with a poorer disease prognosis; in fact, high tumor grade is an independent predictor of survival. The study conducted by Lim et al. referred to above showed that patients with poorly differentiated (G3), or higher grade, tumors of the pancreas had median overall survival of 22.8 months less than patients with well differentiated (G1), or lower grade, tumors.

Ca 19-9 markers: refers to the post-operative concentration of the tumor marker carbohydrate antigen 19-9. The concentration of Ca 19-9 markers is associated with significant risk of early, distant metastasis. A study conducted by Kinsella et al. published in *American Journal of Clinical Oncology* in 2008 reported that pancreatic cancer patients with high post-operative Ca 19-9 levels, defined as greater than 70 units per milliliter, had a median overall survival 16.8 month less than patients with Ca 19-9 marker levels lower than 70 units per milliliter.

Our Phase 2 clinical trial did not compare the outcomes of patients who received HyperAcute Pancreas plus the standard-of-care treatment regimen to the standard-of-care alone. Therefore, we believe it is important to evaluate the patient characteristics and clinical results of NLG-0205 relative to those of prior clinical trials in surgically-resected pancreatic cancer patients.

NLG-0205 has met its primary objective for one-year disease-free survival. NLG-0205 one-year disease free survival of 63% and one-year overall survival of 86% compares favorably to the 221 patients in RTOG 97-04 receiving gemcitabine plus 5-FU based chemoradiotherapy, who had less than 50% one-year disease-free survival and 69% one-year overall survival. The NLG-0205 data demonstrates a statistically significant improvement in disease-free survival at one year for the high dose (300 million cell) arm of the study compared to the lower dose (100 million cell) arm of the same study. This is particularly noteworthy given that the NLG-0205 high dose cohort patients are either equal to or worse than the low dose cohort in every major comparable prognostic indicator.

Study	Nodal Status (% N+)	Local Invasion	Tumor Stage (T3/T4)	High Tumor Grade	Ca 19-9 (³ 180 U/mL)	Disease-Free Survival Median (Months)	Overall Survival at 1 Year
NLG-0205 (70 patients) Gemcitabine + 5-FU + Radiation + HyperAcute Pancreas	**81%**	**90%***	**83%**	**36%***	**17%***	**14.3**	**86%**
NLG-0205 Low Dose (44 patients)	**80%**	**90%***	**77%**	**34%***	**16%***	**12.9(1)**	**80%**
NLG-0205 High Dose (26 Patients)	**85%**	**91%***	**92%**	**40%***	**19%***	**15.3(1)**	**96%**

(1) Calculated as of September 1, 2011.

* Calculation excludes unknowns.

U.S.-based comparator studies

In terms of historical comparisons between NLG-0205 and other resectable pancreatic cancer trials with curative intent, we believe RTOG 97-04 represents the most appropriate comparator study. This clinical trial enrolled 538 patients at 164 U.S. and Canadian institutions from July 1998 to July 2002 with follow-up through August 2006. The objective of RTOG 97-04 was to determine if the addition of gemcitabine to adjuvant 5-FU chemoradiation would improve survival for patients with resected pancreatic adenocarcinoma. In their primary analysis of a 451 patient sub-population, 221 of which received

gemcitabine, the RTOG 97-04 investigators determined that the addition of gemcitabine to adjuvant 5-FU-based chemoradiation was associated with a survival benefit for patients with resected pancreatic cancer, although this benefit was not statistically significant. Based on the subpopulation analysis of this study, we believe that this study demonstrated limited benefit. The results of RTOG 97-04 were presented at the 2006 American Society of Clinical Oncologists, or ASCO, annual meeting and published in *JAMA* in March 2008.

Study	Nodal Status (%N+)	Local Invasion	Tumor Stage (T3/T4)	High Tumor Grade	Ca 19-9 (³ 180 U/mL)	Disease-Free Survival Median (Months)	Overall Survival Median (Months)	Overall Survival at 1 Year
RTOG 97-04 2008(1) Treatment Arm: Gemcitabine + 5FU + Radiation (221 patients)	**68%**	**Not reported**	**81%**	**32%***	**14%(2)**	**11.4(3)**	**20.5(3)**	**69%**
NLG-0205 Gemcitabine + 5-FU + Radiation + HyperAcute Pancreas (70 patients)	**81%**	**90%***	**83%**	**36%***	**17%***	**14.3**	**—(4)**	**86%**

(1) Regine et al., *JAMA* 2008; 299(9): 1019-1026.

(2) Includes only the 124 patients who tested positive for the Lewis antigen (patients who test negative for the antigen do not express Ca 19-9).

(3) Regine et al. study in *JAMA* only reports overall survival and disease-free survival for patients with pancreatic head tumors. The median overall survival of patients in the standard-of-care treatment arm of RTOG 97-04 is 18.8 months.

(4) Not calculable as of September 1, 2011.

* Calculation excludes unknowns.

RTOG 97-04 baseline patient characteristics are the most similar to NLG-0205 baseline patient characteristics; both studies enrolled patients primarily at major medical centers in the United States, and NLG-0205 incorporates the addition of HyperAcute Pancreas to a chemoradiotherapy protocol highly similar to that used in RTOG 97-04.

Since comparisons between specific studies can have distinct limitations, other approaches have been created to evaluate the likely impact of therapies on overall survival. To expand prognostication beyond the AJCC system, researchers have developed statistical tools such as multi-component nomograms that incorporate large numbers of independent variables, including adjuvant therapy, to permit calculations of likely outcomes for post-surgical pancreatic cancer patients. One such nomogram has been developed for surgically resected Stage I/II patients based on the interaction of multiple prognostic indicators identified at Memorial Sloan Kettering Cancer Center over a 17-year period. We have evaluated our entire patient population using this nomogram. The nomogram analysis of the NLG-0205 patients predicted a 63% overall survival at one year following standard therapy. This is in contrast to one-year survival rates of 86% for all patients and 96% for high dose patients in our clinical trial. We believe this represents an additional demonstration that the survival data from NLG-0205 is consistent with an improvement in survival arising from the use of HyperAcute Pancreas in the adjuvant setting.

European studies

It is important to recognize differences in patient selection that may exist between trials due to differences in surgical approaches between United States and Europe. For example, according to Picozzi, in *Business Briefing: US Gastroenterology Review* in 2005, less than 3% of Stage I/II pancreatic cancer patients receive surgery in the United Kingdom. Gebhardt, in *Langenbeck's Archives of Surgery* (2000) 385:14-20, notes that the surgery frequency is approximately 20% in the United States. The major European studies can be summarized as follows:

ESPAC-1: This clinical trial initially recruited 541 patients at 53 hospitals in 11 European countries from February 1994 to June 2000. The final data analysis published in March 2004 was based on an

evaluation of 289 patients. The objective of ESPAC-1 was to evaluate potential survival benefits of post-surgical adjuvant therapy: chemotherapy, chemoradiotherapy, chemoradiotherapy followed by chemotherapy and no-treatment/observation. The investigators in this clinical trial concluded that adjuvant chemotherapy with 5-FU has a significant survival benefit in patients with resected pancreatic cancer while chemoradiotherapy may have had a negative impact on survival. We believe ESPAC-1 lacked adequate statistical power to draw any meaningful conclusions regarding superiority of any of the treatment arms. Results of ESPAC-1 were published in the *New England Journal of Medicine* in March 2004.

CONKO-001: This clinical trial enrolled a total of 368 patients at 88 academic and community-based oncology centers in Germany and Austria from July 1998 to December 2004. The objective of CONKO-001 was to test the hypothesis that adjuvant chemotherapy with gemcitabine administered after complete resection of pancreatic cancer improves disease-free survival by six months or more relative to best supportive care. In their analysis of 354 eligible patients, the CONKO-001 investigators concluded that adjuvant gemcitabine delayed the development of recurrent disease compared to observation alone. However, a statistically significant benefit in overall survival was not observed. CONKO-001 results were published in *JAMA* in January 2007.

ESPAC-3: This clinical trial enrolled a total of 1,088 patients at 159 pancreatic cancer centers in Europe, Australasia, Japan, and Canada from July 2000 to January 2007. The objective of ESPAC-3 was to determine whether treatment with 5-FU/FA or gemcitabine is superior in terms of overall survival as adjuvant treatment following resection of pancreatic cancer. ESPAC-3 is the largest adjuvant trial conducted in pancreatic ductal adenocarcinoma. However, the treatment regimens in ESPAC-3 lacked standardization in terms of dosing and schedule and the investigators elected not to include an observation arm in this study following the results of ESPAC-1, which prevented an analysis of baseline patient risk for enrollees in this trial. We believe these elements of the ESPAC-3 trial design limit the applicability of its conclusions to clinical practice. The results of ESPAC-3 were presented at the ASCO 2009 annual meeting and published in *JAMA* in September 2010.

Study	Nodal Status (% N+)	Local Invasion	Tumor Stage (T3/T4)	High Tumor Grade	Ca 19-9 (³ 180 U/mL)	Disease-Free Survival Median (Months)	Overall Survival Median (Months)	Overall Survival at 1 Year
ESPAC-1 (289 patients) 2004(1) Treatment Arm: 5-FU (147 patients)	**52%***	**18%***	**Not reported**	**18%***	**Not reported**	**Not reported**	**20.1**	**67%**
CONKO-001 (354 patients) 2007(2) Treatment Arm: Gemzar (179 patients)	**71%**	**Not reported**	**86%**	**36%***	**0%**	**13.4**	**22.1**	**73%**
ESPAC-3 (1088 patients) 2010(3) Treatment Arm: Gemcitabine (537 patients)	**73%**	**43%**	**64%**	**24%**	**Not reported(4)**	**14.3**	**23.6**	**80%**

(1) Neoptolemos et al., *New England Journal of Medicine* 2004; 350:1200-1210.

(2) Oettle et al., *JAMA* 2007; 297(3): 267-277.

(3) Neoptolemos et al., *JAMA* 2010; 304(10):1073-1081.

(4) Postoperative levels of Ca 19-9 were recorded in 373 of the 537 gemcitabine treatment arm patients. Only patients with Ca 19-9 levels in the interquartile (25th to 75th percentile) range of recorded events were reported, with a reported range of 9 to 62 units per milliliter and a median of 22 units per milliliter.

* Calculation excludes unknowns.

The baseline characteristics for the NLG-0205 clinical trial are notably different compared to the three most commonly cited European trials. These differences in study populations are noteworthy:

- The ESPAC-1 and ESPAC-3 studies had substantially fewer patients with lymph node spread (NLG-0205 81% vs. 52-73%), local invasion (NLG-0205 90% vs. 18-43%) and high grade tumors (NLG-0205 35% vs. 18-24%) and did not report patients with elevated Ca 19-9 levels.

- The CONKO-001 trial specified active exclusion of patients with elevated Ca 19-9 levels, the tumor marker used to predict the likelihood of recurrence in patients following surgical resection of the primary pancreatic tumor. Consequently, NLG-0205 had 17% of patients with elevated Ca 19-9 vs. none for the CONKO-001 study.

Furthermore, as these studies do not follow harmonized or standardized study regimens, generating meaningful conclusions about specific therapeutic regimens is difficult. These differences in surgical practice, study patient selection, and study therapeutic regimens are so different from the NLG-0205 protocol, we believe it is unlikely that meaningful comparisons can be made; however, the data is at least illustrative of the differences in medical practice for this disease in the United States relative to that of the European and international oncology community.

Our HyperAcute Lung Cancer Immunotherapy Product Candidate

Our HyperAcute Lung product candidate is being studied in a combined Phase 1/2 clinical trial that is fully enrolled with 54 patients for the treatment of refractory, recurrent or metastatic nonresectable NSCLC. This trial is being conducted at the NCI. HyperAcute Lung consists of a group of three separate allogeneic lung tumor cell lines that were modified to express the gene that makes a-GT. These three cell lines are representative of the three major types of NSCLC. Each of the modified cell lines is grown in large cultures, harvested, irradiated, and packaged. Approximately 100 million cells of each HyperAcute Lung cell line are given by intradermal injection with each treatment.

Market Opportunity

According to the American Cancer Society, lung cancer is the leading cause of cancer-related death in the United States. The NCI estimates that over 157,000 Americans will die of the disease in 2010, accounting for approximately 28% of all cancer deaths. Lung cancer is most often diagnosed at advanced stages when it is difficult to treat. According to the American Cancer Society, about 85% to 90% of lung cancers are classified as NSCLC. The remaining lung cancers are classified as small cell lung cancer. The American Cancer Society also reports that about 80% of NSCLC cases are detected when they have progressed to stages III or IV. A study published in the *Journal of Clinical Oncology* in 2004 states that the current expected overall survival for a nonresectable stage IIIB or IV NSCLC patient who has failed first line treatment is approximately eight months.

Clinical Trials

Phase 1/2 Clinical Trial

HyperAcute Lung is currently in a Phase 1/2, single-arm, open-label clinical trial that is fully enrolled with 54 patients at the NCI. This clinical trial is for patients with refractory, recurrent or metastatic NSCLC. Its primary endpoint is to assess tumor response rate after administration of HyperAcute Lung, and the secondary endpoint is to assess overall survival. For the Phase 1 portion of this clinical trial, a positive response included stable disease for 16 weeks in patients who had enrolled after having previously shown progressive disease. A total of 17 patients in the Phase 1 portion and 37 patients in the Phase 2 portion were injected with HyperAcute Lung. Of the 37 patients in the Phase 2 portion, only 28 were evaluated for clinical response. In the Phase 1 portion, four cohorts of patients each received injections of 3 million, 10 million, 30 million, or 100 million cells every four weeks for four doses, and one cohort of

three patients received an initial dose of 500 million cells, followed by injections of 300 million cells every two weeks for up to seven doses. In the Phase 2 portion, the 28 patients evaluated received injections of 300 million cells every two weeks for up to eight doses.

The interim results of our Phase 1/2 clinical trial for HyperAcute Lung, based on an interim analysis of 45 patients, were encouraging. As of December 9, 2010, the interim results for the 28 patients evaluated in the Phase 2 clinical trial group showed a median progression-free survival of 14.6 weeks, median overall survival of 11.3 months, and a one-year survival rate of 46%. Median overall survival data from the Phase 2 clinical trial group was better than the Phase 1 clinical trial group (11.3 versus 7.6 months), a comparison that would be consistent with study drug dose dependency. Overall survival of patients in our Phase 1/2 clinical trial trended with the persistent elevation of anti-a-Gal immunoglobulin (IgG) antibodies. Some patients with longer overall survival demonstrated increased secretion of interleukin-5 (IL-5) and gamma-interferon (IFNg).

Prior Phase 3 studies suggest that in the refractory, recurrent or metastatic NSCLC setting (second line therapy), the median overall survival of patients receiving best supportive care was 4.6 months and the median overall survival of patients receiving pemetrexed or docetaxel (Taxotere) therapy was approximately eight months. Given the favorable safety profile of HyperAcute Lung and 11.3 month median overall survival observed in the Phase 2 study, HyperAcute Lung compares favorably to current standard-of-care cytotoxic chemotherapy. We are currently evaluating alternative designs for a Phase 2B/3 clinical trial in NSCLC with an adaptive design, which we plan to initiate in the first half of 2012 and on which we plan to complete the first interim analysis in 2013. The following table shows comparative results for second-line treatment in advanced NSCLC with pemetrexed, docetaxel and HyperAcute Lung.

Treatment Options and Clinical Outcomes in 2nd Line Advanced Stage NSCLC

Therapy	Overall Survival (Months)	12 Month Survival	Serious Adverse Events (CTC Grade 3 or 4) Attributed to Therapy			
			Nausea	Fatigue	Anemia	Neutropenia
Best supportive care(1)	4.6	11%	—	—	—	—
Docetaxel(1)	7.5	37%	1.8%	5.4%	4.3%	40.2%
Pemetrexed(2)	8.3	30%	2.6%	5.3%	4.2%	5.3%
HyperAcute Lung(3)	11.3	46%	0%	0%	0%	0%

(1) Prospective Randomized Trial of Docetaxel versus Best Supportive Care in Patients with Non-Small-Cell Lung Cancer Previously Treated With Platinum-Based Chemotherapy. Shepherd et al., *Journal of Clinical Oncology*, Volume 18, No. 10 (May), 2000: pp 2095-2103

(2) Randomized Phase III Trial of Pemetrexed Versus Docetaxel in Patients with Non-Small-Cell Lung Cancer Previously Treated with Chemotherapy. Hanna et al., *Journal of Clinical Oncology* 2004 May 1; 22(9):1589-97

(3) Data from NLG-0101 clinical trial Patients 18-45

The Phase 1 portion of our Phase 1/2 clinical trial for our HyperAcute Lung demonstrated a favorable safety profile, with no dose limiting toxicities at any of the five escalating dose levels. There have been no reported CTC grade four adverse events attributed to HyperAcute Lung and only one serious adverse event (CTC grade three lymphopenia) characterized by investigators as possibly or probably attributable to HyperAcute Lung. The most common treatment-related adverse reactions (reported by at least 5% of patients) for HyperAcute Lung were injection site reaction (92%), induration (56%), fatigue (25%), urticaria (12%), anemia (7%), pruritus (7%), lymphopenia (7%), elevated serum amylase (5%), edema (5%), skin pain (5%) and dyspnea (5%). The clinical trial involved a dose escalation from approximately three million up to 300 million cells in repeat dosing. Only a single dose escalation has been required by the FDA in all subsequent clinical trials of our other HyperAcute product candidates conducted to date.

Our HyperAcute Melanoma Immunotherapy Product Candidate

Our HyperAcute Melanoma product candidate is being studied in an investigator-initiated Phase 2 clinical trial in 25 patients with advanced melanoma. In this trial, HyperAcute Melanoma is being administered in combination with an eight-week course of PEG-Intron, a man-made immune modulator that has been tested for the treatment of melanoma. HyperAcute Melanoma consists of a group of three allogeneic melanoma tumor cell lines that were modified to express the gene that makes a-GT. These three cell lines each possess collections of known melanoma antigens so that the immune response they stimulate will provide broad coverage. Each of the modified cell lines is grown separately in large cultures, harvested, irradiated and packaged. Approximately 50 million cells of each HyperAcute Melanoma cell line are given by intradermal injection with each treatment.

Market Opportunity

Melanoma is an often lethal form of skin cancer. If it is not recognized and treated early, the cancer can advance and spread to other parts of the body, where it becomes hard to treat and can be fatal. While it is not the most common of the skin cancers, it causes the most deaths. The American Cancer Society estimates that in 2009 there were 8,650 deaths from melanoma in the United States and there will be approximately 68,000 new cases of melanoma in the United States in 2010.

Phase 2 Clinical Trial

We provided HyperAcute Melanoma product to, and are collaborating with, Dr. Adam Riker at the Ochsner Cancer Institute in New Orleans, Louisiana, in support of a Phase 2 investigator-initiated clinical trial studying HyperAcute Melanoma in combination with an eight week course of PEG-Intron for patients with advanced melanoma. The trial reached its 25-patient enrollment goal in September 2010. The treatment consists of 12 weekly injections of HyperAcute Melanoma with PEG-Intron being co-administered in weeks five through 12. This is the first time that one of our HyperAcute immunotherapies has been combined with another approved immunotherapy, in this case PEG-Intron. The primary objective of this clinical trial is to conduct correlative scientific studies of patient tumor and peripheral blood samples to determine the mechanism of any observed anti-tumor effect involving the innate and cell-mediated host immune response to HyperAcute immunotherapy alone and combined with PEG-Intron. Although the number of patients in this clinical trial is modest, the results to date are encouraging. Among 10 patients with Stage IV melanoma and non-visceral metastases, there were three (30%) responders, two complete responders and one with stable disease.

As of September 8, 2011, vitiligo was observed in four out of 25 (16%) patients. Vitiligo is an autoimmune condition in which the patient's immune system attacks melanoctyes, the cells responsible for skin pigmentation and potential melanoma cancer cells. Two prior clinical trials of immunotherapies conducted by others suggest that the development of vitiligo was correlated with a favorable response to therapy in melanoma patients. All patients evaluated developed autoimmune antibodies. Other than vitiligo, no other clinically apparent autoimmune disorder has been reported in any patient to date. These observations suggest an immunological response to the HyperAcute Melanoma. HyperAcute Melanoma has demonstrated good tolerability and a favorable safety profile, with no systemic, drug-related serious adverse events characterized by the investigators as possibly or probably attributable to our product candidate. The most common non-serious adverse events reported were injection site reactions, induration, diarrhea and nausea. The small scale of this clinical trial and the fact that it was performed at a single institution limit our ability to draw significant conclusions from the data; however, durable complete responses to metastatic disease in this setting are rarely seen.

We currently are developing new clinical trial designs to evaluate the efficacy of HyperAcute Melanoma either as a stand-alone or combination therapy in these new settings. Specifically, in the Phase 2 clinical trial of our HyperAcute Melanoma product candidate, we employed a weekly dose of 150 million

cells for 12 weeks during the course of the treatment. After enrollment was completed in the Phase 2 clinical trial of HyperAcute Melanoma, data from our Phase 2 clinical trial of HyperAcute Pancreas showed a statistically significant improvement in disease-free survival when comparing patients receiving doses of 100 million cells to those receiving doses of 300 million cells. Our Phase 3 HyperAcute Pancreas clinical trial protocol was amended to administer 18 injections of 300 million cells to patients over a 12 month period. We also intend to employ a 12 month treatment schedule employing the 300 million cell dosing level in our next Phase 2B HyperAcute Melanoma clinical trial, which we plan to initiate in 2012. This will represent a three-fold increase in total dose compared to the initial Phase 2 HyperAcute Melanoma clinical trial.

Our Other HyperAcute Cancer Immunotherapy Product Candidates and Indications

We believe we have developed a process to efficiently discover and develop new tumor-specific HyperAcute immunotherapies for other solid tumor types. We have initiated clinical development for our HyperAcute Prostate and HyperAcute Breast product candidates and are developing our HyperAcute immunotherapy technology for other indications.

Our HyperAcute Prostate Cancer Immunotherapy Product Candidate

Prostate cancer is one of the most common forms of cancer affecting men. According to the American Cancer Society, there will be over 217,000 patients diagnosed with prostate cancer in the United States in 2010. Increased screening over the past few decades has enabled physicians to detect prostate cancer in its early, more treatable stages. Nonetheless, while overall five-year survival rates for cases of prostate cancer approach 100%, the outlook for advanced, metastasized cases is poor with five-year survival rate of 31%, according to the American Cancer Society.

We have completed an open-label, single-center Phase 1 clinical trial for our HyperAcute Prostate product candidate. This clinical trial enrolled eight patients with hormone refractory prostate cancer that had recurred or no longer responded to standard treatment. Study participants received 12 bi-weekly intradermal injections of HyperAcute Prostate, which consists of two separate allogeneic prostate cancer cell lines that were selected based on antigen profiles and modified to express the gene that makes a-GT. The primary endpoint for this clinical trial was safety and efficacy of administration. We successfully completed this clinical trial in August 2008. We observed no dose-limiting toxicities and only one serious adverse event (CTC grade three anemia) was reported by the investigator as possibly attributable to HyperAcute Prostate. Median survival was 25.1 months (range 5-60 months) with one treated patient remaining alive at 60 months with stable Prostate Specific Antigen and unchanged bone metastasis since 2007. Although we currently do not have an active IND for this indication due to resource constraints, we believe HyperAcute Prostate could provide a valuable treatment alternative for many prostate cancer patients.

Our HyperAcute Breast Cancer Immunotherapy Product Candidate

According to the American Cancer Society, carcinoma of the breast is the second leading cause of cancer death in women in the United States with over 207,000 new cases and 39,800 deaths estimated in 2010. Increased access to improved screening methods has had a major impact on reducing deaths from this disease; however, despite these interventions, patients continue to present with nodal or metastatic lesions that carry poor prognoses.

We initiated an open-label, single-center Phase 1 clinical trial for our HyperAcute Breast product candidate. Three patients were enrolled in this clinical trial. Due to resource constraints, the clinical trial was suspended.

HyperAcute Breast consists of two allogeneic breast cancer cell lines genetically modified to express the gene that makes a-GT. The cell lines selected for inclusion in this drug represent both estrogen

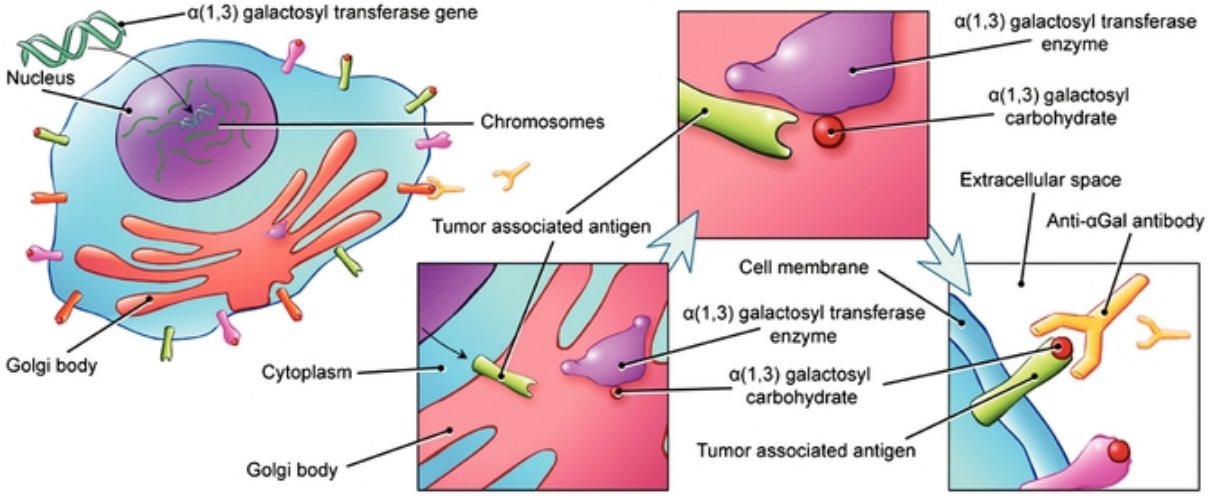
receptor positive and estrogen receptor negative examples of disease. The cell lines of the drug are manufactured with growth nutrient in media by concentrating, irradiating and compounding in a cryopreservative solution. Although we currently do not have an active IND for this indication, we believe HyperAcute Breast could provide a valuable treatment alternative for many breast cancer patients.

Our HyperAcute Cancer Immunotherapy Technology

Compared to prior immunotherapy approaches, our proprietary HyperAcute immunotherapy technology offers several distinct advantages including:

- a robust innate immune response that harnesses the human body's naturally protective and rapid immune reaction to the a-Gal carbohydrate to fight cancer;
- a complex targeted approach that is multi-faceted and involves combined antibody-mediated and multi-cellular responses; and
- an allogeneic, or non-patient specific, approach, in which we manufacture products from genetically modified, allogeneic cells from previously established cell lines, which permits an easier scale-up of the manufacturing process compared to an autologous, or patient specific, approach involving a patient's own cells.

We believe our HyperAcute immunotherapies operate by exploiting a natural barrier present in humans that protects against infections being transmitted from other mammals. This barrier is related to the enzyme a-GT, which is expressed in the cells of lower mammals but not present in human or other Old World primate cells. The presence of this enzyme results in the expression of a non-human form of carbohydrate called a-Gal on the surface of affected cells. Introducing a-Gal expressing cells to the human or primate immune system activates an immune response from antibodies against a-Gal. Antibodies directed against the a-Gal epitope are potentially the most abundant antibody in humans and represent approximately 1% of circulating human antibodies.



The figure above represents our HyperAcute Immunotherapy process. The a-GT gene is inserted into the chromosome within the cancer cell. The gene then yields a protein called a-GT enzyme which is located within the Golgi body of the cell where macromolecules, such as proteins and lipids, are processed and packaged. Proteins, like the illustrated tumor associated antigen, that are processed through the Golgi, are tagged with a-Gal carbohydrate and placed on the surface of the cell. The a-Gal carbohydrate located on the surface of the tumor associated antigen is now targeted by anti-aGal antibodies causing the hyperacute immune response to be initiated.

HyperAcute immunotherapy product candidates are composed of irradiated, live, allogeneic human cancer cells modified to express the gene that makes a-Gal epitopes. This exposure to a-Gal stimulates the human immune system to attack and destroy the immunotherapy cells on which a-Gal is present by activating complement, an important component of the immune system that is capable of cell destruction. After destruction, we believe the resulting cellular fragments bound by anti a-Gal antibodies are processed by the immune system to elicit an enhanced multi-faceted immune response to tumor-associated antigens common to both the immunotherapy and the patient's tumor cells.

In the early 1990s, the NCI conducted experiments in brain cancer patients involving the implantation of mouse cells that had been engineered to produce a virus to genetically attack cancer cells in the brains of cancer patients. Promising results in these clinical trials led our founder and others to attempt a similar experiment in ovarian cancer patients in 1995. However after that therapy, genetic testing of biopsies from these patients demonstrated that this gene transfer approach was ineffective. Nonetheless, the clinical trial suggested clinical benefit in four of nine evaluated patients. During the clinical trial, it was observed that the ovarian cancer patients had a vigorous immune response to the infusion of the mouse cells, characterized by fever and abdominal pain. Further study and comparison to the work of transplant scientists who were attempting to understand the mechanism of xenotransplant rejection (the rejection of tissues transplanted from a different species) identified a carbohydrate on the surface of mouse cells known as a-Gal that may have triggered the ovarian cancer patient's immune systems to mount an attack on the mouse cells. This immune response was led by existing anti-a-Gal antibodies in a manner very similar to "hyperacute rejection," the rapid destruction of tissues transplanted from lower animals.

Evolutionary biologists believe that the ancestors of humans lost the functional gene to produce a-Gal about 25 million years ago. Because the cells or pathogens originating in nonhuman species (for example domestic pets) contain a-Gal, they are rapidly destroyed by anti- a-Gal antibodies present in substantially all humans. This process likely helps humans to defeat infection from other species. Humans develop these antibodies as a result of constant exposure to a-Gal from the beneficial bacteria normally found in the digestive system and through exposure to cells carrying a-Gal on the meat in the diets of humans. We believe the cancer cells in the ovarian cancer patients were immunologically destroyed as a result of being adjacent to the mouse cells carrying the a-Gal gene, and we term this the "hyperacute" response.

In the case of a HyperAcute cancer immunotherapy, this process results in immune cells that are educated to attack a patient's own cancer cells by virtue of the antigens which the immunotherapy and these tumor cells share and by a more generalized activation of the immune system. Our scientists have shown in mouse models of cancer that the immune system responds after a HyperAcute injection by attacking all similar cancer cells, including those that have no a-Gal carbohydrate. In the case of a HyperAcute viral immunotherapy, because of the high concentration of anti-a-Gal antibodies, there is a clearance and processing of immunotherapy containing the a-Gal epitope, significantly boosting immune responses to some target pathogens.

HyperAcute immunotherapies are designed to break tolerance and enable longer duration of anti-tumor effect. We believe that our HyperAcute immunotherapy technology induces a unique combination of advantageous immunologic effects. Our current understanding of the mechanism of HyperAcute immunotherapy includes the following concepts, although our understanding of this technology continues to evolve. The immune response is triggered by formation of immunocomplexes between the a-Gal-containing cells or viral vaccines and pre-existing, naturally occurring, high-titer antibodies to a-Gal that are present in every patient screened by us to date. Formation of immunocomplexes by complement-fixing anti-Gal antibodies activates complement-mediated cell lysis, which generates immune system "danger signals" that elicit activation and recruitment of antigen presenting cells, or APCs, of multiple lineages. The anti-a-Gal-dependent generation of immune responses involves activation of multiple types of immune system effector cells, such as dendritic cells, macrophages and natural killer (NK) cells. These cells which have taken up the lysed or fragmented HyperAcute immunotherapy cells have responses against multiple tumor targets and act by different modes of action,

both cellular and antibody mediated. The process of FcgR-mediated phagocytosis, whereby antibodies bind to the immunotherapy cells and form a connection to a specific region that facilitates uptake by APCs, results in activation of certain immune cells called cytotoxic CD8+ T-cells and CD4+ helper T-cells, as well as stimulation of tumor antigen-specific B-cells. Hyperacute immunotherapy has produced long-term complete responses in an animal model of metastatic disease. Further study in human cancer patients will need to be correlated with observations in preclinical models.

Our IDO Pathway Inhibitor Product Candidate

We are developing d-1-methyltryptophan, or D-1MT, a small-molecule, orally bioavailable product candidate based on our proprietary IDO pathway inhibitor technology. Preclinical experiments have demonstrated a strong, synergistic anti-tumor effect without increased toxicity when D-1MT was administered in combination with a number of currently available chemotherapeutic agents. D-1MT is currently being evaluated for the treatment of a broad range of solid tumors in chemotherapeutic and immunotherapeutic combinations in two Phase 1B/2 clinical trials.

Clinical Trials

Phase 1B/2 Clinical Trials

We currently have two Phase 1B/2 clinical trials enrolling patients to evaluate D-1MT in combination with other approved therapies. The first clinical trial has primary endpoints that assess safety and efficacy of D-1MT in combination with an Ad-p53 autologous dendritic cell vaccine for solid malignancies with p53 mutations, such as lung, breast and colon cancers. As of August 12, 2011, 19 patients have been enrolled in the Phase 1B dose escalation portion of this clinical trial. The Phase 2 clinical trial portion of the D-1MT/Ad-p53 study will expand primarily to enroll patients with metastatic breast cancer. The second clinical trial has primary endpoints that assess safety and efficacy of D-1MT in combination with Taxotere for patients with advanced stage solid tumors for which Taxotere is the standard-of-care, such as metastatic breast, prostate, ovarian and lung cancers. As of July 7, 2011, five patients have been enrolled in the Phase 1B dose escalation portion of this clinical trial. The Phase 2 clinical trial portion of the D-1MT/Taxotere study will expand primarily to enroll patients with metastatic breast cancer. We believe D-1MT has the potential to have a synergistic therapeutic effect in combination with Ad-p53 or Taxotere without adding systemic safety complications. The clinical trials are being co-sponsored by the NCI's Division of Cancer Treatment and Diagnosis under a Cooperative Research and Development Agreement and letter of intent and are taking place at the Moffitt Cancer and Research Institute in Tampa, Florida.

According to the American Cancer Society, in the United States, breast cancer is the most common cancer among women, other than skin cancer. According to the American Cancer Society, there are projected to be approximately 207,000 new cases in 2010, and approximately 39,800 patients are expected to die of the disease. The disease comes in different forms depending on whether the tumor is driven by signaling through the estrogen receptor (approximately 70% of patients), the HER2/neu receptor (approximately 15-20% of patients), or neither. In the early stages, breast cancer may have no symptoms and can be detected only through mammography screening. During the later phases, symptoms may include tenderness, swelling, lumps, and skin irritation. Treatment of breast cancer typically includes surgery to remove tumors and lymph nodes. Usually a combination of radiation, chemotherapy or hormonal therapy is used post-surgery. Although the use of mammography screening has driven a trend toward earlier-stage diagnosis and decreased mortality, approximately 5% of new breast cancer cases will be Stage IV at the time of diagnosis in 2010. Metastatic breast cancer can be treated with a variety of monotherapy or combination drug regimens. According to the NCI, the overall five-year survival rate for breast cancer is 89%, but the outlook for advanced metastasized cases is poor with five-year survival rates of 23.4%.

Phase 1 Clinical Trials

We are nearing completion of two Phase 1 clinical trials of D-1MT as a single agent. These Phase 1 clinical trials were open to all tumor types and enrolled patients with a wide variety of cancers. The principal goal of these trials was to demonstrate that patients can tolerate the drug and that increasing quantities of the drug can be administered without inducing toxicity that would prevent the attainment of efficacy. We have observed autoimmune hypophysitis in a small subset of patients previously sensitized to immunotherapy (ipilimumab) and in one immunotherapy-naive patient receiving high dose D-1MT. Autoimmune hypophysitis is a disease that most commonly occurs with chronic inflammation of the pituitary gland and may be characterized by diminished production of one or more hormones by the pituitary gland. Autoimmune hypophysitis can be successfully managed by hormone replacement therapy during acute or chronic phases.

We have had few serious adverse events with D-1MT in the Phase 1 studies, limited primarily to the hypophysitis, and are proceeding with Phase 1B/2 studies. We have observed one reported CTC grade four (cerebrovascular ischemia) and two reported CTC grade three (lymphopenia) serious adverse events characterized by the investigators possibly, probably or definitely attributable to D-1MT in the clinical trial combining D-1MT with Ad-p53. There have been no reported serious adverse events characterized by the investigators as attributable to D-1MT in the clinical trial combining D-1MT with Taxotere.

Our IDO Pathway Inhibitor Technology

IDO pathway inhibitors, including D-1MT, represent a potential breakthrough approach to cancer therapy using small-molecule, anti-toleragenic product candidates intended to combat the mechanisms by which tumors evade immune-mediated destruction. IDO is an enzyme that regulates immune response by suppressing T-cell function and creating local tumor immune escape. Recent studies have demonstrated that IDO is overexpressed in many cancers, within both tumor cells as a direct defense against T-cell attack, and also within antigen presenting cells in tumor draining lymph nodes whereby IDO promotes peripheral tolerance to TAAs. When hijacked by developing cancers in this manner, IDO may facilitate the survival, growth, invasion, and metastasis of malignant cells expressing TAAs that might otherwise be recognized and attacked by the immune system as foreign.

We believe that immune system failure is a fundamental reason for the inability of the human body to successfully fight cancer cells. Research into the inability of the immune system to respond to cancerous tumors indicates that tumors can induce the human immune system to tolerate the existence of the tumor. This immune tolerance and suppression represents a major barrier to successful treatment of cancer and is a significant target for new therapeutics.

Scientific understanding of the process leading to immune tolerance is in its early stages. We believe IDO is part of a system that may be used by some tumors as a mechanism to evade the immune system. IDO is an enzyme that regulates immune response by suppressing effector T-cell function by breaking down the essential amino acid tryptophan. Expression of IDO, either directly by tumors or by dendritic cells in tumor-draining lymph nodes, has been shown in animal studies to induce immune tolerance to tumors, and inhibition of IDO has been shown in these studies to prevent this induction of tolerance. IDO is rarely expressed by the majority of normal tissues, but it is overexpressed in many types of human tumors.

Cytotoxic chemotherapy places substantial stress on established, tumor-induced tolerance. Several factors can potentially contribute to this result: (1) dying tumors cells release waves of TAAs for processing and presentation, (2) many chemotherapeutic regimens induce a period of transient lymphopenia and homeostatic recovery during which T-cells may become more susceptible to breaking tolerance, and (3) certain regimens can transiently deplete or inactivate tumor-protective T-regulatory cells. Despite producing these challenges to tolerance, most chemotherapeutic agents do not appear to trigger a protective immune response against established tumors. This shortcoming of traditional chemotherapy has

been attributed, in part, to the ability of tumors to rapidly reestablish tolerance following each cycle of chemotherapy. We believe a potential mechanism underlying the failed opportunity is IDO expression by APCs in tumor-draining lymph nodes, which are thereby converted to an immunosuppressive and tolerance-inducing milieu. Preclinical data have demonstrated that IDO pathway inhibitors have anti-tumor effects in combination with a number of radiotherapy, chemotherapeutic drugs or other immunotherapy drug candidates and may work better together than either type of treatment alone.

The ability to acutely eliminate the protective IDO mechanism by administering IDO pathway inhibitor drugs, such as D-1MT, may provide a therapeutic window in which to break tolerance in tumors and reverse the inhibition of immune cells. Additionally, we believe that once immune cells are restored to normal function, they can assist in the rejection of tumors.

We believe our IDO pathway inhibitor technology has the following potential advantages in combating cancers:

- *Potential to break immune tolerance.* The immune tolerance to cancerous cells represents a key barrier to the treatment of cancer. To date, few available therapies have addressed the immune escape mechanisms of cancer. We believe inhibition of the IDO pathway has the potential to break a key immune escape mechanism of cancer cells and significantly enhance patient outcomes.
- *Tolerability.* In early-stage clinical development, we have observed an encouraging safety profile. We believe inhibition of the IDO pathway will selectively enhance the immune response against cancer cells given the limited expression of IDO in normal cells.
- *Oral bioavailability.* Unlike many cancer therapies which require intravenous administration, our D-1MT IDO pathway inhibitor is orally bioavailable, a significant advantage in ease of administration for patients and physicians.
- *Synergy with existing cancer therapies.* Inhibiting the IDO pathway in conjunction with chemotherapy has the potential to enhance the therapeutic effect of chemotherapy by delaying or disrupting the reacquisition of immune tolerance to tumor antigens during the period following chemotherapy. We believe our IDO pathway inhibitors could also have therapeutic synergy with targeted therapeutics, radiation and immunotherapy. The safety profile in humans is conducive to exploring combination therapy and the available animal data does not indicate significant additive or synergistic toxicities with many common oncology therapies.

BioProtection Systems Corporation

BioProtection Systems Corporation, or BPS, was founded by the Company as a subsidiary in 2005 to research, develop and commercialize vaccines to control the spread of emerging lethal viruses and infectious diseases, improve the efficacy of existing vaccines and provide rapid-response prophylactic and therapeutic treatment for pathogens likely to be targeted to the human population through acts of bioterrorism. In 2010, we owned a majority of BPS's common stock on an as-converted basis. On January 7, 2011, we acquired the minority interest in BPS and BPS became a wholly-owned subsidiary of the Company.

BPS is based upon three core technologies, each of which can be leveraged into the biodefense field. The first is our HyperAcute immunotherapy technology, which has been licensed from us for the biodefense field. The second technology, based on a yellow fever virus, is in licensed from the University of California at San Francisco. The third technology is replication competent recombinant Vesicular Stomatitus Vaccine, or rVSV, an advanced vaccine technology developed for the Marburg and Ebola viruses.

BPS Grants and Contracts with the United Stated Government

On August 26, 2009, BPS received a grant from the NIH for the study of Rift Valley fever virus in the aggregate amount of $536,000, of which BPS has billed $534,000 through June 30, 2011 ($446,000 through

December 31, 2010). This grant provides BPS with cost reimbursement for certain types of expenditures in return for research and development activities. The project period for this grant is from July 1, 2005 to June 30, 2011.

On April 6, 2010, BPS received a grant from the NIH for the study of yellow fever and arena viruses in the aggregate amount of $300,000, of which BPS has billed $300,000 through June 30, 2011 ($153,000 through December 31, 2010). On March 24, 2011, BPS received a second grant from the NIH to continue this study in the aggregate amount of $300,000, of which BPS has billed $42,000 through June 30, 2011. This grant provides BPS with cost reimbursement for certain types of expenditures in return for research and development activities. BPS retains the principal worldwide patent rights to any invention developed with support of the grant and the United States receives a royalty free license to use such inventions. The project period for this grant is from April 6, 2010 to March 31, 2012.

Contract between BPS and the DOD, dated July 31, 2009, as amended on April 21, 2010, for the study of Venezuelan equine encephalitis virus in the aggregate amount of $750,000, of which BPS has billed $668,000 through June 30, 2011 ($500,000 through December 31, 2010). This contract provides BPS with cost reimbursement for certain types of expenditures in return for research and development activities. The period of performance for this contract is from July 31, 2009 through July 30, 2011.

Contract between BPS and the DOD, dated May 5, 2008, as amended February 12, 2009, for the study of adjuvant technology in the aggregate amount of $100,000, of which BPS has billed $100,000 through June 30, 2011 ($100,000 through December 31, 2010). This contract provided BPS with cost reimbursement for certain types of expenditures in return for research and development activities. The period of performance for this contract was from May 5, 2008 through May 1, 2009.

On September 25, 2009, BPS entered into a research and development contract with DOD for the study of a-Gal adjuvant technology for the biodefense field. The contract provides for reimbursements to BPS for certain research and development activities on a cost-plus-fixed-fee basis. The initial contract contained a two-year contract period during which BPS could receive reimbursements for aggregate amounts of up to approximately $3.7 million. On September 21, 2011, BPS entered into an amendment to the contract extending the contract period to September 24, 2013, and increasing the aggregate amounts for which BPS may receive reimbursements by $3.4 million to a total of up to approximately $7.1 million. As of June 30, 2011, BPS had submitted reimbursement requests for approximately $1.4 million for research and development performed under the contract during the initial contract period. BPS is permitted to retain ownership of inventions made by BPS under the contract subject to BPS's compliance with certain specified procedures.

Manufacturing

To date, we have manufactured our HyperAcute immunotherapies in our facilities in Ames, Iowa. We have transferred all of our manufacturing to a new facility also located in Ames. We believe this facility is adequate to supply all of the Phase 3 clinical trial drug requirements for at least the first two of our HyperAcute product candidates and initial commercial quantities of HyperAcute Pancreas in the United States. We are in the process of finalizing manufacturing process improvements that have the potential to significantly increase our production capacity.

We currently contract with Sigma-Aldrich Fine Chemicals, a division of Sigma-Aldrich Corporation, for the manufacture of our D-1MT product candidate. We believe that many suppliers would be available for the production of this product, if required. We currently have no plans to build our own manufacturing capacity to support this product.

Sales and Marketing

We currently own exclusive worldwide commercial rights to our HyperAcute and D-1MT immunotherapy product candidates. If we obtain approval for any of these product candidates, we intend to build a commercial infrastructure targeting oncologists and cancer centers in the United States. In addition, we may pursue partnerships or co-promotion arrangements with pharmaceutical and biotechnology companies to complement these efforts or for particular indications.

We expect that our commercial infrastructure would be comprised of a targeted specialty sales force led by several experienced sales management personnel, an internal marketing and medical affairs staff and a specialty distribution team. For our lead product candidate, HyperAcute Pancreas, we estimate that an initial sales force of approximately 50 to 100 representatives will be necessary to drive utilization at key institutions and cancer centers treating pancreatic cancer patients. Our sales infrastructure will also include managed markets personnel to establish and direct reimbursement activities with third-party payors, such as managed care organizations, group-purchasing organizations, oncology group networks and government accounts. We may need to hire personnel to fill some of these functions in advance of the approval of any of our product candidates. We currently have no sales and marketing or distribution capabilities or in-house personnel specializing in these functions.

Outside the United States, we may enter into out-licensing agreements with other pharmaceutical or biotechnology firms to develop and commercialize our product candidates in foreign markets.

Competition

The biopharmaceutical industry is highly competitive. Given the significant unmet patient need for new therapies, oncology is an area of focus for many public and private biopharmaceutical companies, public and private universities and research organizations actively engaged in the discovery and research and development of products for cancer. As a result, there are and will likely continue to be extensive research and substantial financial resources invested in the discovery and development of new oncology products. In addition, there are a number of multinational pharmaceutical companies and large biotechnology companies currently marketing or pursuing the development of products or product candidates targeting the same cancer indications as our product candidates.

Many of our competitors, either alone or with their strategic partners, have substantially greater financial, technical and human resources than we do and significantly greater experience in the discovery and development of drugs, obtaining FDA and other regulatory approvals, and the commercialization of those products. Accordingly, our competitors may be more successful in obtaining approval for drugs and achieving widespread market acceptance. Our competitors' drugs may be more effective, or more effectively marketed and sold, than any drug we may commercialize and may render our product candidates obsolete or non-competitive before we can recover the expenses of developing and commercializing any of our product candidates. We anticipate that we will face intense and increasing competition as new drugs enter the market and advanced technologies become available.

Immunotherapy Products for Cancer

The cancer immunotherapy landscape is broad but still in the early stages of development as a class of therapeutics with only one FDA-approved active cellular immunotherapy product, Dendreon Corporation's Provenge for the treatment of asymptomatic or minimally symptomatic metastatic castrate resistant (hormone refractory) prostate cancer. We estimate that there are over 100 cancer immunotherapy products in clinical development by approximately 70 public and private biotechnology and pharmaceutical companies. Altogether, trials of these product candidates target at least 23 different cancer types. Of this universe, several large public biopharmaceutical companies have approved or are developing cancer immunotherapy products, including Dendreon Corporation, Bristol-Myers Squibb Company, GlaxoSmithKline plc, Merck & Co., Inc., Merck KGaA and Sanofi-Aventis. The cancer immunotherapy product landscape includes numerous immunotherapeutic approaches including but not limited to anti-idiotype, whole cell, DNA, peptide/antigen, viral, tumor lysate, shed antigens, and dendritic cell. To the extent applicable, cancer immunotherapies are also distinguished by whether or not they are derived from autologous or allogeneic sources. Different approaches to cancer immunotherapy design have the potential to confer corresponding advantages and disadvantages based on their respective immunostimulatory mechanisms, formulation characteristics, manufacturing requirements, and logistical demands.

HyperAcute Pancreas

There are several marketed products indicated for pancreatic cancer including Eli Lilly and Company's Gemzar, Astellas Pharma Inc.'s Tarceva, Teva Pharmaceutical Industries Limited's streptozocin, and fluorouracil, or 5-FU, and mitomycin which are marketed by several generic pharmaceutical firms. In addition, there are a number of companies with active clinical trials ongoing in pancreatic cancer including AB Science SA, Amgen Inc., Astellas Pharma, BioSante Pharmaceuticals, Inc., Celgene Corporation, Immunomedics, Inc., Lorus Therapeutics Inc., Sanofi-Aventis, and Threshold Pharmaceuticals, Inc. among other companies.

HyperAcute Lung

There are numerous marketed therapeutics indicated for NSCLC including Roche Holding AG's Avastin, Eli Lilly's Alimta and Gemzar, Astellas Pharma's Tarceva, AstraZeneca PLC's Iressa, Sanofi-Aventis' Taxotere and Eloxatin, as well as generically available platinum-based chemotherapeutics (cisplatin and carboplatin) and mitotic inhibitors (paclitaxel and venorelbine) which are marketed by several generic pharmaceutical firms. In addition, there are a number of companies with active clinical trials ongoing in lung cancer including Abbott Laboratories, Amgen, Bristol-Myers Squibb, Boehringer Ingelheim GmbH, BioNumerik Pharmaceuticals, Inc., Celgene, GlaxoSmithKline, NovaRx Corporation, Onyx Pharmaceuticals, Inc., Pfizer Inc., and Regeneron Pharmaceuticals, Inc. among other companies.

HyperAcute Melanoma

Excision is the preferred treatment for early stage, localized melanoma, and there are several marketed therapeutics indicated for advanced melanoma including Merck's Intron A, Novartis AG / Prometheus Laboratories Inc.'s Proleukin as well as cisplatin and dacarbazine, which are available through several generic pharmaceuticals firms. Bristol-Myers Squibb's immunotherapy ipilimumab was recently approved by the FDA as was Roche/Daiichi Sankyo's drug, vemurafenid. In addition, there are a number of companies with active clinical trials ongoing in advanced melanoma including Amgen, Astellas Pharma, Eli Lilly, Onyx, Roche, Synta Pharmaceuticals Corp., and Vical Inc., among other companies.

Intellectual Property

We believe that patent protection and trade secret protection are important to our business and that our future success will depend, in part, on our ability to maintain our technology licenses, maintain trade secret protection, obtain and maintain patents and operate without infringing the proprietary rights of others both in the United States and abroad. We believe that obtaining identical patents and protection periods for a given technology throughout all markets of the world will be difficult because of differences in patent laws. In addition, the protection provided by non-U.S. patents, if any, may be weaker than that provided by United States patents. We have established and continue to build proprietary positions for our HyperAcute Technology and our IDO pathway inhibitor technology in the United States and abroad. As of September 30, 2010, our patent portfolio included six patent families relating to our HyperAcute Technology and nineteen patent families relating to our IDO pathway inhibitor technology.

There are two principal families of patents and patent applications relating to our HyperAcute product candidates and HyperAcute Technology. The first patent family is exclusively licensed from Central Iowa Health System and includes five pending patent applications and 20 registered U.S. and foreign patents related to the HyperAcute Technology. This patent family is expected to provide basic composition of matter patent protection extending until 2023 and has already resulted in a granted patent in Europe (EP 1549353 B1), in Mexico (278681) and Canada (2501744), all covering pharmaceutical compositions for inhibiting pre-established tumor growth comprising attenuated allogeneic tumor cells modified with a-Gal. Similar composition claims as well as methods of use for treating pre-established tumors are currently being pursued in the U.S., China, Japan and Canada. One patent recently issued from

this family in the U.S. and contains claims to methods of making master cell banks of HyperAcute allogeneic cells (US 7,763,461).

The second principal family of patents is exclusively licensed from Drexel University and includes two U.S. patents (US 6,361,775 and US 5,879,675) relating to the use of a-Gal in viral and cancer vaccines. These patents expire in 2014 and 2016, respectively in the United States. Related patents in this family have also been granted in Canada and Europe and expire in 2015. We exclusively license from Central Iowa Health System or own several other patents relating to a-Gal technology, which we believe provide additional barriers to entry in the space occupied by our HyperAcute Technology. Additional coverage includes issued patents relating to gene therapy technology and the use of xenogeneic cells having a-Gal expiring in 2016; and an application issued in the United States (US Patent No. 7,998,486) and pending in Europe covering isolated tumor antigens comprising a-Gal residues and projected to expire in 2027.

Our IDO pathway inhibitor technology patent portfolio contains several key U.S. patent families exclusively licensed from the Medical College of Georgia. The first patent family contains three issued U.S. patents and two pending applications, all expiring in 2018. This family contains patents having claims to methods of increasing T cell activation (US 6,451,840) and methods of augmenting rejection of tumor cells (US 6,482,416) by administering an IDO inhibitor. The second patent family contains four pending applications and an issued U.S. patent (US 7,598,287) to methods of using D-1MT to treat cancer and provides exclusivity for this use until 2027. We are also actively pursuing pharmaceutical composition claims to D-1MT in the U.S. in a pending application from this family, and also claims to the use of D-1MT to activate T cells in Europe out of another Medical College of Georgia patent family that if granted, will provide exclusivity for this use in validated European countries until 2022. Related applications are allowed in Australia and are pending in Canada. We believe additional barriers to entry in the IDO space are provided through exclusive licenses with Lankenau Institute for Medical Research and various NewLink-owned inventions, in which we are pursuing patent protection for specific combination therapies targeting the IDO pathway, as well as protection for novel inhibitor compounds and potential second generation products.

In order to protect the confidentiality of our technology, including trade secrets and know-how and other proprietary technical and business information, we require all of our employees, consultants, advisors and collaborators to enter into confidentiality agreements that prohibit the use or disclosure of confidential information. The agreements also oblige our employees, consultants, advisors and collaborators to assign or license to us ideas, developments, discoveries and inventions made by such persons in connection with their work with us. We cannot be sure that these agreements will maintain confidentiality, will prevent disclosure, or will protect our proprietary information or intellectual property, or that others will not independently develop substantially equivalent proprietary information or intellectual property.

The pharmaceutical industry is highly competitive and patents have been applied for by, and issued to, other parties relating to products or new technologies that may be competitive with those being developed by us. Therefore, our product candidates may give rise to claims that it infringes the patents or proprietary rights of other parties now or in the future. Furthermore, to the extent that we, our consultants, or manufacturing and research collaborators, use intellectual property owned by others in work performed for us, disputes may also arise as to the rights to such intellectual property or in related or resulting know-how and inventions. An adverse claim could subject us to significant liabilities to such other parties and/or require disputed rights to be licensed from such other parties. A license required under any such patents or proprietary rights may not be available to us, or may not be available on acceptable terms. If we do not obtain such licenses, we may encounter delays in product market introductions, or may find that we are prevented from the development, manufacture or sale of products requiring such licenses. In addition, we could incur substantial costs in defending ourselves in legal proceedings instituted before patent and trademark offices in the United States, the European Union, or other ex-U.S. territories, or in a suit brought against us by a private party based on such patents or proprietary rights, or in a suit by us asserting our patent or proprietary rights against another party, even if the outcome is not adverse to us.

Licensing Agreements

Following are licensing agreements covering technologies and intellectual property rights useful to our HyperAcute product candidates and technologies:

Central Iowa Health System License Agreement

We are a party to a license agreement, or the CIHS Agreement, dated August 2, 2001 with the Central Iowa Health System, or CIHS. The CIHS Agreement grants to us an exclusive, worldwide license to make, have made, use, import, sell and offer for sale products that are covered by certain CIHS patent rights, proprietary information and know-how relating to our HyperAcute immunotherapy technology. The license is subject to CIHS's retained right to use, and to permit other academic and research institutions to use, the CIHS patent rights and information for non-commercial bona fide research purposes. The license is also subject to certain rights of and obligations to the United States government under applicable law, to the extent that such intellectual property was created using funding provided by a United States federal agency. We may grant sublicenses under the license, so long as the sublicense is subordinate to, and complies with, the CIHS Agreement.

In partial consideration of the license under the CIHS Agreement, we entered into a stock purchase agreement with CIHS, under which we issued to CIHS shares of our common stock and granted CIHS certain rights related to ownership of such shares. In addition, we must reimburse CIHS for out-of-pocket costs incurred for patent prosecution and maintenance. If we commercialize a licensed product, we also have the obligation to pay CIHS royalties as a low single-digit percentage of net sales of the licensed product, subject to annual minimum royalties and a reduction for any royalty payments we must make to third parties. If we grant a sublicense under the licenses granted by CIHS, we must pay to CIHS a percentage of certain consideration paid by the sublicensee to us.

Under the CIHS Agreement, we must use commercially reasonable efforts to develop and commercialize licensed products, to obtain necessary regulatory approvals and to launch and market such products in specified markets. As part of such efforts, we must deliver to CIHS certain information including an annual progress report detailing our progress towards commercial use of licensed products. At specific dates after the effective date we must satisfy certain obligations to conduct specified development on the licensed product, expend specified amounts on development of the licensed technology, or raise specific minimum amounts of equity capital. We are obligated to use commercially reasonable efforts to negotiate appropriate sponsored research programs with researchers at CIHS. If CIHS concludes that we have not met any of these obligations, and we fail to cure such failure, CIHS may either terminate the agreement or convert the license to a non-exclusive license. In addition, if CIHS determines that we have failed to use commercially reasonable efforts to, or to grant sublicenses to, develop or commercialize a licensed product in a particular field within the licensed field of use, CIHS may terminate, or convert the license to a non-exclusive license with respect to such particular field.

Unless terminated earlier, the CIHS Agreement shall remain in effect until the expiration of all of our royalty obligations under the agreement. Our royalty obligations expire on a country-by-country and a licensed product-by-licensed product basis upon the later of (i) the expiration of the last to expire valid claim within the licensed patents covering a licensed product in a country or (ii) 12 years following the first commercial sale of a licensed product in a country. Pending the status of certain patent applications and the payment of appropriate maintenance, renewal, annuity or other governmental fees, we expect that the last patent will expire under this agreement in 2023, excluding any patent term adjustments or patent term extensions or additional patents issued that are included under the license. We may terminate the agreement, or specific patents covered by the agreement, on written notice to CIHS or for CIHS' uncured material breach of the agreement. CIHS has the right to terminate for our uncured material breach of the agreement after written notice. Upon termination of the agreement we may sell our existing inventory of licensed products for a period of three months after such termination. We have the right to assign the CIHS Agreement to any affiliate or in connection with the transfer of all or substantially all of our assets

relating to the agreement, but any other assignment requires CIHS' written consent, which consent shall not be unreasonably withheld.

Drexel University License Agreement

We are party to a license agreement, or the Drexel Agreement, dated October 13, 2004 with Drexel University, or Drexel. The Drexel Agreement grants us, and our affiliates, an exclusive, worldwide license, under specified Drexel patent rights relating to compositions and methods for vaccines based on a-Gal epitopes, to make, have made, use, import, sell and offer for sale vaccine products that are covered by such patent rights, or that use related Drexel technical information, for use in the diagnosis and treatment of cancer, viral and other infectious disease. The license is subject to Drexel's retained right to use, and to permit other non-profit organizations to use, those patent rights and technical information for educational and non-commercial research purposes. The license is also subject to certain rights of and obligations to the U.S. government under applicable law, to the extent that certain of such intellectual property were created using funding provided by a U.S. federal agency. We may grant sublicenses under the license, pursuant to a sublicense agreement in form acceptable to Drexel and subject to certain additional conditions and obligations.

In consideration of our license under the Drexel Agreement, we have paid and are obligated to continue to pay specified license fees, potential milestone payments in an aggregate amount up to approximately $1 million for each licensed product, annual license maintenance fees, reimbursement of patent prosecution costs, and royalty payments as a low single-digit percentage of "net sales" of any licensed product that is commercialized, subject to minimum royalty payments. Royalty rates vary depending on the type of licensed product, the territory where it is sold and whether the licensed product is combined with other technologies. In addition, if we grant a sublicense under the license granted by Drexel, we must pay Drexel a percentage of the consideration paid by the sublicensee to us.

In accordance with a development plan included in the Drexel Agreement, we are obligated to use commercially reasonable efforts to develop and market products covered by the license as soon as practicable. In addition, we must either market licensed products within five years of the date of the agreement, or demonstrate that we have made and continue to make bona fide, good faith, ongoing efforts to develop and market licensed products.

Unless terminated earlier, the Drexel Agreement shall remain in effect until the expiration or abandonment of all the licensed Drexel patents. Pending the payment of appropriate maintenance, renewal, annuity or other governmental fees, we expect the last patent will expire under this agreement in 2015, excluding any patent term adjustments or patent term extensions or additional patents issued that are included under the license. We may terminate the Drexel Agreement on written notice to Drexel. Drexel has the right to terminate for the uncured breach of our obligations under the agreement or for certain other reasons. If the Drexel Agreement terminates we may, in certain circumstances, sell any remaining inventory of licensed products for a period of six months after termination. We may not assign the Drexel Agreement except with Drexel's written consent, not to be unreasonably withheld or delayed.

Following are licensing agreements covering technologies and intellectual property rights useful to our IDO pathway inhibitor technology and product candidate:

LIMR Exclusive License Agreement (IDO-1)

We are a party to a license agreement dated July 7, 2005, as amended May 22, 2006 and September 11, 2007, or the IDO-1 Agreement, with Lankenau Institute for Medical Research, or LIMR. The IDO-1 Agreement grants us an exclusive, worldwide license, under specified LIMR patent rights relating to inhibitors of indoleamine 2,3-dioxygenase, or IDO-1, and related LIMR technology, to make, have made, use, and sell products that are covered by such patent rights for use in the field of animal and human therapeutics and diagnostics. Such license is subject to LIMR's retained right to use such LIMR patent rights and technology for its non-commercial educational and research purposes. In addition, the license is

subject to certain rights of and obligations to the U.S. government under applicable law, to the extent that such intellectual property was created using funding provided by a U.S. federal agency. We may grant sublicenses under the LIMR Licenses, provided that each sublicense materially conforms to the IDO-1 Agreement and is expressly subject to its terms.

In consideration of such license grant, we are obligated to pay to LIMR specified license fees, annual license maintenance fees, reimbursement of past patent prosecution costs, potential milestone payments in an aggregate amount up to approximately $1.36 million for each licensed product, and royalties as a low single-digit percentage of net sales of the licensed products if a licensed product is commercialized. In addition, if we grant a sublicense under the IDO-1 Agreement, we must to pay to LIMR a percentage of the consideration received by us from the sublicensee.

Under the IDO-1 Agreement, we are obligated to use commercially reasonable efforts to develop and market the licensed products, and to achieve certain milestones by agreed-upon deadlines. If we breach our obligations and fail to cure such breach, LIMR may reduce our license to a non-exclusive license or revoke the license in its entirety.

Unless terminated earlier, the IDO-1 Agreement shall remain in effect until the expiration of the last licensed LIMR patents. Pending the payment of appropriate maintenance, renewal, annuity or other governmental fees, we expect the last patent will expire under this agreement in 2024, excluding any patent term adjustments or patent term extensions or additional patents issued that are included under the license. LIMR may terminate the agreement for our failure to make payments due, bankruptcy or similar proceedings. Upon termination of the agreement, we may sell our current inventory of licensed products and those licensed products in the process of manufacture, subject to the terms of the agreement. We have the right to assign the IDO-1 Agreement in connection with an acquisition, merger, consolidation, operation of law or the transfer of all or substantially all of our assets or equity relating to the agreement, but any other assignment requires the express prior written consent of LIMR, not to be unreasonably withheld.

Medical College of Georgia Research Institute License Agreement

We are a party to a License Agreement dated September 13, 2005, or the MCGRI Agreement, with Medical College of Georgia Research Institute, or MCGRI which was amended on April 27, 2006 and February 13, 2007. The MCGRI Agreement grants us, including our affiliates, an exclusive, worldwide license, under specified MCGRI patent rights and related technology to make, use, import, sell and offer for sale products that are covered by licensed patent rights or incorporates or uses licensed technology in all medical applications.

Such license is subject to MCGRI's retained right to use, and to permit its academic research collaborators to use, such MCGRI patent rights and technology for research and educational purposes. In addition, the license is subject to certain rights of and obligations to the U.S. government under applicable law, to the extent that such intellectual property was created using funding provided by a U.S. federal agency. We may grant sublicenses under such license, subject to the prior approval of MCGRI, not to be unreasonably withheld or delayed.

In consideration of such license grant, we are obligated to pay to MCGRI specified license fees (including issuing shares of our common stock), annual license maintenance fees, reimbursement of patent prosecution costs, potential milestone payments in an aggregate amount up to approximately $2.8 million per licensed product, and royalties as a single-digit percentage of net sales of the licensed products, subject to minimum royalty payments and royalty rates depending on the type of license product. In addition, if we grant a sublicense under the license granted by MCGRI, we must pay to MCGRI a percentage of the consideration we receive from the sublicensee.

Under the agreement, we are obligated to make certain investments toward the further development of licensed products within specified time periods. If we fail to make the required investment, MCGRI may convert our license in the oncology field to a non-exclusive license. In addition, if we fail to develop the licensed products in a non-cancer field, specifically infectious disease or diagnostics, MCGRI may convert our license in such field to a non-exclusive license.

Unless terminated earlier, the MCGRI Agreement will remain in effect until the expiration of the last licensed MCGRI patents. Pending the status of certain patent applications and the payment of appropriate maintenance, renewal, annuity or other governmental fees, we expect the last patent will expire under this agreement in 2027, excluding any patent term adjustments or patent term extensions or additional patents issued that are included under the license. MCGRI may terminate this agreement for our uncured material breach, bankruptcy or similar proceedings. For a period of one year following the termination of the agreement, we may sell our licensed products that are fully manufactured and part of our normal inventory at the date of termination. We have the right to assign the MCGRI Agreement to our affiliates or in connection with the transfer of all or substantially all of our assets relating to the agreement, but any other assignment requires the prior written consent of MCGRI.

University of British Columbia License Agreement

We are a party to a license agreement dated February 1, 2007, or the UBC License, with the University of British Columbia, or UBC. The UBC License grants us an exclusive, worldwide license, under specified UBC patent rights relating to IDO-1 inhibitors and related technology, to make, have made, use, import, sell and offer for sale products that are covered by licensed patent rights or incorporates or uses licensed technology. In addition, the UBC License grants us an option to obtain an exclusive, worldwide license to new IDO-1 inhibitors related technology developed during the term of the agreement.

Such license is subject to UBC's retained right to use such UBC patent rights and technology for research, scholarly publication, educational and non-commercial uses. We may grant sublicenses, other than naked cross-licenses, under the UBC license, provided that each sublicense is consistent with the terms and conditions of the UBC License and contains certain mandatory sublicensing provisions.

In consideration of such license grant, we must pay to UBC specified license fees, annual payment and license maintenance fees, reimbursement of patent prosecution costs, potential milestone payments in an aggregate amount up to approximately $1.8 million per licensed product, and royalties in a range of less than 10% of net revenue of the licensed product if a licensed product is commercialized, which royalty rate varies depending on the type of license product and field of use. In addition, if we grant a sublicense under the licenses granted by UBC, we may be required to pay to UBC a percentage of certain consideration we receive from the sublicensee.

We are obligated to use our commercially reasonable efforts to develop and market the licensed products, and to achieve certain milestones by agreed-upon deadlines. If we breach our obligations and fail to cure such breach, UBC may terminate this agreement. If we are diligently developing the licensed product in some therapeutic fields, but not in other therapeutic fields, UBC may require us to grant a sublicense in such other fields not being exploited by us to a third party that is able to develop the licensed product in such other fields.

Unless terminated earlier, the UBC License will remain in effect for 20 years or until the expiration of the last licensed UBC patents, whichever is later. Pending the status of certain patent applications and the payment of appropriate maintenance, renewal, annuity or other governmental fees, we expect the last patent will expire under this agreement in 2027, excluding any patent term extensions or additional patents issued that are included under the license. UBC may terminate this agreement for our uncured material breach, bankruptcy or similar proceedings. Upon termination of the agreement, we may not sell any inventory of the licensed product without the prior written consent of UBC. We have the right to assign the

UBC Agreement to our affiliates or in connection with a merger, acquisition, or the transfer of all or substantially all of our assets relating to the agreement, but any other assignment requires the prior written consent of UBC, not to be unreasonably withheld.

LIMR Exclusive License Agreement (IDO-2)

We are a party to a license agreement, or the LIMR IDO-2 Agreement, executed December 21, 2007 with LIMR. The LIMR IDO-2 Agreement grants us an exclusive, worldwide license, under specified LIMR patent rights relating to inhibitors of the target Indoleamine 2,3 Dioxygenase-2, or IDO-2, and under related LIMR know-how or technology, to make, have made, use, import, sell and offer for sale products and services that are covered by such patent rights, for all uses. Such license is subject to LIMR's retained non-exclusive right to use such LIMR patent rights and technical information for internal non-commercial, educational and research purposes only. In addition, the license is subject to certain rights of and obligations to the U.S. government under applicable law, to the extent that such intellectual property was created using funding provided by a U.S. federal agency. We may grant sublicenses under the LIMR IDO-2 license, provided that each sublicense complies with the terms of the LIMR IDO-2 Agreement.

In consideration of such license grant, we have paid to LIMR an upfront license fee and annual license maintenance fees, and are obligated to pay LIMR annual license maintenance fees, potential milestone payments in an aggregate amount up to approximately $1.52 million per licensed product, subject to reductions if milestones also qualify under the IDO-1 Agreement, and, if a licensed product is commercialized, royalties as a low single-digit percentage of "net sales" of the licensed product, subject to reduction for our royalty payments to third parties. In addition, if we grant a sublicense under the licenses granted by LIMR, we must pay to LIMR a percentage of the consideration paid by the sublicensee to us. The payment provisions of the LIMR IDO-2 Agreement provide that, in the event a product for which we have payment obligations under the LIMR IDO-2 Agreement is also covered by payment obligations under the LIMR IDO-1 Agreement, we will not be obligated to pay both such obligations but rather will pay to LIMR the higher of the amounts owed under the two agreements.

Under the LIMR IDO-2 Agreement, we have agreed to use our commercially reasonable efforts to develop and exploit products covered by the license. We have the obligation, at our expense and in our reasonable discretion, to conduct the prosecution and maintenance of the LIMR patent rights licensed to us under the agreement. In addition, LIMR granted us the exclusive option to obtain exclusive, worldwide licenses on commercially reasonable terms to future inventions and discoveries of LIMR related to IDO-2 or inhibitors of IDO-2.

Concurrently with, and as an obligation under, the LIMR IDO-2 Agreement, we entered into a cooperative research and development agreement with LIMR, or the CRADA Agreement. Under the CRADA agreement, we agree to provide funding to LIMR in support of IDO research for one year and renewable at our option.

Unless terminated earlier, the LIMR IDO-2 Agreement shall continue until the expiration of the last valid LIMR patent licensed under the agreement. Pending the status of certain patent applications and the payment of appropriate maintenance, renewal, annuity or other governmental fees, we expect the last patent will expire under this agreement in 2027, excluding any patent term adjustments or patent term extensions or additional patents issued that are included under the license. We may terminate the Agreement on written notice to LIMR. LIMR has the right to terminate for our uncured breach, bankruptcy or similar proceedings. Upon termination of the agreement, we may sell our current inventory of licensed products and those licensed products in the process of manufacture, subject to the terms of the agreement. We may assign the LIMR Agreement in connection with the transfer of all or substantially all of our assets or equity, or by reason of acquisition, merger, consolidation or operation of law, but any other assignment requires LIMR's written consent, which shall not be unreasonably withheld.

LIMR Exclusive License Agreement (IDO)

We are a party to a license agreement, or the LIMR IDO Agreement, dated April 23, 2009 with LIMR. The LIMR IDO Agreement grants us an exclusive, worldwide license, under specified LIMR patent rights relating to IDO inhibitors, and under related LIMR know-how or technology, to make, have made, use, import, sell and offer for sale products and services that are covered by such patent rights, for all uses. Such license is subject to LIMR's retained non-exclusive right to use such LIMR patent rights and technical information for internal non-commercial, educational and research purposes only. In addition, the license is subject to certain rights of and obligations to the U.S. government under applicable law, to the extent that such intellectual property was created using funding provided by a U.S. federal agency. We may grant sublicenses under the LIMR IDO license, provided that each sublicense complies with the terms of the LIMR IDO Agreement.

In consideration of such license grant, we are obligated to pay LIMR potential milestone payments in an aggregate amount up to approximately $610,000 per licensed product, subject to reductions if milestones also qualify under the IDO-1 Agreement or LIMR IDO-2 Agreement, and royalties as a low single-digit percentage of "net sales" of the licensed product, subject to reduction for our royalty payments to third parties and to LIMR under the IDO-1 Agreement or LIMR IDO-2 Agreement. In addition, if we grant a sublicense under the licenses granted by LIMR, we must pay to LIMR a percentage of the consideration paid by the sublicensee to us.

Under the LIMR IDO Agreement, we have agreed to use our commercially reasonable efforts to develop and exploit products covered by the license. We have the right and responsibility, at our expense and in our reasonable discretion, to conduct the prosecution and maintenance of the LIMR patent rights licensed to us under the agreement.

Unless terminated earlier, the LIMR IDO Agreement shall continue until the expiration of the last valid LIMR patent licensed under the agreement. Pending the status of certain patent applications and the payment of appropriate maintenance, renewal, annuity or other governmental fees, we expect the last patent will expire under this agreement in 2029, excluding any patent term adjustments or patent term extensions or additional patents issued that are included under the license. We may terminate the Agreement on written notice to LIMR. LIMR has the right to terminate for our uncured breach, bankruptcy or similar proceedings. Upon termination of the agreement, we may sell our current inventory of licensed products and those licensed products in the process of manufacture, subject to the terms of the agreement. We may assign the LIMR IDO Agreement in connection with the transfer of all or substantially all of our assets or equity, or by reason of acquisition, merger, consolidation or operation of law, but any other assignment requires LIMR's written consent, which shall not be unreasonably withheld.

Bresagen Patent License Agreement

We are a party to a license agreement, or the Bresagen Agreement, dated March 1, 2006 with Bresagen Xenograft Marketing Ltd, or Bresagen. The Bresagen Agreement grants us a non-exclusive, non-sublicensable license to specified Bresagen patent rights for use in testing microbial and cancer vaccines in the U.S. In consideration of such license grant, we are obligated to pay Bresagen an up-front license fee and an annual license fee.

Unless terminated earlier, the Bresagen Agreement shall continue for an initial period of eight years, which may be extended an additional five years upon agreement of the parties. We may terminate the Agreement upon agreement in writing with Bresagen. Bresagen has the right to terminate for our uncured breach, insolvency, change of control without consent or similar proceedings. Upon termination of the agreement, all of our rights under the license are terminated. We may assign the Bresagen Agreement in connection with the transfer of all or substantially all of our assets by reason of acquisition, merger, purchase or otherwise with notice to Bresagen, but any other assignment requires Bresagen's written consent.

Following are licensing agreements to which BPS is a party covering technologies and intellectual property rights applicable to BPS's development of vaccines for the biodefense field:

Regents of the University of California License Agreement

BPS is a party to a license agreement dated July 29, 2008, or the California License, with the Regents of the University of California, or California. The California License grants BPS an exclusive, worldwide license, under specified California patent rights relating to technology based on yellow fever virus, to make, use, import, sell and offer for sale products that are covered by licensed patent rights in the field of human healthcare. The license is subject to California's retained right to use the California patent rights and technology for research purposes. The license is also subject to certain rights of and obligations to the United States government under applicable law. BPS may grant sublicenses under the California license, provided that each sublicense is consistent with the terms and conditions of the California License.

In consideration of the license grant, BPS must pay to California a specified license issue fee, annual license maintenance fees, patent prosecution costs, potential milestone payments in an aggregate amount up to approximately $285,000 per licensed product, and royalties as a low single-digit percentage of net sales of the licensed product, which royalty rate varies depending on the territory. In addition, if BPS grants a sublicense under the licenses granted by California, BPS may be required to pay to California a percentage of certain consideration BPS receives from the sublicensee. BPS is obligated to use commercially reasonable efforts to develop and market the licensed products, and to achieve certain milestones by agreed-upon deadlines. If BPS breaches its obligations and fails to cure the breach, California may terminate the California License or reduce BPS's rights under the license.

Unless terminated earlier, the California License will remain in effect until the expiration or abandonment of the last of the California patent rights. Pending the status of certain patent applications and the payment of appropriate maintenance, renewal, annuity or other governmental fees, we expect the last patent will expire under this agreement in 2024, excluding any patent term extensions or additional patents issued that are included under the license. This agreement will terminate automatically upon the filing, by or against BPS, for relief under the United States Bankruptcy Code or upon the filing of a legal action, by or on behalf of BPS, claiming that any portion of the California License is invalid or unenforceable. California may terminate this agreement for BPS's uncured material breach. BPS may terminate this agreement upon written notice to California. Upon termination of the agreement, BPS may sell any previously made licensed product for a period of 120 days after termination. BPS has the right to assign the California License to its affiliates or in connection with a merger, acquisition, or the transfer of all or substantially all of its assets relating to the agreement, but any other assignment requires the prior written consent of California.

Her Majesty the Queen in Right of Canada License Agreement

BPS is a party to a license agreement dated May 4, 2010, or the Canada License, with the Her Majesty the Queen in Right of Canada, or Canada. The Canada License grants BPS a worldwide, personal, non-transferable, sole, revocable, royalty-bearing license for commercialization of specified Canada patent rights relating to technology based on rVSV. The license is subject to Canada's retained right to use the Canada patent rights and technology to improve the patent rights, carryout educational purposes, and development of the patent rights where BPS cannot obtain regulatory approval or meet demand. BPS may grant sublicenses under the Canada license, provided that each sublicense is consistent with the terms and conditions of the Canada License and contain certain mandatory sublicensing provisions.

In consideration of the license grant, BPS must pay to Canada a specified patent and signing fees, annual license maintenance fees, patent prosecution costs, potential milestone payments in an aggregate amount up to approximately C$205,000 per licensed product, and royalties as a low single-digit percentage of the sales price of the licensed products sold by BPS, which royalty rate varies depending on the type of

licensed product. In addition, if BPS grants a sublicense under the licenses granted by Canada, BPS is required to pay to Canada a percentage of certain consideration BPS receives from the sublicensee. BPS is obligated to use commercially reasonable efforts to develop and market the licensed products. If BPS breaches its obligations and fails to cure the breach, Canada may terminate the Canada License.

Unless terminated earlier, the Canada License will remain in effect until the expiration of the last of the Canada patent rights. Pending the status of certain patent applications and the payment of appropriate maintenance, renewal, annuity or other governmental fees, we currently expect the last patent will expire under this agreement in 2023, excluding any patent term adjustments or patent term extensions or additional patents issued that are included under the license. Canada may terminate this agreement for BPS's failure to use commercially reasonable efforts to commercialize, failure to pay, breach of confidentiality, cessation of business, criminal conviction or other breach of its obligations under the agreement. BPS may not assign the Canada License to a third party without the prior written consent of Canada, not to be unreasonably withheld. This agreement will terminate automatically if BPS assigns the Canada License without prior written consent or if BPS files for bankruptcy or similar proceedings.

Government Regulation

We operate in a highly regulated industry that is subject to significant federal, state, local and foreign regulation. Our present and future business has been, and will continue to be, subject to a variety of laws including, the Federal Food, Drug, and Cosmetic Act, or FDC Act, and the Public Health Service Act, among others.

The FDC Act and other federal and state statutes and regulations govern the testing, manufacture, safety, effectiveness, labeling, storage, record keeping, approval, advertising and promotion of our products. As a result of these laws and regulations, product development and product approval processes are very expensive and time consuming.

FDA Approval Process

In the United States, pharmaceutical products, including biologics, are subject to extensive regulation by the FDA. The FDC Act and other federal and state statutes and regulations, govern, among other things, the research, development, testing, manufacture, storage, recordkeeping, approval, labeling, promotion and marketing, distribution, post-approval monitoring and reporting, sampling, and import and export of pharmaceutical products. Failure to comply with applicable U.S. requirements may subject a company to a variety of administrative or judicial sanctions, such as FDA refusal to approve pending new drug applications, or NDAs, or biologic license applications, or BLAs, warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, civil penalties, and criminal prosecution.

Pharmaceutical product development in the U.S. typically involves preclinical laboratory and animal tests, the submission to the FDA of a notice of claimed investigational exemption or an investigational new drug application, or IND, which must become effective before clinical testing may commence, and adequate and well-controlled clinical trials to establish the safety and effectiveness of the drug or biologic for each indication for which FDA approval is sought. Satisfaction of FDA pre-market approval requirements typically takes many years and the actual time required may vary substantially based upon the type, complexity and novelty of the product or disease.

Preclinical tests include laboratory evaluation as well as animal trials to assess the characteristics and potential pharmacology and toxicity of the product. The conduct of the preclinical tests must comply with federal regulations and requirements including good laboratory practices. The results of preclinical testing are submitted to the FDA as part of an IND along with other information including information about product chemistry, manufacturing and controls and a proposed clinical trial protocol. Long term preclinical

tests, such as animal tests of reproductive toxicity and carcinogenicity, may continue after the IND is submitted.

A 30-day waiting period after the submission of each IND is required prior to the commencement of clinical testing in humans. If the FDA has not objected to the IND within this 30-day period, the clinical trial proposed in the IND may begin.

Clinical trials involve the administration of the investigational new drug to healthy volunteers or patients under the supervision of a qualified investigator. Clinical trials must be conducted in compliance with federal regulations, good clinical practices, or GCP, as well as under protocols detailing the objectives of the trial, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. Each protocol involving testing on U.S. patients and subsequent protocol amendments must be submitted to the FDA as part of the IND.

The FDA may order the temporary or permanent discontinuation of a clinical trial at any time or impose other sanctions if it believes that the clinical trial is not being conducted in accordance with FDA requirements or presents an unacceptable risk to the clinical trial patients. The clinical trial protocol and informed consent information for patients in clinical trials must also be submitted to an institutional review board, or IRB, for approval. An IRB may also require the clinical trial at the site to be halted, either temporarily or permanently, for failure to comply with the IRB's requirements, or may impose other conditions.

Clinical trials to support NDAs or BLAs, which are applications for marketing approval, are typically conducted in three sequential Phases, but the Phases may overlap. In Phase 1, the initial introduction of the drug into healthy human subjects or patients, the drug is tested to assess metabolism, pharmacokinetics, pharmacological actions, side effects associated with increasing doses and, if possible, early evidence on effectiveness. Phase 2 usually involves trials in a limited patient population, to determine the effectiveness of the drug for a particular indication or indications, dosage tolerance and optimum dosage, and identify common adverse effects and safety risks.

If a compound demonstrates evidence of effectiveness and an acceptable safety profile in Phase 2 evaluations, Phase 3 clinical trials are undertaken to obtain the additional information about clinical efficacy and safety in a larger number of patients, typically at geographically dispersed clinical trial sites, to permit the FDA to evaluate the overall benefit-risk relationship of the drug and to provide adequate information for the labeling of the drug. Before proceeding with a Phase 3 clinical trial, sponsors may seek a written agreement from the FDA regarding the design, size, and conduct of a clinical trial. This is known as a Special Protocol Assessment, or SPA. SPAs help establish up front agreement with the FDA about the adequacy of the design of a clinical trial to support a regulatory approval, but the agreement is not binding if new circumstances arise. In addition, even if an SPA remains in place and the trial meets its endpoints with statistical significance, the FDA could determine that the overall balance of risks and benefits for the product candidate is not adequate to support approval, or only justifies approval for a narrow set of clinical uses or approval with restricted distribution or other burdensome post-approval requirements or limitations.

In the case of product candidates for severe or life-threatening diseases such as cancer, the initial human testing is often conducted in patients rather than in healthy volunteers. Since these patients already have the target disease, these studies may provide initial evidence of efficacy traditionally obtained in Phase 2 clinical trials and thus these trials are frequently referred to as Phase 1B clinical trials. Additionally, when product candidates can do damage to normal cells, it is not ethical to administer such drugs to healthy patients in a Phase 1 clinical trial. After completion of the required clinical testing, an NDA or, in the case of a biologic, a BLA, is prepared and submitted to the FDA. FDA approval of the marketing application is required before marketing of the product may begin in the U.S. The marketing application must include the results of all preclinical, clinical and other testing and a compilation of data relating to the product's pharmacology, chemistry, manufacture, and controls.

The FDA has 60 days from its receipt of an NDA or BLA to determine whether the application will be accepted for filing based on the agency's threshold determination that it is sufficiently complete to permit substantive review. Once the submission is accepted for filing, the FDA begins an in-depth review. The FDA has agreed to certain performance goals in the review of marketing applications. Most such applications for non-priority drug products are reviewed within ten months. The review process may be extended by the FDA for three additional months to consider new information submitted during the review or clarification regarding information already provided in the submission. The FDA may also refer applications for novel drug products or drug products which present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved. The FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendations. Before approving a marketing application, the FDA will typically inspect one or more clinical sites to assure compliance with GCP. Additionally, the FDA will inspect the facility or the facilities at which the drug is manufactured. The FDA will not approve the product unless compliance with current good manufacturing practices, or cGMPs, is satisfactory and the marketing application (the NDA or, in the case of biologics, the BLA) contains data that provide substantial evidence that the drug is safe and effective in the indication studied. Manufacturers of biologics also must comply with FDA's general biological product standards.

After the FDA evaluates the marketing application and the manufacturing facilities, it issues an approval letter, or a complete response letter. A complete response letter outlines the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. If and when those deficiencies have been addressed in a resubmission of the marketing application, FDA will re-initiate review. If it is satisfied that the deficiencies have been addressed, the FDA will issue an approval letter. The FDA has committed to reviewing such resubmissions in two or six months depending on the type of information included. It is not unusual for the FDA to issue a complete response letter because it believes that the drug is not safe enough or effective enough or because it does not believe that the data submitted are reliable or conclusive.

An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. As a condition of approval of the marketing application, the FDA may require substantial post-approval testing and surveillance to monitor the drug's safety or efficacy and may impose other conditions, including labeling restrictions which can materially affect the potential market and profitability of the drug. Once granted, product approvals may be withdrawn if compliance with regulatory standards is not maintained or problems are identified following initial marketing.

Fast Track Designation

Congress enacted the Food and Drug Administration Modernization Act of 1997, or the Modernization Act, in part to ensure the availability of safe and effective drugs, biologics and medical devices by expediting the development and review for certain new products. The Modernization Act establishes a statutory program for the review of Fast Track products, including biologics. A Fast Track product is defined as a new drug or biologic intended for the treatment of a serious or life-threatening condition that demonstrates the potential to address unmet medical needs for this condition. Under the Fast Track program, the sponsor of a new drug or biologic may request that the FDA designate the drug or biologic as a Fast Track product at any time during the development of the product, prior to a new drug application submission. Fast Track designation enables a company to file their application for approval on a rolling basis and potentially qualify for priority review.

The FDA may condition approval of an application for a Fast Track product on a commitment to do post-approval studies to validate the surrogate endpoint or confirm the effect on the clinical endpoint and require prior review of all promotional materials. In addition, the FDA may withdraw approval of a Fast Track product in an expedited manner on a number of grounds, including the sponsor's failure to conduct

any required post-approval study in a timely manner. On October 1, 2010 the FDA approved our application for Fast Track product designation for HyperAcute Pancreas.

Orphan Drug Designation

The Company was granted Orphan Drug designation for HyperAcute Pancreas on October 21, 2010 by the FDA. The FDA grants Orphan Drug designation to drugs intended to treat a rare disease or condition, which for this program is defined as having a prevalence of less than 200,000 individuals in the United States. Now that the FDA has granted us Orphan Drug designation, the generic identity of our therapeutic agent and its potential orphan use will be disclosed publicly by the FDA. Orphan drug exclusive marketing rights may be lost if the FDA determines that our request for designation was materially defective or if we are unable to assure sufficient quantity of our drug.

Orphan drug designation does not shorten the regulatory review and approval process for an orphan drug, nor does it give that drug any advantage in the regulatory review and approval process. However, if an orphan drug later receives the first approval for the indication for which it has designation, the FDA may not approve any other applications to market the same drug for the same indication, except in very limited circumstances, for seven years in the United States. Additional benefits of Orphan Drug designation include clinical tax research incentives and exemption from application filing fees. Although obtaining approval to market a product with orphan drug exclusivity may be advantageous, we cannot be certain:

- that we will be the first to obtain approval for any other drugs or indications for which we obtain Orphan Drug designation;
- that Orphan Drug designation will result in any commercial advantage or reduce competition; or
- that the limited exceptions to this exclusivity will not be invoked by the FDA.

Accelerated Approval Based on Surrogate Endpoint

The Modernization Act provides that the FDA can base approval of a marketing application for a Fast Track product on an effect on a surrogate endpoint, or on another endpoint that is reasonably likely to predict clinical benefit. Under the FDA's accelerated approval regulations, the FDA may approve a drug for a serious or life-threatening illness that provides meaningful therapeutic benefit to patients over existing treatments based upon a surrogate endpoint that is reasonably likely to predict clinical benefit. In clinical trials, a surrogate endpoint is a measurement of laboratory or clinical signs of a disease or condition that substitutes for a direct measurement of how a patient feels, functions or survives. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. A drug candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of Phase 4 or post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or confirm a clinical benefit during post-marketing studies, will allow the FDA to withdraw the drug from the market on an expedited basis. All promotional materials for drug candidates approved under accelerated regulations are subject to prior review by the FDA. We do not intend to seek approval for HyperAcute Pancreas based on a surrogate endpoint, but may seek approval based on surrogate endpoints for other indications in the future.

The Hatch-Waxman Act

In seeking approval for marketing of a drug or biologic through an NDA or BLA, respectively, applicants are required to list with the FDA each patent with claims that cover the applicant's product or FDA approved method of using this product. Upon approval of a product, each of the patents listed in the application for the drug is then published in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, commonly known as the Orange Book. Drugs listed in the Orange Book can, in turn, be cited by potential competitors in support of approval of an abbreviated new drug application, or

ANDA. An ANDA provides for marketing of a drug product that has the same active ingredients in the same strengths and dosage form as the listed drug and has been shown through bioequivalence testing to be therapeutically equivalent to the listed drug. ANDA applicants are not required to conduct or submit results of preclinical or clinical tests to prove the safety or effectiveness of their drug product, other than the requirement for bioequivalence testing. Drugs approved in this way are commonly referred to as "generic equivalents" to the listed drug, and can often be substituted by pharmacists under prescriptions written for the original listed drug.

The ANDA applicant is required to certify to the FDA concerning any patents listed for the approved product in the FDA's Orange Book. Specifically, the applicant must certify that: (i) the required patent information has not been filed; (ii) the listed patent has expired; (iii) the listed patent has not expired, but will expire on a particular date and approval is sought after patent expiration; or (iv) the listed patent is invalid or will not be infringed by the new product. A certification that the new product will not infringe the already approved product's listed patents or that such patents are invalid is called a Paragraph IV certification. If the applicant does not challenge the listed patents, the ANDA application will not be approved until all the listed patents claiming the referenced product have expired.

If the ANDA applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the ANDA has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent infringement lawsuit within 45 days of the receipt of a Paragraph IV certification notification automatically prevents the FDA from approving the ANDA until the earlier of 30 months, expiration of the patent, settlement of the lawsuit or a decision in the infringement case that is favorable to the ANDA applicant.

The ANDA application also will not be approved until any non-patent exclusivity, such as exclusivity for obtaining approval of a new chemical entity, listed in the Orange Book for the referenced product has expired. Federal law provides a period of five years following approval of a drug containing no previously approved active moiety, during which ANDAs for generic versions of those drugs cannot be submitted unless the submission contains a Paragraph IV challenge to a listed patent, in which case the submission may be made four years following the original product approval. Federal law provides for a period of three years of exclusivity following approval of a listed drug that contains previously approved active ingredients but is approved in a new dosage form, route of administration or combination, or for a new use, the approval of which was required to be supported by new clinical trials conducted by or for the sponsor, during which the FDA cannot grant effective approval of an ANDA based on that listed drug.

Other Regulatory Requirements

Once an NDA or BLA is approved, a product will be subject to certain post-approval requirements. For instance, the FDA closely regulates the post-approval marketing and promotion of drugs, including standards and regulations for direct-to-consumer advertising, off-label promotion, industry-sponsored scientific and educational activities and promotional activities involving the internet.

Drugs may be marketed only for the approved indications and in accordance with the provisions of the approved labeling. Changes to some of the conditions established in an approved application, including changes in indications, labeling, or manufacturing processes or facilities, require submission and FDA approval of a new NDA or NDA supplement, or in the case of biologics, a new BLA or BLA supplement, before the change can be implemented. An NDA or BLA supplement for a new indication typically requires clinical data similar to that in the original application, and the FDA uses the same procedures and actions in reviewing NDA and BLA supplements as it does in reviewing NDAs and BLAs. We cannot be certain that the FDA or any other regulatory agency will grant approval for our product candidates for any other indications or any other product candidate for any indication on a timely basis, if at all.

Adverse event reporting and submission of periodic reports is required following FDA approval of an NDA or BLA. The FDA also may require post-marketing testing, known as Phase 4 testing, risk evaluation and mitigation strategies, and surveillance to monitor the effects of an approved product or place conditions on an approval that could restrict the distribution or use of the product. In addition, quality control as well as drug manufacture, packaging, and labeling procedures must continue to conform to current good manufacturing practices, or cGMPs, after approval. Drug manufacturers and certain of their subcontractors are required to register their establishments with FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA during which the agency inspects manufacturing facilities to access compliance with cGMPs. Accordingly, manufacturers must continue to expend time, money and effort in the areas of production and quality control to maintain compliance with cGMPs. Regulatory authorities may withdraw product approvals or request product recalls if a company fails to comply with regulatory standards, if it encounters problems following initial marketing, or if previously unrecognized problems are subsequently discovered.

Priority Review

Under the FDA policies, a drug or biologic candidate is eligible for priority review, or review within a six-month time frame from the time a complete NDA or BLA is submitted, if the drug candidate provides a significant improvement compared to marketed drugs in the treatment, diagnosis or prevention of a disease. A Fast Track designated drug or biologic candidate would ordinarily meet the FDA's criteria for priority review.

U.S. Foreign Corrupt Practices Act

The U.S. Foreign Corrupt Practices Act, to which we are subject, prohibits corporations and individuals from engaging in certain activities to obtain or retain business or to influence a person working in an official capacity. It is illegal to pay, offer to pay or authorize the payment of anything of value to any foreign government official, government staff member, political party or political candidate in an attempt to obtain or retain business or to otherwise influence a person working in an official capacity.

Federal and State Fraud and Abuse Laws

In addition to FDA restrictions on marketing of pharmaceutical products, several other types of state and federal laws have been applied to restrict certain marketing practices in the pharmaceutical and medical device industries in recent years. These laws include anti-kickback statutes and false claims statutes.

The federal health care program anti-kickback statute prohibits, among other things, knowingly and willfully offering, paying, soliciting, or receiving remuneration to induce or in return for purchasing, leasing, ordering, or arranging for the purchase, lease, or order of any health care item or service reimbursable under Medicare, Medicaid, or other federally financed healthcare programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers, and formulary managers on the other. Although there are a number of statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchases, or recommendations may be subject to scrutiny if they do not qualify for an exemption or safe harbor. Our practices may not in all cases meet all of the criteria for safe harbor protection from anti-kickback liability.

Federal false claims laws prohibit any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, or knowingly making, or causing to be made, a false statement to get a false claim paid. Recently, several pharmaceutical and other health care companies have been prosecuted under these laws for allegedly providing free product to customers with the expectation

that the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the company's marketing of the product for unapproved, and thus non-reimbursable, uses. The majority of states also have statutes or regulations similar to the federal anti-kickback law and false claims laws, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payer. Sanctions under these federal and state laws may include civil monetary penalties, exclusion of a manufacturer's products from reimbursement under government programs, criminal fines, and imprisonment.

Because of the breadth of these laws and the narrowness of the safe harbors, it is possible that some of our business activities could be subject to challenge under one or more of such laws. Such a challenge could have a material adverse effect on our business, financial condition and results of operations.

In addition, as part of the sales and marketing process, pharmaceutical companies frequently provide samples of approved drugs to physicians. This practice is regulated by the FDA and other governmental authorities, including, in particular, requirements concerning record keeping and control procedures. Any failure to comply with the regulations may result in significant criminal and civil penalties as well as damage to our credibility in the marketplace.

Regulation in the European Union

Drugs are also subject to extensive regulation outside of the United States. In the E.U., for example, there is a centralized approval procedure that authorizes marketing of a product in all countries of the E.U. (which includes most major countries in Europe). If this procedure is not used, approval in one country of the E.U. can be used to obtain approval in another country of the E.U. under two simplified application processes, the mutual recognition procedure or the decentralized procedure, both of which rely on the principle of mutual recognition. After receiving regulatory approval through any of the European registration procedures, pricing and reimbursement approvals are also required in most countries.

Similar to the United States, a system for Orphan Drug designation exists in the E.U. Orphan designation does not shorten the regulatory review and approval process for an orphan drug, nor does it give that drug any advantage in the regulatory review and approval process. However, if an orphan drug later receives approval for the indication for which it has designation, the relevant regulatory authority may not approve any other applications to market the same drug for the same indication, except in very limited circumstances, for ten years in the E.U.

Price Controls

In many of the markets where we may do business in the future, the prices of pharmaceutical products are subject to direct price controls (by law) and to reimbursement programs with varying price control mechanisms. In the United States, the Medicare program is administered by the Centers for Medicare & Medicaid Services, or CMS, an agency within the U.S. Department of Health and Human Services. Coverage and reimbursement for products and services under Medicare are determined pursuant to regulations promulgated by CMS and pursuant to CMS's subregulatory coverage and reimbursement determinations. It is difficult to predict how CMS may apply those regulations and subregulatory determinations to newly approved products, especially novel products, and those regulations and interpretive determinations are subject to change. Moreover, the methodology under which CMS makes coverage and reimbursement determinations is subject to change, particularly because of budgetary pressures facing the Medicare program. For example, the Modernization Act provides for a change in reimbursement methodology that reduces the Medicare reimbursement rates for many drugs, including oncology therapeutics. Medicare regulations and interpretive determinations also may determine who may be reimbursed for certain services.

In the European Union, governments influence the price of pharmaceutical products through their pricing and reimbursement rules and control of national health care systems that fund a large part of the

cost of such products to consumers. The approach taken varies from member state to member state. Some jurisdictions operate positive or negative list systems under which products may only be marketed once a reimbursement price has been agreed. Other member states allow companies to fix their own prices for medicines, but monitor and control company profits. The downward pressure on health care costs in general, particularly prescription drugs, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products, as exemplified by the role of the National Institute for Health and Clinical Excellence in the United Kingdom, which evaluates the data supporting new medicines and passes reimbursement recommendations to the government. In addition, in some countries cross-border imports from low-priced markets (parallel imports) exert commercial pressure on pricing within a country.

Other Regulations

We are also subject to numerous federal, state and local laws relating to such matters as safe working conditions, manufacturing practices, environmental protection, fire hazard control, and disposal of hazardous or potentially hazardous substances and biological materials. We may incur significant costs to comply with such laws and regulations now or in the future.

Legal Proceedings

We are not currently a party to any legal proceedings.

Employees

As of June 30, 2011, we had 78 employees. None of our employees are subject to a collective bargaining agreement or represented by a labor or trade union, and we believe that our relations with our employees are good.

Facilities

Our executive offices and manufacturing facilities are located in the Iowa State University Research Park in Ames, Iowa. In June 2010, we completed the expansion of a 22,500 square foot facility, which includes executive offices as well as approximately 14,000 feet dedicated to manufacturing, testing and product storage. The manufacturing portion of the facility became operational on October 17, 2010. The lease expires January 31, 2015, and we have the option to extend the lease for three additional five-year periods upon the same terms as the base lease. We are currently in discussions with the same lessor to add approximately 26,000 square feet of additional space under substantially the same terms as the current lease. In addition, we continue to occupy a small pilot manufacturing and office facility in the same research park under the terms of a lease that expires October 31, 2012.

MANAGEMENT

The following table sets forth the name, age and position of each of our executive officers and directors as of December 31, 2010.

Name	Age	Position
Executive Officers		
Charles J. Link, Jr., M.D.	51	Chief Executive Officer, Chief Scientific Officer, Chairman of the Board
Nicholas N. Vahanian, M.D.	43	President, Chief Medical Officer
Gordon H. Link, Jr.	57	Chief Financial Officer
Kenneth Lynn	57	Executive Vice President of Business Development
Significant Employees		
Mario Mautino, Ph.D.	44	Vice President—Drug Discovery Module, Intellectual Property Officer
W. Jay Ramsey, M.D., Ph.D.	53	Quality Assurance Officer
Non-Employee Directors		
Thomas A. Raffin, M.D.	64	Director, (1), (2) and (4)
Sarah Alexander, M.D., F.A.C.P.	67	Director, (2)
David J. Lundquist	68	Director, (3)
Joseph Saluri	44	Director, (1) and (2)
Ernest J. Talarico, III	40	Director, (1) and (3)
Paul R. Edick	55	Director, (3)

(1) Member of the Compensation Committee.

(2) Member of the Nominating and Governance Committee.

(3) Member of the Audit Committee.

(4) Lead Independent Director.

Executive Officers

Charles J. Link, Jr., M.D. founded the Company in 1999 and has served as Chairman of the Board and Chief Scientific Officer since inception in 1999. He served as President from 2001 to 2009 and has served as Chief Executive Officer since 2003. Dr. Link has also served as Chairman and Chief Executive Officer of BioProtection Systems Corporation from 2005 and was its Chief Scientific Officer from 2005 to 2009. Dr. Link has been a practicing oncologist at the Medical Oncology and Hematology Associates of Iowa since 1995. From 1995 to 2003, Dr. Link served as the Director of the John Stoddard Cancer Research Institute, which he co-founded. Dr. Link served as a Medical Oncology Clinical Fellow at the NCI, National Institutes of Health, or NIH, from 1988 to 1991. Dr. Link attended the U.S. Air Force Academy from 1977 to 1980. Dr. Link holds a B.A. from Stanford University, an M.D. from Stanford University School of Medicine and is certified in Internal Medicine by the American Board of Internal Medicine and has previously been certified in Medical Oncology.

The Nominating and Corporate Governance Committee believes that Dr. Link's extensive experience with the Company, as founder and as Chief Scientific Officer and Chairman of the Board since inception, brings both strategic vision and continuity to the Board. In addition, the Nominating and Corporate Governance Committee believes that Dr. Link's prior experience as a NCI trained oncologist and Director of the Stoddard Cancer Research Institute provides him with substantial expertise in drug discovery and development, which are important to the Board.

Nicholas N. Vahanian, M.D. has served as our Chief Medical Officer since 2001, Chief Operations Officer since 2003 and President since 2009. Dr. Vahanian served as a research scientist at the NCI from 1992 to 1994 and at the National Center for Human Genome Research, NIH from 1994 to 1995. He completed his Molecular Oncology Fellowship at the John Stoddard Cancer Research Institute from 1999 to 2000. Dr. Vahanian holds a B.S. in Biology from Virginia Commonwealth University. Dr. Vahanian attended St. Barthalomew's and Royal London Hospital Medical College. He also holds an M.B.A. from the University of Notre Dame.

Gordon H. Link, Jr. has served as our Chief Financial Officer since 2008. Previously, Mr. Link worked for Tapestry Pharmaceuticals, Inc., or Tapestry, as Chief Executive Officer from April to July 2008, Senior Vice President and Chief Financial Officer from 2002 through 2008, President of the Genomics Division from 2000 to 2002 and Vice President and Chief Financial Officer from 1993 to 2002. At Tapestry, Mr. Link directed a staff of five to ten individuals in areas of accounting, cash management, financial planning and analysis, risk management, financial reporting and investor relations. Mr. Link also worked with Tapestry's Board of Directors on financial, business and corporate development matters and coordinated Tapestry's initial public offering and subsequent follow-on public offerings of common stock. On April 4, 2008, the Tapestry Board of Directors appointed Mr. Link as Chief Executive Officer to manage the winding up of Tapestry in bankruptcy. Tapestry filed a petition for relief under Chapter 11 of the U.S. Bankruptcy Code on March 19, 2009. Prior to joining Tapestry, Mr. Link served as Corporate Controller of Synergen, Inc., Treasurer of the Syntex-Synergen Neuroscience Joint Venture, Treasurer of Synergen Development Corporation and Audit Manager with Deloitte & Touche USA LLP. Mr. Link received a B.S. from Rensselaer Polytechnic Institute and a B.A. in accounting from Metropolitan State College. Mr. Link is not related to our Chief Executive Officer, Dr. Charles Link.

Kenneth Lynn joined the Company as Senior Vice President of Business Development in February 2008 and has served as Executive Vice President of Business Development since February 2009. From 2006 to 2008, Mr. Lynn was employed as Executive Vice President, Strategy and Policy, of Kansas Technology Enterprise Corporation. From 2004 to 2006, Mr. Lynn worked for the Kauffman Foundation, where he served as President of the Kauffman Innovation Network, a nonprofit corporation established and supported by the Kauffman Foundation to promote the advancement of science and technology-based innovation generated by university researchers. Mr. Lynn was Senior Vice President of Corporate Development and Legal Affairs with RxKinetix, Inc. from 2000 to 2002, where he led the opportunities assessment and strategic planning process, coordinated development of the business plan, and evaluated and negotiated partnership and licensing agreements. He was Senior Vice President, Corporate Development and Legal Affairs with Valentis, Inc. from 1999 to 2000, where he supervised the business development and legal staff, evaluated and negotiated corporate transactions and partnering opportunities, and managed existing strategic alliances. From 1993 to 1998, Mr. Lynn worked for Cortech, Inc., a publicly traded company, where he progressed from Vice President of Business Development and General Counsel to Chairman and Chief Executive Officer. From 1991 to 1993, Mr. Lynn was Vice President and General Counsel of U.S. Bioscience, Inc. From 1984 to 1991, he served as Corporate Counsel with Marion Laboratories (now Sanofi-Aventis). Mr. Lynn holds a B.A. degree in history from Washburn University, a J.D. from the University of Kansas, and an M.B.A. from Rockhurst University.

Significant Employees

Mario Mautino, Ph.D. has served as our Vice President for the Drug Discovery Module since 2007 and as our Intellectual Property Officer since 2002, and served as a Senior Scientist at NewLink Genetics from 2001 to 2007. He received his Licenciate in Biological Chemistry in 1990 and his Ph.D. in Molecular Genetics at the University of Cordoba, Argentina in 1995. He performed one year of post-doctoral training at the National University of Cordoba and five years of post-doctoral work in human gene therapy at the Clinical Gene Therapy Branch, NIH.

W. Jay Ramsey, M.D., Ph.D. has served as our Clinical and Regulatory Compliance Officer since 2006 and served as our Senior Medical Scientist from 2000 to 2006. Prior to joining the Company, Dr. Ramsey served as Clinical Fellow of the Clinical Gene Therapy Branch, National Human Genome Research Institute, NIH from 1995 to 2000, and Clinical Fellow of the Metabolism Branch of the NCI from 1992 to 1995. Dr. Ramsey received his Ph.D. in Cell Biology from the Baylor College of Medicine in Houston, TX and his M.D. from University of Texas Medical Branch at Galveston.

Non-Employee Directors

Thomas A. Raffin, M.D. has served as a member of the Board of Directors since 1999 and is currently our Lead Director. Dr. Raffin has spent 30 years on the faculty at Stanford University School of Medicine, where he is the Colleen and Robert Haas Professor Emeritus of Medicine and Biomedical Ethics. Over the past two decades, Dr. Raffin has worked extensively in the healthcare and medical device business sectors and was an advisor to Cell Therapeutics Inc. (1993-1997), Broncus Technologies (1997-2004), iMedica (1998-2002), and Inhale Technologies (1998-2001). He co-founded Rigel Pharmaceuticals, a publicly traded company, in 1996. In 2001, he co-founded Telegraph Hill Partners, a San Francisco life sciences private equity firm as a General Partner. Dr. Raffin has been a director of the following Telegraph Hill Partners private portfolio companies: AngioScore, Confirma, Freedom Innovations, LDR, and PneumRx; and has worked closely with Estech and Vidacare. Dr. Raffin received a B.A. from Stanford University and an M.D. from Stanford University School of Medicine and did his medical residency at the Peter Bent Brigham Hospital (now Brigham and Women's Hospital) in Boston.

The Nominating and Corporate Governance Committee believes that Dr. Raffin's experience with the Company, as a director since inception, brings continuity to the Board. In addition, the Nominating and Corporate Governance Committee believes that Dr. Raffin's prior experience as a founder of Rigel Pharmaceuticals and as a private equity investor and board member of development stage healthcare companies provides important background to the Board in drug development, finance, corporate development, and overall strategy.

Sarah Alexander, M.D., F.A.C.P. has served as a director since 2006. Dr. Alexander is certified by the American Board of Internal Medicine in Internal Medicine, Hematology and Medical Oncology. She has been a practicing hematologist and oncologist since 1975 and worked with the Medical Oncology and Hematology Associates in Des Moines since 1989. At present, she is a Medical Oncologist and Hematologist at the Des Moines Veterans Administration Hospital. Dr. Alexander's undergraduate work was completed at Christian Medical College, Vellore, Madras, India, her residency in Internal Medicine was completed at the V. A. Hospital in New Orleans, Louisiana, and her fellowship in Medical Oncology and Hematology was completed in at Emory University School of Medicine.

The Nominating and Corporate Governance Committee believes that Dr. Alexander's experience as a practicing medical oncologist and as an investigator in clinical trials brings an important perspective to the Board, as most of our product candidates under development are targeted at cancer.

David J. Lundquist has served as a director since 2005. Since 1996, Mr. Lundquist has served as a Partner of Lundquist, Schiltz & Associates, a firm in the fee-only investment advisory business. From 1991 to 1996, Mr. Lundquist was Vice Chairman of New Heritage Associates, a company engaged in the acquisition and operation of cable television systems. From 1980 to 1990, Mr. Lundquist was Executive Vice President—Finance of Heritage Communications, Inc. Mr. Lundquist is currently a director of Da-Lite Screen Company, Genesis Systems Group, Marketlink and G-Sky. Mr. Lundquist holds a B.A. from the University of Minnesota and an M.B.A. from Stanford University Graduate School of Business.

The Nominating and Corporate Governance Committee believes that Mr. Lundquist's ten years of experience as a Executive Vice President—Finance of a public company provides important experience in corporate finance and provides the background necessary for Mr. Lundquist to chair our Audit Committee and to serve as an "audit committee financial expert." In addition, Mr. Lundquist's operational experience

in rapidly growing companies and transactional experience in both financing and strategic transactions may be helpful to the Company in the future.

Joseph Saluri has served as a director since May 2010. Mr. Saluri has served as Vice President and General Counsel for Stine Seed Company and its affiliates since July 1999. As part of his duties for Stine, he works to establish collaborative licensing, research and marketing alliances with international biotechnology and agribusiness companies, in addition to managing the legal and intellectual property affairs for the Stine Companies. Previous to his employment with Stine, Mr. Saluri was an attorney and solicitor at law with Nicholas Critelli Associates, PC, in Des Moines and London. Mr. Saluri received a B.S./B.A. from Drake University and a J.D. from Drake University Law School.

The Nominating and Corporate Governance Committee believes that Mr. Saluri's extensive experience as legal counsel to a large private company provides important experience in corporate finance and provides the background necessary for Mr. Saluri to serve as a member of our Audit Committee and our Nominating and Corporate Governance Committee. In addition, Mr. Saluri's operational experience in rapidly growing companies and transactional experience in both financing and strategic transactions may be helpful to the Company in the future.

Ernest J. Talarico, III has served as a director since 1999. Mr. Talarico has worked for Mesirow Financial Holdings, Inc., a diversified financial services firm headquartered in Chicago, Illinois since 1998, where he has been a Managing Director since June 2008. Prior to becoming Managing Director, Mr. Talarico served as Senior Vice President from 2005 to 2008, Vice President from 2003 to 2005 and Investment Executive from 1998 to 2003. Mr. Talarico specializes in financial planning and asset allocation, as well as other wealth accumulation and preservation strategies for individuals and businesses. Mr. Talarico sits on several boards and committees, including the Mutual Fund Committee at Mesirow Financial and the Select Advisory Board and Committee at Mesirow Financial. Mr. Talarico has also been the Chairman for the local chapter of the Cystic Fibrosis Foundation and the Founder and Chairman of the Talarico Ataxia Foundation. Mr. Talarico holds a bachelor's degree from the University of Iowa as well as licenses in equities, options and managed futures.

The Nominating and Corporate Governance Committee believes that Mr. Talarico's experience with the Company, as a director since inception, brings continuity to the Board. In addition, the Nominating and Corporate Governance Committee believes that Mr. Talarico's extensive experience in the investment management business provides important experience in corporate finance and investor relations and provides the background necessary for him to serve as a member of our Audit Committee.

Paul R. Edick was appointed to the Board of Directors on July 29, 2011. Since July 2010, Mr. Edick has been the Chief Executive Officer of Durata Therapeutics, a start-up biopharmaceutical company. From 2008 to 2010, Mr. Edick was Chief Executive Officer of Ganic Pharmaceuticals, a specialty pharmaceutical company. From 2006 to 2008, Mr. Edick was Chief Executive Officer of MedPointe Healthcare Inc., a specialty pharmaceutical company until its acquisition. From 2002 to 2006, Mr. Edick was President of MedPointe Healthcare Inc. From 1994 to 2002, Mr. Edick worked in a series of positions at G. D. Searle and its acquirer, Pharmacia Corporation, where he led G. D. Searle's U.S. managed care organization from 1994 to 1995, its U.S. marketing organization from 1995 to 1996 and its Global Pain & Inflammation Business from 1996 to 1997. In 1998, Mr. Edick was named G. D. Searle's VP-Canada & Latin America. In 1999, Mr. Edick became President of Asia Pacific, Canada & Latin America. In 2000, upon Pharmacia's acquisition of G. D. Searle, Mr. Edick was named Group Vice President and President, Asia Pacific/Latin America at Pharmacia. From 2008 to 2011, Mr. Edick was a director and Chairman of the Board of Directors of Life Cycle Pharma, a public technology based biotech located in Copenhagen, Denmark. In addition, Mr. Edick has been a director of Amerita, Inc. since 2000 and was a director of Informed Medical Communications from 2006 to 2011. Mr. Edick holds a B.A. in Psychology from Hamilton College, Clinton.

The Nominating and Corporate Governance Committee believes that Mr. Edick's extensive pharmaceutical industry experience, including leading the growth of the commercial business and development of a clinical stage portfolio at MedPointe Healthcare Inc., negotiating the sale of MedPointe Healthcare Inc. to Meda AB, Sweden and developing G. D. Searle's commercialization and launch plan for Celebrex®, give him the qualifications and skills to serve as a director, and are particularly important as the Company focuses on development and commercialization of its product candidates.

Scientific Advisors

We have established a scientific advisory board comprised of leading experts in their fields. We regularly seek advice and input from these experienced scientific leaders on matters related to our research and development programs. The members of our scientific advisory board consist of experts across a range of key disciplines relevant to our programs and science. We intend to continue to leverage the broad expertise of our advisors by seeking their counsel on important topics relating to our drug discovery and development programs. Some members of our scientific advisory board enter into consulting agreements with us covering their respective financial arrangements and confidentiality, non-disclosure and proprietary rights matters and own or have owned shares of our common stock or options to purchase shares of our common stock.

All of the scientific advisors are employed by or have consulting arrangements with other entities and devote only a small portion of their time to us. Our current advisors are:

Name	Professional Affiliation
Robert B. Belshe, M.D.	Director of the Division of Infectious Diseases and Immunology at Saint Louis University.
Michael Blaese, M.D.	Research Director of the Fund for Inherited Disease Research, Founder and President of PreGentis, Medical Director of the Immune Deficiency Foundation and Administrator of the U.S. Immunodeficiency Network Research Consortium.
Richard Burt, M.D.	Director of Allogeneic Bone Marrow Transplantation for Northwestern Medical Center in Chicago, Illinois and Assistant Professor at Northwestern University School of Medicine.
Richard C. Larock, Ph.D.	Distinguished Professor of Organic Chemistry at Iowa State University.
Kevin Legge, Ph.D.	Assistant Professor of Pathology at the University of Iowa Carver College of Medicine.
Andrew Mellor, Ph.D.	Professor of Medicine and Georgia Research Alliance Eminent Scholar in Immunogenetics at the Medical College of Georgia.
David Munn, M.D.	Professor of Pediatric Hematology-Oncology at the Medical College of Georgia. Head of the Cancer Immunotherapy program in the Cancer Research Center at MCG.
Nicola Pohl, Ph.D.	Associate Professor and Caldwell Chair of Chemistry at Iowa State University.
George Prendergast, Ph.D.	Professor and President/CEO of the Lankenau Institute for Medical Research.

Board Composition and Election of Directors

Our Board of Directors currently consists of five non-employee members and our Chief Executive Officer, Dr. Charles Link. Our Board of Directors has determined that all of our directors, other than Dr. Link, are independent within the meaning of applicable NASDAQ listing standards.

We have initiated the process of recruiting an additional director. Among other qualifications, we are seeking a director who could serve as a member of our Audit Committee.

Effective upon the completion of this offering, we will divide our Board of Directors into three classes, as follows:

- Class I, which will consist of Mr. Lundquist, Dr. Alexander and Mr. Talarico, and whose terms will expire at our first annual meeting of stockholders to be held after the completion of this offering;
- Class II, which will consist of Mr. Edick and Mr. Saluri, and whose terms will expire at our second annual meeting of stockholders to be held after the completion of this offering; and
- Class III, which will consist of Dr. Charles Link and Dr. Raffin, and whose terms will expire at our third annual meeting of stockholders to be held after the completion of this offering.

At each annual meeting of stockholders to be held after the initial classification, the successors to directors whose terms then expire will serve until the third annual meeting following their election and until their successors are duly elected and qualified. The authorized number of directors may be changed only by resolution of the Board of Directors. Any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. This classification of the Board of Directors may have the effect of delaying or preventing changes in our control or management. Under our certificate of incorporation to be in effect upon the closing of this offering, our directors may be removed only for cause, which may be effected by the affirmative vote of the holders of $66^{2}/_{3}\%$ of our voting stock.

Board Committees

Upon the completion of this offering, our Board of Directors will have an Audit Committee, a Compensation Committee and a Nominating and Corporate Governance Committee. At that time, each of these committees will have adopted a written charter that will be available on our corporate website. The composition and primary responsibilities of each committee are described below.

Audit Committee

Upon the completion of this offering, the members of our Audit Committee will be Mr. Lundquist, Mr. Edick and Mr. Talarico. Mr. Lundquist will serve as chairman of the Audit Committee. Our Board of Directors has determined that each member of the Audit Committee meets the independence requirements of Rule 10A-3 of the Securities Exchange Act of 1934, or the Exchange Act, and NASDAQ listing standards, except for Mr. Talarico. Our Board of Directors has also determined that Mr. Lundquist qualifies as an audit committee financial expert within the meaning of Securities and Exchange Commission, or SEC, regulations.

The primary purpose of the Audit Committee is to discharge the responsibilities of our Board of Directors with respect to our accounting, financial and other reporting and internal control practices and to oversee our independent registered public accounting firm. Specific responsibilities of our Audit Committee include:

- evaluating the performance of our independent registered public accounting firm and determining whether to retain or terminate their services;

- determining and pre-approving the engagement of our independent registered public accounting firm to perform audit services and any permissible non-audit services, other than immaterial aggregate amounts of non-audit services as excepted under applicable laws and rules;
- reviewing and discussing with management and our independent registered public accounting firm the results of the annual audit and the independent registered public accounting firm's review of our annual and quarterly financial statements and reports;
- reviewing with management and our independent registered public accounting firm significant issues that arise regarding accounting principles and financial statement presentation;
- conferring with management and our independent registered public accounting firm regarding the scope, adequacy and effectiveness of our internal control over financial reporting; and
- establishing procedures for the receipt, retention and treatment of any complaints we receive regarding accounting, internal control or auditing matters.

Compensation Committee

Upon the completion of this offering, the members of our Compensation Committee will be Dr. Raffin, Mr. Saluri and Mr. Talarico. Dr. Raffin will serve as chairman of the Compensation Committee. Our Board has determined that each member of the Compensation Committee is independent within the meaning of applicable NASDAQ listing standards, is a non-employee director as defined in Rule 16b-3 under the Exchange Act and is an outside director as that term is defined in Section 162(m) of the Internal Revenue Code of 1986. The purpose of our Compensation Committee is to discharge the responsibilities of our Board of Directors to oversee our compensation policies, plans and programs and to review and determine the compensation to be paid to our executive officers and other senior management. Specific responsibilities of our Compensation Committee include:

- determining the compensation and other terms of employment of our executive officers and reviewing and approving corporate performance goals and objectives relevant to such compensation;
- evaluating and recommending to our Board of Directors the compensation plans and programs advisable for us, and evaluating and recommending the modification or termination of existing plans and programs; and
- reviewing and approving the terms of any employment agreements, severance arrangements, change-of-control protections and any other compensatory arrangements for our executive officers.

Nominating and Corporate Governance Committee

The members of our Nominating and Corporate Governance Committee are Dr. Alexander, Dr. Raffin and Mr. Saluri. Dr. Raffin serves as chairman of the Nominating and Corporate Governance Committee. Each member of the Nominating and Corporate Governance Committee is independent within the meaning of applicable NASDAQ listing standards. The specific responsibilities of our Nominating and Corporate Governance Committee include:

- identifying, reviewing, evaluating and recommending for selection candidates for membership to our Board of Directors;
- reviewing, evaluating and considering the recommendation for nomination of incumbent members of our Board of Directors for reelection to our Board of Directors and monitoring the size of our Board of Directors;
- evaluating nominations by stockholders of candidates for election to our Board of Directors;
- reviewing, discussing and reporting to our Board of Directors an assessment of our board's performance; and
- determining adherence to our corporate governance documents.

Lead Independent Director

Dr. Raffin has been appointed as our lead independent director. As lead independent director, Dr. Raffin will work with our Chief Executive Officer to develop the agenda for meetings of the Board of Directors and with committee chairs to develop the agendas for meetings of committees. He will also chair the executive session of Board meetings at which officers are not present and will oversee the Board's annual evaluation of our Chief Executive Officer's performance.

Compensation Committee Interlocks and Insider Participation

For the fiscal year ended December 31, 2009, members of the Board's Compensation Committee consisted of Dr. Raffin and Mr. Talarico and for the fiscal year ended December 31, 2010, members of the Board's Compensation Committee consisted of Dr. Raffin, Mr. Talarico, and Mr. Saluri. None of the members of the Compensation Committee is currently, or has ever been at any time since the Company's formation, one of the Company's officers or employees. None of our officers currently serve, nor have they served during the last completed fiscal year, as a member of the board of directors or compensation committee of any entity that has one or more officers serving as a member of our Board of Directors or Compensation Committee.

Code of Business Conduct and Ethics

We have adopted a written code of business conduct and ethics that applies to our directors, officers and employees, including our principal executive officer, principal financial officer, principal accounting officer and controller, or persons performing similar functions. Following this offering, a current copy of the code will be posted on the Investors section of our website, *www.linkp.com*.

EXECUTIVE AND DIRECTOR COMPENSATION

The following discussion and analysis of compensation arrangements of our named executive officers for our fiscal years ended December 31, 2009 and 2010 and the six-month period ending June 30, 2011 should be read together with the compensation tables and related disclosures set forth below. This discussion contains forward-looking statements that are based on our current plans, considerations, expectations and determinations regarding future compensation programs. Actual compensation programs that we adopt may differ materially from currently planned programs as summarized in this discussion.

Compensation Discussion and Analysis

Our executive compensation program is designed to help us attract talented individuals to manage and operate our business, to reward those individuals fairly over time and to retain those individuals who continue to meet our high expectations. The goals of our executive compensation program are to align our executive officers' compensation with our business objectives and the interests of our stockholders, to incentivize and reward our executive officers for our success and to reflect the teamwork philosophy of our executive management team. To achieve these goals, we have established executive compensation and benefit packages that are based on a mix of base salary, cash incentive payments and equity-based awards and severance and change in control benefits. Our executive compensation program is also intended to make us competitive in the biopharmaceutical industry, where there is significant competition for talented employees, and to be fair relative to other professionals within our organization.

Compensation Objectives

Our compensation program is designed to enable us to attract and retain executives with the skills and experience necessary to execute our business plan, to provide short-term incentives to accomplish specific annual goals defined by the Board of Directors, and to provide long-term incentives to build shareholder value.

Role of Our President and Chief Executive Officer in Setting Executive Compensation

We initially establish executive officers' compensation arrangements when negotiating the terms of employment when they join the Company. We generally include these initial compensation terms in an offer letter with the executive. Each year we review executive compensation and the mix of elements used to compensate our executive officers. In connection with each annual review cycle, Dr. Charles Link, our Chief Executive Officer, meets with those officers who report directly to him to discuss the Company's accomplishments during the year and the individual's performance and contributions over the prior year. Based on these discussions, our Chief Executive Officer then develops a set of compensation recommendations for submission to our Compensation Committee. The Compensation Committee uses these recommendations, its own judgment and experience, and the resources and tools described below to determine the appropriate mix of compensation for each of our executive officers. Our Chief Executive Officer does not participate in the determination of his own compensation.

Role of Our Board and Compensation Committee in Setting Executive Compensation

Our Board of Directors has established a Compensation Committee for the purpose of making recommendations to the full Board of Directors regarding compensation decisions for our executive officers. The Compensation Committee currently consists of Dr. Raffin, Mr. Saluri and Mr. Talarico. In carrying out its responsibilities, our Compensation Committee receives and evaluates the compensation recommendations made by our Chief Executive Officer. None of our executive officers participates in the discussions regarding his own compensation. Based on the evaluation of management's suggestions, the Compensation Committee then makes formal recommendations regarding executive compensation

decisions to the full Board of Directors. In making these recommendations, the Compensation Committee does not delegate any of its functions to others.

Our Compensation Committee has retained independent compensation consultants to advise on selected aspects of executive and Board compensation as follows:

- In 2007, Syzygy Consulting Group was retained to make recommendations regarding equity awards to Dr. Charles Link, who was then serving as our Chief Executive Officer, and Dr. Vahanian, who was then serving as our Chief Medical and Operating Officer, and to provide recommendations concerning Board compensation. The consultant's report was based on 34 United States-based life sciences and biotechnology companies that were managed by founders and had financing histories and valuations deemed similar to the company.
- In 2009, our Compensation Committee retained two compensation consultants, Syzygy Consulting Group and Radford, to provide recommendations on all aspects of executive compensation. The Syzygy report was based on a proprietary database of 160 private life sciences and biotechnology-related companies and its Pre-IPO and Private Technology Company Total Compensation Survey that covered compensation practices at 341 private companies. From those databases, Syzygy identified a group of similarly-situated, founder-managed companies based on cumulative capital raised and valuation. The Radford analysis was based on the 2009 Radford Global Life Sciences Pre-IPO Survey. These reports covered both the Company and our subsidiary BioProtection Systems Corporation, or BPS.
- In 2010, our Compensation Committee retained Syzygy Consulting Group to provide recommendations regarding the establishment and size of initial share reserves for an Employee Stock Purchase Plan and Non-Employee Directors' Stock Award Plan, and the addition of an "evergreen" provision to our 2009 Equity Incentive Plan. The Syzygy report was based on an analysis of the following 34 public biotechnology companies that were considered to be similar to us with respect to market capitalization:

  - Alnylam Pharmaceuticals, Inc.
  - Ariad Pharmaceuticals Inc.
  - Array BioPharma, Inc.
  - AVEO Pharmaceuticals, Inc.
  - BioCryst Pharmaceuticals, Inc.
  - BioTime, Inc.
  - Cadence Pharmaceuticals Inc.
  - Cell Therapeutics, Inc.
  - Chelsea Therapeutics International Ltd.
  - Clinical Data, Inc.
  - Codexis, Inc.
  - Corcept Therapeutics Inc.
  - Cornerstone Therapeutics Inc.
  - Cytokinetics Inc.
  - Cytori Therapeutics, Inc.
  - Dyax Corp.
  - Exact Sciences Corporation
  - Exelixis, Inc.
  - Idenix Pharmaceuticals Inc.
  - Immunogen Inc.
  - Jazz Pharmaceuticals, Inc.
  - Ligand Pharmaceuticals Inc.
  - Medivation, Inc.
  - Nabi Biopharmaceuticals
  - Neurocrine Biosciences Inc.
  - Novavax, Inc.
  - NPS Pharmaceuticals, Inc.
  - Obagi Medical Products, Inc.
  - Optimer Pharmaceuticals, Inc.
  - Osiris Therapeutics, Inc.
  - Sequenom Inc.
  - Vanda Pharmaceuticals, Inc.
  - Xenoport, Inc.
  - ZIOPHARM Oncology, Inc.

- In 2011, our Compensation Committee retained Radford to conduct a competitive review of the executive and director compensation programs. In addition to specific peer company data, the Radford analysis was based on the 2010 Radford Global Life Sciences Survey as well as the 2010 Radford Global Life Sciences Pre-IPO Survey.

In addition to relying on the consultants' reports, the committee members also have relied on the Ernst & Young 2008, 2009, and 2010 Compensation and Entrepreneurship Report in Life Sciences and on their own experience and observations in the marketplace in assessing and making recommendations regarding executive compensation. Our Board of Directors evaluates the recommendations from the Compensation Committee and makes final decisions regarding executive compensation.

Our Compensation Committee consists solely of directors who are "outside directors" for purposes of Section 162(m) of the Internal Revenue Code of 1986, as amended, or the Code, and "non-employee directors" for purposes of Rule 16b-3 under the Securities Exchange Act of 1934, as amended.

Prior to our pending acquisition of the minority interest in our subsidiary BPS, it had its own compensation committee, consisting of Dr. Raffin and Mr. Talarico, who are also directors of the Company, and Mr. Steve Stahley, who is not a director, officer, employee or affiliate of the Company. Dr. Charles Link, our Chief Executive Officer, and Dr. Vahanian, our President and Chief Medical Officer have equity ownership positions in BPS. Neither Dr. Link nor Dr. Vahanian receives any salary from BPS. In September 2006, Drs. Link and Vahanian delivered notes to BPS in the principal amounts of $75,000 and $20,000, respectively, bearing interest at 5.01% per annum, in order to purchase their shares of BPS Series B common stock under stock options. As of November 17, 2010, Dr. Link and Dr. Vahanian had repaid the remaining principal and interest owed under the notes. For a more detailed description of these loans, see "Executive and Director Compensation—Indebtedness of Management and Related Agreements."

Basis for Historical and Future Compensation Policies and Decisions

We use a mix of short-term compensation, consisting of base salaries and cash incentive bonuses, and long-term compensation, consisting of equity incentive compensation, to provide a total compensation structure that is designed to achieve our corporate objectives.

In arriving at the amount and types of initial compensation for each of our named executive officers, we consider the following factors:

- the individual's particular background and circumstances, including prior relevant work experience and compensation paid prior to joining us;
- the individual's role with us and the compensation paid to similar persons in the similarly situated companies represented in the compensation data that we review;
- the demand for people with the individual's specific expertise and experience;
- performance goals and other expectations for the individual's position;
- comparison to other executives within the Company having similar levels of expertise and experience; and
- recommendations from our compensation consultants.

We annually re-assess the compensation of our named executive officers and determine whether any adjustments should be made. In determining whether to adjust the compensation of any of our named executive officers, we generally take into account the following factors:

- our understanding of compensation generally paid by similarly situated companies to their executives with similar roles and responsibilities;
- formal market data regarding base salary, cash incentives and equity compensation from surveys conducted by our compensation consultants of biopharmaceutical and biotechnology companies, as well as the Ernst & Young report cited above;
- the roles and responsibilities of our executives, including any increases or decreases in responsibilities; and
- the contributions and performance of each named executive officer.

Elements of our Executive Compensation Program

General. Our executive compensation program consists of four principal components: base salary, performance-based cash bonus payments, long-term incentive compensation in the form of equity-based awards and severance and change-in-control benefits. Each component of our executive compensation program is designed to address specific compensation objectives. The Compensation Committee has not

established any formal policies or guidelines for allocating compensation between the components, although it seeks to maintain an appropriate balance between fixed compensation, in the form of base salary, and performance-based compensation, in the form of cash bonuses and long-term incentive compensation. As a general matter, our executive officers are also eligible to participate, on the same basis as other employees, in our 401(k) plan and our other benefit programs generally available to all employees, and with limited exceptions relating to the relocation of executive officers, we do not provide perquisites or benefits for our named executive officers on a basis that is different from other eligible employees.

We view each of the elements of our compensation program as related but distinct. Our decisions about each individual element generally do not affect the decisions we make about other elements. For example, we do not believe that significant compensation derived from one element of compensation, such as equity appreciation, should adversely affect compensation from other elements, such as salary or bonus.

Base Salary. Base salary is the primary fixed component of our executive compensation program. We use base salary to compensate executives for services rendered during the calendar year, and to ensure that we remain competitive in attracting and retaining executive talent.

Upon joining the Company, each of our executive officers received an offer letter that provided for an initial base salary. These initial salaries are the product of negotiation with the executive, but we generally seek to establish salaries that we believe are commensurate with the salaries paid to industry peers with comparable qualifications, experience, responsibilities and performance at similar companies. In addition to the Radford and Syzygy reports in 2009, we reviewed the Ernst & Young reports cited above. Our Compensation Committee has also relied on its members' collective experience in the marketplace for determining what they believe to be the market rate of salaries for executives of comparable companies.

Shortly before the end of each calendar year, we review company and individual performance to, among other things, determine whether adjustments in base salary are necessary or appropriate. In establishing the 2009 and 2010 base salaries of our executive officers, our Compensation Committee and Board of Directors took into account a number of factors, including the executive's seniority, position, functional role and level of responsibility and individual performance during the previous year. The Compensation Committee and Board of Directors then reviewed these factors with reference to the compensation reports and recommendations from Syzygy and Radford to establish compensation for each executive that was in line with similarly positioned executives at comparable companies.

Named Executive Officer	2009 Base Salary ($)	2010 Base Salary ($)	2011 Base Salary ($)
Charles J. Link, Jr., M.D.	354,895	440,682	485,000
Nicholas N. Vahanian, M.D.	256,316	312,322	343,600
Gordon H. Link, Jr.	228,375	239,794	263,800
Kenneth Lynn	231,750	243,338	255,500
W. Jay Ramsey, M.D., Ph.D.	162,225	240,000	255,000

For 2009, base salaries increased by 3% from 2008 levels for Dr. Charles Link, Dr. Vahanian, Mr. Lynn and Dr. Ramsey, and increased by 1.5% for Mr. Gordon Link. For 2010, the Compensation Committee and Board of Directors approved increases in total cash compensation for Dr. Charles Link and Dr. Vahanian of 24% and 22%, respectively. These increases were intended to provide for total cash compensation for Drs. Link and Vahanian at approximately the 75th percentile of the total cash compensation determined in the Syzygy report for similarly positioned executives in light of the progress of the Company and the increasing likelihood of an initial public offering of the Company's securities. The Compensation Committee and Board of Directors selected the 75th percentile as the benchmark for Dr. Link's and Dr. Vahanian's total compensation in recognition of their dual business and scientific roles, Dr. Link as Chief Executive Officer and Chief Scientific Officer and Dr. Vahanian as President and Chief Medical Officer. As such, they are responsible for developing both our business strategy and our scientific strategy, providing leadership for our business, scientific and clinical activities, and continuing to enhance

our intellectual property position. Similarly, for 2010, the Compensation Committee and Board of Directors approved increases in base salaries for Mr. Gordon Link, Mr. Lynn and Dr. Ramsey of 5%, 5% and 48%, respectively. These increases were intended to result in base salaries at approximately the 50th percentile of the base salaries determined in the Syzygy report for similarly positioned executives at comparable biotechnology companies per the Syzygy report in light of the Company's progress and the increasing likelihood of an initial public offering. Dr. Ramsey's increased base salary in 2010 also reflected his promotion to an executive of the Company in 2010. For 2011, the Compensation Committee and the Board of Directors approved increases in cash compensation for Dr. Charles Link, Dr. Vahanian, Mr. Gordon Link, Mr. Lynn and Dr. Ramsey of 10.1%, 10%, 10%, 5% and 6.3%, respectively. These increases were based on the Radford report on executive and board compensation and are designed to more closely align our compensation practices with practices of companies similar to us as we become a public company.

We will continue to review base salaries of our executive officers on an annual basis and make adjustments to reflect individual performance-based factors, as well as our financial status. Historically, we have not applied, nor do we intend to apply, specific formulas to determine base salary increases.

Performance-Based Cash Bonuses. Our performance-based cash bonus program is designed to promote the interests of the Company and its stockholders by providing executive officers with the opportunity to earn annual cash bonuses based upon the achievement of pre-specified corporate and individual performance objectives, and to assist the Company in attracting and retaining executive talent.

Our annual cash bonus amounts are recommended by our Compensation Committee and approved by our Board, and these bonuses are ordinarily paid in a single installment in the first quarter of each year for performance in the prior year. Each executive officer is eligible for a discretionary annual cash incentive payment up to a specified percentage of the executive officer's salary. The Board of Directors sets these target percentages at levels that, upon achievement of the target percentage, are likely to result in cash bonus payments that the Board believes to be approximately the level paid to high-performing executives of comparable companies in the biopharmaceutical industry.

At the end of each year, our Chief Executive Officer develops bonus recommendations for each of our executive officers, based on the company's corporate accomplishments and the individual's performance and contributions to those accomplishments during the year. These recommendations are subjective determinations which may vary, from time to time, depending on our overall strategic objectives and the job responsibilities of each executive officer, but relate generally to factors such as development and progression of our existing product candidates, achievement of clinical and regulatory milestones, operational goals such as the expansion of our manufacturing capabilities, and financial factors such as raising and maintaining capital. However, these recommendations may be more or less than the established target percentages for the executive officers, depending on individual and corporate performance, as well as our financial position. The Compensation Committee assesses the bonuses recommended by management and makes its bonus recommendations to the full Board of Directors. Based on its consideration of the recommendations of the Compensation Committee, the full Board then makes a final decision regarding cash bonus payments, if any, for the year. Whether or not a cash bonus is paid for any year is solely within the discretion of the Board.

For 2009, based upon recommendations of the Compensation Committee, the Board of Directors established target bonus amounts for Dr. Charles Link, Dr. Vahanian, Mr. Gordon Link, Mr. Lynn and Dr. Ramsey equal to 50%, 40%, 25%, 20% and 15% of their 2010 base salaries. As a basis for these performance bonuses, the Compensation Committee established corporate and individual performance objectives in January 2009, which were communicated to the named executive officers at that time. The corporate goals for the year included:

- receiving approval from the FDA to initiate our Phase 3 trial for HyperAcute Pancreas;
- developing Phase 2 clinical trial plans for D-1MT; and

- raising additional funding

Dr. Charles Link's performance goals for 2009 included leading the Company through the significant corporate developments referenced above. Dr. Vahanian's performance goals for 2009 included his role in running our day-to-day operations, including the achievements referenced above. Mr. Gordon Link's performance goals for 2009 included his primary responsibility, as our principal financial and accounting officer, for our Series C and Series D preferred stock financings that closed in 2009. Mr. Lynn's performance goals for 2009 included his role in establishing third party relationships and presenting our Company to outside companies for potential future collaborations. Dr. Ramsey's performance goals for 2009 included his role in regulatory and compliance accomplishments concerning clinical trials, manufacturing and quality assurance.

The Board determined that each of the 2009 corporate performance goals had been met or exceeded. The Compensation Committee determined that Dr. Charles Link, Dr. Vahanian, Mr. Gordon Link, Mr. Lynn and Dr. Ramsey had all met their individual 2009 performance goals. Taking all corporate and personal achievements into consideration, the Compensation Committee, in its discretion, made bonus recommendations for each executive officer in December 2009 and the Board of Directors adopted those bonus recommendations. The bonuses paid to Dr. Charles Link, Dr. Vahanian, Mr. Gordon Link, Mr. Lynn and Dr. Ramsey were equal to 50%, 40%, 25%, 20%, and 15% of their 2010 base salaries, respectively.

For 2010, based upon recommendations of the Compensation Committee, the Board of Directors established target bonus amounts for Dr. Charles Link, Dr. Vahanian, Mr. Gordon Link, Mr. Lynn and Dr. Ramsey equal to 50%, 35%, 25%, 40% and 25% of their 2010 base salaries. The Compensation Committee also established corporate and individual performance objectives in June 2010, which were communicated to the named executive officers at that time. The corporate goals for the year included:

- initiating a Phase 3 clinical trial for HyperAcute Pancreas and meeting specific targets for patient enrollment and number of clinical centers;
- initiating a Phase 1B/2 clinical trial for D-1MT; and
- raising additional funding.

Each officer's individual goals consisted of one or more corporate goals and, in most cases, separate individual goals. Dr. Charles Link's performance goals for 2010 were the foregoing corporate goals. Dr. Vahanian's performance goals for 2010 included the corporate goals pertaining to the HyperAcute Pancreas and D-1MT trials and design of a HyperAcute Lung clinical study. Mr. Gordon Link's performance goals for 2010 included the corporate goal with respect to financing, raising additional funding and preparation for this offering. Mr. Lynn's performance goals for 2010 included the corporate goal with respect to financing, progress towards strategic third-party partnerships, and establishing an intellectual property committee. Dr. Ramsey's performance goals for 2010 included the corporate goal with respect to HyperAcute Pancreas trial, obtaining Orphan Drug and Fast Track approvals for HyperAcute Pancreas, validating the new HyperAcute immunotherapy production facility and initiating production of HyperAcute immunotherapy product candidates in that facility.

The Board determined that each of the 2010 corporate performance goals had been met or exceeded. The Compensation Committee determined that Dr. Charles Link, Dr. Vahanian, Mr. Gordon Link and Dr. Ramsey had all met their individual 2010 performance goals. The Compensation Committee determined that Mr. Lynn achieved substantially all of his stated objectives, but did not fully satisfy his individual performance goals with respect to progress towards strategic partnerships. Taking all corporate and personal achievements into consideration, the Compensation Committee, in its discretion, made bonus recommendations for each executive officer in December 2010 and the Board of Directors adopted those bonus recommendations. The bonuses paid to Dr. Charles Link, Dr. Vahanian, Mr. Gordon Link, Mr. Lynn and Dr. Ramsey were equal to 50%, 35%, 25%, 28%, and 25% of their 2010 base salaries, respectively.

For 2011, based upon recommendations of the Compensation Committee, the Board of Directors established target bonus amounts for Dr. Charles Link, Dr. Vahanian, Mr. Gordon Link, Mr. Lynn and Dr. Ramsey equal to 50%, 40%, 30%, 30% and 30% of their 2011 base salaries. The Compensation Committee also established corporate and individual performance objectives in January 2011, which were communicated to the named executive officers at that time. The corporate goals for the year include:

- meeting specific targets for patient enrollment in HyperAcute Pancreas Phase III; and
- raising additional funding.

Each officer's individual goals consist of one or more corporate goals and, in most cases, separate individual goals. Dr. Charles Link's performance goals for 2011 are the foregoing corporate goals as well as meeting specific targets for patient enrollment for HyperAcute Lung Phase 2B study. Dr. Vahanian's performance goals for 2011 include the corporate goal pertaining to HyperAcute Pancreas, HyperAcute Lung Phase 2B and oversight of vaccine manufacturing for HyperAcute Pancreas. Mr. Gordon Link's performance goals for 2011 include the corporate goal with respect to financing, raising additional funding and SEC reporting. Mr. Lynn's performance goals for 2011 include the corporate goal with respect to financing and progress towards strategic third-party partnerships. Dr. Ramsey's performance goals for 2011 include initiating a validation master plan for the HyperAcute product line and submitting new IND(s) covering additional HyperAcute or IDO pathway inhibitor product candidates.

The Board will make determinations on 2011 corporate and individual performance goals after the conclusion of 2011.

We have not determined whether we would seek to recover cash bonus payments paid to our executive officers if the performance objectives that led to the determination of such payments were to be restated or found not to have been met to the extent that we originally believed.

In addition, in 2010, BPS paid Dr. Charles Link and Dr. Vahanian discretionary performance based bonuses in aggregate amounts of $65,000 and $30,000, respectively, which were approved by the BPS Board of Directors. Of these amounts, $15,000 was paid to each executive in connection with BPS's securing a research and development contract with the U.S. Department of Defense relating to the study of a-Gal adjuvant technology for the biodefense field and the remainder was paid in connection with BPS's securing licensing agreement with Her Majesty the Queen in Right of Canada relating to rVSV. These bonuses were approved after those contracts were awarded and were not a result of any pre-defined performance goals for BPS.

Equity Compensation. Equity incentives represent the largest at-risk component of our executive compensation program. Our equity incentives are designed to align the interests of our executive officers with those of our stockholders by creating an incentive for our executive officers to maximize stockholder value and to remain employed with us despite a competitive labor market through the grant of time-vested stock options.

Initial option grants to our executive officers are generally set forth in an offer letter. These initial option grants are the product of negotiation with the executive, but we generally seek to establish equity ownership levels that we believe are commensurate with the equity stakes of industry peers with comparable qualifications, experience, responsibilities and performance at similar companies. In addition, as part of our annual compensation review process, we provide subsequent option grants to those executive officers determined to be performing well.

In May 2009, we granted Dr. Charles Link a stock option for 732,511 shares and Dr. Vahanian a stock option for 331,296 shares, each at an exercise price of $2.10 per share. These options vest over five years beginning on June 1, 2007, and expire on May 12, 2019. These grants had been initially approved by the Compensation Committee and the Board in June 2007, but the Company did not have sufficient shares authorized under its 2000 Equity Incentive Plan at that time. In 2009 the Company adopted the 2009 Equity Incentive Plan and these options were approved and granted by the Board under that plan. In

December 2009, we granted Dr. Charles Link a stock option for 428,571 shares of common stock, and Dr. Vahanian a stock option for 380,952 shares of common stock, each at an exercise price of $2.96 per share. These options vest as to 25% on the first anniversary of the date of grant and as to the remainder in equal monthly increments over the following 36 months. These options expire December 3, 2019. In March 2010, we granted Dr. Vahanian a stock option for 190,476 shares, Mr. Gordon Link a stock option for 4,762 shares and Dr. Ramsey a stock option for 51,428 shares, each at an exercise price of $3.07 per share. These options vest as to 25% on December 4, 2010 for Dr. Vahanian and March 3, 2011 for Mr. Gordon Link and Dr. Ramsey, and as to the remainder in equal monthly increments over the following 36 months. These options expire on March 2, 2020. All of these grants were recommended to the Board by our Compensation Committee, which considered the advice of our independent compensation consultants regarding executive equity ownership. Our independent compensation consultants compared our executives' ownership positions with other similarly-situated biopharmaceutical companies and, in recommending these grants, the Compensation Committee considered the executives' roles and responsibilities within the company, and their ownership positions in relation to similarly-situated companies as defined by our Compensation Committee. The December 2009 grants to Dr. Link and Dr. Vahanian and March 2010 grant to Dr. Vahanian resulted in equity ownership percentages above the median of the companies in the group of companies analyzed by our compensation consultant. The Compensation Committee and Board approved these grants in recognition of the leadership of Dr. Link and Dr. Vahanian in achieving company goals and raising capital.

In April 2011, we approved stock options for our executive officers, reflecting the Compensation Committee's recommendations based on the "mid" tier from the April 2011 Radford report. These stock option grants were approved by the board for Dr. Charles Link, Dr. Vahanian, Mr. Gordon Link, Mr. Lynn and Dr. Ramsey in the amounts of 95,238 shares, 42,857 shares, 70,238 shares, 19,047 shares and 19,047 shares, respectively. These options vest as to 25% on the first anniversary of the date of grant and as to the remainder in equal monthly increments over the following 36 months. These stock option grants are to become effective upon pricing of the Company's proposed initial public offering of Common Stock registered under the Securities Act of 1933, provided that the initial public offering is completed by December 31, 2011, and the exercise price will be the same as the the "price to public" in the initial public offering in the event the Company completes an initial public offering by such date. If the initial public offering is not completed by such date, such options shall have an exercise price equal to the fair market value of one share of Common Stock as of December 31, 2011, as determined by a valuation report of The Mentor Group, the Company's independent valuation consultant. These options will expire on April 13, 2021.

Severance and Change of Control Benefits. We enter into employment agreements with our executives in select cases, generally when it is necessary to secure the services of a newly hired executive. We entered into employment agreements with each of Dr. Charles Link, Dr. Vahanian, Mr. Gordon Link, Mr. Lynn and Dr. Ramsey, as well as certain other officers. These agreements provide for severance compensation to be paid if the officers are terminated under certain conditions, such as in connection with a change-in-control of the Company or a termination without cause by us, each as defined in the agreements. The severance compensation payable under the employment agreements are described in more detail beginning on page 147 of this prospectus under the heading "Potential Payments Upon Termination or Change in Control."

In our experience, post-termination protection for executive officers is common among our peer group, and the Compensation Committee believes that providing this protection is essential to our ability to attract and retain talented executives capable of providing the leadership, vision and execution necessary to achieve our business objectives. In addition, the employment agreements and the related post-termination compensation provisions are designed to meet the following objectives:

- *Change in control:* As part of our normal course of business, we engage in discussions with other pharmaceutical companies about possible collaborations, licensing and/or other ways in which the companies may work together to further our respective long-term objectives. In addition, many

larger established pharmaceutical companies consider companies at similar stages of development to ours as potential acquisition targets. In certain scenarios, the potential for a merger or being acquired may be in the best interests of our stockholders. We provide post-termination compensation if an officer is terminated as a result of a change-in-control transaction to promote the ability of our officers to act in the best interests of our stockholders even though they could be terminated as a result of the transaction.

- *Termination Without Cause:* In certain instances, if we terminate the employment of an officer "without cause" or the officer resigns for "good reason," each as defined in the applicable agreement, we are obligated to pay the officers certain severance benefits under their employment agreements. We believe this is appropriate because the terminated officer is bound by confidentiality and non-competition provisions covering one year after termination and because we and the officer have a mutually agreed-to severance package that is in place prior to any termination event. This provides us with more flexibility to make a change in senior management if such a change is in our and our stockholders' best interest.

401(k) Plan. Our employees, including our executive officers, are eligible to participate in our 401(k) plan. Our 401(k) plan is intended to qualify as a tax qualified plan under Section 401 of the Code. Our 401(k) plan provides that each participant may contribute a portion of his or her pretax compensation, up to a statutory limit, which for most employees was $16,500 in 2009 and 2010, with a larger "catch up" limit for older employees. Employee contributions are held and invested by the plan's trustee. We provide a contribution of 3% of each participant's salary with a possibility of an additional discretionary contributions.

Other Benefits and Perquisites. We pay a portion of the premiums for medical insurance, dental insurance, life insurance and accidental death and dismemberment insurance benefits to all full-time employees, including our executive officers. These benefits are available to all employees, subject to applicable laws. Our executive officers have not historically received perquisites valued in aggregate at more than $10,000 per year per person, with the exception of Dr. Charles Link, who received perquisites totalling $18,443 in 2009 and $14,846 in 2010. The Compensation Committee will evaluate perquisites annually as an element of overall compensation. From time to time, we have provided relocation expenses in connection with the relocation of executive officers to the geographic area of our corporate headquarters in Ames, Iowa. We intend to continue to provide relocation expenses in the future, as necessary, to obtain the services of qualified individuals.

Executive Loans. Between September 2006 and October 2010, the Company and its subsidiary BPS extended loans to Dr. Charles Link, Dr. Vahanian and Mr. Gordon Link. The loans made by the Company were extended to Dr. Charles Link and Dr. Vahanian for personal purposes and to Mr. Gordon Link to facilitate purchase of a home in Ankeny, Iowa. In light of the Company's planned initial public offering, and in accordance with the recommendation of its compensation consultants, the Company's Compensation Committee recommended and the Company's Board agreed in May 2010 to forgive Dr. Charles Link's and Dr. Vahanian's loans and pay a bonus equal to the resulting tax liability in exchange for the executives' agreement to increase the exercise price of certain outstanding stock options. As of July 2, 2010, the aggregate exercise price of these options was increased by an amount equal to the principal and accrued interest on the loans forgiven plus the bonuses paid to cover the resulting tax liability. Mr. Gordon Link repaid his loan in full on May 11, 2010.

In September 2006, Dr. Charles Link and Dr. Vahanian delivered notes to BPS in the principal amounts of $75,000 and $20,000, respectively, bearing interest at 5.01% per annum, in order to purchase their shares of BPS Series B common stock under stock options. As of November 17, 2010, Dr. Link and Dr. Vahanian had repaid the remaining principal and interest owed under the notes. For a more detailed description of these loans, see "Executive and Director Compensation—Indebtedness of Management and Related Agreements." No loans to executives of the company or BPS are currently outstanding and it is the policy of the Company and BPS not to extend loans to officers or directors in the future.

Other Compensation. We intend to continue to maintain the current benefits for our executive officers, which are also available to all of our other employees; however, our Compensation Committee, in its discretion, may in the future revise, amend or add to the benefits of any executive officer if it deems it advisable.

Federal Tax Considerations Under Sections 162(m) and 409A

Section 162(m) of the Code limits our deduction for federal income tax purposes to not more than $1 million of compensation paid to specified executive officers in a calendar year. Compensation above $1 million may be deducted if it is performance-based compensation within the meaning of Section 162(m). Our Compensation Committee has not yet established a policy for determining which forms of incentive compensation awarded to our executive officers will be designed to qualify as performance-based compensation. To maintain flexibility in compensating our executive officers in a manner designed to promote our objectives, our Compensation Committee has not adopted a policy that requires all compensation to be deductible. However, the committee intends to evaluate the effects of the compensation limits of Section 162(m) on any compensation it proposes to grant, and the Compensation Committee intends to provide future compensation in a manner consistent with our best interests and those of our stockholders.

Section 409A of the Code addresses the tax treatment of nonqualified deferred compensation benefits and provides for significant taxes and penalties in the case of payment of nonqualified deferred compensation. We currently intend to structure our executive compensation programs to avoid triggering these taxes and penalties under Section 409A.

Accounting Considerations

Under ASC 718, we are required to estimate and record an expense for each award of equity compensation, including stock options, over the vesting period of the award. Our Board of Directors has determined to retain for the foreseeable future our stock option program as the sole component of its long-term compensation program, and, therefore, to record this expense on an ongoing basis according to ASC 718. Our Compensation Committee may in the future consider the grant of restricted stock or other equity-based awards to our executive officers in lieu of stock option grants, in light of the accounting impact of ASC 718 with respect to stock option grants.

Compensation Policies and Practices as They Relate to Risk Management

The Company believes that risks arising from its compensation policies and practices for its employees are not reasonably likely to have a material adverse effect on the Company. In addition, the Compensation Committee believes that the mix and design of the elements of executive compensation do not encourage management to assume excessive risks.

The Compensation Committee has reviewed the elements of executive compensation to determine whether any portion of executive compensation encouraged excessive risk taking and concluded:

- significant weighting towards long-term incentive compensation discourages short-term risk taking, including use of multi-year vesting for equity awards which compromise the majority of compensation awards;
- goals are set to focus mainly on key events related to the overall success of the Company's product development rather than individual components;
- vesting conditions imposed on option awards after performance targets are reached discourage short-term risk taking;
- incentive awards are benchmarked to calculate reasonable overall compensation; and

- as a biopharmaceutical business, the Company does not face the same level of risks associated with compensation for employees at financial services companies (traders and instruments with a high degree of risk).

Furthermore, as described above in "Compensation Discussion and Analysis," compensation decisions include subjective considerations, which help to constrain the influence of formulae or objective factors on excessive risk taking.

Summary Compensation Table

The following table sets forth information regarding compensation earned during the years ended December 31, 2010 and 2009, by our principal executive officer, our principal financial officer and our three other most highly compensated executive officers serving as executive officers at December 31, 2010 whose total compensation exceeded $100,000 for the year ended December 31, 2009. We refer to these persons as our named executive officers.

Name and Principal Position	Year	Salary ($)	Bonus(1) ($)	Option Awards(2) ($)	All Other Compensation ($)	Total ($)
Charles J. Link, Jr., M.D.	2010	440,682	285,341(4)	—	643,609(5)	1,369,632
Chairman of the Board and Chief Executive and Scientific Officer	2009	354,895	298,490(6)	307,655	57,073(7)	1,018,113
Nicholas N. Vahanian, M.D.	2010	312,322	139,313(8)	—	78,571(9)	530,206
President and Chief Medical Officer	2009	256,316	179,966(10)	139,145	34,496	609,923
Gordon H. Link, Jr.	2010	239,794	59,949	—	23,345(11)	323,088
Chief Financial Officer	2009	228,375	59,948	52,500	13,294(12)	354,117
Kenneth Lynn	2010	243,338	68,135	—	13,190	324,663
Executive Vice President of Business Development	2009	231,750	48,668	52,500	14,350	347,268
W. Jay Ramsey, M.D., Ph.D.	2010	240,000	60,000	—	12,827	312,827
Quality Assurance Officer	2009	162,225	36,000	8,400	13,597	220,222

(1) Performance bonuses are based on a percentage of 2010 base salary. For 2010 and 2009, Dr. Charles Link was awarded cash performance bonuses of 50% of his 2010 base salary, which was $440,682. For 2010 and 2009, Dr. Vahanian was awarded cash performance bonuses of 35% and 40%, respectively, of his 2010 base salary, which was $312,332. For 2010 and 2009, Mr. Gordon Link was awarded cash performance bonuses of 25% of his 2010 base salary, which was $239,794. For 2010 and 2009, Mr. Lynn was awarded cash performance bonuses of 28% and 20%, respectively, of his 2010 base salary, which was $243,338. For 2010 and 2009, Dr. Ramsey was awarded cash performance bonuses of 25% and 15%, respectively, of his 2010 base salary, which was $240,000.

(2) The assumptions we used in valuing options are described under the caption "Stock Option Valuation" in note 2(n) to our financial statements included in this prospectus. This column reflects compensation expense that would be recorded under ASC 718 as stock-based compensation in our financial statements for the indicated year in connection with options we granted in the indicated year and in prior years, adjusted to disregard the effects of any estimate of forfeitures related to service-based vesting, if we had adopted the modified-prospective transition method of ASC 718. As a result, unlike our financial statements for the indicated year, the amounts in the table include values associated with stock options that were granted prior to January 1, 2006 and that had not fully vested prior to the indicated year, and assume that the executive will perform the requisite service for the award to vest.

(3) Unless otherwise indicated, amounts in this column represent Company contributions under our 401(k) plan.

(4) Amount includes the performance bonus discussed in footnote (1) and bonuses of $50,000 and $15,000 received by Dr. Charles Link from BPS.

(5) Amount includes: (i) a $29,850 contribution under the Company's 401(k) plan; (ii) $14,846 in perquisites and personal benefits received by Dr. Charles Link that we reimbursed or paid on his behalf in 2010, including insurance, memberships, a medical license and various other Company provided benefits; (iii) $43,517 in loan and accrued interest forgiveness by BPS; and (iv) $555,396 in loan and accrued interest forgiveness by the Company and a tax gross-up, which was offset by increasing the exercise price of options to purchase 264,474 shares of common stock held by Dr. Link from $2.10 per share to $4.20 per share, as described in more detail on page 160 of this prospectus.

(6) Amount includes the performance bonus discussed in footnote (1) and a $78,149 bonus received by Dr. Charles Link from the Company.

(7) Amount includes (i) a $38,630 contribution under the Company's 401(k) plan and (ii) $18,443 in perquisites and personal benefits received by Dr. Charles Link that we reimbursed or paid on his behalf in 2009, including insurance, memberships, a medical license and various other Company provided benefits.

(8) Amount includes the performance bonus discussed in footnote (1) and two $15,000 bonuses received by Dr. Vahanian from BPS.

(9) Amount includes: (i) a $19,600 contribution under the Company's 401(k) plan; (ii) $10,357 of loan interest forgiveness; (iii) $11,604 in loan and accrued interest forgiveness by BPS; and (iv) $37,010 in loan and accrued interest forgiveness by the Company and a tax gross-up, which was offset by increasing the exercise price of options to purchase 17,624 shares of common stock held by Dr. Vahanian from $2.10 per share to $4.20 per share, as described in more detail on page 160 of this prospectus.

(10) Amount includes the performance bonus discussed in footnote (1) and a $55,037 bonus received by Dr. Vahanian from the Company.

(11) Amount includes (i) a $13,345 contribution under the Company's 401(k) plan, of which $5,995 is non-vested and subject to Mr. Link's continued service with the Company through 2011, and (ii) $10,000 in loan and accrued interest forgiveness by the Company.

(12) Amount represents a $13,294 contribution under the Company's 401(k) plan, of which $7,000 is non-vested and subject to Mr. Link's continued service with the Company through 2011.

2010 Grants of Plan-Based Awards

The following table lists grants of plan-based awards made to our named executive officers in 2010:

Grants Of Plan-Based Awards

Name	Grant Date	All Other Option Awards: Number of Securities Underlying Options (#)	Exercise or Base Price of Option Awards ($/Sh)	Fair Value of Shares Available Under Grant
Nicholas N. Vahanian	3/3/2010	190,476(1)	$ 3.07	$ 584,000
Gordon H. Link, Jr.	3/3/2010	4,761(2)	$ 3.07	$ 14,600
W. Jay Ramsey	3/3/2010	51,428(2)	$ 3.07	$ 157,900

(1) The vesting commencement date of these options was December 4, 2009. See "Executive and Director Compensation—Elements of our Executive Compensation Program—Equity Compensation" for further discussion of this option grant.

(2) The vesting commencement date of these options was March 3, 2010. See "Executive and Director Compensation—Elements of our Executive Compensation Program—Equity Compensation" for further discussion of this option grant.

2011 Grants of Plan-Based Awards

Anticipated Grants of Plan-Based Awards

Name	Approval Date	All other Option Awards: Number of Securities Underlying Options (#)	Exercise or Base Price of Option Awards ($/Sh)	Fair Value of Shares Available Under Grant
Charles J. Link, Jr., M.D.	4/14/2011	95,238	$ 7.00	$ 666,700
Nicholas N. Vahanian, M.D.	4/14/2011	42,857	$ 7.00	$ 300,000
Gordon H. Link, Jr.	4/14/2011	70,238	$ 7.00	$ 492,700
Kenneth Lynn	4/14/2011	19,047	$ 7.00	$ 133,300
W. Jay Ramsey, M.D., Ph.D.	4/14/2011	19,047	$ 7.00	$ 133,300

Outstanding Equity Awards at June 30, 2011

The following table provides information about outstanding stock options held by each of our named executive officers at June 30, 2011. All of these options were granted under our 2000 Equity Incentive Plan. Our named executive officers did not hold any restricted stock or other stock awards at the end of 2010.

Name	Number of Shares Underlying Unexercised Options(1) (#) Exercisable	(#) Unexercisable(2)	Option Vesting Commencement Date	Option Exercise Price	Option Expiration Date
Charles J. Link, Jr., M.D.	374,430(4)(6)	93,607	6/1/2007	$ 2.10	5/12/2019
	211,579(4)(6)	52,895	6/1/2007	$ 4.20	5/12/2019
	160,714(3)	267,857	12/4/2009	$ 2.96	12/3/2019
	1,239(4)(8)	1,325	1/1/2009	$ 0.80	1/20/2019
Nicholas N. Vahanian, M.D.	2,380(5)	—	10/18/2002	$ 2.10	7/15/2018
	35,714(3)	—	10/18/2002	$ 2.10	7/15/2018
	250,938(4)(7)	62,735	6/1/2007	$ 2.10	5/12/2019
	14,098(4)(7)	3,525	6/1/2007	$ 4.20	5/12/2019
	142,857(3)	238,095	12/4/2009	$ 2.96	12/3/2019
	71,429(3)	119,047	12/4/2009	$ 3.07	3/2/2020
	1,239(4)(8)	1,325	1/1/2009	$ 0.80	1/20/2019
Gordon H. Link, Jr.	67,460(3)	27,778	8/4/2008	$ 2.10	8/5/2018
	4,761(5)	—	3/3/2010	$ 3.07	3/2/2020
	2,644(3)(8)	1,202	8/1/2008	$ 0.80	9/11/2018
Kenneth Lynn	83,333(3)	16,667	2/25/2008	$ 2.10	8/5/2018
	1,859(4)(8)	1,987	8/1/2008	$ 0.80	1/20/2019
W. Jay Ramsey, M.D., Ph.D.	15,238(4)	3,809	6/29/2007	$ 2.10	6/28/2017
	2,380(3)	—	10/18/2002	$ 2.10	7/15/2018
	2,380(3)	—	9/1/2004	$ 2.10	7/15/2018
	952(4)	—	4/4/2005	$ 2.10	7/15/2018
	16,071(3)	35,357	3/3/2010	$ 3.07	3/2/2020

(1) Unless otherwise indicated, these options have a 10-year term.

(2) This column shows options that were unvested as of June 30, 2011.

(3) These options vest over a four-year period, with 25% of the options vesting on the first anniversary of the vesting commencement date and the remaining 75% of the options vesting in equal monthly installments thereafter over the next three years, subject to the recipient's continued employment with the Company through such vesting dates.

(4) These options vest over a five-year period, with 20% of the options vesting on the first anniversary of the vesting commencement date and the remaining 80% of the options vesting in equal monthly installments thereafter over the next four years, subject to the recipient's continued employment with the Company through such vesting dates.

(5) These options and were fully vested as of the date of grant.

(6) Dr. Charles Link was granted a total option of 732,511 shares at $2.10 per shares, which was amended on July 1, 2010 and split into separate grants of 468,037 with a price of $2.10 and 264,474 with a price of $4.20.

(7) Dr. Nicholas Vahanian was granted a total option of 331,296 shares at $2.10 per shares, which was amended on July 1, 2010 and split into separate grants of 313,673 with a price of $2.10 and 17,624 with a price of $4.20.

(8) This number represents outstanding stock options to purchase stock in the Company that were issued on January 7, 2011 in exchange for options to purchase stock in our subsidiary, BPS.

2010 Option Exercises and Stock Vested

The following table lists exercise of stock options during 2010 for each of the named executive officers:

Name	Option Awards	
	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise ($)
Nicholas N. Vahanian, M.D.	35,714	124,285
Gordon H. Link, Jr.	4,761	9,094

Employment Agreements

The Company has entered into employment agreements with each of the named executive officers. The material terms of the agreements are summarized below.

Employment Agreement with Dr. Charles Link

On December 6, 2010, the Company entered into an employment agreement with Dr. Charles Link in connection with his employment as Chief Executive Officer. Pursuant to the employment agreement, Dr. Link earns an annual base salary, which is subject to annual review and adjustment by the Board of Directors. Currently, Dr. Link earns an annual base salary of $485,000. Dr. Link is also eligible to receive an annual performance bonus based on his achievement of certain milestones and performance objectives. Currently, Dr. Link's target bonus is set at 50% of his annual base salary.

The employment agreement with Dr. Link also provides that his employment with the Company is at-will and may be altered or terminated by either Dr. Link or the Company at any time. However, if the Company terminates Dr. Link's employment without just cause or if he resigns for good reason (other than in connection with a change-in-control of the Company), as long as Dr. Link executes a general release in favor of the Company, he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 147 of this prospectus.

The employment agreement with Dr. Link further provides that if the Company (or any surviving or acquiring corporation) terminates Dr. Link's employment without just cause or if he resigns for good reason within one month prior to or 13 months following the effective date of a change-in-control of the Company, as long as Dr. Link executes a general release in favor of the Company (or any surviving or acquiring corporation), he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 147 of this prospectus.

Employment Agreement with Dr. Nicholas Vahanian

On November 22, 2010, the Company entered into an employment agreement with Dr. Nicholas Vahanian in connection with his employment as President and Chief Medical Officer. Pursuant to the employment agreement, Dr. Vahanian earns an annual base salary, which is subject to annual review and adjustment by the Board of Directors. Currently, Dr. Vahanian earns an annual base salary of $343,600. Dr. Vahanian is also eligible to receive an annual performance bonus based on his achievement of certain milestones and performance objectives. Currently, Dr. Vahanian's target bonus is set at 40% of his annual base salary.

The employment agreement with Dr. Vahanian also provides that his employment with the Company is at-will and may be altered or terminated by either Dr. Vahanian or the Company at any time. However,

if the Company terminates Dr. Vahanian's employment without just cause or if he resigns for good reason (other than in connection with a change-in-control of the Company), as long as Dr. Vahanian executes a general release in favor of the Company, he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 147 of this prospectus.

The employment agreement with Dr. Vahanian further provides that if the Company (or any surviving or acquiring corporation) terminates Dr. Vahanian's employment without just cause or if he resigns for good reason within one month prior to or 13 months following the effective date of a change-in-control of the Company, as long as Dr. Vahanian executes a general release in favor of the Company (or any surviving or acquiring corporation), he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 147 of this prospectus.

Employment Agreement with Mr. Gordon Link

On November 22, 2010, the Company entered into an employment agreement with Mr. Gordon Link in connection with his employment as Chief Financial Officer. Pursuant to the employment agreement, Mr. Link earns an annual base salary, which is subject to annual review and adjustment by the Board of Directors. Currently, Mr. Link earns an annual base salary of $263,800. Mr. Link is also eligible to receive an annual performance bonus based on his achievement of certain milestones and performance objectives. Currently, Mr. Link's target bonus is set at 30% of his annual base salary.

The employment agreement with Mr. Link also provides that his employment with the Company is at-will and may be altered or terminated by either Mr. Link or the Company at any time. However, if the Company terminates Mr. Link's employment without just cause or if he resigns for good reason (other than in connection with a change-in-control of the Company), as long as Mr. Link executes a general release in favor of the Company, he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 147 of this prospectus.

The employment agreement with Mr. Link further provides that if the Company (or any surviving or acquiring corporation) terminates Mr. Link's employment without just cause or if he resigns for good reason within one month prior to or 13 months following the effective date of a change-in-control of the Company, as long as Mr. Link executes a general release in favor of the Company (or any surviving or acquiring corporation), he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 147 of this prospectus.

Employment Agreement with Mr. Kenneth Lynn

On November 22, 2010, the Company entered into an employment agreement with Mr. Kenneth Lynn in connection with his employment as Executive Vice President, Business Development. Pursuant to the employment agreement, Mr. Lynn earns an annual base salary, which is subject to annual review and adjustment by the Board of Directors. Currently, Mr. Lynn earns an annual base salary of $255,500. Mr. Lynn is also eligible to receive an annual performance bonus based on his achievement of certain milestones and performance objectives. Currently, Mr. Lynn's target bonus is set at 30% of his annual base salary.

The employment agreement with Mr. Lynn also provides that his employment with the Company is at-will and may be altered or terminated by either Mr. Lynn or the Company at any time. However, if the Company terminates Mr. Lynn's employment without just cause or if he resigns for good reason (other than in connection with a change-in-control of the Company), as long as Mr. Lynn executes a general release in favor of the Company, he will be entitled to receive certain payments and other benefits, which

are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 147 of this prospectus.

The employment agreement with Mr. Lynn further provides that if the Company (or any surviving or acquiring corporation) terminates Mr. Lynn's employment without just cause or if he resigns for good reason within one month prior to or 13 months following the effective date of a change-in-control of the Company, as long as Mr. Lynn executes a general release in favor of the Company (or any surviving or acquiring corporation), he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 147 of this prospectus.

Employment Agreement with Dr. W. Jay Ramsey

On November 22, 2010, the Company entered into an employment agreement with Dr. W. Jay Ramsey in connection with his employment as Quality Assurance and Quality Control Officer. Pursuant to the employment agreement, Dr. Ramsey earns an annual base salary, which is subject to annual review and adjustment by the Board of Directors. Currently, Dr. Ramsey earns an annual base salary of $255,000. Dr. Ramsey is also eligible to receive an annual performance bonus based on his achievement of certain milestones and performance objectives. Currently, Dr. Ramsey's target bonus is set at 30% of his annual base salary.

The employment agreement with Dr. Ramsey also provides that his employment with the Company is at-will and may be altered or terminated by either Dr. Ramsey or the Company at any time. However, if the Company terminates Dr. Ramsey's employment without just cause or if he resigns for good reason (other than in connection with a change-in-control of the Company), as long as Dr. Ramsey executes a general release in favor of the Company, he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 147 of this prospectus.

The employment agreement with Dr. Ramsey further provides that if the Company (or any surviving or acquiring corporation) terminates Dr. Ramsey's employment without just cause or if he resigns for good reason within one month prior to or 13 months following the effective date of a change-in-control of the Company, as long as Dr. Ramsey executes a general release in favor of the Company (or any surviving or acquiring corporation), he will be entitled to receive certain payments and other benefits, which are described in more detail under the heading "Potential Payments Upon Termination or Change in Control" beginning on page 147 of this prospectus.

Potential Payments Upon Termination or Change in Control

Under the terms of employment agreements with our named executive officers, if the Company terminates a named executive officer's employment for "cause" or a named executive officer resigns without "good reason," such named executive officer is entitled to the following: (i) any salary earned but unpaid prior to termination, (ii) any benefits accrued prior to termination, (iii) all accrued but unused vacation and (iv) any business expenses that were incurred but not reimbursed as of the date of termination (collectively, the "Accrued Obligations"). Following such termination, vesting of such named executive officer's then outstanding stock options shall cease on the date of such termination.

Under the terms of employment agreements with the named executive officers, if the Company terminates a named executive officer's employment without just cause or a named executive officer resigns with good reason (other than in connection with a change in control of the Company), and in each case such named executive officer signs a general release and written acknowledgment of his continuing obligations under his confidentiality and inventions assignment agreement with the Company, such named executive officer is entitled to the following: (i) payment of the Accrued Obligations; (ii) depending on the named executive officer and as described in the tables below, the equivalent of 24, 12 or 6 months of such

named executive officer's base salary as in effect immediately prior to the termination date, payable on the same basis and at the same time as previously paid and subject to employment tax withholdings and deductions; and (iii) depending on the named executive officer and as described in the tables below, payment of such named executive officer's COBRA premiums for 24, 12 or 6 months to be paid in order for such named executive officer to maintain medical insurance coverage that is substantially equivalent to that which such named executive officer received immediately prior to the termination payment of premiums for his group health insurance. In the event that such named executive officer breaches his confidentiality, non-compete or non-solicitation obligations under his confidentiality and inventions assignment agreement with the Company, the payments described above, except for the Accrued Obligations, shall cease, and the Company shall have no further obligations to such named executive officer with respect thereto. The Company's obligation to pay such named executive officer's COBRA premiums ceases upon such named executive officer's eligibility for comparable coverage provided by a new employer.

Under the terms of the employment agreements with the named executive officers, if the Company (or any surviving or acquiring corporation) terminates a named executive officer's employment without cause or a named executive officer resigns with good reason within one month prior to or 13 months following the effective date of a change in control of the Company (either constituting a "Change of Control Termination"), and in each case such named executive officer signs a general release and written acknowledgment of his continuing obligations under his confidentiality and inventions assignment agreement with the Company, such named executive officer is entitled to the following: (i) payment of the Accrued Obligations; (ii) depending on the named executive officer and as described in the tables below, the equivalent of 24, 12 or 6 months of such named executive officer's base salary as in effect immediately prior to the termination date, payable on the same basis and at the same time as previously paid and subject to employment tax withholdings and deductions; (iii) depending on the named executive officer and as described in the tables below, payment of such named executive officer's COBRA premiums for 24, 12 or 6 months to be paid in order for such named executive officer to maintain medical insurance coverage that is substantially equivalent to that which such named executive officer received immediately prior to the termination payment of premiums for his group health insurance; and (iv) the Company will vest 100% of the shares subject to such named executive officer's options and such vesting shall occur upon the occurrence of the change of control in the case of a Change of Control Termination occurring prior to the change in control or upon termination in the case of a Change of Control Termination occurring after the change of control. If a named executive officer breaches his confidentiality, non-compete or non-solicitation obligations under his confidentiality and inventions assignment agreement with the Company, the payments described above, except for the Accrued Obligations, shall cease, and the Company shall have no further obligations to such named executive officer with respect thereto. The Company's obligation to pay such named executive officer's COBRA premiums ceases upon such named executive officer's eligibility for comparable coverage provided by a new employer.

The following tables reflect the estimated potential payments that would be payable to each named executive officer upon a termination or change-in-control of the Company under the terms of his employment agreement. The amounts shown reflect only the additional payments or benefits that each named executive officer would have received upon the occurrence of the respective triggering events listed below; they do not include the value of payments or benefits that would have been earned, or any amounts associated with equity awards that would have vested, absent the triggering event. For purposes of

calculating the potential payments set forth in the tables below, we have assumed that (i) the date of termination was December 31, 2010 and (ii) the stock price was $10.02.

Charles J. Link, Jr., M.D.	Termination For Just Cause or Resignation Without Good Reason Termination	Termination Without Just Cause or Resignation With Good Reason Termination	Termination Without Just Cause or Resignation With Good Reason (in connection with a Change in Control)
Cash Payments			
Cash Severance	$ —	$ 970,000(1)	$ 970,000(1)
Long-Term Incentives			
Stock Options (Unvested and Accelerated)	$ —	$ —	$ 2,952,503(2)
Benefits and Perquisites			
Accrued Obligations	$ 21,450(3)	$ 21,450(3)	$ 21,450(3)
Benefits Continuation	$ —	$ 22,934(4)	$ 22,934(4)
Total Payments Upon Termination	$ 21,450	$ 1,014,384	$ 3,966,887

(1) Amount represents 24 months of his base salary then in effect.

(2) Amount represents the in-the-money value of unvested NewLink stock options as of June 30, 2011, using the value of the Company's common stock on December 31, 2010 based on the value of our common stock used for purposes of calculating compensation expense under ASC 718. The number of shares underlying such stock options and the exercise price thereof are reflected in the columns entitled "Number of Shares Underlying Unexercised Options—Unexercisable" and "Option Exercise Price," respectively, in the "Outstanding Equity Awards at June 30, 2011" table set forth on page 144 of this prospectus.

(3) Amount represents (i) a $4,500 contribution under the Company's 401(k) plan and (ii) $16,950 in accrued vacation.

(4) Amount represents 24 months of COBRA premiums.

Nicholas N. Vahanian, M.D.	Termination For Just Cause or Resignation Without Good Reason Termination	Termination Without Just Cause or Resignation With Good Reason Termination	Termination Without Just Cause or Resignation With Good Reason (in connection with a Change in Control)
Cash Payments			
Cash Severance	$ —	$ 343,600(1)	$ 343,600(1)
Long-Term Incentives			
Stock Options (Unvested and Accelerated)	$ —	$ —	$ 3,037,921(2)
Benefits and Perquisites			
Accrued Obligations	$ 28,512(3)	$ 28,512(3)	$ 28,512(3)
Benefits Continuation	$ —	$ 11,467(4)	$ 11,467(4)
Total Payments Upon Termination	$ 28,512	$ 383,579	$ 3,421,500

(1) Amount represents 12 months of his base salary then in effect.

(2) Amount represents the in-the-money value of unvested NewLink stock options as of June 30, 2011, using the value of the Company's common stock on December 31, 2010 based on the value of our common stock used for purposes of calculating compensation expense under ASC 718. The number of shares underlying such stock options and the exercise price thereof are reflected in the columns entitled "Number of Shares Underlying Unexercised Options—Unexercisable" and "Option Exercise Price," respectively, in the "Outstanding Equity Awards at June 30, 2011" table set forth on page 144 of this prospectus.

(3) Amount represents (i) a $16,500 contribution under the Company's 401(k) plan and (ii) $12,012 in accrued vacation.

(4) Amount represents 12 months of COBRA premiums.

Gordon H. Link, Jr.	Termination For Just Cause or Resignation Without Good Reason Termination	Termination Without Just Cause or Resignation With Good Reason Termination	Termination Without Just Cause or Resignation With Good Reason (in connection with a Change in Control)
Cash Payments			
Cash Severance	$ —	$ 131,900(1)	$ 131,900(1)
Long-Term Incentives			
Stock Options (Unvested and Accelerated)	$ —	$ —	$ 231,084(2)
Benefits and Perquisites			
Accrued Obligations	$ 21,213(3)	$ 21,213(3)	$ 21,213(3)
Benefits Continuation	$ —	$ 5,734(4)	$ 5,734(4)
Total Payments Upon Termination	$ 21,213	$ 158,846	$ 389,931

(1) Amount represents six months of his base salary then in effect.

(2) Amount represents the in-the-money value of unvested NewLink stock options as of June 30, 2011, using the value of the Company's common stock on December 31, 2010 based on the value of our common stock used for purposes of calculating compensation expense under ASC 718. The number of shares underlying such stock options and the exercise price thereof are reflected in the columns entitled "Number of Shares Underlying Unexercised Options—Unexercisable" and "Option Exercise Price," respectively, in the "Outstanding Equity Awards at June 30, 2011" table set forth on page 144 of this prospectus.

(3) Amount represents (i) a $11,990 contribution under the Company's 401(k) plan and (ii) $9,223 in accrued vacation.

(4) Amount represents six months of COBRA premiums.

Kenneth Lynn	Termination For Just Cause or Resignation Without Good Reason Termination	Termination Without Just Cause or Resignation With Good Reason Termination	Termination Without Just Cause or Resignation With Good Reason (in connection with a Change in Control)
Cash Payments			
Cash Severance	$ —	$ 127,750(1)	$ 127,750(1)
Long-Term Incentives			
Stock Options (Unvested and Accelerated)	$ —	$ —	$ 150,323(2)
Benefits and Perquisites			
Accrued Obligations	$ 9,359(3)	$ 9,359(3)	$ 9,359(3)
Benefits Continuation	$ —	$ 5,734(4)	$ 5,734(4)
Total Payments Upon Termination	$ 9,359	$ 142,842	$ 293,166

(1) Amount represents six months of his base salary then in effect.

(2) Amount represents the in-the-money value of unvested NewLink stock options as of June 30, 2011, using the value of the Company's common stock on December 31, 2010 based on the value of our common stock used for purposes of calculating compensation expense under ASC 718. The number of shares underlying such stock options and the exercise price thereof are reflected in the columns entitled "Number of Shares Underlying Unexercised Options—Unexercisable" and "Option Exercise Price," respectively, in the "Outstanding Equity Awards at June 30, 2011" table set forth on page 144 of this prospectus.

(3) Amount represents $9,359 in accrued vacation.

(4) Amount represents six months of COBRA premiums.

W. Jay Ramsey, M.D., Ph.D.	Termination For Just Cause or Resignation Without Good Reason Termination	Termination Without Just Cause or Resignation With Good Reason Termination	Termination Without Just Cause or Resignation With Good Reason (in connection with a Change in Control)
Cash Payments			
Cash Severance	$ —	$ 127,500(1)	$ 127,500(1)
Long-Term Incentives			
Stock Options (Unvested and Accelerated)	$ —	$ —	$ 275,898(2)
Benefits and Perquisites			
Accrued Obligations	$ 29,392(3)	$ 29,392(3)	$ 29,392(3)
Benefits Continuation	$ —	$ 3,537(4)	$ 3,537(4)
Total Payments Upon Termination	$ 29,392	$ 160,428	$ 436,327

(1) Amount represents six months of his base salary then in effect.

(2) Amount represents the in-the-money value of unvested NewLink stock options as of June 30, 2011, using the value of the Company's common stock on December 31, 2010 based on the value of our common stock used for purposes of calculating compensation expense under ASC 718. The number of shares underlying such stock options and the exercise price thereof are reflected in the columns entitled "Number of Shares Underlying Unexercised Options—Unexercisable" and "Option Exercise Price," respectively, in the "Outstanding Equity Awards at June 30, 2011" table set forth on page 144 of this prospectus.

(3) Amount represents (i) a $22,000 contribution under the Company's 401(k) plan and (ii) $7,392 in accrued vacation.

(4) Amount represents six months of COBRA premiums.

Option Acceleration Under Equity Incentive Plans

Under our 2009 Equity Incentive Plan, the vesting of stock options granted to our employees and officers may be accelerated in connection with specified corporate transactions and change in control transactions.

Under the terms of the employment agreements with the named executive officers, if the Company (or any surviving or acquiring corporation) terminates a named executive officer's employment without just cause or a named executive officer resigns with good reason within one month prior to or 13 months following the effective date of a change in control of the Company, the Company will vest 100% of the shares subject to such named executive officer's options.

In addition, in the event of a change in control of the Company, the Company will vest 100% of the shares subject to each Director's options.

Other than as set forth above, none of our other option grants provide for acceleration of vesting of any options in connection with such a transaction, unless the acquirer does not assume outstanding option grants.

Confidential Information and Inventions Agreement

Each of our named executive officers has entered into a form agreement with respect to confidential information and inventions. Among other things, this agreement obligates each named executive officer to refrain from disclosing any of our confidential information received during the course of employment and, with some exceptions, to assign to us any inventions conceived or developed during the course of employment.

Employee Benefit Plans

We believe that our ability to grant equity-based awards is a valuable and necessary compensation tool that aligns the long-term financial interests of our employees, consultants and directors with the financial interests of our stockholders. In addition, we believe that our ability to grant options and other equity-based awards helps us to attract, retain and motivate qualified service providers, and encourages them to devote their best efforts to our business and financial success. The material terms of our equity incentive plans are described below.

2000 Equity Incentive Plan

On April 10, 2000, the stockholders approved the Company's 2000 Equity Incentive Plan, or the 2000 Plan. As of May 13, 2009, no additional stock awards have been granted under the 2000 Plan and the 2000 Plan terminated according to its terms on March 2, 2010. As of June 30, 2011, options to purchase 554,272 shares of common stock at a weighted average exercise price per share of $1.89 were outstanding under the 2000 Plan.

2009 Equity Incentive Plan

On July 15, 2009, the stockholders approved the Company's 2009 Equity Incentive Plan, or the 2009 Plan, as the successor to and continuation of the 2000 Plan. The options still outstanding under the 2000 Plan will continue to be governed by their existing terms, but any shares subject to outstanding options granted under the 2000 Plan that expire or terminate for any reason prior to exercise or settlement, or are forfeited because of the failure to meet a contingency or condition required to vest such shares, will become available for issuance pursuant to awards granted under the 2009 Plan. In anticipation of our initial public offering, the 2009 Plan was amended by our Board of Directors on October 29, 2010.

Available Awards. The 2009 Plan provides for the discretionary grant of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, performance stock awards, performance cash awards and other stock awards to our employees, directors and consultants. Incentive stock options may be granted only to employees of the Company or our affiliates.

Administration. Our Board of Directors has delegated its authority to administer the 2009 Plan to our Compensation Committee. Subject to the terms of the 2009 Plan, our Board of Directors or an authorized committee, referred to as the "plan administrator," determines: grant recipients, when and how each award will be granted, what type or combination of types of award will be granted, the provisions of each award granted (including the time or times when a person will be permitted to receive cash or

common stock pursuant to a stock award), the number of shares of common stock with respect to which a stock award will be granted, and the fair market value applicable to a stock award.

The plan administrator also has the authority, under appropriate circumstances, to engage in any action that is treated as a repricing under United States generally accepted accounting principles, to reduce the exercise price of any outstanding option or the strike price of any outstanding stock appreciation right, and to cancel any outstanding option or stock appreciation right and to grant in exchange one or more of the following: (i) new options or stock appreciation rights covering the same or a different number of shares of common stock; (ii) new stock awards; (iii) cash, and/or (iv) other valuable consideration.

Amendment and Termination. The plan administrator has the authority to amend the 2009 Plan, provided that certain changes require the approval of our stockholders. The 2009 Plan is scheduled to terminate on May 12, 2019, unless terminated earlier by the plan administrator.

Share Reserve. Subject to the provisions of the 2009 Plan relating to adjustments upon changes in stock, the aggregate number of shares of common stock that are available for issuance pursuant to stock awards (including incentive stock options) under the 2009 Plan is 3,992,854 shares. This amount will be increased pursuant to an "evergreen provision" on January 1 of each year, from 2012 to (and including) 2019, in an amount equal to 4% of the total number of shares of Common Stock outstanding on December 31 of the preceding calendar year. However, our Board of Directors will have the authority to designate a lesser number of shares by which the share reserve will be increased. As of June 30, 2011, options to purchase 2,547,512 shares of common stock at a weighted average exercise price per share of $3.14 were outstanding under the 2009 Plan. As of June 30, 2011, 731,532 shares of common stock remained available for future issuance. The shares remaining for future issuance as of June 30, 2011 will be reduced by an additional 494,011 shares of common stock issuable upon the exercise of options that were granted effective November 10, 2011, upon the pricing of this offering.

If a stock award (a) granted under the 2009 Plan expires or otherwise terminates without all of the shares covered by such stock award having been issued or (b) granted under the 2009 Plan is settled in cash (i.e., the holder of the stock award receives cash rather than stock), such expiration, termination or settlement will not reduce or otherwise offset the number of shares of the common stock that may be issued pursuant to the 2009 Plan. In addition, if any shares of common stock issued pursuant to a stock award granted under the 2009 Plan are forfeited back to or repurchased by the Company because of the failure to vest, then the shares that are forfeited or repurchased will revert to and again become available for issuance under the 2009 Plan. In addition, if any shares subject to a stock award are not delivered to a participant because the shares are reacquired by the Company to satisfy withholding obligations upon the exercise of an option, or as consideration for the exercise of an option, the number of shares subject to the stock award that are not delivered to the participant will also be available for subsequent issuance under the 2009 Plan. Subject to the provisions of the 2009 Plan relating to capitalization adjustments, the aggregate maximum number of shares of common stock that may be issued pursuant to the exercise of incentive stock options will be 3,992,854 shares of common stock.

The stock issuable under the 2009 Plan may be shares of authorized but unissued or reacquired common stock, including shares repurchased by the Company on the open market.

Stock Options. Incentive and nonstatutory stock options are granted pursuant to incentive and nonstatutory stock option agreements adopted by the plan administrator. The plan administrator determines the exercise price for a stock option, within the terms and conditions of the 2009 Plan, provided that the exercise price of an incentive stock option and nonstatutory stock option cannot be less than 100% of the fair market value of our common stock on the date of grant. Options granted under the 2009 Plan vest at the rate specified by the plan administrator.

Generally, the plan administrator determines the term of stock options granted under the 2009 Plan, up to a maximum of 10 years, except in the case of specified incentive stock options, as described below.

Unless the terms of an optionee's stock option agreement provide otherwise, if an optionee's service relationship with us, or any of our affiliates, ceases for any reason other than a termination for cause or a termination because of disability or death, the optionee may exercise the vested portion of any options for a period of three months following the cessation of service. If an optionee's service relationship with us, or any of our affiliates, ceases due to disability or death (or an optionee dies within a specified period following cessation of service), the optionee or a beneficiary may exercise the vested portion of any options for a period of 12 months or 18 months, respectively. In the event of a termination of an optionee's services for cause, the unexercised portion of any outstanding stock option held by the optionee will be forfeited and may not be exercised. The option term may be extended in the event that exercise of the option following termination of service is prohibited by applicable securities laws. In no event, however, may an option be exercised beyond the expiration of its term.

Acceptable consideration for the purchase of common stock issued upon the exercise of a stock option will be determined by the plan administrator and may include cash or check, a broker-assisted cashless exercise, the tender of common stock previously owned by the optionee, a net exercise of the option, and other legal consideration approved by the plan administrator.

Unless the plan administrator provides otherwise, options generally are not transferable except by will, the laws of descent and distribution, or pursuant to a domestic relations order. An optionee may designate a beneficiary, however, who may exercise the option following the optionee's death.

Tax Limitations on Incentive Stock Options. Incentive stock options may be granted only to our employees. The aggregate fair market value, determined at the time of grant, of shares of our common stock with respect to incentive stock options that are exercisable for the first time by an optionee during any calendar year under all of our equity incentive plans may not exceed $100,000. No incentive stock option may be granted to any person who, at the time of the grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power or that of any of our affiliates unless the option exercise price is at least 110% of the fair market value of the stock subject to the option on the date of grant, and the term of the incentive stock option does not exceed five years from the date of grant.

Restricted Stock Awards. Restricted stock is stock that is subject to certain restrictions, such as vesting or a holding period. The plan administrator may award restricted stock in consideration for past or future services without the payment of a purchase price, or in consideration for a cash payment or other legal consideration. Even while the restricted stock award is unvested, the award holder will have the same general rights as a stockholder with respect to those shares, including the right to vote those shares in any matter put to our stockholders for a vote.

Restricted Stock Unit Awards. A restricted stock unit award represents the right to receive consideration in the future based on the value of our common stock when the shares of common stock subject to the award have vested or are subsequently deliverable. Restricted stock unit awards may be settled by the delivery of shares of our common stock, their cash equivalent, a combination thereof, or any other form of consideration determined by the plan administrator and detailed in the award recipient's restricted stock unit award agreement. Unlike restricted stock, a holder of a restricted stock unit award does not have any rights as a stockholder until shares subject to the award are actually issued. Specifically, award holders do not have rights to vote the shares subject to their awards and will not have rights to receive dividends with respect to the shares subject to their awards, unless and until those shares are actually issued.

Performance Stock Awards. The 2009 Plan permits the grant of performance stock awards that may qualify as performance-based compensation that is not subject to the $1,000,000 limitation on the income tax deductibility of compensation paid per covered executive officer imposed by Section 162(m) of the Code. To assure that the compensation attributable to one or more performance stock awards will so qualify, our Compensation Committee can structure one or more such awards so that stock will be issued

or paid pursuant to such award only upon the achievement of certain pre-established performance goals during a designated performance period. The maximum benefit to be received by a participant in any calendar year attributable to performance stock awards may not exceed 238,095 shares of our common stock.

Other Stock Awards. The plan administrator may grant other awards based in whole or in part by reference to our common stock. The plan administrator will set the number of shares under the award and all other terms and conditions of such awards.

Adjustment Provisions. Transactions not involving our receipt of consideration, such as certain mergers, consolidations, reorganizations, stock dividends, or stock splits, may change the type, class and number of shares of our common stock subject to the 2009 Plan and outstanding awards. In that event, the 2009 Plan will be appropriately adjusted as to the type, class and the maximum number of shares of our common stock subject to the 2009 Plan, and outstanding awards will be adjusted as to the type, class, number of shares and price per share of common stock subject to such awards.

Corporate Transactions; Changes in Control. Unless otherwise determined by the Board of Directors at the time of grant, in the event of (i) a sale or other disposition of all or substantially all of the consolidated assets of our company and our subsidiaries, (ii) a sale or disposition of at least 90% of our outstanding securities, (iii) a merger consolidation or similar transaction after which we are not the surviving corporation, or (iv) a merger, consolidation or similar transaction after which we are the surviving corporation but our shares of common stock immediately preceding the merger, consolidation or similar transaction are converted or exchanged by virtue of the merger, consolidation or similar transaction into other property, any unvested portion of a stock award granted under the 2009 Plan held by those in continuous service as of the effective time of the corporate transaction will become fully vested, unless the surviving or acquiring corporation assumes or continues such outstanding stock award or substitutes a similar stock award for such outstanding stock award.

If a change in control occurs under the 2009 Plan, an individual stock award may provide for accelerated vesting upon the change in control. A change in control includes a transaction or series of related transactions, in each case, where persons who were not our stockholders immediately prior to acquiring our capital stock as part of such transaction become the owners of our capital stock that represents more than 50% of the combined voting power of our outstanding capital stock.

2010 Employee Stock Purchase Plan

On October 29, 2010, our Board of Directors adopted our 2010 Employee Stock Purchase Plan, or the 2010 Purchase Plan, and our stockholders approved the 2010 Purchase Plan on January 7, 2011. The 2010 Purchase Plan will become effective upon the closing of the initial public offering.

Share Reserve. Subject to the provisions of the 2010 Purchase Plan relating to capitalization adjustments, the shares of common stock that may be sold pursuant to purchase rights shall not exceed in the aggregate 214,286 shares of common stock. If any purchase right granted under the 2010 Purchase Plan will for any reason terminate without having been exercised, the shares of common stock not purchased under such purchase right will again become available for issuance under the 2010 Purchase Plan. The 2010 Purchase Plan is intended to qualify as an "employee stock purchase plan" within the meaning of Section 423 of the Code.

Administration. Our Board of Directors has delegated its authority to administer the 2010 Purchase Plan to our Compensation Committee. Subject to the terms of the 2010 Purchase Plan, our Board of Directors or an authorized Committee, referred to as the "plan administrator," determines the provisions of each offering of rights to purchase our common stock and whether employees of any of our parent or subsidiary companies will be eligible to participate in the 2010 Purchase Plan. The 2010 Purchase Plan will be implemented through a series of offerings of such duration as determined by the plan administrator to

eligible employees, provided that in no event may an offering exceed 27 months. Each offering will consist of one or more purchase periods as determined by the plan administrator prior to the commencement of that offering. The plan administrator has the authority to alter the duration of subsequent offerings or change the number of purchase dates within each such offering. The provisions of separate offerings need not be identical. When an eligible employee elects to join an offering, he or she will be granted a purchase right to acquire shares of common stock on each purchase date within the offering. On the purchase date, all payroll deductions collected from the participant are automatically applied to the purchase of common stock, subject to certain limitations. The plan administrator has not yet established the terms of any offering.

Payroll Deductions. Generally, all regular employees, including executive officers, employed by us or by any of any of our parent or subsidiary companies designated by the plan administrator may contribute, normally through payroll deductions, up to 15% of their eligible cash compensation (or such lesser amount set by the plan administrator for a specific offering) for the purchase of common stock under the 2010 Purchase Plan. Amounts deducted and accumulated for a participant are used to purchase shares of our common stock on the purchase dates established by the plan administrator. All payroll deductions made for a participant are credited to his or her account under the 2010 Purchase Plan and deposited with our general funds. A participant may make additional payments into such account only as specifically provided for in the offering and only if the participant has not exceeded certain limitations under the 2010 Purchase Plan or under the terms of such offering. The 2010 Purchase Plan permits common stock to be purchased at a price per share no less than the lower of (i) 85% of the fair market value of a share of our common stock on the offering date, or (ii) 85% of the fair market value of a share of our common stock on the applicable purchase date.

Purchase of Stock. An eligible employee must sign and return an agreement in order to participate in the 2010 Purchase Plan. In connection with offerings made under the 2010 Purchase Plan, the plan administrator may specify a maximum number of shares of common stock a participant may purchase and the maximum aggregate number of shares of common stock that may be purchased by all participants in such offering. In addition, in connection with each offering that contains more than one purchase date, the plan administrator may specify a maximum aggregate number of shares of common stock that may be purchased by all participants on any purchase date under the offering. If the aggregate number of shares to be purchased upon exercise of outstanding purchase rights in the offering would exceed the maximum aggregate number of shares of common stock available, the plan administrator will make a pro rata allocation of available shares in a uniform and equitable manner. Unless the employee's participation is discontinued, his or her right to purchase shares is exercised automatically at the next purchase date at the applicable price.

Withdrawal. During an offering, a participant may cease making contributions and withdraw from the offering by delivering a notice of withdrawal and terminating his or her payroll deductions in such form as we may require. Such withdrawal may occur at any time prior to the end of an offering except as otherwise provided by the plan administrator. Upon such withdrawal, we will refund accumulated payroll deductions without interest to the employee, and such employee's right to participate in that offering will terminate. However, an employee's withdrawal from an offering does not generally affect such employee's eligibility to participate in subsequent offerings under the 2010 Purchase Plan.

Reset Feature. The plan administrator has the authority to provide that if the fair market value of the shares of our common stock on the first day of a new purchase period within a particular offering is less than the fair market value of the shares of common stock on the start date of that offering, then the participants in that offering will automatically be transferred and enrolled in a new offering which will begin on the first day of that purchase period and the participant's purchase rights in the original offering will terminate.

Limitations. The plan administrator may limit participation in the 2010 Purchase Plan to those persons who are customarily employed more than 20 hours per week and five months per calendar year by us (or by any of our parent or subsidiary companies designated by the plan administrator) on the first day of an offering. The plan administrator may also provide that a person must have been employed for such continuous period preceding the first day of the offering as the plan administrator may require, but in no event may the required period of continuous employment be greater than two years. In addition, the plan administrator may provide in any offering that certain of our employees who are "highly compensated" as defined in the Code are not eligible to participate in the 2010 Purchase Plan. The plan administrator may also provide that each person who, during the course of an offering, first becomes an eligible employee will, on a date or dates specified in the offering, receive a purchase right under that offering at a price equal to the market price of our common stock at that time, which purchase right will be deemed to be a part of that offering, and such purchase right will generally have the same characteristics as any purchase rights originally granted under that offering. No employee is eligible to participate in the 2010 Purchase Plan if, immediately after the grant of purchase rights, the employee would own, directly or indirectly, stock possessing 5% or more of the total combined voting power or value of all classes of our stock or of any of our parent or subsidiary companies (including any stock which such employee may purchase under all outstanding purchase rights and stock options). In addition, no employee may purchase more than $25,000 worth of our common stock (valued at the time each purchase right is granted) for each calendar year during which those purchase rights are outstanding.

Termination of Employment. Purchase rights granted pursuant to any offering under the 2010 Purchase Plan terminate upon cessation of employment for any reason, and we will refund all accumulated payroll deductions to the terminated employee without interest.

Restrictions on Transfer. A participant may not transfer rights granted under the 2010 Purchase Plan other than by will, the laws of descent and distribution, or by a beneficiary designation as provided in the 2010 Purchase Plan. During a participant's lifetime, purchase rights will be exercisable only by such participant.

Changes to Capital Structure. In the event that there is any change to the outstanding common stock (whether by reason of merger, consolidation, reorganization, recapitalization, stock dividend, dividend in property other than cash, stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure, or other transaction not involving the receipt of consideration by the Company), appropriate adjustments will be made to (a) the class and maximum number of securities subject to the 2010 Purchase Plan, (b) the class and maximum number of securities by which the share reserve is to increase automatically each year, (c) the class and number of securities subject to outstanding purchase rights, and (d) the class and number of securities imposed by purchase limits under each ongoing offering.

Corporate Transactions. In the event of certain significant corporate transactions, any surviving or acquiring corporation may assume, continue or substitute similar purchase rights for those outstanding under the 2010 Purchase Plan. If the surviving or acquiring corporation does not assume or continue such rights or substitute similar rights, then the participants' accumulated payroll deductions will be used to purchase shares of common stock within ten business days prior to the corporate transaction under any ongoing offerings, and such purchase rights will terminate immediately thereafter.

Termination and Amendment. The plan administrator may amend, suspend or terminate the 2010 Purchase Plan at any time. Any amendment of the 2010 Purchase Plan must be approved by our shareholders to the extent shareholder approval is necessary for the 2010 Purchase Plan to satisfy Sections 423 of the Code or other applicable laws and regulations. Purchase rights granted before amendment, suspension or termination of the 2010 Purchase Plan generally may not be altered or impaired by any amendment, suspension or termination of the 2010 Purchase Plan without consent of the

employee to whom such purchase rights were granted. No purchase rights may be granted under the 2010 Purchase Plan while the 2010 Purchase Plan is suspended or after it is terminated.

2010 Non-Employee Directors' Stock Award Plan

Our Board of Directors adopted the Non-Employee Directors' Stock Award Plan, or Directors' Plan, on October 29, 2010 and our stockholders approved the Directors' Plan on January 7, 2011. The Directors' Plan was amended by our Board of Directors on July 1, 2011. The Directors' Plan became effective immediately upon the execution and delivery of the underwriting agreement for this offering. The Directors' Plan will terminate at the discretion of our Board of Directors. The purpose of the Directors' Plan is to retain the services of new non-employee directors and provide incentives for such persons to exert maximum efforts towards our success by giving them an opportunity to benefit from increases in value of our common stock. The Directors' Plan provides for the automatic grant of nonstatutory stock options to purchase shares of our common stock to our non-employee directors. The Directors' Plan also provides for the discretionary grant of stock appreciation rights, restricted stock awards, restricted stock unit awards, and other stock awards.

Share Reserve. An aggregate of 238,095 shares of our common stock are reserved for issuance under the Directors' Plan. Shares of our common stock subject to stock awards that have expired or otherwise terminated under the Directors' Plan without having been exercised in full will again become available for grant under the Directors' Plan. Shares of our common stock issued under the Directors' Plan may be previously unissued shares or reacquired shares bought on the market or otherwise. If the exercise of any stock option granted under the Directors' Plan is satisfied by tendering shares of our common stock held by the participant, then the number of shares tendered will again become available for the grant of awards under the Directors' Plan. In addition, any shares reacquired to satisfy income or employment withholding taxes will again become available for the grant of awards under the Directors' Plan.

Administration. Our Board of Directors has delegated its authority to administer the Directors' Plan to our Compensation Committee. The Compensation Committee must consist of two or more "non-employee directors" pursuant to the Rule 16b-3 of the Securities Exchange Act of 1934, as amended.

Stock Options. Stock options will be granted pursuant to stock option agreements. The exercise price of the options granted under the Directors' Plan will be equal to or greater than 100% of the fair market value of our common stock on the date of grant.

In general, the term of stock options granted under the Directors' Plan may not exceed ten years. Unless the terms of an optionholder's stock option agreement provide otherwise, if an optionholder's service relationship with us, or any affiliate of ours, ceases due to death or disability, the optionholder or his or her beneficiary may then exercise any vested options for a period of 12 months in the event of disability, or 18 months in the event of death. If an optionholder's service with us or any affiliate ceases for any other reason, the optionholder may exercise the vested options for up to three months following cessation of service.

Acceptable consideration for the purchase of our common stock issued under the Directors' Plan may include cash, a net exercise, common stock previously owned by the optionholder or a program developed under Regulation T as promulgated by the Federal Reserve Board.

Generally, an optionholder may not transfer a stock option other than by will or the laws of descent and distribution. However, an optionholder may transfer an option under certain circumstances with our written consent if a Form S-8 registration statement is available for the exercise of the option and the subsequent resale of the shares. In addition, an optionholder may designate a beneficiary who may exercise the option following the optionholder's death.

Non-discretionary Grants

- *Initial Grant.* Any person who becomes a non-employee director for the first time after the completion of this offering will automatically receive an initial grant of an option to purchase 11,905 shares of our common stock upon his or her election or appointment, subject to adjustment by our Board of Directors from time to time. 33% of the shares subject to the initial grants will vest on the first anniversary of the date of such person's election or appointment to the Board of Directors and the remainder will vest monthly over two additional years. These initial grants may also be issued in the form of stock appreciation rights, or SARs, restricted stock awards, restricted stock unit awards, or other stock awards if so determined by our Board of Directors.
- *Annual Grant.* In addition, on the date of the annual meeting of our stockholders, commencing with our first annual meeting after the completion of this offering, any person who is a non-employee director on such date automatically will be granted an option to purchase 7,143 shares of our common stock, plus an additional 3,571 shares of our common stock for service as chair of the Audit, Compensation or Nominating and Corporate Governance Committee, or as Lead Independent Director as of such date, plus 2,381 shares of our common stock for service as a member of the Audit, Compensation or Nominating and Corporate Governance Committee as of such date, subject to adjustment by our Board of Directors from time to time. Fifty percent of the shares subject to the annual grants will vest on the first anniversary of the date of grant and the remainder will vest monthly over one additional year, subject to continued service. These annual grants may also be issued in the form of SARs, restricted stock awards, restricted stock unit awards, or other stock awards if so determined by our Board of Directors.

Discretionary Grants

In addition to the non-discretionary grants noted above, our Board of Directors may grant stock awards to one or more non-employee directors in such numbers and subject to such other provisions as it shall determine. These awards may be in the form of stock options, SARs, restricted stock awards, restricted stock units, or other stock awards and will vest pursuant to vesting schedules to be determined by our Board of Directors in its sole discretion.

Changes to Capital Structure. In the event there is a specified type of change in our capital structure not involving the receipt of consideration by us, such as a stock split or stock dividend, the number of shares reserved under the Directors' Plan, the maximum number of shares by which the share reserve may increase automatically each year, the number of shares subject to the initial and annual grants and the number of shares and exercise price of all outstanding stock options will be appropriately adjusted.

Change in Control Transactions. In the event of a change in control transaction, the vesting of options held by non-employee directors whose service is terminated may be accelerated in full according to the provisions of the award agreement. A change in control is the occurrence of one or more of the following events:

- a transaction in which one person or a group acquires stock that, combined with stock previously owned, controls more than 50% of our value or voting power;
- a merger, consolidation or similar transaction involving us (directly or indirectly) in which our stockholders immediately before the transaction do not own more than 50% of the outstanding securities following such transaction;
- our complete liquidation or dissolution;
- a sale, lease, license or other disposition of substantially all of our assets; or
- a majority of the Board of Directors is replaced by persons whose appointment or election is not endorsed by a majority of the Board of Directors.

Plan Amendments. Our Board of Directors will have the authority to amend, suspend or terminate the Directors' Plan. However, no amendment or termination of the directors' plan will adversely affect any rights under awards already granted to a participant unless agreed to by the affected participant. We will obtain stockholder approval of any amendment to the Directors' Plan that is required by applicable law.

Indebtedness of Management and Related Agreements

In 2008, in connection with his commencement of employment and relocation to Ames, Iowa, we entered into a loan agreement with Mr. Gordon Link, our Chief Financial Officer. Pursuant to the terms of this agreement, we loaned Mr. Link $500,000 for the purchase of a principal residence. This note was secured by Mr. Link's residence and had an interest rate of 2.42% per year. In May 2010, Mr. Link repaid the loan in full and we forgave accrued interest of $10,052.

In 2008, we entered into a loan agreement with Dr. Charles Link, our Chief Executive Officer. Pursuant to this agreement, we loaned Dr. Link $225,000 for personal purposes. This loan had an interest rate of 6% per year. In January 2009, we granted Dr. Link a bonus of $78,149, which was applied to the principal due on the loan. In April 2009, Dr. Link repaid the remaining principal and accrued interest on the loan.

In 2009, we entered into another loan agreement with Dr. Link. Pursuant to this agreement, we loaned Dr. Link $350,000 for personal purposes. This loan had an interest rate of 6% per year. In July 2010, we forgave the loan and accrued interest of $25,170 and granted Dr. Link a $180,226 bonus to pay the taxes incurred as a result of such extinguishment. To offset the forgiveness and the bonus payment, the exercise price of options to purchase 264,474 shares of common stock held by Dr. Link from was increased from $2.10 per share to $4.20 per share and Dr. Link agreed to exercise the higher priced options prior to exercising any lower priced options to purchase our common stock.

In 2000, we loaned Dr. Vahanian, our President and Chief Medical Officer $31,500. This loan had an interest rate of 6.71% per year. In July 2010, we forgave the remaining balance of $25,000 and all accrued interest and granted Dr. Vahanian a $12,010 bonus to pay the taxes incurred as a result of such extinguishment. To offset the forgiveness and the bonus payment, the exercise price of options to purchase 17,624 shares of common stock held by Dr. Vahanian from was increased from $2.10 per share to $4.20 per share and Dr. Vahanian agreed to exercise the higher priced options prior to exercising any lower priced options to purchase our common stock.

In 2008, we entered into another loan agreement with Dr. Vahanian. Pursuant to this agreement, we loaned Dr. Vahanian $125,000 for personal purposes. This loan had an interest rate of 6% per annum. In January 2009, we granted Dr. Vahanian a bonus of $55,037, which was applied to the principal due on the loan. In April 2009, Dr. Vahanian repaid the remaining principal and all accrued interest on the loan.

In 2006, BPS entered into a loan agreement with Dr. Charles Link. Pursuant to this agreement, BPS loaned Dr. Link $75,000 to facilitate the exercise of stock options. The loan had an interest rate of 5.01% per annum. In March 2010 and May 2010, BPS forgave a total of $30,000 of the principal amount of the loan plus $13,517 of interest accrued on the loan. In March 2010, BPS paid Dr. Link a cash bonus of $15,000 to cover related tax liability. In October 2010, BPS paid Dr. Link a bonus of $50,000 gross, of which $33,775 was net and was applied to the principal due on the loan. In November 2010, Dr. Link repaid the remaining principal and all accrued interest on the loan.

In 2006, BPS entered into a loan agreement with Dr. Vahanian. Pursuant to this agreement, BPS loaned Dr. Vahanian $20,000 to facilitate the exercise of stock options. The loan had an interest rate of 5.01%. In March 2010 and May 2010, BPS forgave a total of $8,000 of the principal amount of the loan plus $3,604 of interest accrued on the loan and paid Dr. Vahanian a cash bonus, a portion of which was used to cover the related tax liability. In October 2010, Dr. Vahanian repaid the remaining principal and all accrued interest on the loan.

Limitation of Liability and Indemnification

Our amended and restated bylaws to be in effect upon the closing of this offering require us to indemnify our directors to the fullest extent not prohibited by law and permit us to indemnify our officers, employees and other agents as set forth under Delaware law. We will indemnify any such person in connection with a proceeding initiated by such person only if such indemnification is expressly required by law, the proceeding was authorized by our Board of Directors, the indemnification is provided by us, in our sole discretion, pursuant to the Delaware General Corporation Law or other applicable law or is otherwise expressly required by our amended and restated bylaws. Section 145 of the Delaware General Corporation Law permits indemnification of officers, directors and other agents under specified circumstances and subject to specified limitations. Delaware law also permits a corporation to not hold its directors personally liable for monetary damages for breach of their fiduciary duties as directors, except for liability for:

- breach of their duty of loyalty to the corporation or its stockholders;
- acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions; and
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not affect the availability of equitable remedies such as injunctive relief or rescission.

Our amended and restated bylaws also permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in this capacity. We have obtained directors' and officers' liability insurance to cover certain liabilities described above.

We have entered into indemnity agreements with each of our directors that require us to indemnify such persons against any and all expenses, including attorneys' fees, witness fees, judgments, fines, settlements and other amounts incurred, including expenses of a derivative action, in connection with any action, suit or proceeding or alternative dispute resolution mechanism, inquiry hearing or investigation, whether threatened, pending or completed, to which any such person may be made a party by reason of the fact that such person is or was a director, an officer or an employee of our company, provided that such person's conduct did not constitute a breach of his or her duty of loyalty to us or our stockholders, and was not an act or omission not in good faith or which involved intentional misconduct or a knowing violation of laws. The indemnity agreements also set forth procedures that will apply in the event of a claim for indemnification thereunder. We believe that these provisions and agreements are necessary to attract and retain qualified persons as directors of our company.

At present, there is no pending litigation or proceeding involving a director or officer of our company for which indemnification is required or permitted, and we are not aware of any threatened litigation or proceeding that may result in a claim for indemnification.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted by directors, executive officers or persons controlling us, we have been informed that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Non-Employee Director Compensation

The following table shows certain information with respect to the compensation of all non-employee directors of the Company for the fiscal year ended December 31, 2010.

2010 Director Compensation

Name	Option Awards($)(1)	Fair Value(2)
Thomas A. Raffin, M.D.	$ 330,725(3)	$ 234,150
Sarah Alexander M.D., F.A.C.P.	$ 153,800(4)	$ 117,769
David J. Lundquist	$ 187,625(5)	$ 147,489
Joseph Saluri	$ 218,050(6)	$ 153,598
Ernest J. Talarico, III	$ 289,100(7)	$ 232,673

(1) Unless otherwise indicated, these options have a 10-year term and vest over a two-year period, with 50% of the options vesting on the first anniversary of the vesting commencement date and the remaining 50% of the options vesting in equal monthly installments thereafter over the next year, subject to the recipient's continued service with the Company through such vesting dates.

(2) Fair value was determined using a Black-Scholes model which allows the use of a range of assumptions related to volatility, risk-free interest rate, and employee exercise behavior.

(3) Represents (i) 26,190 options exercisable at $3.07 per share with a vesting commencement date of March 3, 2010, (ii) 7,143 options exercisable at $10.02 per share with a vesting commencement date of December 9, 2010 and (iii) 17,857 options exercisable at $10.02 per share with a vesting commencement date of January 1, 2011.

(4) Represents (i) 19,048 options exercisable at $3.07 per share with a vesting commencement date of March 3, 2010 and (ii) 9,524 options exercisable at $10.02 per share with a vesting commencement date of January 1, 2011.

(5) Represents (i) 26,190 options exercisable at $3.07 per share with a vesting commencement date of March 3, 2010 and (ii) 10,714 options exercisable at $10.02 per share, with a vesting commencement date of January 1, 2011.

(6) Represents (i) 16,667 options exercisable at $3.07 per share with a vesting commencement date of March 3, 2010, (ii) 14,286 options exercisable at $10.02 per share with a vesting commencement date of January 1, 2011 and (iii) 2,381 options at $10.02 per share with a vesting commencement date of December 9, 2010.

(7) Represents (i) 23,810 options exercisable at $3.07 per share with a vesting commencement date of March 3, 2010, (ii) 23,810 options exercisable at $3.07 per share that are fully vested, (iii) 2,381 options exercisable at $10.02 per share with a vesting commencement date of December 9, 2010 and (iv) 11,905 options exercisable at $10.02 per share with a vesting commencement date of January 1, 2011.

In December 2009, the Board of Directors adopted our non-employee director compensation policy, pursuant to which non-employee directors are compensated for their services on our Board. This policy was revised by our Board of Directors in October 2010. The Non-Employee Directors Stock Award Plan will supersede the policy described above effective upon closing of the initial public offering. Under the current policy, for service on the Board of Directors each non-employee director receives an initial option grant of 11,905 shares of the company's common stock, of which 33% vests on the first anniversary of the director's election or appointment and the remainder vests on a monthly basis over the subsequent two years. Additionally, each non-employee director receives, during the term of his or her service on the Board of Directors, an annual option grant of 7,143 shares, plus 3,571 shares for service as chair of the

Audit, Compensation or Nominating and Corporate Governance Committee, or as Lead Independent Director. In addition, a director receives 2,381 shares for service as a member of (but not as chair of) the Audit, Compensation and/or Nominating and Corporate Governance Committee. For example, a director serving as chair of the Audit Committee and as a member of the Compensation Committee and the Nominating and Corporate Governance Committee would receive, immediately following the date of our annual meeting of stockholders, an annual grant of 15,476 shares (i.e., 7,143 + 3,571 + 2,381 + 2,381). The annual option grants vest as to 50% of the shares one year after the date of grant and the remainder over the succeeding twelve months.

Historically, we have not provided cash compensation to any directors for serving on our Board of Directors or committees of our Board of Directors. Commencing with the closing of the initial public offering, the Company will pay annual cash retainers to directors (other than executive officers) as follows:

All Directors (other than executive officers)	$ 50,000
Lead Independent Director	$ 15,000
Audit Committee Chair	$ 20,000
Other Audit Committee Members	$ 13,500
Compensation Committee Chair	$ 14,000
Other Compensation Committee Members	$ 7,500
Nominating and Corporate Governance Committee Chair	$ 7,500
Other Nominating and Corporate Governance Committee Members	$ 5,000

Payments for service as lead director, committee chair or committee member are in addition to payment for service as a director. Payments will be made quarterly beginning on the first day of the quarter following closing of the initial public offering.

We have reimbursed and will continue to reimburse our non-employee directors for their reasonable expenses incurred in attending meetings of our Board of Directors and committees of our Board of Directors.

No cash compensation was paid to directors in 2010 or in the six-month period ending June 30, 2011.

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following is a description of transactions since our inception to which we have been a party, in which the amount involved in the transaction exceeds $120,000, and in which any of our directors, executive officers or to our knowledge, beneficial owners of more than 5% of our capital stock had or will have a direct or indirect material interest, other than compensation, termination and change-in-control arrangements, which are described under the "Executive and Director Compensation" section of this prospectus. We believe the terms obtained or consideration that we paid or received, as applicable, in connection with the transactions described below were comparable to terms available or the amounts that would be paid or received, as applicable, in arm's-length transactions.

Preferred Stock Financings

On August 29, 2000, we entered into a Series A Preferred Stock Purchase Agreement pursuant to which we issued and sold to investors an aggregate of 420,000 shares of Series A preferred stock on August 29, 2000 at a purchase price of $2.50 per share, for aggregate consideration of $1.1 million.

On September 26, 2001, we entered into a Series AA Preferred Stock Purchase Agreement pursuant to which we issued and sold to investors an aggregate of 1,224,967 shares of Series AA preferred stock at a purchase price of $1.80 per share, for aggregate consideration of $2.2 million.

On January 21, 2002, we entered into a Series AAA Preferred Stock Purchase Agreement pursuant to which we issued and sold to investors an aggregate of 377,410 shares of Series AAA preferred stock at a purchase price of $2.25 per share, for aggregate consideration of $850,000.

Between October 7, 2002 and December 12, 2003, we entered into Series B Preferred Stock Purchase Agreements pursuant to which we issued and sold to investors an aggregate of 2,191,193 shares of Series B preferred stock at a purchase price of $2.50 per share, for aggregate consideration of $5.5 million.

On February 11, 2005, we entered into a Series BB Preferred Stock Purchase Agreement pursuant to which we issued and sold to investors an aggregate of 1,906,866 shares of Series BB preferred stock at a purchase price of $4.25 per share, for aggregate consideration of $8,104,181.

Between February 8, 2008 and December 17, 2009, we entered into Series C Preferred Stock Purchase Agreements pursuant to which we issued and sold to investors an aggregate of 6,000,000 shares of Series C preferred stock at a purchase price of $5.00 per share, for aggregate consideration of $30.0 million.

On July 17, 2009, we entered into a Series D Preferred Stock Purchase Agreement pursuant to which we issued and sold to one investor 1,500,000 shares of Series D preferred stock at a purchase price of $5.00 per share, for aggregate consideration of $7.5 million.

Between December 1, 2010 and June 30, 2011, we issued and sold to investors an aggregate of 408,320 shares of our Series E preferred stock at a purchase price of $31.25 per share, for aggregate consideration of $12.7 million. We also issued 276,304 shares of our Series E preferred stock as consideration for our acquisition of the minority interest in our majority owned subsidiary, BPS, of which 221,066 shares were issued on January 7, 2011 and 55,238 shares were issued on August 12, 2011.

The participants in these preferred stock financings included the following directors, officers and holders of more than 5% of our capital stock or entities affiliated with them. The following table presents the number of shares issued to these related parties in these financings. Upon completion of this offering, each share of Series A preferred stock will convert into approximately 0.661 shares of our common stock, each share of Series AA, AAA, and B preferred stock will convert into approximately 0.476 shares of our common stock, each share of Series BB preferred stock will convert into approximately 0.522 shares of our common stock, each share of Series C and D preferred stock will convert into approximately 0.543 shares

of our common stock, and each share of Series E preferred stock will convert into approximately 5.252 shares of our common stock.

Name	Shares of Series A Convertible Preferred Stock	Shares of Series AA Convertible Preferred Stock	Shares of Series AAA Convertible Preferred Stock	Shares of Series B Convertible Preferred Stock	Shares of Series C Convertible Preferred Stock	Shares of Series D Convertible Preferred Stock	Shares of Series E Convertible Preferred Stock
5% or Greater Stockholders							
Stine Seed Farm Inc.(1)	—	—	—	1,760,000	1,000,000	1,500,000	320,000
Executive Officers and Directors							
Charles J. Link, Jr., M.D.	—	—	—	—	—	—	51,960(4)
Thomas Raffin, M.D.	—	—	—	—	—	—	1,732(4)
Sarah Alexander, M.D. F.A.C.P.	—	—	11,112	—	1,000	—	—
David J. Lundquist	—	27,780(2)	—	19,999(2)	20,000(2)	—	5,257(4)
Nicholas N. Vahanian, M.D.	40,000	—	—	—	—	—	13,856(4)
Joseph Saluri	—	—	—	—	15,000	—	—
Ernest J. Talarico, III	—	—	—	—	5,000(3)	—	1,732(4)

(1) On October 8, 2010, Midwest Oilseeds transferred all of its shares of the Company's stock to Stine Seed Farm Inc.

(2) These shares belong to the David Lundquist Revocable Trust.

(3) These shares are held by NLG Series C, LLC.

(4) These shares were issued as consideration for our acquisition of the minority interest in our majority owned subsidiary, BPS.

Agreements With Our Stockholders

We have entered into an investor rights agreement with holders of our convertible preferred stock and warrants to purchase shares of our common stock. The investor rights agreement contains a right of first refusal provision that provides that we shall not make certain issuances of our securities unless we first offer such securities to certain holders of preferred stock in accordance with the terms of the investor rights agreement. The right of first refusal provision of the investor rights agreement does not apply to and will terminate upon the closing of this offering. The investor rights agreement also provides that holders of preferred stock and warrants to purchase common stock have the right to (a) demand that we file a registration statement, subject to certain limitations, and (b) request that their shares be covered by a registration statement that we are otherwise filing. See the "Description of Capital Stock—Registration Rights" section of this prospectus for a further discussion of these registration rights.

We have also entered into a right of first refusal and co-sale agreement with holders of convertible preferred stock and certain other stockholders. This agreement provides the holders of preferred stock a right of purchase and of co-sale in respect of sales of securities by certain holders of common stock. These rights of purchase and co-sale will terminate upon the closing of this offering.

We have also entered into a voting agreement with our equity holders that contains agreements with respect to the election of our Board of Directors and its composition. The voting agreement will terminate upon the closing of this offering.

Each of the transactions noted above were entered into prior to our adoption of a written related party transaction policy, which is described below.

BPS Preferred Stock Financings

Between December 30, 2005 and February 28, 2006, BPS entered into Series A Preferred Stock Purchase Agreements pursuant to which BPS issued and sold to investors an aggregate of 1,444,721 shares

of its Series A preferred stock at a purchase price of $1.75 per share, for aggregate consideration of $2.5 million.

Between December 22, 2009 and September 7, 2010, BPS entered into Series B Preferred Stock Purchase Agreements pursuant to which BPS issued and sold to investors an aggregate of 555,930 shares of its Series B preferred stock at a purchase price of $1.75 per share, for aggregate consideration of $973,000.

Acquisition of BioProtection Systems Corporation

On January 7, 2011, we acquired all of the minority interest in our majority-owned subsidiary, BPS, by merging a newly-formed subsidiary of ours with BPS, with BPS as the surviving corporation. In connection with this transaction, we issued 276,304 shares of our Series E preferred stock to the former holders of BPS Series B common stock, Series A preferred stock and Series B preferred stock (other than the Company). 221,066 of the shares of our Series E preferred stock were issued to the holders of the BPS Series B common stock, Series A preferred stock and Series B preferred stock upon the closing of the merger. The remaining 55,238 shares of our Series E preferred stock were held back to satisfy any indemnity obligations under the merger agreement. The remaining 55,238 shares subject to the holdback were issued August 12, 2011. As a result of this transaction, BPS became a wholly-owned subsidiary of the Company and our note was converted into Series B preferred stock of BPS. All options to purchase shares of BPS stock became options to purchase a total of 50,641 shares of our common stock.

In this transaction, shares of our Series E preferred stock were issued to our officers and directors as follows:

Name	Shares of Series E Preferred Stock Issued at Closing of the Merger	Shares of Series E Preferred Stock Issued August 12, 2011
Charles J. Link, Jr., M.D.	41,568	10,392
Nicholas N. Vahanian, M.D.	11,085	2,771
Thomas A. Raffin, M.D.	1,386	346
Ernest J. Talarico, III	1,386	346

In addition, the following directors and officers of NewLink who are also directors or officers of BPS exchanged their BPS stock options for options to acquire NewLink common stock as follows:

Name	Options to Acquire BPS Series B Common Stock	Options to Acquire NewLink Common Stock
Charles J. Link, Jr., M.D.	20,000	2,564
Nicholas N. Vahanian, M.D.	20,000	2,564
Thomas A. Raffin, M.D.	50,000	6,410
Ernest J. Talarico, III	45,000	5,770

The acquisition of BPS was recommended by a special committee of our Board of Directors consisting of Dr. Alexander and Messrs. Lundquist and Saluri, none of whom served as directors of BPS. Dr. Alexander and Mr. Saluri did not own any shares or options in BPS. The David Lundquist Revocable Trust owned shares of Series A Preferred Stock in BPS.

Executive Compensation and Employment Arrangements

Please see the "Executive and Director Compensation" section of this prospectus for information on compensation arrangements with our executive officers, including option grants and agreements with executive officers.

Director Compensation

Please see the "Executive and Director Compensation—Non-Employee Director Compensation" section of this prospectus for information on compensation arrangements for our directors generally.

Other Transactions

We have made loans to certain of our executive officers. For a description of these loans, see the "Executive and Director Compensation—Indebtedness of Management and Related Agreements" section of this prospectus.

Policies and Procedures for Related Person Transactions

Our Board of Directors has adopted written policies and procedures for the review of any transaction, arrangement or relationship in which we are a participant, the amount involved exceeds $120,000 and one of our executive officers, directors, director nominees or 5% stockholders (or their immediate family members), each of whom we refer to as a "related person," has a direct or indirect material interest.

If a related person proposes to enter into such a transaction, arrangement or relationship, which we refer to as a "related person transaction," the related person must report the proposed related person transaction to the Audit Committee of our Board of Directors. The policy calls for the proposed related person transaction to be reviewed and, if deemed appropriate, approved by the Audit Committee. Whenever practicable, the reporting, review and approval will occur prior to entry into the transaction. If advance review and approval is not practicable, the Audit Committee will review, and, in its discretion, may ratify the related person transaction. Any related person transactions that are ongoing in nature will be reviewed annually.

A related person transaction reviewed under the policy will be considered approved or ratified if it is authorized by the committee after full disclosure of the related person's interest in the transaction. As appropriate for the circumstances, the Audit Committee will review and consider:

- the related person's interest in the related person transaction;
- the approximate dollar value of the amount involved in the related person transaction;
- the approximate dollar value of the amount of the related person's interest in the transaction without regard to the amount of any profit or loss;
- whether the transaction was undertaken in the ordinary course of our business;
- whether the terms of the transaction are no less favorable to us than terms that could have been reached with an unaffiliated third party;
- the purpose of, and the potential benefits to us of, the transaction; and
- any other information regarding the related person transaction or the related person in the context of the proposed transaction that would be material to investors in light of the circumstances of the particular transaction.

The Audit Committee may approve or ratify the transaction only if the committee determines that, under all of the circumstances, the transaction is in, or is not inconsistent, with our best interests. The committee may impose any conditions on the related person transaction that it deems appropriate.

In addition to the transactions that are excluded by the instructions to the SEC's related person transaction disclosure rule, our Board of Directors has determined that the following transactions do not

create a material direct or indirect interest on behalf of related persons and, therefore, are not related person transactions for purposes of this policy:

- interests arising solely from the related person's position as an executive officer of another entity (whether or not the person is also a director of such entity), that is a participant in the transaction, where (a) the related person and all other related persons own in the aggregate less than a 10% equity interest in such entity, (b) the related person and his or her immediate family members are not involved in the negotiation of the terms of the transaction and do not receive any special benefits as a result of the transaction or (c) the amount involved in the transaction equals less than the greater of $200,000 or 5% of the annual consolidated gross revenues of the company receiving payment under the transaction; and
- a transaction that is specifically contemplated by provisions of our charter or by-laws.

The policy provides that transactions involving compensation of executive officers shall be reviewed and approved by the Compensation Committee in the manner specified in its charter.

PRINCIPAL STOCKHOLDERS

The following table sets forth the beneficial ownership of our common stock as of June 30, 2011 by:

- each person, or group of affiliated persons, who is known by us to beneficially own more than 5% of our common stock;
- each of our named executive officers;
- each of our directors; and
- all of our executive officers and directors as a group.

The percentage of shares beneficially owned before the offering shown in the table is based upon 14,382,002 shares of common stock outstanding as of June 30, 2011, after giving effect to (i) the issuance of 276,304 shares of our Series E preferred stock in connection with our acquisition of the minority interest in BPS and (ii) the conversion of all of our convertible preferred stock into 10,710,850 shares of common stock, which will occur automatically immediately prior to the closing of this offering. The information relating to numbers and percentages of shares beneficially owned after the offering gives effect to the issuance of shares of common stock in this offering at the initial public offering price in this offering of $7.00 per share.

Stine Seed Farm, Inc., an existing stockholder, has indicated an interest in purchasing up to $15 million of the shares of common stock to be sold in this offering at the public offering price. If Stine Seed Farm, Inc. were to purchase all of the shares of common stock it has indicated an interest in purchasing, then the number of shares of common stock beneficially owned by Stine Seed Farm, Inc. would increase to 6,197,245 and the percentage of common stock beneficially owned by Stine Seed Farm, Inc. after this offering would increase to 30.1%.

We have determined beneficial ownership in accordance with the rules of the SEC. These rules generally attribute beneficial ownership of securities to persons who possess sole or shared voting power or investment power with respect to those securities. In addition, the rules include shares of common stock issuable pursuant to the exercise of stock options or warrants that are either immediately exercisable or exercisable on or before August 29, 2011, which is 60 days after June 30, 2011. These shares are deemed to be outstanding and beneficially owned by the person holding those options or warrants for the purpose of computing the percentage ownership of that person, but they are not treated as outstanding for the purpose of computing the percentage ownership of any other person. Unless otherwise indicated, the persons or entities identified in this table have sole voting and investment power with respect to all shares shown as beneficially owned by them, subject to applicable community property laws.

Except as otherwise noted below, the address for persons listed in the table is c/o NewLink Genetics Corporation, 2503 South Loop Drive, Ames, Iowa 50010.

Name of Beneficial Owner	Shares Beneficially Owned Before Offering		Shares Beneficially Owned After Offering	
	Number	Percentage	Number	Percentage
5% Stockholders:				
Stine Seed Farm, Inc**(1)	4,054,388	28.2%	4,054,388	19.7%
Named Executive Officers and Directors:				
Charles J. Link, Jr. M.D.(2)	2,286,807	15.1%	2,286,807	10.7%
Nicholas N. Vahanian, M.D.(3)	772,816	5.2%	772,816	3.7%
Thomas A. Raffin, M.D.(4)	135,901	0.9%	135,901	0.7%
Kenneth Lynn(5)	89,807	0.6%	89,807	0.4%
Ernest J. Talarico, III(6)	125,570	0.9%	125,570	0.6%
David Lundquist(7)	109,712	0.8%	109,712	0.5%
Gordon H. Link, Jr.(8)	79,073	0.5%	79,073	0.4%
W. Jay Ramsey M.D., Ph.D.(9)	63,607	0.4%	63,607	0.3%
Sarah Alexander, M.D., F.A.C.P.(10)	35,989	0.2%	35,989	0.2%
Joseph Saluri(11)	17,135	0.1%	17,135	0.1%
Paul R. Edick(12)	0	0.0%	0	0.0%
All current directors and executive officers as a group (11 persons) (13)	3,716,417	23.0%	3,716,417	16.6%

* Represents beneficial ownership of less than 1%.

** Address: 22555 Laredo Trail, Adel, Iowa 50003, Attn: Jerald L. Reichling

(1) Includes 1,680,671 shares of common stock issuable upon conversion of NewLink Series E preferred stock.

(2) Includes 790,320 shares Dr. Charles Link has the right to acquire through the exercise of stock options within 60 days of June 30, 2011. Includes 272,898 shares of common stock issuable upon conversion of NewLink Series E preferred stock issued in connection with our acquisition of BPS in exchange for 1,500,000 shares of BPS Series B common stock currently held by Dr. Link.

(3) Includes 52,856 shares held by Christina Marie Vahanian, and 553,592 shares Dr. Vahanian has the right to acquire through the exercise of stock options within 60 days of June 30, 2011. Includes 72,772 shares of common stock issuable upon conversion of NewLink Series E preferred stock issued in connection with our acquisition of BPS in exchange for 400,000 shares of BPS Series B common stock currently held by Dr. Vahanian.

(4) Includes 79,186 shares Dr. Raffin has the right to acquire through the exercise of stock options within 60 days of June 30, 2011. Includes 9,096 shares of common stock issuable upon conversion of NewLink Series E preferred stock issued in connection with our acquisition of BPS in exchange for 50,000 shares of BPS Series B common stock currently held by Dr. Raffin.

(5) Includes 89,807 shares Mr. Lynn has the right to acquire through the exercise of stock options within 60 days of June 30, 2011.

(6) Includes 101,856 shares Mr. Talarico has the right to acquire through the exercise of stock options within 60 days of June 30, 2011. Includes 2,714 shares of common stock issuable upon the conversion of NewLink Series C preferred stock held by NLG Series C, LLC. Includes 9,096 shares of common stock issuable upon the conversion of NewLink Series E preferred stock issued in connection with our

acquisition of BPS in exchange for 50,000 shares of BPS Series B common stock currently held by Mr. Talarico.

(7) Includes 72,115 shares held by David Lundquist Revocable Trust, dated November 19, 2002, David J. Lundquist, Trustee, and 37,597 shares Mr. Lundquist has the right to acquire through the exercise of stock options within 60 days of June 30, 2011. Includes 27,609 shares of common stock issuable upon the conversion of NewLink Series E preferred stock issued in connection with our acquisition of BPS in exchange for 58,000 shares of BPS Series A preferred stock currently held in the David Lundquist Revocable Trust.

(8) Includes 79,073 shares Mr. Gordon Link has the right to acquire through the exercise of stock options within 60 days of June 30, 2011.

(9) Includes 39,798 shares Dr. Ramsey has the right to acquire through the exercise of stock options within 60 days of June 30, 2011.

(10) Includes 30,156 shares Dr. Alexander has the right to acquire through the exercise of stock options within 60 days of June 30, 2011.

(11) Includes 8,993 shares Mr. Saluri has the right to acquire through the exercise of stock options within 60 days of June 30, 2011.

(12) In connection with Mr. Edick's appointment to our Board of Directors on July 29, 2011, he was granted the right to acquire 11,904 shares of our common stock through the exercise of stock options, which were granted effective November 10, 2011, upon the pricing of this offering.

(13) Includes 1,810,378 shares issuable upon exercise of stock options by all executive officers and directors exercisable within 60 days of June 30, 2011. See notes (2) through (11) above.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock and provisions of our certificate of incorporation and bylaws are summaries and are qualified by reference to the amended and restated certificate of incorporation and the amended and restated bylaws, each to be in effect upon the completion of this offering. We have filed copies of these documents with the Securities and Exchange Commission, or SEC, as exhibits to our registration statement of which this prospectus forms a part. The description of the capital stock reflects changes to our capital structure that will occur upon the closing of this offering. Upon the closing of this offering and the filing of the amended and restated certificate of incorporation, our authorized capital stock will consist of 38,833,334 shares of common stock, par value $0.01 per share, and 5,000,000 shares of preferred stock, par value $0.01 per share, all of which preferred stock will be undesignated.

As of June 30, 2011, we had issued and outstanding:

- 3,648,549 shares of our common stock held by 113 stockholders of record;
- 420,000 shares of our Series A preferred stock held by eight stockholders of record that are convertible into 277,772 shares of our common stock;
- 1,217,175 shares of our Series AA preferred stock held by 32 stockholders of record are convertible into shares of our common stock on approximately a 0.476-for-one basis;
- 377,410 shares of our Series AAA preferred stock held by 18 stockholders of record that are convertible into shares of our common stock on approximately a 0.476-for-one basis; and
- 2,191,193 shares of our Series B preferred stock held by 18 stockholders of record that are convertible into shares of our common stock on approximately a 0.476-for-one basis.
- 1,883,337 shares of our Series BB preferred stock held by 92 stockholders of record that are convertible into shares of our common stock on approximately a 0.522-for-one basis;
- 6,000,000 shares of our Series C preferred stock held by 152 stockholders of record that are convertible into shares of our common stock on approximately a 0.543-for-one basis; and
- 1,500,000 shares of our Series D preferred stock held by one stockholder of record that are convertible into shares of our common stock on approximately a 0.543-for-one basis.
- 680,998 shares of our Series E preferred stock held by 78 stockholders of record that are convertible into shares of our common stock on approximately a 5.252-for-one basis.

As of June 30, 2011, we also had outstanding options to purchase 3,101,784 shares of our common stock at a weighted-average exercise price of $2.92 per share.

On January 7, 2011, we acquired all of the minority interest in BPS. We have issued 276,304 shares of our Series E preferred stock as consideration for this acquisition.

Upon the closing of this offering, all of the outstanding shares of our preferred stock will automatically convert into a total of 10,710,850 shares of our common stock. No warrants to purchase shares of common stock remain outstanding as of June 30, 2011.

Common Stock

Voting Rights. Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Our amended and restated certificate of incorporation and amended and restated bylaws do not provide for cumulative voting rights. Because of this, the holders of a majority of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose.

Dividends. Subject to preferences that may be applicable to any then outstanding preferred stock, holders of common stock are entitled to receive dividends, if any, as may be declared from time to time by our Board of Directors out of legally available funds.

Liquidation. In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding shares of preferred stock.

Rights and Preferences. Holders of common stock have no preemptive, conversion, subscription or other rights, and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

Fully paid and Nonassessable. All of our outstanding shares of common stock are, and the shares of common stock to be issued in this offering will be, fully paid and nonassessable.

Preferred Stock

Upon the closing of this offering, all outstanding shares of preferred stock will have been automatically converted into shares of common stock. Following this offering, our certificate of incorporation will be amended and restated to delete all references to such shares of preferred stock.

Under the amended and restated certificate of incorporation, our Board of Directors will have the authority, without further action by the stockholders, to issue up to 5,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

Our Board of Directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of our company and may adversely affect the market price of the common stock and the voting and other rights of the holders of common stock. We have no current plans to issue any shares of preferred stock.

Registration Rights

Under an amended and restated investor rights agreement, following the completion of this offering, the holders of an aggregate of 10,317,800 shares of common stock, or their transferees, will have the right to require us to register their shares with the SEC so that those shares may be publicly resold, or to include their shares in any registration statement we file, subject to specified exemptions, conditions and limitations.

Beginning twelve months after the closing of this offering, subject to specified limitations, these stockholders may require that we register all or part of these securities for sale under the Securities Act on two occasions. In addition, these stockholders may from time to time make demand for registrations on Form S-3, a short form registration statement, when we are eligible to use this form.

If we register any of our common stock, either for our own account or for the account of other security holders, these stockholders are entitled to notice of the registration and to include their shares of common stock in the registration.

Other than in a demand registration, with specified exceptions, a holder's right to include shares in a registration is subject to the right of the underwriters to limit the number of shares included in the offering. All fees, costs and expenses of any demand registrations and any registrations on Form S-3 will be paid by

us, and all selling expenses, including underwriting discounts and commissions, will be paid by the holders of the securities being registered.

Delaware Anti-takeover Law and Certain Provisions of Our Amended and Restated Certificate of Incorporation and Bylaws

Delaware law. We are subject to Section 203 of the Delaware General Corporation Law. Section 203 generally prohibits a public Delaware corporation from engaging in a business combination with an interested stockholder for a period of three years after the date of the transaction in which the person became an interested stockholder, unless:

- prior to the date of the transaction, the Board of Directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for this purpose shares owned by persons who are directors and also officers and shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or subsequent to the date of the transaction, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least $66^{2}/_{3}\%$ of the outstanding voting stock that is not owned by the interested stockholder.

Section 203 defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws. Provisions of our amended and restated certificate of incorporation and amended and restated bylaws, which will become effective upon the closing of this offering, may delay or discourage transactions involving an actual or potential change in our control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares, or transactions that our stockholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of our common stock.

Among other things, our amended and restated certificate of incorporation and amended and restated bylaws:

- permit our Board of Directors to issue up to 5,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate, including the right to approve an acquisition or other change in our control;
- provide that the authorized number of directors may be changed only by resolution of the Board of Directors;
- provide that, subject to the rights of any series of preferred stock to elect directors, directors may only be removed for cause, which removal may be effected subject to any limitation imposed by law, by the holders of at least $66^2/3\%$ of the voting power of our then outstanding capital stock entitled to vote generally at an election of directors;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- divide our Board of Directors into three classes with staggered, three-year terms;
- require that any action to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and not be taken by written consent;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide notice in writing in a timely manner, and also specify requirements as to the form and content of a stockholder's notice;
- do not provide for cumulative voting rights, therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose;
- provide that special meetings of our stockholders may be called only by the chairman of the board, our Chief Executive Officer or by the Board of Directors pursuant to a resolution adopted by a majority of the total number of authorized directors; and
- provide that stockholders will be permitted to amend our amended and restated bylaws only upon receiving at least $66^2/3\%$ of the votes entitled to be cast by holders of all outstanding shares then entitled to vote generally in the election of directors, voting together as a single class.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock will be BNY Mellon Shareowner Services.

NASDAQ Global Market

Our common stock has been approved for listing on The NASDAQ Global Market under the symbol "NLNK."

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, no public market existed for our common stock. Market sales of shares of our common stock after this offering and from time to time, and the availability of shares for future sale, may reduce the market price of our common stock. Sales of substantial amounts of our common stock, or the perception that these sales could occur, could adversely affect prevailing market prices for our common stock and could impair our future ability to obtain capital, especially through an offering of equity securities.

Based on the number of shares of common stock outstanding as of June 30, 2011, upon completion of this offering, 20,582,002 shares of common stock will be outstanding, assuming no exercise of the underwriters' over-allotment option and no exercise of options prior to the completion of this offering. All of the shares sold in this offering will be freely tradable without restrictions or further registration under the Securities Act, unless held by our affiliates as that term is defined under Rule 144 under the Securities Act or subject to lock-up agreements. The remaining shares of common stock outstanding upon the closing of this offering are restricted securities as defined under Rule 144 of the Securities Act. Restricted securities may be sold in the U.S. public market only if registered or if they qualify for an exemption from registration, including by reason of Rule 144 or 701 under the Securities Act, which rules are summarized below. These remaining shares will generally become available for sale in the public market as follows:

- 755,218 restricted shares will be eligible for immediate sale upon the completion of this offering;
- approximately 2,314 restricted shares will be eligible for sale in the public market 90 days after the date of this prospectus, subject to the volume, manner of sale and other limitations under Rule 144 and Rule 701;
- approximately 13,629,108 restricted shares will be eligible for sale in the public market upon expiration of lock-up agreements 180 days after the date of this prospectus, which date may be extended in specified circumstances, subject in certain circumstances to the volume, manner of sale and other limitations under Rule 144 and Rule 701; and
- approximately 4,543 restricted shares will be eligible for sale from time to time thereafter upon expiration of their respective one-year holding periods, but could be sold earlier if the holder exercises any available registration rights.

Additionally, of the 3,101,784 shares of common stock issuable upon exercise of options outstanding as of June 30, 2011, approximately 2,211,670 shares will be vested and eligible for sale 180 days after the date of this prospectus.

Rule 144

In general, under Rule 144 under the Securities Act of 1933, as in effect on the date of this prospectus, beginning 90 days after the date of this prospectus, a person who is not one of our affiliates at any time during the three months preceding a sale, and who has beneficially owned shares of our common stock to be sold for at least six months, would be entitled to sell an unlimited number of shares of our common stock, provided current public information about us is available. In addition, under Rule 144, a person who is not one of our affiliates at any time during the three months preceding a sale, and who has beneficially owned the shares of our common stock to be sold for at least one year, would be entitled to sell an unlimited number of shares immediately upon the closing of this offering without regard to whether current public information about us is available. Beginning 90 days after the date of this prospectus, our affiliates who have beneficially owned shares of our common stock for at least six months are entitled to sell within any three-month period a number of shares that does not exceed the greater of:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately 179,799 shares immediately after this offering; and
- the average weekly trading volume of our common stock on The NASDAQ Global Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale.

Sales of restricted shares under Rule 144 by our affiliates are also subject to requirements regarding the manner of sale, notice and the availability of current public information about us. Rule 144 also provides that affiliates relying on Rule 144 to sell shares of our common stock that are not restricted shares must nonetheless comply with the same restrictions applicable to restricted shares, other than the holding period requirement.

Notwithstanding the availability of Rule 144, the holders of substantially all of our restricted shares have entered into lock-up agreements as described below under "Underwriting" and their restricted shares will become eligible for sale at the expiration of the restrictions set forth in those agreements.

Rule 701

Rule 701 under the Securities Act, as in effect on the date of this prospectus, permits resales of shares in reliance upon Rule 144 but without compliance with some of the restrictions of Rule 144, including the holding period requirement. Most of our employees, executive officers, directors or consultants who purchased shares under a written compensatory plan or contract may be entitled to rely on the resale provisions of Rule 701, but all holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling their shares under Rule 701. However, all of the Rule 701 shares are subject to lock-up agreements as described below and under "Underwriting" and will become eligible for sale at the expiration of the restrictions set forth in those agreements.

Lock-up Agreements

We, along with our directors, executive officers and substantially all of our other stockholders, optionholders and warrantholders, have agreed with the underwriters that, for a period of 180 days following the date of this prospectus, we or they will not offer, sell, assign, transfer, pledge, contract to sell or otherwise dispose of or hedge any shares of our common stock or any securities convertible into or exchangeable for shares of common stock, subject to specified exceptions. Stifel, Nicolaus & Company, Incorporated and Canaccord Genuity Inc. may, in their sole discretion, at any time without prior notice, release all or any portion of the shares from the restrictions in any such agreement.

The 180-day restricted period described in the preceding paragraph will be extended if:

- during the last 17 days of the 180-day restricted period we issue an earnings release or material news or a material event relating to us occurs and is publicly announced; or
- prior to the expiration of the 180-day restricted period, we announce that we will release earnings results during the 16-day period beginning on the last day of the 180-day restricted period.

In this case, the restrictions described in the preceding paragraph will continue to apply until the expiration of the 18-day period beginning on the issuance of the release of the material news or the occurrence of the material event.

The lock-up agreements signed by our securityholders generally permit them, among other customary exceptions, to make bona fide gifts to their immediate family, to transfer securities to trusts for their or their immediate family's benefit and, if the securityholder is a partnership, limited liability company or corporation, to transfer securities to its partners, members or stockholders. However, the recipients of these transfers must agree to be bound by the lock-up agreement for the remainder of the lock-up period.

Registration Rights

Upon the closing of this offering, the holders of an aggregate of 10,317,800 shares of our common stock will have the right to require us to register their shares for resale under the Securities Act, beginning six months after the date of this prospectus. Registration of these shares for resale under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act immediately upon the effectiveness of such registration. Any sales of securities by these stockholders could

adversely affect the trading price of our common stock. These registration rights are described in more detail under the caption "Description of Capital Stock—Registration Rights."

Equity Incentive Plans

As of June 30, 2011, options to purchase an aggregate of 3,101,784 shares of our common stock were outstanding, of which 1,895,626 were vested and exercisable. Substantially all of the shares issuable upon the exercise of options are subject to the terms of the lock-up agreements with the underwriters. On October 29, 2010, 714,286 additional shares of common stock were added to the shares reserved for future issuance under our 2009 plan. This amount will be increased pursuant to an "evergreen provision" on January 1 of each year, from 2012 to (and including) 2019, in an amount equal to 4% of the total number of shares of Common Stock outstanding on December 31 of the preceding calendar year. However, our Board of Directors will have the authority to designate a lesser number of shares by which the share reserve will be increased.

We intend to file one or more registration statements on Form S-8 under the Securities Act to register all shares of common stock subject to outstanding stock options and common stock issued or issuable under our 2000 Equity Incentive Plan, 2009 Equity Incentive Plan, 2010 Non-Employee Directors' Stock Award Plan and 2010 Employee Stock Purchase Plan. We expect to file the registration statement covering shares offered pursuant to our stock plans shortly after the date of this prospectus, permitting the resale of such shares by nonaffiliates in the public market without restriction under the Securities Act and the sale by affiliates in the public market, subject to compliance with the resale provisions of Rule 144.

CERTAIN U.S. FEDERAL INCOME AND ESTATE TAX CONSEQUENCES TO NON-U.S. HOLDERS OF OUR COMMON STOCK

The following is a summary of the U.S. federal income and estate tax consequences to a non-U.S. holder (as defined below) of the purchase, ownership and disposition of our common stock issued pursuant to this offering. This discussion is not a complete analysis of all potential U.S. federal income and estate tax consequences and does not address any tax consequences arising under any state, local or foreign tax laws or under other U.S. federal tax laws (such as gift tax laws). This discussion is based on the Internal Revenue Code of 1986, as amended (the "Code"), U.S. Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the Internal Revenue Service (the "IRS"), all as in effect on the date of this offering. These authorities are subject to change, possibly retroactively, resulting in tax consequences different from those discussed below. No rulings have been or will be sought from the IRS with respect to the matters discussed below, and there can be no assurance that the IRS will not take a different position concerning the tax consequences of a non-U.S. holder's purchase, ownership or disposition of our common stock or that any such position would not be sustained by a court.

This discussion is limited to non-U.S. holders who purchase our common stock in this offering and who hold shares of our common stock as "capital assets" within the meaning of Code Section 1221 (generally, property held for investment). This discussion does not address all U.S. federal income tax or estate tax consequences that may be relevant to a non-U.S. holder in light of the holder's particular circumstances or to holders subject to special rules under the U.S. federal income tax laws, such as banks, financial institutions, U.S. expatriates, insurance companies, regulated investment companies, real estate investment trusts, "controlled foreign corporations," "passive foreign investment companies," dealers in securities or currencies, traders in securities, partnerships or other pass-through entities (or investors in such entities), persons subject to the alternative minimum tax, tax-exempt organizations and persons holding our common stock as part of a "straddle," "hedge," "conversion transaction" or other integrated transaction.

WE RECOMMEND THAT PROSPECTIVE INVESTORS CONSULT THEIR OWN TAX ADVISORS REGARDING THE PARTICULAR U.S. FEDERAL INCOME AND ESTATE TAX CONSEQUENCES TO THEM OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK, AS WELL AS ANY TAX CONSEQUENCES ARISING UNDER ANY STATE, LOCAL OR FOREIGN TAX LAWS, ANY OTHER U.S. FEDERAL TAX LAWS (INCLUDING GIFT TAX LAWS), AND ANY APPLICABLE TAX TREATIES.

For purposes of the U.S. federal income tax portion of this discussion, a "non-U.S. holder" is a beneficial owner of our common stock who is an individual, corporation, estate or trust for U.S. federal income tax purposes and who is not treated for U.S. federal income tax purposes as:

- an individual who is a citizen or resident of the United States;
- an entity treated as a corporation for U.S. federal income tax purposes that is created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust if (i) a U.S. court is able to exercise primary supervision over its administration and one or more U.S. persons have authority to control all its substantial decisions or (ii) the trust was in existence on August 20, 1996, was treated as a U.S. person prior to that date, and validly elected to continue to be so treated.

A modified definition of non-U.S. holder applies for U.S. federal estate tax purposes.

If any entity treated as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner generally will depend on the status of the partner and the activities of the

partnership. Partnerships and their partners should consult their tax advisors as to the tax consequences to them of the purchase, ownership and disposition of our common stock.

This discussion assumes that a non-U.S. holder will not hold our common stock in a manner that would subject the non-U.S. holder to the newly-enacted withholding tax discussed below under "New legislation relating to foreign accounts."

Distributions on our Common Stock

Payments on our common stock will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and will first be applied against and reduce a non-U.S. holder's adjusted tax basis in the common stock (determined on a share-by-share basis), but not below zero. Any remaining excess will be treated as capital gain from the sale of property as described below under "—Gain on Disposition of our common stock."

Dividends paid to a non-U.S. holder of our common stock that are not effectively connected with the holder's conduct of a U.S. trade or business generally will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends, or a lower rate specified by an applicable tax treaty. To receive the benefit of a reduced treaty rate, a non-U.S. holder must furnish to us or our paying agent a valid IRS Form W-8BEN (or applicable successor form) certifying the holder's qualification for the reduced rate. This certification must be provided to us or our paying agent prior to the payment of dividends and must be updated periodically. If the non-U.S. holder holds the stock through a financial institution or other agent acting on the non-U.S. holder's behalf, the non-U.S. holder will be required to provide appropriate documentation to the agent, who then will be required to provide certification to us or our paying agent, either directly or through other intermediaries. Non-U.S. holders that do not timely provide us or our paying agent with the required certification, but which qualify for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. holders should consult their own tax advisors regarding their possible entitlement to benefits under a relevant tax treaty.

If dividends paid on our common stock are effectively connected with a non-U.S. holder's U.S. trade or business, the non-U.S. holder will be exempt from U.S. federal withholding tax. To claim the exemption, the non-U.S. holder must furnish to us or our paying agent a properly executed IRS Form W-8ECI or IRS Form W-8BEN, as applicable (or an applicable successor form) prior to the payment of the dividends.

Any dividends paid on our common stock that are effectively connected with a non-U.S. holder's U.S. trade or business generally will be subject to U.S. federal income tax on a net income basis in the same manner as if the holder were a resident of the United States. A non-U.S. holder that is a foreign corporation also may be subject to a branch profits tax equal to 30% (or a lower rate specified by an applicable tax treaty) of any effectively connected earnings and profits. Non-U.S. holders should consult their own tax advisors regarding any applicable tax treaties that may provide for different rules.

Gain on Disposition of our Common Stock

Subject to the discussion below regarding backup withholding, a non-U.S. holder generally will not be subject to U.S. federal income tax on any gain realized upon the sale or other disposition of our common stock unless:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business in the United States;
- the non-U.S. holder is an individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or

- our common stock constitutes a U.S. real property interest by reason of our status as a U.S. real property holding corporation ("USRPHC") at any time within the shorter of the five-year period preceding the disposition or the non-U.S. holder's holding period for our common stock (the "applicable period").

Unless an applicable tax treaty provides otherwise, gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis in the same manner as if the holder were a resident of the United States. Non-U.S. holders that are foreign corporations also may be subject to a branch profits tax equal to 30% (or a lower rate specified by an applicable tax treaty) of any effectively connected earnings and profits. Non-U.S. holders should consult any applicable tax treaties that may provide for different rules.

Gain described in the second bullet point above will be subject to U.S. federal income tax at a flat 30% rate (or a lower rate specified by an applicable tax treaty), but may be offset by U.S. source capital losses, provided that the non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and we do not anticipate becoming, a USRPHC. However, because the determination of whether we are a USRPHC depends on the fair market value of our U.S. real property interests relative to the fair market value of our other trade or business assets and our foreign real property interests, there can be no assurance that we are not currently or will not become a USRPHC in the future. In the event we are or become a USRPHC, as long as our common stock is regularly traded on an established securities market, our common stock will constitute a U.S. real property interest only with respect to a non-U.S. holder that actually or constructively holds more than 5% of our common stock at some time during the applicable period. Any taxable gain generally will be taxed in the same manner as gain that is effectively connected with the conduct of a U.S. trade or business, except that the branch profits tax will not apply.

Information Reporting and Backup Withholding

We must report annually to the IRS and to each non-U.S. holder the amount of dividends on our common stock paid to such holder and the amount, if any, of tax withheld with respect to those dividends. These information reporting requirements apply even if no withholding was required because the dividends were effectively connected with the holder's conduct of a U.S. trade or business, or withholding was reduced or eliminated by an applicable tax treaty. This information also may be made available under a specific treaty or agreement with the tax authorities in the country in which the non-U.S. holder resides or is established.

Backup withholding, currently at a rate of 28% (and scheduled to increase to 31% after 2012), generally will not apply to payments of dividends to a non-U.S. holder of our common stock provided the non-U.S. holder furnishes to us or our paying agent the required certification as to its non-U.S. status (typically, by providing a valid IRS Form W-8BEN or W-8ECI) or an exemption is otherwise established.

Payment of the proceeds from a non-U.S. holder's disposition of our common stock made by or through a non-U.S. office of a broker will not be subject to information reporting or backup withholding, except that information reporting (but generally not backup withholding) may apply to those payments if the broker does not have documentary evidence that the beneficial owner is a non-U.S. holder, an exemption is not otherwise established, and the broker is:

- a U.S. person;
- a controlled foreign corporation for U.S. federal income tax purposes;
- a foreign person 50% or more of whose gross income is effectively connected with a U.S. trade or business for a specified three-year period; or

- a foreign partnership if at any time during its tax year (1) one or more of its partners are U.S. persons who hold in the aggregate more than 50% of the income or capital interest in the partnership or (2) it is engaged in the conduct of a U.S. trade or business.

Payment of the proceeds from a non-U.S. holder's disposition of our common stock made by or through the U.S. office of a broker generally will be subject to information reporting and backup withholding unless the non-U.S. holder certifies as to its non-U.S. status (such as by providing a valid IRS Form W-8BEN or W-8ECI) or otherwise establishes an exemption from information reporting and backup withholding.

Backup withholding is not an additional tax. Taxpayers may use amounts withheld as a credit against their U.S. federal income tax liability or may claim a refund if they timely provide certain information to the IRS.

New Legislation Relating to Foreign Accounts

Newly enacted legislation may impose withholding taxes on certain types of payments made to or through "foreign financial institutions" and certain other non-U.S. entities after December 31, 2012. The legislation imposes a 30% withholding tax on dividends on, or gross proceeds from the sale or other disposition of, our common stock paid to a foreign financial institution (whether holding stock for its own account or on behalf of its account holders/investors) unless the foreign financial institution enters into an agreement with the U.S. Treasury to among other things, undertake to identify accounts held by certain U.S. persons or U.S.-owned foreign entities, annually report certain information about such accounts, and withhold 30% on payments to account holders whose actions prevent it from complying with these reporting and other requirements. In addition, the legislation imposes a 30% withholding tax on the same types of payments to a foreign non-financial entity unless the entity certifies that it does not have any substantial U.S. owners or furnishes identifying information regarding each substantial U.S. owner and satisfies certain other requirements. Prospective investors should consult their own tax advisors regarding this legislation.

Estate Tax

Common stock owned or treated as owned by an individual who is not a citizen or resident of the United States (as specifically defined for U.S. federal estate tax purposes) at the time of death is considered a U.S. situs asset includible in the individual's gross estate for U.S. federal estate tax purposes and therefore may be subject to U.S. federal estate tax, unless an applicable estate tax treaty provides otherwise. The test for whether an individual is a resident of the United States for federal estate tax purposes differs from the test used for U.S. federal income tax purposes. Some individuals, therefore, may be "non-U.S. holders" for U.S. federal income tax purposes, but not for U.S. federal estate tax purposes, and vice versa. Prospective investors are urged to consult their tax advisors regarding the U.S. federal estate tax considerations of acquiring, holding, and disposing of common stock.

UNDERWRITING

Under the terms and subject to the conditions contained in an underwriting agreement dated November 10, 2011 by and among us and the underwriters named below, the underwriters have agreed to purchase, we have agreed to sell to them, the number of shares of common stock indicated in the table below:

Underwriter	Number of Shares
Stifel, Nicolaus & Company, Incorporated	2,867,500
Canaccord Genuity Inc.	1,937,500
Robert W. Baird & Co. Incorporated	930,000
Cantor Fitzgerald & Co.	465,000
Total	6,200,000

All of the shares to be purchased by the underwriters will be purchased from us.

The underwriting agreement provides that the obligations of the several underwriters are subject to various conditions, including approval of legal matters by counsel. The shares of common stock are offered by the underwriters, subject to prior sale, when, as and if issued to and accepted by them. The underwriters reserve the right to withdraw, cancel or modify the offer and to reject orders in whole or in part.

The underwriting agreement provides that the underwriters are obligated to purchase all the shares of common stock offered by this prospectus if any are purchased, other than those shares covered by the over-allotment option described below. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the non-defaulting underwriters may be increased or the underwriting agreement may be terminated.

Commissions and Expenses

Shares sold by the underwriters to the public will initially be offered at the initial public offering price set forth on the cover of this prospectus and to certain dealers at that price less a concession of not more than $0.294 per share. After the initial offering, the public offering price and concession to dealers may be changed.

The following table summarizes the underwriting discounts and commissions and the proceeds, before expenses, payable to us, both on a per share basis and in total, assuming either no exercise or full exercise by the underwriters of their overallotment option:

		Total	
	Per Share	Without Option	With Option
Public offering price	$ 7.00	$ 43,400,000	$ 49,910,000
Underwriting discounts and commissions	$ 0.49	$ 3,038,000	$ 3,493,700
Proceeds, before expenses, to us	$ 6.51	$ 40,362,000	$ 46,416,300

We estimate that the expenses of this offering payable by us, not including underwriting discounts and commissions, will be approximately $2,875,000.

Stine Seed Farm, Inc., an existing stockholder, has indicated an interest in purchasing $15 million of the shares of common stock to be sold in this offering at the public offering price. However, because indications of interest are not binding agreements or commitments to purchase, the underwriters may determine to sell more, less or no shares in this offering to this stockholder, or this stockholder may determine to purchase more, less or no shares in this offering.

Over-Allotment Option

We have granted a 30-day option to the underwriters to purchase up to a total of 930,000 additional shares of our common stock from us at the initial public offering price per share less the underwriting discounts and commissions per share, as set forth on the cover page of this prospectus, and less any dividends or distributions declared, paid or payable on the shares that the underwriters have agreed to purchase from us but that are not payable on such additional shares, to cover over-allotment, if any. If the underwriters exercise this option in whole or in part, then the underwriters will be severally committed, subject to the conditions described in the underwriting agreement, to purchase the additional shares of our common stock in proportion to their respective commitments set forth in the prior table.

Directed Share Program

At our request, the underwriters have reserved up to 10% of the shares of common stock for sale at the initial public offering price to persons who are directors, officers or employees or who are otherwise associated with us, through a directed share program. The number of shares of common stock available for sale to the general public will be reduced by the number of directed shares purchased by participants in the directed share program. Any directed shares not purchased will be offered by the underwriters to the general public on the same basis as all other shares of common stock offered. Any shares purchased by our officers, directors or other existing security holders in the directed share program will be subject to the 180-day lock-up period from the date of this prospectus, as described below.

Indemnification of Underwriters

The underwriting agreement provides that we will indemnify the underwriters against specified liabilities, including liabilities under the Securities Act, or contribute to payments that the underwriters may be required to make in respect of those liabilities.

Lock-Up Agreements

We, all of our directors and officers, the holders of substantially all of the other shares of our common stock outstanding prior to this offering, and the holders of all of our warrants and substantially all of our options outstanding prior to this offering, have agreed, subject to certain exceptions, that, without the prior written consent of Stifel, Nicolaus & Company, Incorporated and Canaccord Genuity Inc., we and they will not, during the period beginning on and including the date of this prospectus through and including the date that is the 180th day after the date of this prospectus, directly or indirectly:

- issue (in the case of us), offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of any shares of our common stock or other capital stock or any securities convertible into or exercisable or exchangeable for our common stock or other capital stock;
- in the case of us, file or cause the filing of any registration statement under the Securities Act with respect to any shares of our common stock or other capital stock or any securities convertible into or exercisable or exchangeable for our common stock or other capital stock; or
- enter into any swap or other agreement, arrangement, hedge or transaction that transfers to another, in whole or in part, directly or indirectly, any of the economic consequences of ownership of our common stock or other capital stock or any securities convertible into or exercisable or exchangeable for our common stock or other capital stock,

whether any transaction described in any of the foregoing bullet points is to be settled by delivery of our common stock or other capital stock, other securities, in cash or otherwise, or publicly announce an intention to do any of the foregoing. Moreover, if:

- during the last 17 days of the lock-up period, we issue an earnings release or material news or a material event relating to us occurs; or
- prior to the expiration of the lock-up period, we announce that we will release earnings results or become aware that material news on a material event relating to us will occur during the 16-day period beginning on the last day of the lock-up period,

the restrictions described in the immediately preceding sentence will continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of the material news or material event, as the case may be, unless Stifel, Nicolaus & Company, Incorporated and Canaccord Genuity Inc. waive, in writing, that extension.

Stifel, Nicolaus & Company, Incorporated and Canaccord Genuity Inc. may, in their sole discretion and at any time or from time to time, without notice, release all or any portion of the shares or other securities subject to the lock-up agreements. Any determination to release any shares or other securities subject to the lock-up agreements would be based on a number of factors at the time of determination, which may include the market price of the common stock, the liquidity of the trading market for the common stock, general market conditions, the number of shares or other securities proposed to be sold or otherwise transferred and the timing, purpose and terms of the proposed sale or other transfer.

Electronic Distribution

This prospectus in electronic format may be made available on websites or through other online services maintained by the underwriters of the offering, or by their affiliates. Other than the prospectus in electronic format, the information on the underwriters' websites and any information contained in any other website maintained by the underwriters is not part of the prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or the underwriters in their capacity as underwriters and should not be relied upon by investors.

No Public Market

Our common stock has been approved for listing on The NASDAQ Global Market under the symbol "NLNK," but there has been no public market for the shares prior to this offering. The offering price for the shares has been determined by us and the representatives, based on the following factors:

- the history and prospects for the industry in which we compete;
- our past and present operations;
- our historical results of operations;
- our prospects for future business and earning potential;
- our management;
- the general condition of the securities markets at the time of this offering;
- the recent market prices of securities of generally comparable companies;
- the market capitalization and stages of development of other companies which we and the representatives believe to be comparable to us; and
- other factors deemed to be relevant.

We cannot assure you that the initial public offering price will correspond to the price of which our common stock will trade in the public market after this offering or that an active trading market for the common stock will develop and continue after this offering.

Price Stabilization, Short Positions and Penalty Bids

Until the distribution of the shares of common stock is completed, SEC rules may limit the underwriters from bidding for and purchasing shares of our common stock.

In connection with this offering, the underwriters may engage in transactions that stabilize, maintain or make short sales of our common stock and may purchase our common stock on the open market to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in this offering. The underwriters may close out any short position by purchasing shares in the open market or by exercising their overallotment option.

A short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in this offering. A "stabilizing bid" is a bid for or the purchase of common stock on behalf of the underwriters in the open market prior to the completion of this offering for the purpose of fixing or maintaining the price of the shares of common stock. A "syndicate covering transaction" is the bid for or purchase of common stock on behalf of the underwriters to reduce a short position incurred by the underwriters in connection with the offering.

Similar to other purchase transactions, the underwriters' purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our shares or preventing or retarding a decline in the market price of our shares. As a result, the price of our shares may be higher than the price that might otherwise exist in the open market.

In connection with this offering, the underwriters may also engage in passive market making transactions in our common stock on The NASDAQ Global Market in accordance with Rule 103 of Regulation M during a period before the commencement of offers or sales of shares of our common stock in this offering and extending through the completion of distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, that bid must then be lowered when specified purchase limits are exceeded.

Neither we nor the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our common stock. In addition, neither we nor the underwriters make any representation that the underwriters will engage in these transactions or that any transaction, if commenced, will not be discontinued without notice.

Affiliations

In the future, the underwriters and their affiliates may provide various investment banking, commercial banking, financial advisory and other services to us and our affiliates for which services they have received, and may in the future receive, customary fees. In the course of their businesses, the underwriters and their affiliates may actively trade our securities or loans for their own accounts or for the accounts of customers, and, accordingly, the underwriters and their affiliates may at any time hold long or short positions in such securities or loans.

Sales Outside the United States

No action has been or will be taken in any jurisdiction (except in the United States) that would permit a public offering of the common stock, or the possession, circulation or distribution of this prospectus or any other material relating to us or the common stock in any jurisdiction where action for that purpose is required. Accordingly, the common stock may not be offered or sold, directly or indirectly, and neither of this prospectus nor any other offering material or advertisements in connection with the common stock may be distributed or published, in or from any country or jurisdiction except in compliance with any applicable rules and regulations of any such country or jurisdiction.

Each of the underwriters may arrange to sell common stock offered by this prospectus in certain jurisdictions outside the United States, either directly or through affiliates, where they are permitted to do so.

Notice to Prospective Investors in the European Economic Area

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State") an offer to the public of any shares of common stock which are the subject of the offering contemplated by this prospectus (the "Shares") may not be made in that Relevant Member State except that an offer to the public in that Relevant Member State of any Shares may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

(a) to legal entities which are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;

(b) to any legal entity which has two or more of (1) an average of at least 250 employees during the last financial year; (2) a total balance sheet of more than €43,000,000; and (3) an annual net turnover of more than €50,000,000, as shown in its last annual or consolidated accounts;

(c) to fewer than 100 natural or legal persons (other than qualified investors as defined in the Prospectus Directive) subject to obtaining the prior consent of the representatives of the underwriters; or

(d) in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of Shares shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to the public" in relation to any Shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any Shares to be offered so as to enable an investor to decide to purchase any Shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State and the expression "Prospectus Directive" means Directive 2003/71/EC and includes any relevant implementing measure in each Relevant Member State.

Notice to Prospective Investors in the United Kingdom

This prospectus and any other material in relation to the shares described herein is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospective Directive ("qualified investors") that also (i) have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, or the Order, (ii) who fall within Article 49(2)(a) to (d) of the Order or (iii) to whom it may otherwise lawfully be communicated (all such persons together being referred to as "relevant persons"). The shares are only available to, and any invitation, offer or agreement to purchase or otherwise acquire such shares will be engaged in only with, relevant persons. This prospectus and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other person in the United Kingdom. Any person in the United Kingdom that is not a relevant person should not act or rely on this prospectus or any of its contents.

The distribution of this prospectus in the United Kingdom to anyone not falling within the above categories is not permitted and may contravene the Financial Services and Markets Act of 2000. No person falling outside those categories should treat this prospectus as constituting a promotion to him, or act on it for any purposes whatever. Recipients of this prospectus are advised that we, the underwriters and any

other person that communicates this prospectus are not, as a result solely of communicating this prospectus, acting for or advising them and are not responsible for providing recipients of this prospectus with the protections which would be given to those who are clients of any aforementioned entities that is subject to the Financial Services Authority Rules.

Notice to Prospective Investors in France

The prospectus supplement and the accompanying prospectus (including any amendment, supplement or replacement thereto) have not been approved either by the *Autorité des marchés financiers* or by the competent authority of another State that is a contracting party to the Agreement on the European Economic Area and notified to the *Autorité des marchés financiers*; no security has been offered or sold and will be offered or sold, directly or indirectly, to the public in France within the meaning of Article L. 411-1 of the French *Code Monétaire et Financier* except to permitted investors, or Permitted Investors, consisting of persons licensed to provide the investment service of portfolio management for the account of third parties, qualified investors (*investisseurs qualifiés*) acting for their own account and/or a limited circle of investors (*cercle restreint d'investisseurs*) acting for their own account, with "qualified investors" and "limited circle of investors" having the meaning ascribed to them in Articles L. 411-2, D. 411-1, D. 411-2, D. 411-4, D. 744-1, D. 754-1 and D. 764-1 of the French *Code Monétaire et Financier*; none of this prospectus supplement and the accompanying Prospectus or any other materials related to the offer or information contained therein relating to our securities has been released, issued or distributed to the public in France except to Permitted Investors; and the direct or indirect resale to the public in France of any securities acquired by any Permitted Investors may be made only as provided by Articles L. 411-1, L. 411-2, L. 412-1 and L. 621-8 to L. 621-8-3 of the French *Code Monétaire et Financier* and applicable regulations thereunder.

Notice to Prospective Investors in Germany

This document has not been prepared in accordance with the requirements for a securities or sales prospectus under the German Securities Prospectus Act *(Wertpapierprospektgesetz)*, the German Sales Prospectus Act *(Verkaufsprospektgesetz)*, or the German Investment Act *(Investmentgesetz)*. Neither the German Federal Financial Services Supervisory Authority *(Bundesanstalt fur Finanzdienstleistungsaufsicht—BaFin)* nor any other German authority has been notified of the intention to distribute the securities in Germany. Consequently, the securities may not be distributed in Germany by way of public offering, public advertisement or in any similar manner AND THIS DOCUMENT AND ANY OTHER DOCUMENT RELATING TO THE OFFERING, AS WELL AS INFORMATION OR STATEMENTS CONTAINED THEREIN, MAY NOT BE SUPPLIED TO THE PUBLIC IN GERMANY OR USED IN CONNECTION WITH ANY OFFER FOR SUBSCRIPTION OF THE SECURITIES TO THE PUBLIC IN GERMANY OR ANY OTHER MEANS OF PUBLIC MARKETING. The securities are being offered and sold in Germany only to qualified investors which are referred to in Section 3, paragraph 2 no. 1, in connection with Section 2, no. 6, of the German Securities Prospectus Act. This document is strictly for use of the person who has received it. It may not be forwarded to other persons or published in Germany.

Notice to Prospective Investors in Switzerland

The securities which are the subject of the offering contemplated by this prospectus may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This prospectus has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. None of this

prospectus or any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

None of this prospectus or any other offering or marketing material relating to the offering, us or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of the securities.

LEGAL MATTERS

The validity of the shares of common stock being offered by this prospectus will be passed upon for us by Cooley LLP, Broomfield, Colorado. The underwriters are being represented by Cahill Gordon & Reindel LLP, New York, New York.

EXPERTS

The consolidated financial statements of NewLink Genetics Corporation and subsidiary (a development stage enterprise) as of December 31, 2010 and 2009, and for each of the years in the three-year period ended December 31, 2010, and for the period from June 4, 1999 (inception), through December 31, 2010, have been included herein in reliance upon the report of KPMG LLP, an independent registered public accounting firm, appearing elsewhere herein, and upon the authority of said firm as experts in accounting and auditing. The audit report covering the December 31, 2010, financial statements refers to the adoption of new guidance on the presentation and disclosure of noncontrolling interests.

The common stock valuations as of December 31, 2007, 2008 and 2009, March 31, 2010, June 30, 2010, September 30, 2010 and December 31, 2010 have been included herein in reliance upon reports of the Mentor Group, Inc., an independent valuation specialist, and upon the authority of said firm as valuation experts.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act, with respect to the shares of common stock being offered by this prospectus. This prospectus does not contain all of the information in the registration statement and its exhibits. For further information with respect to NewLink Genetics Inc. and the common stock offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference.

You can read our SEC filings, including the registration statement, over the Internet at the SEC's website at http://www.sec.gov. You may also read and copy any document we file with the SEC at its public reference facilities at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the Public Reference Section of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facilities.

Upon completion of this offering, we will be subject to the information reporting requirements of the Exchange Act, and we will file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information will be available for inspection and copying at the public reference room and web site of the SEC referred to above. We also maintain a website at www.linkp.com, at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this prospectus.

Index to Financial Statements

Report of Independent Registered Public Accounting Firm

The Board of Directors
NewLink Genetics Corporation and Subsidiary:

We have audited the accompanying consolidated balance sheets of NewLink Genetics Corporation and subsidiary (a development stage enterprise) (the Company) as of December 31, 2009 and 2010, and the related consolidated statements of operations, equity (deficit), and cash flows for each of the years in the three year period ended December 31, 2010 and for the period from June 4, 1999 (inception) through December 31, 2010. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of NewLink Genetics Corporation and subsidiary (a development stage enterprise) as of December 31, 2009 and 2010, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2010, and for the period from June 4, 1999 (inception) through December 31, 2010, in conformity with U.S. generally accepted accounting principles.

As discussed in note 2 to the consolidated financial statements, the Company has adopted guidance on the presentation and disclosure of noncontrolling interests as of January 1, 2009.

/s/ KPMG LLP

Des Moines, Iowa
February 25, 2011, except as to note 3, which is as of September 7, 2011 and note 21, which is as of October 25, 2011

NewLink Genetics Corporation and Subsidiary
(A Development Stage Enterprise)

Consolidated Balance Sheets

(In thousands, except share and per share data)

	December 31, 2009	December 31, 2010	June 30, 2011 (unaudited)
Assets			
Current assets:			
Cash and cash equivalents	$ 15,217	$ 10,572	$ 9,550
Certificates of deposit	1,992	2,269	250
Prepaid expenses	110	959	1,599
State research and development credit receivable	170	230	370
Interest receivable	68	8	—
Other receivables	1,341	604	329
Total current assets	18,898	14,642	12,098
Leasehold improvements and equipment:			
Leasehold improvements	2,293	3,804	3,804
Computer equipment	430	691	695
Lab equipment	1,765	3,165	3,290
Total leasehold improvements and equipment	4,488	7,660	7,789
Less accumulated depreciation and amortization	(1,569)	(2,224)	(2,572)
Leasehold improvements and equipment, net	2,919	5,436	5,217
Notes receivable from related parties	850	—	—
Total assets	$ 22,667	$ 20,078	$ 17,315

See accompanying notes to consolidated financial statements.

NewLink Genetics Corporation and Subsidiary
(A Development Stage Enterprise)

Consolidated Balance Sheets (Continued)

(In thousands, except share and per share data)

	December 31, 2009	December 31, 2010	June 30, 2011 (unaudited)	Pro forma Equity at June 30, 2011 (unaudited) (Note 2)
Liabilities and Equity				
Current liabilities:				
Accounts payable	$ 1,080	$ 552	$ 313	
Accrued expenses	1,176	1,554	1,383	
Deferred rent	947	951	932	
Notes payable to Iowa Department of Economic Development	—	—	6,000	
Obligations under capital leases	35	116	122	
Current portion of long term debt	—	91	93	
Deposits on restricted shares	3	1	—	
Total current liabilities	3,241	3,265	8,843	
Long term liabilities:				
Notes payable to Iowa Department of Economic Development	6,000	6,000	—	
Notes payable to Iowa State University Research Park	—	642	594	
Notes payable to City of Ames	—	300	300	
Obligations under capital leases	78	145	151	
Total long-term liabilities	6,078	7,087	1,045	
Total liabilities	9,319	10,352	9,888	
Redeemable preferred stock, $0.01 par value:				
Authorized shares—14,327,777 at December 31, 2009, 15,327,777 at December 31, 2010 and June 30, 2011 and 0 at June 30, 2011 pro forma; issued and outstanding shares—13,200,436 at December 31, 2009, 13,417,435 at December 31, 2010 and 13,850,113 at June 30, 2011 and 0 at June 30, 2011 pro forma; liquidation preference—$54,136 at December 31, 2009, $61,782 at December 31, 2010 and $75,303 at June 30, 2011 and $0 at June 30, 2011 pro forma	54,134	61,745	75,272	—
Equity:				
Blank check preferred stock, $0.01 par value: Authorized shares—1,388,889 at December 31, 2009 and 2010 and June 30, 2011 pro forma; issued and outstanding shares—0 at December 31, 2009 and 2010 and June 30, 2011 pro forma	—	—	—	—
Series A preferred stock, $0.01 par value: Authorized shares—450,000 at December 31, 2009 and 2010 and June 30, 2011 and 0 at June 30, 2011 pro forma; issued and outstanding shares—420,000 at December 31, 2009 and 2010 and June 30, 2011 and 0 at June 30, 2011 pro forma; liquidation preference—$1,050 at December 31, 2009 and 2010 and June 30, 2011 and $0 at June 30, 2011 pro forma	1,030	1,030	1,030	—
Common stock, $0.01 par value: Authorized shares—32,000,000 at December 31, 2009 and 38,833,334 at December 31, 2010 and June 30, 2011 and June 30, 2011 pro forma; issued and outstanding shares—3,176,858 at December 31, 2009, 3,628,082 at December 31, 2010, 3,648,549 at June 30, 2011 and 14,382,002 at June 30, 2011 pro forma	32	36	36	144
Additional paid-in capital	3,014	7,374	2,769	78,963
Notes receivable for common stock	(38)	(13)	—	—
Deficit accumulated during the development stage	(47,176)	(63,389)	(71,680)	(71,680)
Total NewLink Genetics shareholders' (deficit) equity	(43,138)	(54,962)	(67,845)	7,427
Equity attributable to noncontrolling interests	2,352	2,943	—	—
Total (deficit) equity	(40,786)	(52,019)	(67,845)	7,427
Commitments				
Total liabilities and deficit	$ 22,667	$ 20,078	$ 17,315	

See accompanying notes to consolidated financial statements.

NewLink Genetics Corporation and Subsidiary
(A Development Stage Enterprise)

Consolidated Statements of Operations

(In thousands, except share and per share data)

	Year Ended December 31,			Cumulative from June 4, 1999 (inception) through December 31, 2010
	2008	2009	2010	
Grant revenue	$ 633	$ 934	$ 2,079	$ 3,845
Operating expenses:				
Research and development	5,790	7,578	12,666	46,063
General and administrative	3,938	3,705	6,074	24,156
Total operating expenses	9,728	11,283	18,740	70,219
Loss from operations	(9,095)	(10,349)	(16,661)	(66,374)
Other income and expense:				
Miscellaneous income	42	19	71	353
Forgiveness of debt	—	—	—	449
Interest income	213	132	75	1,742
Interest expense	(2)	(9)	(47)	(101)
Other income (expense), net	253	142	99	2,443
Net loss	(8,842)	(10,207)	(16,562)	(63,931)
Less net loss attributable to noncontrolling interest	—	233	349	582
Net loss attributable to NewLink	$ (8,842)	$ (9,974)	$ (16,213)	$ (63,349)
Net loss per share, basic and diluted	$ (2.84)	$ (3.16)	$ (4.84)	
Weighted-average shares outstanding, basic and diluted	3,115,010	3,159,993	3,352,331	
Pro forma net loss per share, basic and diluted (unaudited) (note 2)			$ (1.15)	
Weighted-average pro forma shares outstanding, basic and diluted (unaudited) (note 2)			14,085,784	

See accompanying notes to consolidated financial statements.

NewLink Genetics Corporation and Subsidiary
(A Development Stage Enterprise)

Consolidated Statements of Operations

(In thousands, except share and per share data)

(unaudited)

	Six Months Ended June 30,		Cumulative from June 4, 1999 (inception) through June 30, 2011
	2010	2011	
Grant revenue	$ 730	$ 1,141	$ 4,986
Operating expenses:			
Research and development	5,696	6,975	53,038
General and administrative	2,284	2,452	26,608
Total operating expenses	7,980	9,427	79,646
Loss from operations	(7,250)	(8,286)	(74,660)
Other income and expense:			
Miscellaneous income	8	1	354
Forgiveness of debt	—	—	449
Interest income	23	8	1,750
Interest expense	(19)	(15)	(116)
Other income (expense), net	12	(6)	2,437
Net loss	(7,238)	(8,292)	(72,223)
Less net loss attributable to noncontrolling interest	151	1	583
Net loss attributable to NewLink	$ (7,087)	$ (8,291)	$ (71,640)
Net loss per share, basic and diluted	$ (2.23)	$ (2.27)	
Weighted-average shares outstanding, basic and diluted	3,195,223	3,641,539	
Pro forma net loss per share, basic and diluted		$ (0.58)	
Weighted-average pro forma shares outstanding, basic and diluted		14,374,992	

See accompanying notes to consolidated financial statements.

NewLink Genetics Corporation and Subsidiary
(A Development Stage Enterprise)

Consolidated Statements of Equity (Deficit)

(In thousands, except share and per share data)

	Preferred Stock Series A	Common Stock: Number of Common Shares Outstanding	Common Stock: Common Stock	Common Stock: Additional Paid-in Capital	Common Stock: Notes Receivable For Common Stock	Common Stock: Treasury Stock	Deficit Accumulated During the Development Stage	Total NewLink Genetics Shareholders' Equity	Non-Controlling Interest	Total Equity (Deficit)
Balance at June 4, 1999	$ —	—	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Initial stock issuance (November 11, 1999)	—	1,904,762	19	21	(13)	—	—	27	—	27
Net loss	—	—	—	—	—	—	(64)	(64)	—	(64)
Balance at December 31, 1999	—	1,904,762	19	21	(13)	—	(64)	(37)	—	(37)
Loan payment	—	—	—	—	13	—	—	13	—	13
Common stock issuance (April 18, 2000)	—	661,524	6	131	(92)	—	—	45	—	45
Common stock issuance (June 13, 2000)	—	25,238	—	14	(12)	—	—	2	—	2
Issuance of 420,000 shares of Series A preferred stock (net of offering costs) (August 29, 2000)	989	—	—	—	—	—	—	989	—	989
Net loss	—	—	—	—	—	—	(236)	(236)	—	(236)
Balance at December 31, 2000	989	2,591,524	25	166	(104)	—	(300)	776	—	776
Repurchase of common stock and settlement of notes receivable (January 29, 2001)	—	(131,806)	—	—	18	(33)	—	(15)	—	(15)
Issuance of common stock (August 2, 2001)	—	95,238	1	49	—	—	—	50	—	50
Deemed dividend due to sale of Series AA preferred shares (September 26, 2001) (note 4)	41	—	—	—	—	—	(41)	—	—	—
Net loss	—	—	—	—	—	—	(1,448)	(1,448)	—	(1,448)
Balance at December 31, 2001	1,030	2,554,956	26	215	(86)	(33)	(1,789)	(637)	—	(637)
Receipt of payment on note receivable (April 5 and October 5, 2002)	—	—	—	—	2	—	—	2	—	2
Issuance of common stock from exercise of stock options (July 26, 2002)	—	23,810	1	12	—	—	—	13	—	13
Receipt of payment on note receivable (September 4, 2002)	—	—	—	—	31	—	—	31	—	31
Issuance of dividend paid in common stock (October 18, 2002)	—	20,998	—	—	—	—	—	—	—	—
Issuance of stock options to nonemployees	—	—	—	14	—	—	—	14	—	14
Accretion of redemption feature of preferred stock	—	—	—	(6)	—	—	—	(6)	—	(6)
Net loss	—	—	—	—	—	—	(2,253)	(2,253)	—	(2,253)
Balance at December 31, 2002	1,030	2,599,764	27	235	(53)	(33)	(4,042)	(2,836)	—	(2,836)
Issuance of common stock for compensation (March 20, 2003)	—	9,524	—	46	—	—	—	46	—	46
Receipt of payment on note receivable (January 1, April 4, July 9, and September 29, 2003)	—	—	—	—	7	—	—	7	—	7
Issuance of common stock from exercise of warrants (various dates through March 2003)	—	235,537	2	1,110	—	—	—	1,112	—	1,112
Issuance of dividend paid in common stock	—	20,998	—	—	—	—	—	—	—	—
Issuance of stock options	—	—	—	15	—	—	—	15	—	15
Accretion of redemption feature of preferred stock	—	—	—	(5)	—	—	—	(5)	—	(5)
Net loss	—	—	—	—	—	—	(2,979)	(2,979)	—	(2,979)
Balance at December 31, 2003	1,030	2,865,823	29	1,401	(46)	(33)	(7,021)	(4,640)	—	(4,640)
Receipt of payment on note receivable (February 25, 2004 and July 15, 2004)	—	—	—	—	5	—	—	5	—	5
Issuance of stock options	—	—	—	57	—	—	—	57	—	57
Accretion of redemption feature of preferred stock	—	—	—	(5)	—	—	—	(5)	—	(5)
Net loss	—	—	—	—	—	—	(3,669)	(3,669)	—	(3,669)
Balance at December 31, 2004	$ 1,030	2,865,823	$ 29	$ 1,453	$ (41)	$ (33)	$ (10,690)	$ (8,252)	$ —	$ (8,252)

NewLink Genetics Corporation and Subsidiary
(A Development Stage Enterprise)

Consolidated Statements of Equity (Deficit) (Continued)

(In thousands, except share and per share data)

	Preferred Stock Series A	Common Stock: Number of Common Shares Outstanding	Common Stock: Common Stock	Common Stock: Additional Paid-in Capital	Common Stock: Notes Receivable For Common Stock	Common Stock: Treasury Stock	Deficit Accumulated During the Development Stage	Total NewLink Genetics Shareholders' Equity	Non-Controlling Interest	Total Equity (Deficit)
Balance at December 31, 2004 (brought forward)	$ 1,030	2,865,823	$ 29	$ 1,453	$ (41)	$ (33)	$ (10,690)	$ (8,252)	$ —	$ (8,252)
Receipt of payment on note receivable	—	—	—	—	1	—	—	1	—	1
Issuance of stock options	—	—	—	2	—	—	—	2	—	2
Issuance of dividend paid in common stock (September 23, 2005)	—	41,995	—	—	—	—	—	—	—	—
Issuance of common stock for OncoRx acquisition (June 21, 2005)	—	61,953	1	353	—	—	—	354	—	354
Issuance of common stock to consultants (April 4 and June 1, 2005)	—	8,946	—	51	—	—	—	51	—	51
Issuance of 593,247 shares of Series BB preferred stock (net of offering costs of $36,114) (January and February 2005)	—	—	—	—	—	—	—	—	—	—
Accretion of redemption feature of preferred stock	—	—	—	(82)	—	—	—	(82)	—	(82)
Issuance of subsidiary preferred stock	—	—	—	—	—	—	—	—	2,278	2,278
Net loss	—	—	—	—	—	—	(4,770)	(4,770)	—	(4,770)
Balance at December 31, 2005	1,030	2,978,717	30	1,777	(40)	(33)	(15,460)	(12,696)	2,278	(10,418)
Stock compensation	—	—	—	22	—	—	—	22	—	22
Issuance of common stock for OncoRx acquisition (March 22, 2006)	—	61,953	1	129	—	—	—	130	—	130
Issuance of dividend paid in common stock (September 25, 2006)	—	20,996	—	—	—	—	—	—	—	—
Issuance of subsidiary preferred stock	—	—	—	—	—	—	—	—	250	250
Issuance of subsidiary common stock, net of deposits	—	—	—	—	—	—	—	—	7	7
Accretion of redemption feature of preferred stock	—	—	—	(4)	—	—	—	(4)	—	(4)
Net loss	—	—	—	—	—	—	(5,318)	(5,318)	—	(5,318)
Balance at December 31, 2006	1,030	3,061,666	31	1,924	(40)	(33)	(20,778)	(17,866)	2,535	(15,331)
Stock compensation	—	—	—	58	—	—	—	58	—	58
Exercise of stock options	—	15,476	—	12	—	—	—	12	—	12
Receipt of payment on note receivable	—	—	—	—	2	—	—	2	—	2
Issuance of common stock for license milestone (August 2, 2007)	—	11,905	—	—	—	—	—	—	—	—
Issuance of dividend paid in common stock	—	20,996	—	—	—	—	—	—	—	—
Retire treasury stock	—	—	—	(33)	—	33	—	—	—	—
Issuance of subsidiary common stock, net of deposits	—	—	—	—	—	—	—	—	8	8
Net loss	—	—	—	—	—	—	(7,582)	(7,582)	—	(7,582)
Balance at December 31, 2007	1,030	3,110,043	31	1,961	(38)	—	(28,360)	(25,376)	2,543	(22,833)
Stock compensation	—	—	—	86	—	—	—	86	—	86
Exercise of stock options	—	15,298	—	19	—	—	—	19	—	19
Issuance of common stock for license milestone (September 8, 2008)	—	2,381	—	5	—	—	—	5	—	5
Issuance of dividend paid in common stock	—	21,000	—	—	—	—	—	—	—	—
Issuance of subsidiary common stock, net of deposits	—	—	—	—	—	—	—	—	(1)	(1)
Net loss	—	—	—	—	—	—	(8,842)	(8,842)	—	(8,842)
Balance at December 31, 2008	$ 1,030	3,148,722	$ 31	$ 2,071	$ (38)	$ —	$ (37,202)	$ (34,108)	$ 2,542	$ (31,566)

NewLink Genetics Corporation and Subsidiary
(A Development Stage Enterprise)

Consolidated Statements of Equity (Deficit) (Continued)

(In thousands, except share and per share data)

	Preferred Stock Series A	Common Stock: Number of Common Shares Outstanding	Common Stock: Common Stock	Common Stock: Additional Paid-in Capital	Common Stock: Notes Receivable For Common Stock	Common Stock: Treasury Stock	Deficit Accumulated During the Development Stage	Total NewLink Genetics Shareholders' Equity	Non-Controlling Interest	Total Equity (Deficit)
Balance at December 31, 2008 (brought forward)	$ 1,030	3,148,722	$ 31	$ 2,071	$ (38)	$ —	$ (37,202)	$ (34,108)	$ 2,542	$ (31,566)
Stock compensation	—	—	—	929	—	—	—	929	—	929
Exercise of stock options	—	7,138	—	15	—	—	—	15	—	15
Issuance of dividend paid in common stock	—	20,998	1	(1)	—	—	—	—	—	—
Issuance of subsidiary common stock net of deposits	—	—	—	—	—	—	—	—	3	3
Issuance of 30,000 shares of subsidiary Series B preferred stock (November 16, 2009)	—	—	—	—	—	—	—	—	40	40
Net loss	—	—	—	—	—	—	(9,974)	(9,974)	(233)	(10,207)
Balance at December 31, 2009	1,030	3,176,858	32	3,014	(38)	—	(47,176)	(43,138)	2,352	(40,786)
Stock compensation	—	—	—	1,525	—	—	—	1,525	—	1,525
Exercise of stock options	—	141,573	1	81	—	—	—	82	—	82
Exercise of warrants for common stock	—	178,571	2	1,998	—	—	—	2,000	—	2,000
Receipt of payment and forgiveness of note receivable	—	—	—	—	25	—	—	25	121	146
Issuance of common stock for OncoRX acquisition (July 29, 2010)	—	173,469	2	817	—	—	—	819	—	819
Issuance of common stock for license termination (September 3, 2010)	—	23,810	—	201	—	—	—	201	—	201
Issuance of dividend paid in common stock	—	20,996	—	—	—	—	—	—	—	—
Accretion of redemption feature of preferred stock	—	—	—	(2)	—	—	—	(2)	—	(2)
Conversion of preferred stock to common stock	—	14,915	—	114	—	—	—	114	—	114
Repurchase and retirement of common stock (December 20, 2010)	—	(102,110)	(1)	(374)	—	—	—	(375)	(94)	(469)
Issuance of subsidiary common stock net of deposits	—	—	—	—	—	—	—	—	2	2
Issuance of 555,930 shares of subsidiary Series B Preferred Stock (September 7, 2010)	—	—	—	—	—	—	—	—	911	911
Net loss	—	—	—	—	—	—	(16,213)	(16,213)	(349)	(16,562)
Balance at December 31, 2010	$ 1,030	3,628,082	36	7,374	(13)	—	(63,389)	(54,962)	2,943	(52,019)
Stock compensation	—	11,905	—	977	—	—	—	977	—	977
Exercise of stock options	—	57	—	—	—	—	—	—	—	—
Receipt of payment on note receivable	—	—	—	—	13	—	—	13	—	13
Conversion of preferred stock to common stock	—	8,505	—	115	—	—	—	115	—	115
Accretion of redemption feature of preferred stock	—	—	—	(5)	—	—	—	(5)	—	(5)
Acquisition of noncontrolling interest	—	—	—	(5,692)	—	—	—	(5,692)	(2,942)	(8,634)
Net loss	—	—	—	—	—	—	(8,291)	(8,291)	(1)	(8,292)
Balance at June 30, 2011 (unaudited)	$ 1,030	3,648,549	$ 36	$ 2,769	$ —	$ —	$ (71,680)	$ (67,845)	$ —	$ (67,845)

See accompanying notes to consolidated financial statements.

NewLink Genetics Corporation and Subsidiary
(A Development Stage Enterprise)

Consolidated Statements of Cash Flows

(In thousands, except share and per share data)

	Year Ended December 31,			Cumulative from June 4, 1999 (inception) through December 31, 2010
	2008	2009	2010	
Cash Flows From Development Activities				
Net loss	$ (8,842)	$ (10,207)	$ (16,562)	$ (63,931)
Adjustments to reconcile net loss to net cash used in development activities:				
Share-based compensation	86	929	1,525	2,804
Depreciation and amortization	294	303	655	2,274
In-process research and development expenses—OncoRx	5	—	819	1,428
Issuance of common stock for license termination	—	—	201	201
Forgiveness of debt	—	—	—	(449)
Forgiveness of notes receivable from related parties	—	—	350	350
Changes in operating assets and liabilities:				
Prepaid expenses	(38)	(60)	(849)	(959)
State research and development credit receivable	(222)	329	(60)	(230)
Interest due on notes receivable	(25)	(23)	60	(8)
Other receivables	—	(1,341)	737	(604)
Accounts payable	(361)	(271)	(528)	(197)
Accrued expenses and deferred rent	218	1,201	382	2,505
Net cash used in development activities	(8,885)	(9,140)	(13,270)	(56,816)
Cash Flows From Investing Activities				
Purchase of investments	(1,850)	(142)	(277)	(8,800)
Sale of investments	—	—	—	6,531
Notes receivable from related parties	(850)	—	500	(350)
Purchase of equipment	(427)	(1,403)	(2,932)	(6,488)
Cash paid for OncoRx	—	—	—	(120)
Net cash provided by (used in) investing activities	(3,127)	(1,545)	(2,709)	(9,227)
Cash Flows From Financing Activities				
Cash received from noncontrolling interest investment	—	40	911	3,479
Issuance of common stock	—	—	—	192
Issuance of common stock from exercise of stock options	19	15	82	140
Issuance of common stock from exercise of warrants	—	—	2,000	3,113
Repurchase of common stock	—	—	(468)	(501)
Repayments (advances) of notes receivable for common stock	—	—	25	(13)
Proceeds (repurchases) from subsidiary common stock option exercise and notes receivable	(4)	—	121	141
Proceeds from preferred stock (including deposits)	2,039	19,580	7,723	62,743
Transfer (to) from restricted cash	15,880	—	—	—
Proceeds from notes payable	—	—	1,100	7,759
Principal payments on debt	—	—	(67)	(277)
Payments under capital lease obligations	(4)	(9)	(93)	(161)
Net cash provided by financing activities	17,930	19,626	11,334	76,615
Net (decrease) increase in cash and cash equivalents	5,918	8,941	(4,645)	10,572
Cash and cash equivalents at beginning of period	358	6,276	15,217	—
Cash and cash equivalents at end of period	$ 6,276	$ 15,217	$ 10,572	$ 10,572
Supplemental disclosure of cash flows information:				
Cash paid for interest	$ 2	$ 9	$ 44	$ 62
Noncash financing and investing activities:				
Accretion on redeemable preferred stock	—	—	2	105
Purchased leasehold improvements and equipment in accounts payable	—	749	—	769
Common stock issued to acquire goods or services	5	—	932	1,654
Issuance of common stock dividend to Series AA preferred shareholders	1	1	1	5
Assets acquired under capital lease	12	114	282	462

See accompanying notes to consolidated financial statements.

NewLink Genetics Corporation and Subsidiary
(A Development Stage Enterprise)

Consolidated Statements of Cash Flows

(In thousands, except share and per share data)

(unaudited)

	Six Months Ended June 30,		Cumulative from June 4, 1999 (inception) through June 30, 2011
	2010	2011	
Cash Flows From Development Activities			
Net loss	$ (7,238)	$ (8,292)	$ (72,223)
Adjustments to reconcile net loss to net cash used in development activities:			
Share-based compensation	809	979	3,783
Depreciation and amortization	266	348	2,622
In-process research and development expenses—OncoRx	—	—	1,428
In-process research and development expenses—Reconstitute	—	—	201
Forgiveness of debt	—	—	(449)
Forgiveness of notes receivable from related parties	—	—	350
Changes in operating assets and liabilities:			
Prepaid expenses	1,176	(429)	(1,388)
State research and development credit receivable	(45)	(140)	(370)
Interest due on notes receivable	16	8	—
Other receivables	—	65	(539)
Accounts payable	(285)	(240)	(437)
Accrued expenses and deferred rent	(259)	(190)	2,315
Net cash used in development activities	(5,560)	(7,891)	(64,707)
Cash Flows From Investing Activities			
Purchase of investments	(250)	—	(8,800)
Sale of investments	—	2,019	8,550
Notes receivable from related parties	500	—	(350)
Purchase of equipment	(2,765)	(54)	(6,542)
Cash paid for OncoRx	—	—	(120)
Net cash provided by (used in) investing activities	(2,515)	1,965	(7,262)
Cash Flows From Financing Activities			
Cash received from noncontrolling interest investment	304	—	3,479
Issuance of common stock	—	—	192
Issuance of common stock from exercise of stock options	19	—	140
Issuance of common stock from exercise of warrants	—	—	3,113
Repurchase of common stock	—	—	(501)
Repayments (advances) of notes receivable for common stock	—	13	—
Proceeds from subsidiary common stock option exercise	62	—	141
Proceeds from preferred stock (including deposits)	—	5,000	67,743
Proceeds from notes payable	1,100	—	7,759
Principal payments on debt	(22)	(48)	(325)
Payments under capital lease obligations	(33)	(61)	(222)
Net cash provided by financing activities	1,430	4,904	81,519
Net (decrease) increase in cash and cash equivalents	(6,645)	(1,022)	9,550
Cash and cash equivalents at beginning of period	15,217	10,572	—
Cash and cash equivalents at end of period	$ 8,572	$ 9,550	$ 9,550
Supplemental disclosure of cash flows information:			
Cash paid for interest	$ 17	$ 15	$ 77
Noncash financing and investing activities:			
Accretion on redeemable preferred stock	—	5	110
Purchased leasehold improvements and equipment in accounts payable	39	0	769
Common stock issued to shareholders of OncoRx as part of acquisition	—	—	1,654
Issuance of common stock dividend to Series AA preferred shareholders	—	—	5
Assets acquired under capital lease	—	75	537

See accompanying notes to consolidated financial statements.

NewLink Genetics Corporation and Subsidiary
(A Development Stage Enterprise)

Notes to Consolidated Financial Statements

(Information as of June 30, 2011, for the six-month periods ended June 30, 2011 and 2010, and for the cumulative period June 4, 1999 (inception) through June 30, 2011 is unaudited)

1. Description of Business and Development Stage Activities

On June 4, 1999, NewLink Genetics Corporation (NewLink) was incorporated as a Delaware corporation. NewLink was formed for the purpose of developing treatments for cancer and other diseases. NewLink initiated operations in April of 2000, which primarily consist of research and development.

In 2005, NewLink created a wholly owned subsidiary, BioProtection Systems Corporation (BPS). NewLink contributed certain licensing agreements and other intangible assets for BPS to create vaccines against potential biological terror threats. During 2006, BPS granted options to the founders of NewLink and employees and consultants of BPS to acquire shares of BPS common stock. A portion of these options were exercised during 2008 and 2009, which diluted NewLink's ownership. At December 31, 2009, NewLink owned 72% of BPS and on an as-if-converted-to-common-stock basis, NewLink's ownership of BPS would be 63%. At December 31, 2010, NewLink owned 71% of BPS and on an as-if-converted-to-common-stock basis, NewLink's ownership of BPS would be 64%. On January 7, 2011, NewLink acquired all of the minority interest in BPS, by merging a newly-formed subsidiary of NewLink with BPS, with BPS as the surviving corporation resulting in NewLink's owning all the outstanding capital stock of BPS. See note 20.

NewLink and its subsidiary (the Company) are development stage enterprises and are devoting substantially all of their efforts toward research and development.

The Company has never earned revenue from sales of its drugs under development. The Company has, from June 4, 1999 (inception) through December 31, 2010 generated a cumulative deficit of $62.7 million. The accompanying financial statements for the year ended December 31, 2010 have been prepared assuming the Company will continue as a going concern. The generation of additional financing will be necessary for the Company to continue operations in the future. During the years ended December 31, 2010 and 2009, the Company received financing of $9.8 million and $19.6 million, respectively. During the year ended December 31, 2010, BPS received financing of $900,000.

The Company incurred a net loss of $8.3 million for the six months ended June 30, 2011, and from inception through June 30, 2011 has generated a cumulative deficit of $71.7 million. The Company has managed its liquidity needs during its development stage to date through a series of capital market transactions, including raising $5 million in June 2011 from the sale of shares of the Company's Series E preferred stock. The accompanying financial statements as of and for the six months ended June 30, 2011 have been prepared assuming the Company will continue as a going concern. The Company anticipates that its existing capital resources as of June 30, 2011 will be adequate to satisfy its liquidity requirements through June 30, 2012. If available liquidity is not sufficient to meet the Company's operating obligations as they come due, management's plans include pursuing alternative funding arrangements and/or reducing expenditures as necessary to meet the Company's cash requirements. However, there is no assurance that, if required, the Company will be able to raise additional capital or reduce discretionary spending to provide the required liquidity. Failure by the Company to successfully execute its plans or otherwise address its liquidity needs, including obtaining an extension of the due date of the $6 million note due to the Iowa Department of Economic Development (see note 7), may have a material adverse affect on its business and financial position, and may materially affect the Company's ability to continue as a going concern.

NewLink Genetics Corporation and Subsidiary
(A Development Stage Enterprise)

Notes to Consolidated Financial Statements (Continued)

(Information as of June 30, 2011, for the six-month periods ended June 30, 2011 and 2010, and for the cumulative period June 4, 1999 (inception) through June 30, 2011 is unaudited)

The Company's Board of Directors has approved the filing of a registration statement on Form S-1 with respect to a proposed initial public offering (IPO) of its common stock. There is no assurance that additional financing will be consummated or obtained in sufficient amounts or on acceptable terms to meet the Company's needs.

2. Significant Accounting Policies

(a) Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles (U.S. GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

(b) Principles of Consolidation

The consolidated financial statements include the financial statements of NewLink and its majority-owned subsidiary. All significant intercompany balances and transactions have been eliminated in consolidation.

(c) Cash and Cash Equivalents

For the purposes of the consolidated statements of cash flows, the Company considers all highly liquid debt instruments with an original maturity of three months or less to be cash equivalents. Cash equivalents of $9.6 million, $10.6 million and $15.2 million at June 30, 2011, December 31, 2010 and December 31, 2009, respectively, consist of money market accounts. Cash received for deposits on sales of equity securities is classified as restricted cash until the shares are issued. No cash is restricted at June 30, 2011, December 31, 2010 and December 31, 2009.

(d) Certificates of Deposit

Certificates of deposit have original maturities of greater than three months. Certificates of deposit are classified as held-to-maturity with due dates through 2011 and are presented at amortized cost, which approximates fair value.

(e) Prepaid Expenses

Prepaid expenses includes costs directly attributable to the Company's offering of its equity securities. In accordance with FASB Accounting Standards Codification (ASC) 340-10, *Other Assets and Deferred Costs*, these costs are deferred and capitalized as part of prepaid expenses. Costs attributable to the equity offerings will be charged against the proceeds of the offering once completed.

NewLink Genetics Corporation and Subsidiary
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Notes to Consolidated Financial Statements (Continued)

(Information as of June 30, 2011, for the six-month periods ended June 30, 2011 and 2010, and for the cumulative period June 4, 1999 (inception) through June 30, 2011 is unaudited)

(f) Leasehold Improvements and Equipment

Leasehold improvements and equipment are stated at cost. Equipment under capital leases is stated at the present value of minimum lease payments.

Depreciation on all leasehold improvements and equipment is calculated on the straight-line method over the shorter of the lease term or estimated useful life of the asset. Computer equipment has useful lives of three to five years and lab equipment has useful lives of three to seven years.

During 2009, the Company added leasehold improvements to a new facility under an operating lease. As part of the lease, the lessor approved a tenant improvement allowance of $943,000 for improvements made to the facility. This amount was receivable from the lessor at December 31, 2009 and recorded in other receivables. The receivable was subsequently collected from lessor in January 2010. The offsetting amount is recorded as deferred rent on the financial statements and will reduce rent expense over the remaining term of the lease. The Company incurred costs in excess of the tenant improvement allowance during 2009.

(g) Impairment of Long-Lived Assets

Long-lived assets are reviewed for impairment whenever changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset group to future net undiscounted cash flows expected to be generated by the asset group, primarily relating to proceeds for selling the assets. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Assets to be disposed of are reported at the lower of the carrying amount or fair value less costs to sell.

(h) Revenue Recognition

The Company receives payments from government entities under its grants and contracts with the National Institute of Health and the Department of Defense. These agreements provide the Company cost reimbursement for certain types of expenditures in return for research and development activities over a contractually defined period. Revenues are recognized in the period during which the related costs are incurred, provided that the conditions under which the cost reimbursement was provided have been met and we have only perfunctory obligations outstanding. During the six months ended June 30, 2011 and years ended December 31, 2010, 2009, 2008, from inception through December 31, 2010 and since inception, the Company has earned $1.1 million, $2.1 million, $934,000, $633,000, $3.8 million, and $5.0 million in grant revenue, respectively.

(i) Expenses Accrued Under Contractual Arrangements with Third Parties; Accrued Clinical Expenses

The Company estimates its accrued expenses through a process of reviewing open contracts and purchase orders, communicating with personnel to identify services that have been performed and estimating the level of service performed and the associated cost incurred for the service that may not be invoiced from the provider. The estimates of accrued expenses as of each balance sheet date are based on

NewLink Genetics Corporation and Subsidiary
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Notes to Consolidated Financial Statements (Continued)

(Information as of June 30, 2011, for the six-month periods ended June 30, 2011 and 2010, and for the cumulative period June 4, 1999 (inception) through June 30, 2011 is unaudited)

facts and circumstances known at that time. Such estimates are periodically confirmed with the service providers to verify accuracy.

The Company bases its expenses related to clinical trials on estimates of the services received and efforts expended pursuant to contracts with multiple research institutions and contract research organizations that conduct and manage clinical trials on behalf of the Company. The Company does not expect its estimates to be materially different from amounts actually incurred.

(j) Pro Forma Stockholders' Equity (Unaudited)

In October 2010, the Company's Board of Directors authorized the filing of a registration statement with the Securities and Exchange Commission (SEC) to sell shares of its common stock to the public in an IPO. The Company filed an initial S-1 registration statement with the SEC on December 21, 2010. The pro forma data gives effect to: (i) the issuance of 55,238 shares of Series E preferred stock in connection with our acquisition of the minority interest in our majority owned subsidiary, BPS, which were issued on August 12, 2011 after the closing of the acquisition; (ii) the conversion of all of our outstanding convertible preferred stock into an aggregate 10,710,850 shares of common stock, which will take place automatically upon the closing of this offering in accordance with the terms of our preferred stock; and (iii) the issuance of 22,603 shares of common stock payable as dividends on shares of Series AA preferred stock issuable as of October 21, 2011. Pro forma equity includes the effect of this transaction as if it occurred on June 30, 2011 at an initial public offering price of $7.00 per share. Pro forma net loss per share and weighted-average pro forma shares outstanding include the effect of this transaction as if it occurred on January 1, 2010.

(k) Research and Development

Research and development costs are expensed as incurred. Certain research and development expenses are refundable from the state of Iowa without regard to income. State research and development credits of $140,000, $230,000, $170,000, $272,000, $1.6 million, and $1.7 million at June 30, 2011, December 31, 2010, 2009, and 2008, from inception through December 31, 2010 and since inception through June 30, 2011, respectively, are reflected as a reduction of research and development expenses on the accompanying consolidated statements of operations.

(l) Patents

The Company generally applies for patent protection on processes and products. Patent application costs are expensed as incurred as a component of research and development expense, as recoverability of such expenditures is uncertain.

(m) Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates

expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in operating results in the period that includes the enactment date.

The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. As of June 30, 2011 and December 31, 2010 and 2009, the Company has not recognized any uncertain tax positions.

(n) Stock Option Valuation

The Company is required to estimate the grant-date fair value of stock options issued to employees and recognize this cost over the period these awards vest. The Company estimates the fair value of each option granted using the Black-Scholes option pricing model. Generally, the Company has issued employee awards with a graded vesting schedule that vest over time. For these awards, the Company records compensation cost on a straight-line basis over the vesting period for the entire award.

The Company has issued awards to nonemployee consultants and advisors. All grants to nonemployees are valued using the same fair value method that the Company uses for grants to employees. The compensation cost recognized on these awards is determined on the later of the vesting of the award or completion of services by the nonemployee.

Following is a description of the inputs for the Black-Scholes model:

Exercise Price

The Company's stock options are granted with an exercise price as determined by the Board of Directors.

Expected Term (in Years)

The expected term of a stock option is the period of time for which the option is expected to be outstanding. The Company has a large number of options outstanding and has no secondary market. Therefore, the Company used the simplified method under current SEC guidance to estimate the expected term. The simplified method uses the midpoint between the fully vested date and the forfeiture date as the expected term for the employee and nonemployee director grants. For nonemployee grants, the contractual life of the option is used.

Risk-Free Interest Rate

The Company uses the average yield on current U.S. Treasury instruments with terms that approximate the expected term of the stock options being valued.

Expected Dividend Yield

The expected dividend yield for all of the Company's stock option grants is 0%, as the Company has not declared a cash dividend since inception and has no plans to declare a dividend.

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Notes to Consolidated Financial Statements (Continued)

(Information as of June 30, 2011, for the six-month periods ended June 30, 2011 and 2010, and for the cumulative period June 4, 1999 (inception) through June 30, 2011 is unaudited)

Expected Volatility

Since the Company is a privately held firm, the estimated future expected volatility for each stock option valuation utilizes volatility rates of similar publicly traded companies considered to be in the same peer group.

Forfeitures

The share-based compensation expense has been reduced for estimated forfeitures. The estimated forfeiture rate is based on historical experience of the Company's option plan, which the Company expects to continue at the current level, and any adjustments in the forfeiture rate in the future will result in a cumulative adjustment in the period that this estimate is changed. Ultimately, the total compensation expense recognized for any given stock-based award over its vesting period will only be for those shares that actually vest.

(o) Noncontrolling Interest

The Company has consolidated 100% of the assets, liabilities, and income from subsidiaries for which the Company has a majority voting interest. The Company has recorded a noncontrolling interest in subsidiaries on the consolidated balance sheets and noncontrolling interest in net loss of subsidiaries on the consolidated statements of operations representing the noncontrolling interest's equity and their proportionate share of net loss.

In December 2007, the Financial Accounting Standards Board (FASB) issued new authoritative guidance on the presentation and disclosures of noncontrolling interests in consolidated financial statements to improve the relevance, comparability, and transparency. The Company adopted the authoritative guidance on noncontrolling interests on January 1, 2009. As a result of the adoption, the Company now allocates a portion of the loss from its subsidiary to the noncontrolling interest. This creates a deficit balance from operations, which was not allowed under previous accounting literature. The amount allocated to the noncontrolling interest was $1,300 during the six months ended June 30, 2011 and $349,000 and $233,000 during the years ended December 31, 2010 and 2009, respectively. Had the Company continued to apply previous accounting literature, the loss for the six months ended June 30, 2011 and the years ended December 31, 2010 and December 31, 2009 would be $8.3 million, $16.6 million and $10.2 million, respectively, as none of the loss would be allocated to the noncontrolling interest as it would create a deficit balance. The noncontrolling interest was eliminated on January 7, 2011. See note 20.

(p) Segments

The Company operates in one segment. NewLink and its subsidiary BPS conduct research and development activities based from facilities located in Ames, Iowa. The Ames location also includes corporate headquarters for NewLink and BPS. The companies conduct preclinical and clinical research in the biopharmaceutical industry. Management uses cash flow as the primary measure to manage its business and does not segment its business for internal reporting or decision-making.

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Notes to Consolidated Financial Statements (Continued)

(Information as of June 30, 2011, for the six-month periods ended June 30, 2011 and 2010, and for the cumulative period June 4, 1999 (inception) through June 30, 2011 is unaudited)

(q) Financial Instruments and Concentrations of Credit Risk

The fair values of cash and cash equivalents, certificates of deposit, prepaid expenses, receivables, accounts payable, and accrued liabilities, which are recorded at cost, approximate fair value based on the short-term nature of these financial instruments. Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash and cash equivalents, and certificates of deposit. Cash and cash equivalents are held by financial institutions and are federally insured up to certain limits. At times, the Company's cash and cash equivalents balance exceeds the federally insured limits. To limit the credit risk, the Company invests its excess cash primarily in high quality securities such as money market funds. The fair value of notes payable and capital lease obligations was $6.1 million, $7.3 million, and $7.3 million as of December 31, 2009 and 2010, and June 30, 2011, respectively.

(r) Unaudited Interim Financial Data

The accompanying balance sheet as of June 30, 2011, statements of operations and of cash flows for the six months ended June 30, 2010 and 2011 and for the period from June 4, 1999 (inception) through June 30, 2011 and the statements of equity (deficit) for the six months ended June 30, 2011 and for the period from June 4, 1999 (inception) through June 30, 2011 are unaudited. The unaudited interim financial statements have been prepared on a basis consistent with the audited financial statements and, in the opinion of management, reflect all adjustments (consisting of normal recurring adjustments) considered necessary to state fairly the Company's financial position as of June 30, 2011 and the results of operations and cash flows for the six months ended June 30, 2010 and 2011 and for the period from June 4, 1999 (inception) through June 30, 2011. The financial data and other information disclosed in these notes to the financial statements related to the six month periods ended June 30, 2010 and 2011 and for the period from June 4, 1999 (inception) through June 30, 2010 are unaudited. The results for the six months ended June 30, 2011 are not necessarily indicative of the results to be expected for the year ending December 31, 2011 or for any other interim period.

(s) Recent Accounting Pronouncements

In April 2009, FASB issued guidance that expands the fair value disclosures required for financial instruments to interim reporting periods for publicly traded companies, including disclosure of the significant assumptions used to estimate the fair value of financial instruments. We adopted this guidance effective June 30, 2010. The adoption did not impact our financial position or results of operations.

In January 2010, the FASB issued guidance to amend the disclosure requirements related to recurring and nonrecurring fair value measurements. The amended guidance requires disclosure of transfers of assets and liabilities between Level 1 and Level 2 of the fair value measurement hierarchy, including the reasons and the timing of the transfers and information on purchases, sales, issuances, and settlements on a gross basis in the reconciliation of the assets and liabilities measured under Level 3 of the fair value measurement hierarchy. The Company adopted the new disclosure requirements on January 1, 2010, except for the requirement concerning gross presentation of Level 3 activity, which is effective for fiscal years beginning after December 15, 2010. The adoption of the Level 1 and Level 2 disclosure guidance did not have an impact on the Company's consolidated financial position or results of operations.

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In recent exposure drafts, the International Accounting Standards Board (IASB) and the FASB proposed a new approach to the accounting for leases. From a lessee's perspective, the exposure drafts propose to abolish the distinction between operating and finance/capital leases. In its place, a right-of-use model would be used. This proposal, as currently written, would require the lessee to recognize an asset for its right to use the underlying leased asset and a liability for its obligation to make lease payments. This would lead to an increase in assets and liabilities for leases currently classified as an operating lease and could also lead to a change in timing as to when the expense is recognized. This exposure draft is not yet finalized.

3. Immaterial Corrections

The Company has corrected immaterial errors in the historical financial statements related to the stock compensation and research and development expenses. The errors related to the fair value and volatility assumptions used in the stock compensation calculations, the allocation of these expenses to research and development activities, adjusting certain research and development expenses, and the correction of other classification errors within research and development expenses and general and administrative expenses. In accordance with the SEC's Staff Accounting Bulletin (SAB) No. 99, *Materiality*, and SAB No. 108, *Considering the Effects of Prior Year Misstatements when Quantifying Misstatements in Current Year Financial Statements*, management evaluated the materiality of the errors from qualitative and quantitative perspectives and concluded that the errors were immaterial to the Company's historical financial statements. Consequently, the Company has revised its historical financial statements for the years ended December 31, 2008 and 2009 as noted in the table below. The Company has also revised the disclosure of the inputs to the Black-Scholes model for estimating the fair value of stock options to disclose the assumptions now used in the calculation. The impact on beginning deficit accumulated during the development stage and additional paid-in capital for 2008 was $318 and $54, respectively. The errors also had an impact on the cumulative balances from inception as of December 31, 2009.

2008	As previously reported	Adjustments	As adjusted
Research and development	$ 5,451	$ 339	$ 5,790
General and administrative	4,598	(660)	3,938
Net loss	(9,162)	(320)	(8,842)
Net loss per share	(2.94)		(2.84)
Additional paid-in capital	2,125	(54)	2,071
Deficit accumulated during the development stage	(37,520)	318	(37,202)
2009			
Research and development	$ 5,559	$ 2,019	$ 7,578
General and administrative	5,192	(1,487)	3,705
Net loss	(9,442)	532	(9,974)
Net loss per share	(2.98)		(3.16)
Additional paid-in capital	2,800	214	3,014
Deficit accumulated during the development stage	(46,962)	(214)	(47,176)

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Subsequent to the issuance of the 2010 financial statements, the Company identified errors related to stock compensation, research and development expenses, and general and administrative expenses in the 2010 financial statements. The errors related to the fair value and volatility assumptions used in the stock compensation calculations, the allocation of these expenses to research and development activities, the recognition of certain general and administrative expenses, and the correction of other classification errors within research and development expenses. Management evaluated the materiality of the errors from qualitative and quantitative perspectives in accordance with SAB No. 99 and concluded that the errors were immaterial to the Company's historical financial statements. The Company has revised its 2010 financial statements as noted in the table below. The errors also had an impact on the cumulative balances from inception as of December 31, 2010.

	As previously reported	Adjustments	As adjusted
Prepaid expenses	$ 1,020	$ 61	$ 959
Additional paid-in capital	6,753	621	7,374
Deficit accumulated during the development stage	(62,707)	682	(63,389)
Research and development	13,249	(583)	12,666
General and administrative	5,023	1,051	6,074
Net loss	(15,745)	468	(16,213)
Net loss per share	(4.70)		(4.84)

4. Acquisition of OncoRx Corporation

On June 21, 2005, NewLink acquired all of the outstanding shares of OncoRx Corporation (OncoRx) in order to gain access to certain small molecule technologies. NewLink provided the following consideration to the OncoRx shareholders:

- 371,720 shares of NewLink common stock payable in four installments. The first installment was 61,953 shares at closing. The second, third, and fourth installments result in the delivery of 61,953, 123,907, and 123,906 shares, respectively, conditional upon the achievement of certain development milestones as described in the purchase agreement.
- Cash consideration of $120,000 at closing.

During 2005, the cash and first installment of shares noted above were delivered to OncoRx. During 2006, NewLink issued the second installment of 61,953 shares of common stock with a fair value of $130,000. All cash and stock consideration paid to the OncoRx shareholders has been recorded as research and development expense at fair value when delivered as there is no alternative use for the acquired research and development activities. There were no other assets or liabilities of OncoRx at the date of acquisition. Upon the achievement of the development milestones, the Company will record the fair value of the third and fourth installments of common stock issued as research and development expense.

On July 29, 2010, the Company entered into an amendment of the stock purchase agreement with OncoRx to reduce the remaining shares payable under the third and fourth installments by accelerating the payment of such installments to the effective date of the amendment. In consideration for the accelerated stock payment, the Company received a 30% discount on the remaining shares payable, reducing total

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shares payable under the agreement by 74,344 shares. A total of 173,469 shares were issued with total fair value of $819,000. Through this acquisition, the Company acquired technology related to its IDO pathway inhibitor product candidates, subject to a licensing agreement with the Lankenau Institute for Medical Research.

5. Notes Receivable for Common Stock

Notes receivable for common stock at June 30, 2011 and December 31, 2010 and 2009 were $0, $13,000 and $38,000, respectively. The notes were issued in connection with the sale of common stock to officers of the Company and, accordingly, are shown as a reduction of shareholders' equity (deficit). All of the notes are secured by the common stock and are guaranteed by the officer's personal assets. The outstanding notes for NewLink common stock were due in April 2005 and were subsequently extended for an additional five years through April 2010. Subsequent to April 2010, a decision was made to forgive a portion of these notes, subject to Board approval. All of the notes for NewLink common stock bear interest at rates from 5.00% to 6.71%, payable annually in arrears. Effective as of July 2, 2010, $25,000 of the notes and accrued interest of $10,000 were forgiven and a bonus of $12,000 was granted to cover the resulting tax liability. To offset the forgiveness and the bonus payment, outstanding options to purchase Company common stock were modified to increase the aggregate exercise price by an amount equal to the amount of the forgiveness plus the bonus paid.

6. Leases

(a) Capital Leases

The following is an analysis of the leased property under capital leases by major class (in thousands):

Class of property	Asset balances at December 31 2009	Asset balances at December 31 2010	Asset balances at June 30 2011
Lab equipment	$ 126	$ 409	$ 484
Leasehold improvements	27	27	27
Total property under capital leases	153	436	511
Less accumulated depreciation and amortization	72	67	101
Capital leased assets, net	$ 81	$ 369	$ 410

The depreciation and amortization reflected above has been recorded as depreciation and amortization expense in these consolidated financial statements.

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The following is a schedule by years of the future minimum lease payments under capital leases together with the present value of the net minimum lease payments as of December 31, 2010 (in thousands):

Year ending December 31:	
2011	$ 135
2012	114
2013	40
Total minimum lease payments	289
Less amount representing interest	28
Present value of net minimum lease payments	$ 261

The present value of net minimum lease payments as of December 31, 2009 is reflected in the balance sheet as current and long-term obligations under capital leases of $35,000 and $78,000, respectively. The present value of net minimum lease payments as of December 31, 2010 is reflected in the balance sheet as current and long-term obligations under capital leases of $116,000 and $145,000, respectively. The present value of net minimum lease payments as of June 30, 2011 is reflected in the balance sheet as current and long-term obligations under capital leases of $122,000 and $151,000, respectively.

(b) Operating Leases

The Company has noncancelable facilities operating leases that expired at various times between February 2009 and June 2009, which are now being leased on a month-to-month basis. In addition, the Company entered into a new lease for additional space in October 2009 expiring in 2015. Under the terms of the lease, the Company has the option to extend the lease for three additional five-year periods upon the same terms as the base lease. The Company also leases laboratory space from one of its licensors. Lease expense is recognized on a straight-line basis. Rental expense for operating leases during the six month period ending June 30, 2011 and the years ended December 31, 2010, 2009, 2008, from inception through December 31, 2010, and since inception through June 30, 2011 was $322,000, $601,000, $294,000, $396,000, $2.4 million and $2.7 million respectively.

Future minimum lease payments under the noncancelable operating leases (with initial or remaining lease terms in excess of one year) as of December 31, 2010 are as follows (in thousands):

Year ending December 31:	
2011	$ 266
2012	269
2013	271
2014	271
2015	23
	$ 1,100

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7. Long-Term Debt

March 2005 Iowa Department of Economic Development Loan

In March 2005, the Company entered into a $6.0 million forgivable loan agreement with the Iowa Department of Economic Development (IDED). Under the agreement, in the absence of default, there will be no principal or interest payments due until the completion date for the project, which is March 18, 2012, under the current one-year extension granted by the IDED. The project is to provide assistance to the Company for research and product development activities at its Iowa State University Research Park facility. The project calls for the creation of 315 positions and retention of 35 positions with total project expenditures of $189.9 million for clinical trials, research and development activities, building construction, equipment purchases, and other working capital needs.

If, as of March 18, 2012, which is the current project completion date under the agreement, the IDED determines the Company has fulfilled all the job creation and maintenance terms and project expenditure requirements of the loan agreement, the loan will be forgiven. However, on the project completion date the Company will be required to repay the greater of approximately $17,000 for each of the 350 jobs it fails to create and maintain as of that date or a percentage of the $6.0 million advanced under the agreement equal to the percentage of any shortfall in its obligation to expend $189.9 million of project expenditures. Five years following the project completion date, the Company will be required to repay approximately $17,000 for each of the 350 jobs the IDED determines it fails to maintain as of that date. In the event of default, including failure to repay any amounts under the loan when due, the Company will be required to repay the note including 6% interest per annum beginning at the date of default.

The Company has not currently fulfilled the requirements for loan forgiveness under this agreement. Absent an amendment granted by the IDED, the Company would have to repay up to $4.7 million on or after March 18, 2012. There is no guarantee that the IDED will agree to further extend the completion date under the agreement. If the amounts under the loan become due in March 2012, it would likely have a material adverse effect on the Company's cash position.

Under the agreement, the Company is obligated to pay a minimum of 0.25% royalties on all gross revenues of its products with a cumulative maximum royalty amount due of $3.2 million. Royalties the Company pays will first offset amounts the Company is required to repay for amounts of the loan not forgiven and then go toward reducing the total cumulative royalty to be paid. The Company is also obligated to maintain its business in the State of Iowa while amounts remain outstanding under the loan. Substantially all of the Company's assets are pledged against this loan and the Company is required to submit audited financial statements within 90 days of year-end. The Company has failed to meet this covenant each year and has obtained a waiver from the IDED each year.

The original project completion date for the project was March 18, 2010 and was initially extended to March 18, 2011 and currently to March 18, 2012 by amendments to the agreement approved by the IDED.

2009 Iowa State University Research Park Loan

In 2009, the Company executed a promissory note in favor of Iowa State University Research Park, or ISURP, in an original principal amount of $800,000. The note represents amounts owed by the Company to ISURP for certain improvements that were made to facilities the Company leases from ISURP. The

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principal and interest owed under the note is amortized over an eight-year period. Interest is payable monthly under this promissory note, initially at a rate of 3.0% per annum and increasing to 5.0% per annum after five years from the date the improvements were completed. ISURP may accelerate all amounts owed under the note upon an event of default, including the Company's uncured material breach of the terms of the note or the lease or upon early termination of the lease. In the event of a default under the note, amounts owed under the note will bear interest at 8.0% per annum. No amounts were outstanding under this note as of December 31, 2009. The balance outstanding under this note at December 31, 2010 was $733,000. The balance outstanding under this note at June 30, 2011 is $687,000.

March 2010 City of Ames Forgivable Loan

In March 2010, the Company entered into a $400,000 forgivable loan agreement with the City of Ames, Iowa and the Ames Chamber of Commerce, jointly, as lenders. The project provides the Company with financial assistance to construct new facilities within the Ames city limits. In the absence of a default, there are no principal or interest payments due until the expected completion date for the project, which is March 10, 2015.

The project calls for the Company to create or retain at least 70 full-time jobs located in Ames, Iowa as of March 10, 2012 and to create or maintain at least 150 full-time positions located in Ames, Iowa as of March 10, 2015. The agreement also calls for the Company to enter into a five-year building lease with the option for extension for an additional five years of not less than 20,000 square feet within the corporate limits of the City of Ames by March 10, 2015. If, as of March 10, 2015, the Company has fulfilled the terms of the loan agreement, the loan will be forgiven. If on March 10, 2012 and March 10, 2015, the Company has failed to create or retain at least 70 full-time jobs and 150 full-time jobs in Ames, Iowa, respectively, the Company will be required to repay approximately $3,100 per job not created or retained following the respective date. As of June 30, 2011, $300,000 of the total $400,000 forgivable loan was advanced to the Company with the final $100,000 pending certification to the City of Ames regarding the creation of a threshold level of jobs. In the event of default, including failure to repay any amounts under the loan when due, the Company will be required to repay the note, including 6.5% interest per annum, beginning at the date of default.

8. Common Stock

The holders of common stock are entitled to one vote per share on all matters to be voted upon by the NewLink stockholders. Subject to preferences applicable to outstanding preferred stock, the holders of common stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by the NewLink Board of Directors.

NewLink and its major investors have a right of first refusal with respect to certain sales of shares by existing stockholders. NewLink's major investors have a right of first refusal to acquire certain equity securities issued by NewLink. These rights expire with an IPO.

In the event of liquidation, dissolution, or winding up of NewLink, the holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities subject to prior distribution rights of the preferred stock.

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On January 7, 2011, the Shareholders approved an amendment to NewLink's Restated Certificate of Incorporation granting the Board of Directors authority to approve a reverse split of shares of issued and outstanding common stock between 1.5-for-1 and 3.0-for-1.

9. Subsidiary Common Stock and Common Stock Preferences

Subject to preferences applicable to outstanding preferred stock, the holders of BPS common stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by the BPS Board of Directors. BPS has issued two classes of common stock: Series A common stock and Series B common stock. All shares of Series A common stock are held by NewLink. The holders of BPS Series A and Series B common stock are entitled to one vote per share on all BPS matters to be voted upon by BPS's stockholders.

In the event of any liquidation, dissolution, or winding up of BPS, whether voluntary or involuntary, the holders of Series A common stock will be entitled to receive $0.10 per share, plus any declared and unpaid dividends out of the assets of BPS available for distribution, before any payment of any amount to holders of the Series B common stock. In the event of liquidation, dissolution, or winding up of BPS, the holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities subject to prior distribution rights of the preferred stock.

On January 7, 2011, NewLink acquired all of the outstanding shares of BPS Series B common stock. See note 20.

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10. Preferred Stock

NewLink's Amended and Restated Certificate of Incorporation authorizes the issuance of 17,166,666 shares of preferred stock, $0.01 par value. The NewLink Board of Directors has the authority to issue the preferred stock in one or more series and to fix the voting power and such designations, preferences, and rights subject to approval of outstanding preferred series shareholders. The following is a summary of all preferred stock issued by NewLink and outstanding at June 30, 2011 and December 31, 2010 and 2009:

		as of June 30, 2011 (in thousands, except share and per share data)			
	Issue Price per Share	Shares Authorized	Issued and Outstanding Shares	Liquidation Preference	Carrying Value
Series A	$ 2.50	450,000	420,000	$ 1,050	$ 1,030
Series AA	1.80	1,250,000	1,217,175	2,191	2,191
Series AAA	2.25	377,777	377,410	849	849
Series B	2.50	3,200,000	2,191,193	5,478	5,478
Series BB	4.25	2,000,000	1,883,337	8,004	8,004
Series C	5.00	6,000,000	6,000,000	30,000	30,000
Series D	5.00	1,500,000	1,500,000	7,500	7,500
Series E	31.25	1,000,000	680,998	21,281	21,250
Blank Check Preferred	—	1,388,889	—	—	—
Total			14,270,113	$ 76,353	$ 76,302

		as of December 31, 2010 (in thousands, except share and per share data)			
	Issue Price per Share	Shares Authorized	Issued and Outstanding Shares	Liquidation Preference	Carrying Value
Series A	$ 2.50	450,000	420,000	$ 1,050	$ 1,030
Series AA	1.80	1,250,000	1,217,175	2,191	2,191
Series AAA	2.25	377,777	377,410	849	849
Series B	2.50	3,200,000	2,191,193	5,478	5,478
Series BB	4.25	2,000,000	1,883,337	8,004	8,004
Series C	5.00	6,000,000	6,000,000	30,000	30,000
Series D	5.00	1,500,000	1,500,000	7,500	7,500
Series E	31.25	1,000,000	248,320	7,760	7,723
Blank Check Preferred	—	1,388,889	—	—	—
Total			13,837,435	$ 62,832	$ 62,775

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		as of December 31, 2009 (in thousands, except share and per share data)			
	Issue Price per Share	Shares Authorized	Issued and Outstanding Shares	Liquidation Preference	Carrying Value
Series A	$ 2.50	450,000	420,000	$ 1,050	$ 1,030
Series AA	1.80	1,250,000	1,224,967	2,205	2,205
Series AAA	2.25	377,777	377,410	849	847
Series B	2.50	3,200,000	2,191,193	5,478	5,478
Series BB	4.25	2,000,000	1,906,866	8,104	8,104
Series C	5.00	6,000,000	6,000,000	30,000	30,000
Series D	5.00	1,500,000	1,500,000	7,500	7,500
Blank Check Preferred	—	1,388,889	—	—	—
Total			13,620,436	$ 55,186	$ 55,164

On January 7, 2011, NewLink acquired all of the minority interest in BPS. See note 20. On June 20, 2011, the Company issued and sold to an investor 160,000 shares of Series E preferred stock at a purchase price of $31.25 per share, for aggregate consideration of $5.0 million (unaudited).

Between December 1, 2010 and December 13, 2010, the Company issued and sold to investors an aggregate of 248,320 shares of Series E preferred stock at a purchase price of $31.25 per share, for aggregate consideration of $7.8 million. The related offering costs of $37,000 were charged as an offset to the proceeds. The carrying value of the Series E preferred stock will be accreted to the liquidation amount by the date the shares are available to be redeemed. At an initial public offering price of $7.00 per share, each share of NewLink Series E preferred stock will convert into 5.252 shares of NewLink Common Stock.

On July 17, 2009, NewLink issued 1,500,000 shares of Series D convertible preferred stock at $5.00 per share for net proceeds of $7.5 million. The related offering costs were not significant and were charged to expense. NewLink also issued warrants to purchase 375,000 shares of common stock at $7.20 per share in conjunction with the issuance of Series D shares. On October 21, 2010, a stockholder exercised the warrant for 375,000 shares of common stock at an aggregate purchase price of $2.0 million. The exercise price of the warrant was reduced from $7.20 per share to $5.33 per share in 2010 in exchange for the holder's agreement to exercise the warrant at that time.

During 2009, NewLink collected $12.1 million for the sale of 2,413,379 shares of NewLink Series C preferred stock and $7.5 million for the sale of 1,500,000 shares of NewLink Series D preferred stock.

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Following is a summary of all redeemable preferred stock issuances through June 30, 2011:

	Redeemable Preferred Stock						
	Series AA	Series AAA	Series B	Series BB	Series C	Series D	Series E
Balance at June 4, 1999	$ —	$ —	$ —	$ —	$ —	$ —	$ —
No activity in 1999	—	—	—	—	—	—	—
Balance at December 31, 1999	—	—	—	—	—	—	—
No activity in 2000	—	—	—	—	—	—	—
Balance at December 31, 2000	—	—	—	—	—	—	—
Issuance of 1,224,967 shares of Series AA preferred stock (net of offering costs) (September 26, 2001)	2,179	—	—	—	—	—	—
Balance at December 31, 2001	2,179	—	—	—	—	—	—
Issuance of 377,410 shares of Series AAA preferred stock (net of offering costs) (January 21, 2002)	—	847	—	—	—	—	—
Accretion of redemption feature of preferred stock	6	—	—	—	—	—	—
Balance at December 31, 2002	2,185	847	—	—	—	—	—
Issuance of 2,191,193 shares of Series B preferred stock (net of offering costs) (February 7, 2003)	—	—	5,436	—	—	—	—
Accretion of redemption feature of preferred stock	6	—	—	—	—	—	—
Balance at December 31, 2003	2,191	847	5,436	—	—	—	—
Issuance of 1,313,619 shares of Series BB preferred stock (net of offering costs and receivables of $706,005) (December 27, 2004)	—	—	—	4,877	—	—	—
Accretion of redemption feature of preferred stock	5	—	—	—	—	—	—
Balance at December 31, 2004	2,196	847	5,436	4,877	—	—	—
Issuance of 593,247 shares of Series BB preferred stock (net of offering costs of $36,114) (January and February 2005)	—	—	—	3,192	—	—	—
Accretion of redemption feature of preferred stock	5	—	42	35	—	—	—
Balance at December 31, 2005	2,201	847	5,478	8,104	—	—	—
Accretion of redemption feature of preferred stock	4	—	—	—	—	—	—
Balance at December 31, 2006	2,205	847	5,478	8,104	—	—	—
No activity in 2007	—	—	—	—	—	—	—
Balance at December 31, 2007	2,205	847	5,478	8,104	—	—	—
Issuance of 3,586,621 shares of Series C preferred stock (net of offering costs of $13,530) (February through October 2008)	—	—	—	—	17,920	—	—
Balance at December 31, 2008	2,205	847	5,478	8,104	17,920	—	—
Issuance of 2,413,379 shares of Series C preferred stock (July through October 2009)	—	—	—	—	12,080	—	—
Issuance of 1,500,000 shares of Series D preferred stock (July 17, 2009)	—	—	—	—	—	7,500	—
Balance at December 31, 2009	2,205	847	5,478	8,104	30,000	7,500	—
Issuance of 248,320 shares of Series E preferred stock (net of offering costs) (December 1 through December 13, 2010)	—	—	—	—	—	—	7,723
Accretion of redemption feature of preferred stock	—	2	—	—	—	—	—
Conversion of preferred stock to common stock	(14)	—	—	(100)	—	—	—
Balance at December 31, 2010	2,191	849	5,478	8,004	30,000	7,500	7,723
Issuance of 436,304 shares of Series E preferred stock (January 7, 2011 and June 20, 2011)	—	—	—	—	—	—	13,635
Accretion of redemption feature of preferred stock	—	—	—	—	—	—	5
Conversion of preferred stock to common stock	—	—	—	—	—	—	(113)
Balance at June 30, 2011 (unaudited)	$ 2,191	$ 849	$ 5,478	$ 8,004	$ 30,000	$ 7,500	$ 21,250

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Prior to the acquisition by NewLink of the minority interest in BPS described in note 20, BPS had authority to issue stand-alone preferred stock to outside investors as discussed in note 12. The following is a summary of all preferred stock issued by BPS and outstanding at December 31, 2010:

Original issue	Date(s) issued	Shares issued	Offering price
Series A	January-February 2006	1,444,721	$1.75
Series B	2009-2010	2,341,644	$1.40-$1.75

11. Preferred Stock Preferences

Following is a summary of the preferences relating to the various series of NewLink preferred stock:

(a) Voting Rights

The Series A, AA, AAA, B, BB, C, D and E (collectively, the Series Preferred) vote on an as-if-converted-to-common-stock basis. Any action taken by the Board of Directors or others that would impact the holders of Series AA, B, BB, C, D or E shares must be approved by a majority of the outstanding shares held by Series AA, B, BB, C, D or E shareholders.

(b) Dividend Rights

Series A, AAA, B, BB, C, D and E stockholders, in preference to holders of common stock, are entitled to receive a noncumulative cash dividend of 8% of the original issue price per annum, payable only when, as, and if declared by the Board of Directors.

Series AA stockholders, in preference to holders of common stock, are entitled to receive a cumulative stock dividend of 0.017 shares of common stock for each outstanding share of Series AA. The dividend is paid at least annually. Dividends shall accrue monthly, and unpaid dividends shall be paid upon conversion of the Series AA to common stock. A total of 17,498, 6,992 and 6,992 shares of common stock are accrued for dividends on the Series AA stock as of June 30, 2011 and December 31, 2010 and 2009, respectively.

(c) Conversion Rights

The Series Preferred will automatically convert into common stock immediately upon the closing of an IPO of common stock pursuant to an effective registration statement filed by NewLink under the Securities Act of 1933 that generates aggregate gross proceeds of not less than $20.0 million. The Series Preferred may also convert to common stock upon a vote of action by a majority of the holders of the Series Preferred voting together as a single class on an as-if converted basis, or at the option of the holders. Persons holding 20% of NewLink 's common stock on an as-if converted basis can request NewLink file a registration statement.

Each share of Series A preferred stock will convert into approximately 0.661 shares of NewLink Common Stock; each share of Series AA, AAA and B preferred stock will convert into approximately 0.476 shares of NewLink Common Stock; each share of Series BB preferred stock will convert into approximately 0.522 shares of NewLink Common Stock; each share of NewLink Series C and D preferred stock will convert into approximately 0.543 shares of NewLink Common Stock; and each share of NewLink Series E preferred stock will convert into approximately 5.252 shares of NewLink Common Stock. These

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securities are subject to proportional adjustments for stock splits, stock dividends, recapitalizations, and other distributions of common stock of NewLink.

(d) Liquidation Preferences

In the event of any liquidation, dissolution, or winding up of NewLink, whether voluntary or involuntary, the holders of Series C, Series D and Series E will be entitled to receive $5.00 per share, $5.00 per share and $31.25 per share, respectively, plus any declared and unpaid dividends out of the assets of NewLink available for distribution before any payment of any amount to holders of the Series A, AA, AAA, B, BB (collectively, the Junior Preferred), or holders of common stock. If the assets available for distribution are insufficient to pay the holders of Series C, Series D and Series E preferred stock, then such holders will share ratably in any distribution of the assets of NewLink in proportion to the amounts that would have been payable with respect to their shares if all amounts payable with respect to such shares were paid in full.

After payment of the full liquidation to the Series C, Series D and Series E holders, the holders of the Junior Preferred will be entitled to receive $2.50, $1.80, $2.25, $2.50, $4.25, respectively, per share plus any declared and unpaid dividends out of the assets of NewLink available for distribution before any payment of any amount to holders of NewLink common stock. If the assets available for distribution are insufficient to pay the holders of Junior Preferred, then such holders will share ratably in any distribution of the assets of NewLink in proportion to the amounts that would have been payable with respect to their shares if all amounts payable with respect to such shares were paid in full.

After the payment of the full liquidation preference of the Series Preferred, the assets of NewLink legally available for distribution, if any, shall be distributed ratably to the holders of the common stock and Series Preferred on an as-if-converted-to-common-stock basis until such time as the holders of Series A, AA, AAA, and B have received an aggregate amount equal to three times the original issue price ($28,704,210 at June 30, 2011 and December 31, 2010 and $28,746,287 at December 31, 2009), the holders of the Series BB have received an aggregate amount equal to two times the original issue price ($16,008,365 at June 30, 2011 and December 31, 2010 and $16,208,361 at December 31, 2009). Thereafter, the remaining assets of NewLink legally available for distribution, if any, shall be distributed ratably to the holders of the common stock.

(e) Additional Preferences

Redemption

If a majority of the outstanding shares of Series AA, B, BB, C, D and E vote to have NewLink redeem its stock, it must do so in three equal installments beginning on September 30, 2014, provided that NewLink receives 60 days' notice. Redemption price shall equal original sale price plus any declared and unpaid dividends on Series Preferred. NewLink is required on or prior to the redemption date to deposit the funds in trust with a bank or trust company.

Warrants

Warrants to purchase 178,571 shares of common stock at $15.12 per share were issued to Series D Preferred stockholders in conjunction with the purchase of NewLink preferred stock in July of 2009. The warrants were exercised on October 21, 2010, at an aggregate purchase price of $2.0 million. The exercise

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price of the warrant was reduced in exchange for the holder's agreement to exercise the warrant at that time. NewLink computed the fair value of the warrants at issuance using the Black-Scholes model and determined the fair value of the warrants was *de minimis*.

Right of First Refusal

NewLink's major investors have a right of first refusal to acquire certain equity securities issued by NewLink. These rights expire with an IPO.

Registration Rights

Under an amended and restated investor rights agreement, following an IPO, certain holders of NewLink common stock will have the right to require NewLink to register their shares with the SEC so that those shares may be publicly resold, or to include those shares in any registration statement NewLink files, subject to specified exemptions, conditions and limitations.

12. Subsidiary Preferred Stock Preferences (See note 20)

During 2009 and 2010, BPS issued 555,930 shares of Series B preferred stock at $1.75 per share for an aggregate consideration of $970,000. In December 2010, in connection with the merger of BPS with NewLink, BPS issued 1,785,714 shares of Series B preferred stock to NewLink at $1.40 per share for an aggregate consideration of $2.5 million.

During 2006, BPS issued 1,444,721 shares of Series A preferred stock. All deposits received prior to issuance of the shares were considered restricted until the shares of Series A preferred stock were issued. In July 2009, shareholders authorized the issuance of an additional 3,055,279 shares of BPS Series B preferred stock. Prior to the acquisition, BPS's amended Certificate of Incorporation authorized the issuance of 4,500,000 shares of preferred stock at $0.01 par value. The Board of Directors of BPS has the authority to issue the preferred stock in one or more series and to fix the voting power and such designations, preferences, and rights subject to approval of outstanding preferred series shareholders. The following preferences are in place related to the BPS Series A and B preferred stock:

(a) Voting Rights

The BPS Series A and B preferred stock vote on an as-if-converted-to-common-stock basis (one vote per share). Any action taken by the Board of Directors of BPS or others that would impact the holders of BPS Series A and B preferred stock must be approved by a majority of the outstanding shares held by BPS Series A and B shareholders.

(b) Conversion Rights

The BPS Series A and B preferred stock will automatically convert into BPS common stock immediately upon the closing of an IPO of BPS common stock, pursuant to an effective registration statement filed by BPS under the Securities Act of 1933 that generates aggregate gross proceeds of not less than $4.00 per common share and $10.0 million in aggregate. BPS Series A and B preferred stock may automatically convert upon a vote of action by the class or at the option of the holder.

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(c) Liquidation Preferences

In the event of any liquidation, dissolution, or winding up of BPS, whether voluntary or involuntary, the holders of BPS Series B preferred stock will be entitled to receive $1.75 per share, plus any declared and unpaid dividends out of the assets of BPS available for distribution before any payment of any amount to holders of BPS Series A preferred stock or BPS common stock. If the assets available for distribution are insufficient to pay the holders of BPS Series B preferred stock, then such holders will share ratably in any distribution of the assets of BPS in proportion to the amounts that would have been payable with respect to their shares if all amounts payable with respect to such shares were paid in full.

After payment of the full liquidation to the holders of Series B preferred stock, the holders of Series A preferred stock will be entitled to receive $1.75 per share, plus any declared and unpaid dividends out of the assets of BPS available for distribution before any payment of any amount to holders of BPS common stock. If the assets available for distribution are insufficient to pay the holders of Series A preferred stock, then such holders will share ratably in any distribution of the assets of BPS in proportion to the amounts that would have been payable with respect to their shares if all amounts payable with respect to such shares were paid in full.

After payment of the full liquidation to the holders of Series A and B preferred stock, the holders of the Series A common stock will be entitled to receive $0.10 per share ($0 at June 30, 2011 and $700,000 at December 31, 2010 and 2009) out of the assets of BPS available for distribution before any payment of any amount to holders of the Series B common stock. If the assets available for distribution are insufficient to pay the holders of Series A common stock, then such holders will share ratably in any distribution of the assets of BPS in proportion to the amounts that would have been payable with respect to their shares if all amounts payable with respect to such shares were paid in full.

After the payment of the full liquidation preference of the Series A and B preferred stock and Series A common stock, the assets of BPS legally available for distribution, if any, shall be distributed ratably to the holders of the Series A common stock and Series A and B preferred stock on an as-if-converted-to-common-stock basis until such time as the holders of Series A preferred stock have received an aggregate amount equal to two times the original issue price ($0 at June 30, 2011 and $5.1 million at December 31, 2010 and 2009) and the holders of Series B preferred stock have received an aggregate amount equal to one and one-half times the original issue price ($0 at June 30, 2011 and $6.1 million at December 31, 2010 and $1.5 million at December 31, 2009). Thereafter, the remaining assets of BPS legally available for distribution, if any, shall be distributed ratably to the holders of the Series A and B common stock.

(d) Registration Rights.

Prior to the acquisition by NewLink of the minority interest in BPS, under an amended and restated investor rights agreement, following an IPO, certain holders of BPS common stock had the right to require BPS to register their shares with the SEC so that those shares could be publicly resold, or to include those shares in any registration statement BPS filed, subject to specified exemptions, conditions and limitations.

13. Common Stock Equity Incentive Plan

In April 2000, the stockholders approved NewLink's 2000 Equity Incentive Plan (the "2000 Plan"), and in July 2009, the stockholders approved NewLink's 2009 Equity Incentive Plan (the "2009 Plan").

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Following the approval of the 2009 Plan, all options outstanding under the 2000 Plan are effectively included under the 2009 Plan. Under the provisions of the 2009 Plan, NewLink may grant the following types of common stock awards:

- Incentive Stock Options
- Nonstatutory Stock Options
- Restricted Stock Awards
- Stock Appreciation Rights

Awards under the 2009 Plan, as amended, may be made to officers, employees, Board of Directors, advisors, and consultants to NewLink. As of June 30, 2011 and December 31, 2010 and 2009, an aggregate of 3,992,857, 3,278,571 and 2,621,667 shares of common stock, respectively, were reserved for issuance under the 2009 Plan. In May 2010, stockholders authorized an increase of 1,238,095 shares of common stock available for issuance under the plan. On January 7, 2011, stockholders authorized an increase of 714,286 shares of common stock available for issuance under the 2009 Plan.

On October 29, 2010, the Company adopted a 2010 Non-Employee Directors' Stock Option Plan, or Directors' Plan, and a 2010 Employee Stock Purchase Plan, or 2010 Purchase Plan. 238,095 shares of common stock reserved for future issuance under the Directors' Plan, which will become effective immediately upon the execution and delivery of the underwriting agreement for the initial public offering. 214,285 shares of common stock reserved for future issuance under the 2010 Purchase Plan, which will become effective upon the closing of the initial public offering.

Stock Options

The fair value of the awards shall be determined by the Board of Directors in good faith until such time as NewLink's common stock is traded on an established exchange at which time the fair value will be the quoted market price as listed on the public exchange. The estimated fair value of the common stock has been determined by management with the assistance of a third-party appraisal report and an evaluation of milestones achieved. Under provisions of the 2009 Plan, if Incentive Stock Options (ISO) are granted to a 10% stockholder in NewLink, the exercise price shall not be less than 110% of the common stock's fair market value on the date of grant.

In 2008, all options were granted at an exercise price of $2.10 per share. Additionally, during 2008, NewLink revised the exercise price for 173,304 options under the Plan. The options were previously issued with exercise prices of $3.68, $4.20, or $7.14 per share and were modified to an exercise price of $2.10 per share. The result of this change was an increase in compensation expense of $0 and $34,000 for the years ending December 31, 2010 and 2009, respectively. In January 2009, options were issued at an exercise price of $2.10 per share. In March 2010, options were issued at an exercise price of $2.96 per share for grants dated in December 2009, which were subject to pricing based on finalizing NewLink's valuation as of December 31, 2009. In June 2010, options were issued at an exercise price of $3.07 per share for grants dated in December 2009 and March 2010, which were subject to pricing based on finalizing NewLink's valuation as of March 31, 2010. In October 2010, options were issued at an exercise price of $4.01 per share for grants dated in June 2010, which were subject to pricing based on finalizing NewLink's valuation as of June 30, 2010.

The life of the options is 10 years under the 2009 Plan unless an ISO is granted to a stockholder who owns more than 10% of NewLink's outstanding stock, in which case the life may not exceed five years.

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The NewLink Board of Directors determines the vesting period for each stock option award. Generally, stock options awarded to date under the 2009 Plan vest 20% or 25% on the first anniversary date of issuance with the remaining options vesting ratably over the next 36 to 48 months, though some options have effective vesting periods that begin prior to the date of grant. In such cases, compensation expense is recognized for the vested portion of the award upon grant. The stock options may include provisions for early exercise of options. If any shares acquired are unvested, they are subject to repurchase at NewLink's discretion until they become vested.

Share-based employee compensation expense for the six months ended June 30, 2011 and the years ended December 31, 2010, 2009, 2008, from inception through December 31, 2010 and since inception was $978,000, $1,525,000, $929,000, $86,000, $2.6 million, and $3.5 million, respectively, and is allocated between research and development and general and administrative expenses within the consolidated statements of operations, giving rise to a related tax benefit of $0. As of June 30, 2011, the total compensation cost related to nonvested option awards not yet recognized was $3.4 million and the weighted average period over which it is expected to be recognized was 1.6 years. As of December 31, 2010, the total compensation cost related to nonvested option awards not yet recognized was $3.4 million and the weighted average period over which it is expected to be recognized was 1.9 years. As of December 31, 2009, the total compensation cost related to nonvested option awards not yet recognized was $977,000 and the weighted average period over which it is expected to be recognized was 1.8 years.

The following table summarizes the stock option activity for the six months ended June 30, 2011:

	Number of options	Weighted average exercise price	Weighted average remaining contractual term (years)
Outstanding at beginning of period	2,932,772	$ 2.67	
Options granted	185,037	7.35	
Options exercised	(11,958)	9.99	
Options forfeited	(4,067)	3.40	
Options expired	—	—	
Outstanding at end of period	3,101,784	$ 2.92	
Options exercisable at end of period	1,898,106	$ 2.76	7.4

On January 7, 2011, all options to purchase BPS common stock were exchanged for 50,513 options to purchase NewLink stock with a weighted average exercise price of $1.30, which are included in options granted above. See note 20.

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The following table summarizes stock option activity for the year ended December 31, 2010:

	Number of options	Weighted average exercise price	Weighted average remaining contractual term (years)
Outstanding at beginning of period	1,785,000	$ 1.93	
Options granted	1,297,738	3.00	
Options exercised	(123,537)	0.67	
Options forfeited	(26,429)	2.10	
Options expired	—	—	
Outstanding at end of period	2,932,772	$ 2.67	8.2
Options exercisable at end of period	1,493,280	$ 2.48	7.7

The following table summarizes stock option activity for the year ended December 31, 2009:

	Number of options	Weighted average exercise price	Weighted average remaining contractual term (years)
Outstanding at beginning of period	735,952	$ 1.66	
Options granted	1,079,524	2.10	
Options exercised	(25,174)	0.59	
Options forfeited	(5,302)	2.10	
Options expired	—	—	
Outstanding at end of period	1,785,000	$ 1.93	8.1
Options exercisable at end of period	1,051,543	$ 1.83	7.5

The following table summarizes the stock option activity for the six months ended June 30, 2011 and the assumptions used to estimate the fair value of those stock options using a Black-Scholes valuation model:

Number of options granted	185,037
Risk-free interest rate	2.1%-3.1%
Expected dividend yield	—
Expected volatility	64.5%-67.7%
Expected term (in years)	5.4-7.5
Weighted average grant-date fair value per share	$6.95

The intrinsic value of options exercised during the six months ending June 30, 2011 was $119,000. The fair value of awards vested during the six months ending June 30, 2011 was $4.2 million.

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The following table summarizes options that were granted during the years ended December 31, 2010 and 2009, and the assumptions used to estimate the fair value of those stock options using a Black-Scholes valuation model:

	Year Ended		
	2008	2009	2010
Number of options granted	458,810	1,079,524	1,297,738
Risk-free interest rate	1.5%-3.3%	1.6%	2.3%-3.5%
Expected dividend yield	—	—	—
Expected volatility	54.5%-67.2%	69.4%	59.8%-68.1%
Expected term (in years)	5.5-7.5	7.5	5.0-7.5
Weighted average grant-date fair value per share	$1.03-1.22	$1.03	$2.90

The intrinsic value of options exercised during the year ended December 31, 2010 was $82,000. The fair value of awards vested during the year ended December 31, 2010 was $3.7 million.

Although NewLink does not have a formal policy regarding the source of shares issued upon exercise of stock options, these shares were generally issued from treasury stock. As all treasury shares were retired in 2007, NewLink expects shares issued upon future stock option exercises to be new shares.

During the six months ended June 30, 2011 and the years ended December 31, 2010, 2009 and 2008, from inception through December 31, 2010, and since inception 129,048, 145,238, 0, 119,524, 310,000 and 439,048 stock options and awards were granted to nonemployees, respectively. As a result of the issuance of these options and awards, $236,000, $147,000, $90,000, $13,000, $408,000 and $644,000 of expense was recorded in the six months ended June 30, 2011 and the years ended 2010, 2009 and 2008, from inception through December 31, 2010, and since inception, respectively.

14. Subsidiary Common Stock Equity Incentive Plan

In September 2006, the BPS stockholders approved BPS's 2006 Equity Incentive Plan (the "BPS Plan"). Under the provisions of the BPS Plan, prior to the merger described in note 20, BPS could have granted the following types of common stock awards:

- Incentive Stock Options
- Nonstatutory Stock Options
- Restricted Stock Awards
- Stock Appreciation Rights

Awards under the BPS Plan, as amended, could have been be made to officers, employees, Board of Directors, advisors, and consultants to BPS. During 2007, BPS authorized up to 3,000,000 shares of BPS's common stock to be awarded under the BPS Plan. During 2008, BPS authorized an increase in the number of shares of BPS's common stock available under the BPS Plan to 3,253,341. During 2009, BPS authorized an increase in the number of shares of BPS's common stock available under the BPS Plan to 3,453,341.

Stock Options

The fair value of the awards was determined by the BPS Board of Directors in good faith. The estimated fair value of the common stock was determined by management based on BPS milestones achieved, which provided additional value and the issuance price of preferred stock, discounted for

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preference items for the Series A and B Preferred, sold to third-party investors. Under provisions of the BPS Plan, if ISOs were granted to a 10% stockholder in BPS, the exercise price could not be less than 110% of the BPS common stock's fair market value on the date of grant. All stock options granted in 2010 had an exercise price of $0.25 per share. All stock options granted in 2009 had an exercise price of $0.10 per share.

The life of the options is 10 years under the BPS Plan unless an ISO is granted to a stockholder who owns more than 10% of BPS's outstanding stock, in which case the life may not exceed five years.

The BPS Board of Directors determined the vesting period for each stock option award. Generally, stock options awarded to date under the BPS Plan vest 25% on the first anniversary date of issuance with the remaining options vesting ratably over the next 24 to 48 months.

Share-based employee compensation expense for the years ended December 31, 2010, 2009, 2008, and since inception was $20,000, $19,000, $35,000, and $126,000, respectively, and is allocated between research and development and general and administrative expenses within the consolidated statements of operations, giving rise to a related tax benefit of $0. As of December 31, 2010, the total compensation cost related to nonvested option awards not yet recognized was $17,000 and the weighted average period over which it is expected to be recognized was 1.7 years. As of December 31, 2009, the total compensation cost related to nonvested option awards not yet recognized was $15,000 and the weighted average period over which it is expected to be recognized was 2.4 years.

The following table summarizes stock option activity for the year ended December 31, 2010:

	Number of options	Weighted average exercise price	Weighted average remaining contractual term (years)
Outstanding at beginning of period	227,500	$ 0.10	
Options granted	169,000	0.25	
Options exercised	—	—	
Options forfeited	(2,500)	0.10	
Options expired	—	—	
Outstanding at end of period	394,000	$ 0.16	8.4
Options exercisable at end of period	216,033	$ 0.18	8.4

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The following table summarizes stock option activity for the year ended December 31, 2009:

	Number of options	Weighted average exercise price	Weighted average remaining contractual term (years)
Outstanding at beginning of period	40,000	$ 0.09	
Option granted	189,000	0.10	
Options exercised	—	—	
Options forfeited	(1,500)	0.10	
Options expired	—	—	
Outstanding at end of period	227,500	$ 0.10	8.9
Options exercisable at end of period	56,025	$ 0.09	8.9

The fair value of awards vested during the year ended December 31, 2010 was $247,000. The fair value of awards vested during the year ended December 31, 2009 was $70,446.

The following table summarizes options that were granted during the years ended December 31, 2010 and 2009 and the assumptions used to estimate the fair value of those stock options using a Black-Scholes valuation model:

	Year Ended		
	2008	2009	2010
Number of options granted	31,200	189,000	169,000
Risk-free interest rate	1.7%-2.7%	1.6%-2.3%	1.3%-1.9%
Expected dividend yield	—	—	—
Expected volatility	75.2%-75.5%	62.5%-64.2%	61.7%-63.2%
Expected term (in years)	7.0-7.5	7.5	5.5-7.5
Weighted average grant date fair value per share	$0.07	$0.06-0.07	$0.14

BPS common stock bonuses during the years ended December 31, 2010, 2009, 2008, and from inception totaled 0, 0, 1,200, and 58,343 shares, respectively. To date, there have been no issues of rights to acquire restricted common stock.

During the years ended December 31, 2010, 2009, 2008, and since inception, 155,000, 30,000, 0, and 355,000 in stock options were granted to nonemployees, respectively. As a result of the issuance of these options, $2,000, $3,000, $2,000, and $10,000 of expense was recorded in the years ended December 31, 2010, 2009, 2008, and since inception, respectively.

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15. Income Taxes

The tax effects of temporary differences that give rise to significant portions of deferred tax assets and the deferred tax liability at June 30, 2011 are presented below (in thousands):

Deferred tax assets:	
Net operating loss carryforwards	$ 13,969
Federal research credits	2,618
Gross deferred tax assets	16,587
Less valuation allowance	(16,409)
Net deferred tax assets	178
Deferred tax liability:	
Equipment	(178)
Total net deferred tax assets	$ —

The tax effects of temporary differences that give rise to significant portions of deferred tax assets and the deferred tax liability at December 31, 2010 and 2009 are presented below (in thousands):

	Year Ended	
	2009	2010
Deferred tax assets:		
Net operating loss carryforwards	$ 9,786	$ 13,042
Federal research credits	1,888	2,101
Gross deferred tax assets	11,674	15,143
Less valuation allowance	(11,581)	(15,017)
Net deferred tax assets	93	126
Deferred tax liability:		
Equipment	(93)	(126)
Total net deferred tax assets	$ —	$ —

The valuation allowance for deferred tax assets as of June 30, 2011 and December 31, 2010 and 2009 was $16.4 million, $15.0 million and $11.6 million, respectively. The net change in the total valuation allowance for the six months ended June 30, 2011 and the years ended December 31, 2010 and 2009 was an increase of $1.4 million, $3.4 million and $1.6 million, respectively. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected taxable income, and tax planning strategies in making this assessment. Valuation allowances have been established for the entire amount of the net deferred tax assets as of December 31, 2010 and 2009, due to the uncertainty of future recoverability.

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Federal operating loss carryforwards as of December 31, 2010 for approximately $62.1 million and federal research credit carryforwards of approximately $2.1 million expire at various dates from 2020 through 2030. Sections 382 and 383 of the Internal Revenue Code limit a corporation's ability to utilize its net operating loss carryforwards and certain other tax attributes (including research credits) to offset any future taxable income or tax if the corporation experiences a cumulative ownership change of more than 50% over any rolling three year period. State net operating loss carryforwards (and certain other tax attributes) may be similarly limited. An ownership change can therefore result in significantly greater tax liabilities than a corporation would incur in the absence of such a change and any increased liabilities could adversely affect the corporation's business, results of operations, financial condition and cash flow.

Based on a preliminary analysis, we believe that, from its inception through December 31, 2009, NewLink experienced Section 382 ownership changes in September 2001 and March 2003. These two ownership changes limit NewLink's ability to utilize its federal net operating loss carryforwards (and certain other tax attributes) that accrued prior to the 2003 ownership change. In addition, the net operating loss carryforwards (and certain other tax attributes) of NewLink's subsidiary may be limited by Sections 382 and 383 as a result of a prior ownership change of the subsidiary.

Additional analysis will be required to determine whether changes in the Company's ownership since December 31, 2009 and/or changes in the Company's ownership that will result from this offering have caused or will cause another ownership change to occur, and the conclusions will depend on the terms of the IPO and other information that may not be available to us until after the IPO has occurred. Any such change could result in significant limitations on all of the Company's net operating loss carryforwards and other tax attributes.

Even if another ownership change has not occurred and does not occur as a result of the IPO, additional ownership changes may occur in the future as a result of events over which the Company will have little or no control, including purchases and sales of the Company's equity by our 5% stockholders, the emergence of new 5% stockholders, additional equity offerings or redemptions of the Company's stock or certain changes in the ownership of any of the Company's 5% stockholders.

The Company incurred no income tax expense for the six months ended June 30, 2011 and the years ended December 31, 2010, 2009 and 2008, for the period from inception through December 31, 2010 or since inception. Income tax expense differs from the amount that would be expected after applying the statutory U.S. federal income tax rate primarily due to changes in the valuation allowance for deferred taxes.

16. Net Loss per Common Share

Basic net loss per share is calculated by dividing the net loss attributable to common stockholders by the weighted average number of common shares outstanding for the period, without consideration of common stock equivalents. Diluted net loss per share is computed by dividing the net loss attributable to common stockholders by the weighted average number of common share equivalents outstanding for the period determined using the treasury-stock method. For purposes of this calculation, preferred stock, stock options and warrants are considered to be common stock equivalents and are only included in the calculation of diluted net loss per share when their effect is dilutive.

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The following table presents the computation of basic and diluted net loss per common share (in thousands, except per share data):

	Years Ended December 31,			Six Months Ended June 30,	
	2008	2009	2010	2010	2011
Historical net loss per share					
Numerator					
Net loss attributable to common stockholders	$ (8,842)	$ (9,974)	$ (16,213)	$ (7,087)	$ (8,291)
Denominator					
Weighted-average common shares outstanding	3,115	3,160	3,352	3,195	3,642
Denominator for basic and diluted net loss per share	3,115	3,160	3,352	3,195	3,642
Basic and diluted net loss per share	$ (2.84)	$ (3.16)	$ (4.84)	$ (2.23)	$ (2.27)
Pro forma net loss per common share (unaudited)					
Numerator					
Net loss attributable to common stockholders			(16,213)		(8,291)
Net loss used to compute pro forma net loss per share			(16,213)		(8,291)
Denominator					
Basic and diluted weighted-average common shares, as used above			3,352		3,642
Weighted-average shares used in computing pro forma basic and diluted net loss per common share			14,086		14,375
Pro forma basic and diluted net loss per common share			$ (1.15)		$ (0.58)

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The numerator was not adjusted for the stock dividend paid on the Series AA preferred stock as the impact is not material. Potentially dilutive securities not included in the calculation of diluted net loss per common share because to do so would be anti-dilutive are as follows (in common equivalent shares):

	As of December 31,			Six Months Ended June 30,	
	2008	2009	2010	2010	2011
Preferred stock(1)	5,025,987	7,150,222	8,438,417	7,150,222	10,710,850
Common stock warrants	—	178,571	—	178,571	—
Common stock options	735,927	1,784,940	2,932,673	3,040,518	3,101,784
	5,761,914	9,113,733	11,371,090	10,369,311	13,812,634

(1) Amounts for the Series BB, C, D and E conversions are computed based on an initial public offering price of $7.00 per share.

As discussed in note 10, the Series Preferred will automatically convert into common stock immediately upon the closing of an IPO of common stock pursuant to an effective registration statement filed by the Company under the Securities Act of 1933 that generates aggregate gross proceeds of not less than $20.0 million. In the event of such a conversion, and assuming such shares were outstanding for the entire year and that the price per share at which common stock is the public offering price of $7.00, the weighted-average common shares outstanding and the basic and diluted net loss per share would be as disclosed in the table above.

17. Licensing Agreements

The Company is subject to a number of licensing agreements with respect to certain of the technologies that underlie its intellectual property. Unless otherwise noted, these agreements typically provide that the Company has exclusive rights to the use and sublicensing of the technologies in question for the duration of the intellectual property patent protection in question, subject to the Company meeting its financial and other contractual obligations under the agreements. The Company expenses all payments made under the following agreements in the period the payments occurred. For additional information regarding how the Company records payments under these agreements, see note 2(k) above. Certain of the key licensing agreements include the following:

Central Iowa Health Systems. The Company is a party to a license agreement, or the CIHS Agreement, dated August 2, 2001, with the Central Iowa Health System, or CIHS. The CIHS Agreement grants the Company an exclusive, worldwide license to make, have made, use, import, sell and offer for sale products that are covered by certain CIHS patent rights, proprietary information and know-how relating to the Company's HyperAcute immunotherapy technology. In partial consideration of the license under the CIHS Agreement, the Company entered into a stock purchase agreement with CIHS, under which the Company issued to CIHS shares of its common stock and granted CIHS certain rights related to ownership of such shares.

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In addition, the Company must reimburse CIHS for out-of-pocket costs incurred for patent prosecution and maintenance. If the Company commercializes a licensed product, it also has the obligation to pay CIHS royalties as a low single-digit percentage of net sales of the licensed product, subject to annual minimum royalties and a reduction for any royalty payments the Company must make to third parties. If the Company grants a sublicense under the licenses granted by CIHS, it must pay to CIHS a percentage of certain consideration paid by the sublicensee to the Company. Under the CIHS Agreement, the Company must use commercially reasonable efforts to develop and commercialize licensed products, to obtain necessary regulatory approvals and to launch and market such products in specified markets.

Unless terminated earlier, the CIHS Agreement shall remain in effect until the expiration of all of the Company's royalty obligations under the agreement. The Company may terminate the agreement, or specific patents covered by the agreement, on written notice to CIHS or for CIHS' uncured material breach of the agreement. CIHS has the right to terminate for the Company's uncured material breach of the agreement after written notice. Upon termination of the agreement the Company may sell its existing inventory of licensed products for a period of three months after such termination.

Drexel University. The Company is party to a license agreement, or the Drexel Agreement, dated October 13, 2004 with Drexel University, or Drexel. The Drexel Agreement grants the Company, and its affiliates, an exclusive, worldwide license, under specified Drexel patent rights relating to compositions and methods for vaccines based on alpha-galactosyl epitopes, to make, have made, use, import, sell and offer for sale vaccine products that are covered by such patent rights, or that use related Drexel technical information, for use in the diagnosis and treatment of cancer, viral and other infectious disease.

In consideration of the Company's license under the Drexel Agreement, it has paid and is obligated to continue to pay specified license fees, potential milestone payments in an aggregate amount up to approximately $1 million for each licensed product, annual license maintenance fees, reimbursement of patent prosecution costs, and royalty payments as a low single-digit percentage of "net sales" of any licensed product that is commercialized, subject to minimum royalty payments. Royalty rates vary depending on the type of licensed product, the territory where it is sold and whether the licensed product is combined with other technologies. In addition, if the Company grants a sublicense under the license granted by Drexel, it must pay Drexel a percentage of the consideration paid by the sublicensee to the Company. In accordance with a development plan included in the Drexel Agreement, the Company is obligated to use commercially reasonable efforts to develop and market products covered by the license as soon as practicable.

Unless terminated earlier, the Drexel Agreement shall remain in effect until the expiration or abandonment of all the licensed Drexel patents. The Company may terminate the Drexel Agreement on written notice to Drexel. Drexel has the right to terminate for the uncured breach of the Company's obligations under the agreement or for certain other reasons. If the Drexel Agreement terminates the Company may, in certain circumstances, sell any remaining inventory of licensed products for a period of six months after termination.

Lankenau Institute for Medical Research—IDO-1. The Company is a party to a license agreement dated July 7, 2005, as amended May 22, 2006 and September 11, 2007, or the IDO-1 Agreement, with Lankenau Institute for Medical Research, or LIMR. The IDO-1 Agreement grants the Company an

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exclusive, worldwide license, under specified LIMR patent rights relating to inhibitors of indoleamine 2,3-dioxygenase, or IDO-1, and related LIMR technology, to make, have made, use, import, sell and offer for sale products that are covered by such patent rights for use in the field of animal and human therapeutics and diagnostics.

In consideration of the license grant, the Company is obligated to pay to LIMR specified license fees, annual license maintenance fees, reimbursement of past patent prosecution costs, potential milestone payments in an aggregate amount up to approximately $1.36 million for each licensed product, and royalties as a low single-digit percentage of net sales of the licensed products if a licensed product is commercialized. In addition, if the Company grants a sublicense under the IDO-1 Agreement, it must to pay to LIMR a percentage of the consideration received by the Company from the sublicensee. Under the IDO-1 Agreement, the Company is obligated to use commercially reasonable efforts to develop and market the licensed products, and to achieve certain milestones by agreed-upon deadlines.

Unless terminated earlier, the IDO-1 Agreement shall remain in effect until the expiration of the last licensed LIMR patents. LIMR may terminate the agreement for the Company's failure to achieve specified milestones, failure to make payments due, bankruptcy or similar proceedings. Upon termination of the agreement, the Company may sell its current inventory of licensed products and those licensed products in the process of manufacture, subject to the terms of the agreement.

Medical College of Georgia. The Company is a party to a License Agreement dated September 13, 2005, or the MCGRI Agreement, with Medical College of Georgia Research Institute, or MCGRI, which was amended on April 27, 2006 and February 13, 2007. The MCGRI Agreement grants the Company, including its affiliates, an exclusive, worldwide license, under specified MCGRI patent rights and related technology to make, have made, use, import, sell and offer for sale products that are covered by licensed patent rights or incorporates or uses licensed technology in all medical applications.

In consideration of such license grant, the Company is obligated to pay to MCGRI specified license fees (including issuing shares of its common stock), annual license maintenance fees, reimbursement of patent prosecution costs, potential milestone payments in an aggregate amount up to approximately $2.8 million per licensed product, and royalties as a single-digit percentage of net sales of the licensed products, subject to minimum royalty payments and royalty rates depending on the type of license product. In addition, if the Company grants a sublicense under the license granted by MCGRI, it must pay to MCGRI a percentage of the consideration it receives from the sublicensee. Under the agreement, the Company is obligated to make certain investments toward the further development of licensed products within specified time periods.

Unless terminated earlier, the MCGRI Agreement will remain in effect until the expiration of the last licensed MCGRI patents. MCGRI may terminate this agreement for the Company's uncured material breach, bankruptcy or similar proceedings. The Company may terminate this agreement for the uncured material breach of MCGRI. For a period of one year following the termination of the agreement, the Company may sell its licensed products that are fully manufactured and part of its normal inventory at the date of termination.

University of British Columbia. The Company is a party to a license agreement dated February 1, 2007, or the UBC License, with the University of British Columbia, or UBC. The UBC License grants the

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Company an exclusive, worldwide license, under specified UBC patent rights relating to IDO-1 inhibitors and related technology, to make, have made, use, import, sell and offer for sale products that are covered by licensed patent rights or incorporates or uses licensed technology. In addition, the UBC License grants the Company an option to obtain an exclusive, worldwide license to new IDO-1 inhibitors related technology developed during the term of the agreement.

In consideration of the license grant, the Company must pay to UBC specified license fees, annual payment and license maintenance fees, reimbursement of patent prosecution costs, potential milestone payments in an aggregate amount up to approximately $1.8 million per licensed product, and royalties in a range of 10% or less of net revenue of the licensed product if a licensed product is commercialized, which royalty rate varies depending on the type of license product and field of use. In addition, if the Company grants a sublicense under the licenses granted by UBC, it may be required to pay to UBC a percentage of certain consideration it receives from the sublicensee. The Company is obligated to use its commercially reasonable efforts to develop and market the licensed products, and to achieve certain specific development milestones by agreed-upon deadlines.

Unless terminated earlier, the UBC License will remain in effect for 20 years or until the expiration of the last licensed UBC patents, whichever is later. UBC may terminate this agreement for the Company's uncured material breach, bankruptcy or similar proceedings. The Company may terminate this agreement for the uncured material breach of UBC. Upon termination of the agreement, the Company may not sell any inventory of the licensed product without the prior written consent of UBC.

LIMR—IDO-2. The Company is a party to a license agreement, or the LIMR IDO-2 Agreement, executed December 21, 2007 with LIMR. The LIMR IDO-2 Agreement grants the Company an exclusive, worldwide license, under specified LIMR patent rights relating to inhibitors of the target Indoleamine 2,3 Dioxygenase-2, or IDO-2, and under related LIMR know-how or technology, to make, have made, use, import, sell and offer for sale products and services that are covered by such patent rights, for all uses.

In consideration of the license grant, the Company has paid to LIMR an upfront license fee and annual license maintenance fees, and is obligated to pay LIMR annual license maintenance fees, potential milestone payments in an aggregate amount up to approximately $1.52 million per licensed product, subject to reductions if milestones also qualify under the IDO-1 Agreement, and, if a licensed product is commercialized, royalties as a low single-digit percentage of "net sales" of the licensed product, subject to reduction for the Company's royalty payments to third parties. In addition, if the Company grants a sublicense under the licenses granted by LIMR, it must pay to LIMR a percentage of the consideration paid by the sublicensee to the Company. Under the LIMR IDO-2 Agreement, the Company has agreed to use its commercially reasonable efforts to develop and exploit products covered by the license.

Unless terminated earlier, the LIMR IDO-2 Agreement shall continue until the expiration of the last valid LIMR patent licensed under the agreement. The Company may terminate the Agreement on written notice to LIMR. LIMR has the right to terminate for the Company's uncured material breach, failure to pay, or bankruptcy or similar proceedings. Upon termination of the agreement, The Company may sell its current inventory of licensed products and those licensed products in the process of manufacture, subject to the terms of the agreement.

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2009 LIMR Exclusive License Agreement. The Company is a party to a license agreement, or the 2009 LIMR Agreement, dated April 23, 2009 with LIMR. The 2009 LIMR Agreement grants the Company an exclusive, worldwide license, under specified LIMR patent rights relating to IDO inhibitors, and under related LIMR know-how or technology, to make, have made, use, import, sell and offer for sale products and services that are covered by such patent rights, for all uses. In consideration of such license grant, the Company is obligated to pay LIMR potential milestone payments in an aggregate amount up to approximately $610,000 per licensed product, subject to reductions if milestones also qualify under the IDO-1 Agreement or LIMR IDO-2 Agreement, and royalties as a low single-digit percentage of "net sales" of the licensed product, subject to reduction for the Company's royalty payments to third parties and to LIMR under the IDO-1 Agreement or LIMR IDO-2 Agreement. In addition, if the Company grants a sublicense under the licenses granted by LIMR, it must pay to LIMR a percentage of the consideration paid by the sublicensee to us.

Unless terminated earlier, the LIMR IDO Agreement shall continue until the expiration of the last valid LIMR patent licensed under the agreement. The Company may terminate the Agreement on written notice to LIMR. LIMR has the right to terminate for the Company's uncured material breach, failure to pay, or bankruptcy or similar proceedings. Upon termination of the agreement, the Company may sell its current inventory of licensed products and those licensed products in the process of manufacture, subject to the terms of the agreement.

Bresagen Patent License Agreement. The Company is a party to a license agreement, or the Bresagen Agreement, dated March 1, 2006 with Bresagen Xenograft Marketing Ltd, or Bresagen. The Bresagen Agreement grants the Company a non-exclusive, non-sublicensable license to specified Bresagen patent rights for use in testing microbial and cancer vaccines. In consideration of such license grant, the Company is obligated to pay Bresagen an up front license fee and an annual license fee.

Unless terminated earlier, the Bresagen Agreement shall continue for an initial period of eight years, which may be extended an additional five years upon agreement of the parties. Either party may terminate the Agreement at any time by agreement in writing, each party not to unreasonably withhold its consent for termination. Bresagen has the right to terminate for the Company's uncured breach, insolvency, change of control without consent or similar proceedings. Upon termination of the agreement, all of the Company's rights under the license are terminated.

During 2010, the Company issued 23,810 shares to Reconstitute, LLC as consideration for terminating a licensing agreement and for performance of certain provisions of the license agreement prior to termination. The fair value of the shares issued was approximately $201,000.

18. Employee Benefit Plans

The Company sponsors a 401(k) plan, which includes a defined contribution feature. The Company contributed $89,000, $137,000, $90,000, $120,000, $508,000 and $597,000 for the six months ended June 30, 2011 and the years ended December 31, 2010, 2009, 2008, from inception to December 31, 2010 and since inception, respectively.

On October 29, 2010, the Company approved employment agreements for certain executives that provide for the payment of 24, 12 or 6 months of base salary upon termination of the executive in certain

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circumstances and group health insurance premiums plus accrued obligations. The agreements include provisions to accelerate the vesting of stock options subject to certain events including those related to a change in control.

19. Related-Party Transactions

As of December 31, 2009, the Company was owed $850,000 in various notes receivable and $25,000 in notes receivable for common stock by its executive management team. The notes carried interest rates ranging from 2.42% to 6.00% and matured within the next 16 months. On May 7, 2010, the Board of Directors voted to forgive notes receivable and related outstanding interest from two officers. The remaining balances were repaid. Bonuses of $192,236 were paid to cover the resulting tax liabilities for these individuals. To offset the forgiveness, outstanding options held by the officers to purchase common stock were modified to increase the aggregate exercise price by $592,406 on July 1, 2010.

Certain purchasing activities are outsourced to a company owned by an immediate family member of the Company's controller. Total purchases through this related party were $1,000, $40,000, $30,000, $78,000, $270,000, and $271,000 for the six months ended June 30, 2011 and the years ended December 31, 2010, 2009, 2008, from inception through December 31, 2010 and since inception through June 30, 2011, respectively. The Company paid fees to this related party for consulting services of approximately $0, $0, $0, $0, $7,000 and $7,000 for the six months ended June 30, 2011 and the years ended December 31, 2010, 2009, 2008, from inception through December 31, 2010 and since inception, respectively.

20. Acquisition of BioProtection Systems Corporation

On January 7, 2011, NewLink acquired all of the minority interest in BPS, by merging a newly-formed subsidiary of NewLink's with BPS, with BPS as the surviving corporation. In connection with this transaction, NewLink agreed to issue up to an aggregate of 276,304 shares of NewLink's Series E preferred stock with a value of $8.6 million to the former holders of BPS Series B common stock, Series A preferred stock and Series B preferred stock (other than NewLink). 221,066 of the shares of NewLink's Series E preferred stock were issued to the holders of the BPS Series B common stock, Series A preferred stock and Series B preferred stock upon the closing of the merger. The remaining 55,238 shares of NewLink's Series E preferred stock were held back to satisfy any indemnity obligations under the merger agreement. There were no indemnity obligations owed to BPS and these remaining shares were issued on August 12, 2011 to the former stockholders of BPS (unaudited). As a result of this transaction, BPS became a wholly-owned subsidiary of NewLink. All options to purchase shares of BPS common stock became options to purchase NewLink's common stock. As part of the merger agreement, each outstanding BPS option was converted into the right to receive the number of NewLink options equal to the product of (A) the number of shares of BPS common stock subject to such BPS option multiplied by (B) a fraction, the numerator of which is $1.0825 and the denominator of which is $8.44, which was the fair market value of one share of NewLink common stock on September 30, 2010. As part of the merger agreement each outstanding BPS option was converted into the right to receive that number of NewLink options equal to the product of (A) the number of shares of BPS common stock subject to such BPS option multiplied by (B) a fraction, the numerator of which is $1.0825 and the denominator of which is $8.44, which was the fair market value of one share of NewLink common stock as of September 30, 2010. The exchange of options will be accounted for as a modification of an equity-classified award. The Series E preferred stock was issued with

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similar price and terms as the shares sold to third-parties in December 2010. See note 10 and note 11. As NewLink and BPS are under common control, the acquisition is treated as an equity transaction. The net assets of BPS had a book value of $2.9 million. The remaining amount paid of $5.7 million was recorded as a reduction of additional paid-in capital. No gain or loss was recorded as a result of this transaction.

21. Reverse Stock Split

On October 19, 2011, the Company's board of directors approved a 2.1-for-one reverse split of the Company's common stock to be effected prior to the effective date of the Company's registration statement. In connection with the reverse split, the Company filed a Certificate of Amendment of the Restated Certificate of Incorporation with the Secretary of State of Delaware on October 25, 2011 making the reverse split effective. All share and per share amounts have been retroactively restated in the accompanying financial statements and notes for all periods presented.

22. Subsequent Events (Unaudited)

On December 13, 2010, the Company's Board of Directors approved an amendment to the Company's certificate of incorporation that we plan to file shortly prior to consummating this offering. Among other things, the amendment will eliminate the requirement that the per share price to the public in this offering be at least $14.70 in order to result in the conversion of the outstanding preferred stock of the Company into common stock in connection with this offering. This amendment was subsequently approved by the Company's stockholders on January 7, 2011.

In July 2011, the Company's nonemployee director compensation policy was amended to change the vesting period for the initial grant of stock options from five years to three years. All outstanding director grants shall be amended accordingly.

On July 29, 2011, the Company's Board of Directors approved an amendment to the Company's Restated Certificate of Incorporation extending the date by which this offering must close in order to result in the adjustment to the conversion price of the Series E preferred stock discussed in note 2(j) above. This amendment was subsequently approved by the Company's stockholders on September 10, 2011.

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6,200,000 Shares
Common Stock

PROSPECTUS

November 10, 2011

Stifel Nicolaus Weisel

Canaccord Genuity

Baird

Cantor Fitzgerald & Co.

Until and including December 5, 2011, all dealers that effect transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to the dealers' obligation to deliver a prospectus when acting as underwriters and with respect to unsold allotments or subscriptions.