SPHERIX INC
Form 424B4
October 12, 2010
Table of Contents

Filed Pursuant to Rule 424(b)(4)
Registration Statement No. 333-167963

PROSPECTUS

SPHERIX INCORPORATED

5,250 Shares of Series B Convertible Preferred Stock Together With

Warrants to Purchase Up To 2,100,000 Shares of Common Stock

6,300,000 Shares of Common Stock Underlying the Convertible Preferred Stock and the Warrants

We are offering 5,250 shares of our Series B Convertible Preferred Stock, convertible into 4,200,000 shares of our common stock, par value $0.005 per share, together with warrants to purchase 2,100,000 shares of our common stock, to purchasers in this offering. The maximum number of shares of common stock underlying the convertible preferred stock and the warrants issued in this offering is 6,300,000. Each share of convertible preferred stock we sell will be accompanied by a warrant to purchase 0.5 shares of common stock for each share of common stock issuable upon conversion of the preferred stock. Subject to certain ownership limitations, the convertible preferred stock is convertible at any time at the option of the holder into shares of our common stock at a conversion ratio determined by dividing the stated value of the convertible preferred stock by a conversion price of $1.25 per share. The warrants are exercisable immediately and on or before the fifth year anniversary of their initial exercise date at an exercise price of $1.50 per share of common stock. Each share of convertible preferred stock and warrant will be sold at a negotiated price of $1,000. The convertible preferred stock and warrants are immediately separable and will be issued separately.

Our common stock is listed on the NASDAQ Capital Market under the symbol SPEX . The last reported sale price of our common stock on the NASDAQ Capital Market on October 5, 2010 was $1.38 per share. We do not intend to list the convertible preferred stock or the warrants on any securities exchange.

Investing in our securities involves a high degree of risk and purchasers of our securities may lose their entire investment. See Risk Factors beginning on page 7 of this prospectus for factors you should consider before buying our securities. You should carefully read this prospectus before you invest in our securities.

	Per Share	Maximum Total
Offering Price	$ 1,000.00	$ 5,250,000
Placement Agent Fees	$ 60.00	$ 315,000
Net Offering Proceeds, Before Expenses(1)	$ 940.00	$ 4,935,000

(1) We have also agreed to reimburse the placement agent s expenses up to $45,000.

We have retained Rodman & Renshaw, LLC as our exclusive placement agent to use its reasonable best efforts to solicit offers to purchase our securities in this offering. The placement agent is not purchasing or selling any of the securities in this offering. There is no minimum amount of securities that must be sold as a condition to closing this offering. We expect that delivery of the securities being offered pursuant to this prospectus will be made to purchasers on or about October 13, 2010. We have agreed to indemnify the placement agent against some liabilities, including liabilities under the Securities Act of 1933, and to contribute to payments that the placement agent may be required to make in respect thereof. In consideration for its services, in addition to the cash fees set forth in the table above, we have agreed to issue to the placement agent two-year warrants to purchase up to an aggregate of 126,000 shares of our common stock at an exercise price of $1.5625 per share. The placement agent warrants are not covered by this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Rodman & Renshaw, LLC
Sole Placement Agent

The date of this prospectus is October 12, 2010

Table of Contents

TABLE OF CONTENTS

Table of Contents

PROSPECTUS SUMMARY

This summary does not contain all of the information you should consider before buying our securities. You should read the entire prospectus carefully, especially the Risk Factors section in this prospectus, and our financial statements, related notes and other information incorporated by reference into this prospectus before deciding to invest in our securities.

Company Information

We were founded in 1967 and are incorporated in the State of Delaware. Our principal executive offices are located at 6430 Rockledge Drive, Suite 503, Bethesda, Maryland 20817, and our telephone number is (301) 897-2540. Our website is www.spherix.com. The information contained on our website is not a part of this prospectus. We have included our website address in this prospectus for reference only.

We are engaged in two (2) lines of business, our biotechnology research and development business and our health sciences technical and regulatory consulting business. We have created two wholly-owned subsidiaries, Biospherics Incorporated, which operates our biotechnology segment, and Spherix Consulting, Inc., which operates our Health Sciences segment. The subsidiaries began operations on January 1, 2009. Spherix now provides management, strategic guidance, business development, marketing and other services to its subsidiaries.

Biotechnology Segment

Biospherics is dedicated to development of its proprietary low-caloric sweetener, D-tagatose. Until June 2010, this development was limited to developing D-tagatose as a novel, first-in-class treatment for Type 2 diabetes. The Company recently announced that it will actively seek a pharma partner to continue the diabetes development and that it will also explore D-tagatose as a potential treatment for high triglycerides, a risk factor for heart disease, including atherosclerosis, myocardial infarction and stroke.

Tagatose, a naturally occurring sugar, is a low-calorie, full-bulk sweetener previously approved by the Food and Drug Administration (FDA) as a GRAS (Generally Recognized As Safe) food ingredient. It is a true sugar that looks, feels, and tastes like table sugar. During human safety studies supporting food use, we discovered and patented a number of health and medical uses for D-tagatose.

Diabetes Indication

We have conducted a Phase 3 trial to determine efficacy of D-tagatose as a treatment for Type 2 diabetes and are conducting a Phase 2 Dose Range trial to evaluate the effectiveness of lower doses of D-tagatose in treating Type 2 diabetes. D-tagatose is believed to depress elevations of blood sugar levels in diabetic patients by increasing glycogen synthesis while decreasing glycogen utilization, resulting in an improvement of blood sugar control and modulation of HbA1c. HbA1c is a key indicator that measures glycated hemoglobin in the blood and is a measure of

long-term control of blood glucose. Glucose is a sugar molecule that serves as a primary energy storage mechanism and glycogen is a molecule that functions as secondary long-term energy storage in humans. D-tagatose works in part by affecting glycogen levels.

The Company has announced that its Phase 3 clinical trial showed a statistically significant reduction in HbA1c levels. The reduction was more pronounced among patients treated in the United States than those treated in India. The Company expects to complete the Phase 2 Dose Range trial by the end of 2010.

The cost burden of developing drugs specifically for diabetes has increased significantly within the last few years under evolving and more stringent FDA guidelines. A company-commissioned analysis estimates it would take several additional years of clinical trials and could cost as much as several hundred million dollars to achieve a New Drug Application (NDA) filing for D-tagatose under current guidelines. We have determined that continued development of D-tagatose as a treatment for Type 2 diabetes requires the involvement of a pharma partner with the resources needed to fund the rest of the development and to bring it to market. We are hopeful that the recently announced Phase 3 results will further D-tagatose as an attractive candidate for further development by a pharma company. Accordingly, we are actively seeking a strategic relationship with a pharma company for the continued development of D-tagatose as a treatment for Type 2 diabetes.

Table of Contents

Triglycerides Indication

Secondary endpoints of our diabetes trials include triglyceride measurements. High triglyceride levels are sometimes a symptom of conditions associated with heart disease such as obesity and metabolic syndrome, which is a condition associated with elevated glucose levels as well as excess fat around the waist, high blood pressure, high triglycerides and low HDL cholesterol. Interim results of our Phase 2 Dose Range Study demonstrate a substantial reduction in triglycerides from patients who received 7.5 grams of D-tagatose compared to patients who received 2.5 grams of D-tagatose. Because of the relatively small number of patients enrolled in our Phase 3 trial with significant triglyceride levels, the trial could not confirm D-tagatose s efficacy regarding triglycerides.

The program to investigate D-tagatose as a pharmaceutical agent to lower serum triglycerides will begin this year. As per a normal pharmaceutical development plan, initial studies may include appropriate animal models in order to fully explore the mechanism of action on lipid metabolism, including triglycerides as well as LDL and HDL cholesterol. The commercial intent of the triglyceride program is to develop a formulation, dose and dosing regimen appropriate for the lipid market segment and uniquely different from the diabetes market. Thus, Spherix s intent is to develop a completely new, second brand for triglycerides, separate from the diabetes brand. Our goal is to produce a robust proof of concept in a Phase 2 clinical study, and then seek a pharma partner for further development of the triglycerides drug product. We estimate that it will likely take up to three years to complete the studies/trials necessary to attract a pharma partner to complete the development and an additional 2-3 years to complete all necessary studies for an NDA filing.

We expect to incur substantial development costs in our Biospherics segment in the next several years, without substantial corresponding revenue. We intend to finance our development activities through the remaining proceeds received from the 2007 sale of InfoSpherix, the net proceeds of the November 2009 registered direct equity offering, the net proceeds from this offering, and additional funds we will seek to raise through the sale of additional stock in the future.

Health Sciences Segment

In July 2007, we entered into the Health Sciences business when Claire L. Kruger, CEO and COO, joined us in advance of the anticipated sale of our wholly-owned subsidiary, InfoSpherix Incorporated. The Health Sciences business provides technical and regulatory consulting services to biotechnology and pharmaceutical companies, as well as providing technical support for our own R&D activities.

During 2009 and 2008, Health Sciences provided services to 12 and 16 companies, respectively. We generally provide our services on either a fixed-price basis or a time and expenses basis, charging hourly rates for each staff member involved in a project, based on his or her skills and experience. Our engagement agreements typically provide for monthly billing and payment of our invoices within thirty days of receipt.

The projects range from safety analyses of food ingredients to safety analyses of pharmaceutical manufacturing and dispensing equipment. Many clients are large, well-known companies with a number of successful products on the market. The proliferation of new products in the food and pharmaceutical areas creates a growing need for such regulatory services.

Revenues are primarily derived from services provided in response to client requests or events that occur without notice, and engagements, generally billed as services are performed, are terminable or subject to postponement or delay at any time by clients. Revenues and operating margins for any particular quarter are generally affected by staffing mix, resource requirements, and timing and size of engagements.

Health Sciences is also monitoring and directing the clinical trials of D-tagatose for Biospherics.

Health Sciences revenue accounted for 99% of our total revenue in each of 2009 and 2008.

Table of Contents

2009 Offering

In November 2009, we completed a registered direct equity financing involving the issuance of 2,760,870 shares of our common stock and warrants exercisable for an additional 1,104,348 shares of our common stock. We received approximately $6 million in net proceeds from the offering, after deducting the placement agent s fees and our offering expenses. As of June 30, 2010, the Company had cash and short-term investments of approximately $4.7 million and expects to expend all of this amount within the next six months.

The Offering

We are offering 5,250 shares of our convertible preferred stock (convertible into 4,200,000 shares of our common stock) together with warrants to purchase 2,100,000 shares of our common stock in this offering. The maximum number of shares of common stock underlying the convertible preferred stock and the warrants issued in this offering is 6,300,000. Each share of convertible preferred stock will be accompanied by a warrant to purchase 0.5 shares of common stock for each share of common stock issuable upon conversion of the preferred stock.

NASDAQ rules generally require stockholder approval for issuance of stock in excess of 20% of outstanding shares. On August 31, 2010, our stockholders provided such approval, subject to certain limitations, including:

- The aggregate number of shares issued in any offerings will not exceed 15,000,000 shares of our common stock (including pursuant to preferred stock, options, warrants, convertible debt or other securities exercisable for a convertible into common stock);

- The total aggregate consideration will not exceed $12 million in cash;

- The maximum discount at which securities will be offered will be equivalent to a discount of 20% below the market price of our common stock at the time of issuance; and

- Such offerings will occur within the three-month period commencing on August 31, 2010.

This offering will be conducted pursuant to the authority granted by our stockholders at the August 31, 2010 annual meeting.

Holders of the convertible preferred stock will be entitled to receive dividends equal (on an as converted to common stock basis) to and in the same form as dividends actually paid on shares of common stock, as and if such dividends are paid. We have never declared or paid any cash

dividends on our common stock and do not currently anticipate declaring or paying cash dividends on our common stock in the foreseeable future.

There will be 23,450,648 shares of our common stock outstanding after the closing of this offering if all of the shares of convertible preferred stock and warrants offered hereunder are sold and are fully converted into shares of common stock.

The number of shares of our common stock to be outstanding is based on 17,150,648 shares of our common stock issued and outstanding as of October 5, 2010.

Summary Financial Data

The following tables set forth our summary consolidated statement of operations data for the fiscal years ended December 31, 2009 and 2008, and for the six-month periods ended June 30, 2010 and 2009, and our summary consolidated balance sheets as of June 30, 2010 and December 31, 2009. Our statement of operations data for the fiscal years ended December 31, 2009 and 2008 and our balance sheet as of December 31, 2009 were derived from our audited consolidated financial statements. Our statement of operations data for the six months ended June 30, 2010 and 2009 and our balance sheet as of June 30, 2010 were derived from unaudited consolidated financial statements, all of which are included elsewhere in this prospectus.

Table of Contents

The results indicated below and elsewhere in this prospectus are not necessarily indicative of our future performance. You should read this information together with Capitalization, Management s Discussion and Analysis of Financial Condition and Results of Operations, our consolidated financial statements and related notes included elsewhere in this prospectus.

Summary Consolidated Statements of Operations Data

	Year Ended December 31,		(Unaudited) Six Months Ended June 30,	
	2009	2008	2010	2009
Revenue	$ 1,359,110	$ 1,025,961	$ 659,430	$ 692,911
Operating expense				
Direct costs	449,293	397,645	231,899	239,665
Research and development	6,830,957	4,004,565	2,856,484	2,695,351
Selling, general and administrative	3,265,137	3,135,310	2,280,750	1,408,366
Loss from operations	(9,186,277)	(6,511,559)	(4,709,703)	(3,650,471)
Interest income and other expense	37,646	340,229	4,216	29,847
Income tax benefit		552,803		
Loss from continuing operations	(9,148,631)	(5,618,527)	(4,705,487)	(3,620,624)
Income from discontinued operations		1,482,993		
Net loss	$ (9,148,631)	$ (4,135,534)	$ (4,705,487)	$ (3,620,624)
Net loss per share, basic and diluted				
Continuing operations	$ (0.62)	$ (0.39)	$ (0.27)	$ (0.25)
Discontinued operations	$	$ 0.10	$	$
Net loss per share	$ (0.62)	$ (0.29)	$ (0.27)	$ (0.25)
Weighted average shares outstanding, basic and diluted	14,713,473	14,342,953	17,150,648	14,357,162

Summary Consolidated Balance Sheets Data

	June 30, 2010 (Unaudited)	December 31, 2009
Cash and cash equivalents	$ 4,585,803	$ 9,026,002
Total assets	$ 5,351,851	$ 10,155,308
Total liabilities	$ 2,750,045	$ 2,883,432
Accumulated deficit	$ 30,654,490	$ 25,949,003
Total stockholders equity	$ 2,601,806	$ 7,271,876

Table of Contents

RISK FACTORS

An investment in our securities involves a high degree of risk and should be considered only by those persons who are able to afford a loss of their entire investment. There are important factors that could cause our actual results, level of activity, performance or achievements to differ materially from the results, level of activity, performance or achievements expressed or implied by any forward-looking statement. In particular, you should consider the numerous risks outlined below. Those risk factors are not exhaustive.

RISKS ASSOCIATED WITH PRODUCT DEVELOPMENT

WE MAY NOT BE ABLE TO FIND A STRATEGIC PARTNER FOR OUR DIABETES DRUG CANDIDATE. With the conclusion of the Phase 3 trial, we have scaled back our development of D-tagatose as a treatment for Type 2 diabetes and are actively seeking a strategic partner to continue this development. We may not locate such a partner or may not negotiate an appropriate strategic relationship agreement. If we are not successful, we will not obtain any benefits from the substantial investment we have made in these efforts over the past several years.

OUR POTENTIAL TRIGLYCERIDES DRUG IS AT A VERY EARLY STAGE OF DEVELOPMENT. We will be starting at the beginning in our development of a triglycerides drug. We may begin with animal studies and then progress to human studies and trials. We expect that it could take up to three years to complete the studies/trials necessary to attract a pharma partner to complete the development and an additional 2-3 years to complete all necessary studies for an NDA filing. There can be no assurance that any of these studies/trials will be successful or that we will develop the necessary proof of concept required to attract a pharma partner.

IF WE ARE UNABLE TO COMPLETE OUR TRIGLYCERIDES CLINICAL TRIAL PROGRAMS SUCCESSFULLY, OR IF SUCH CLINICAL TRIALS TAKE LONGER TO COMPLETE THAN WE PROJECT, OUR ABILITY TO EXECUTE OUR CURRENT BUSINESS STRATEGY WILL BE ADVERSELY AFFECTED. Whether or not and how quickly we complete triglycerides clinical trials is dependent in part upon the rate at which we are able to engage clinical trial sites and, thereafter, the rate of enrollment of patients, and the rate we collect, clean, lock and analyze the clinical trial database. Patient enrollment is a function of many factors, including the size of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the study, the existence of competitive clinical trials, and whether existing or new drugs are approved for the indication we are studying. Certain clinical trials are designed to continue until a pre-determined number of events have occurred in the patients enrolled. Trials such as this are subject to delays stemming from patient withdrawal and from lower than expected event rates. They may also incur additional costs if enrollment is increased in order to achieve the desired number of events. If we experience delays in identifying and contracting with sites and/or in patient enrollment in our clinical trial programs, we may incur additional costs and delays in our development programs, and may not be able to complete our clinical trials in a cost-effective or timely manner. In addition, conducting multi-national studies adds another level of complexity and risk. We are subject to events affecting countries outside the United States. Negative or inconclusive results from the clinical trials we conduct or unanticipated adverse medical events could cause us to have to repeat or terminate the clinical trials. We may also opt to change the delivery method, formulation or dosage, which could affect efficacy results for the drug candidate. Accordingly, we may not be able to complete the clinical trials within an acceptable time frame, if at all.

Additionally, we have never filed an NDA or similar application for approval in the United States, or in any country, which may result in a delay in, or the rejection of, our filing of an NDA or similar application. During the drug development process, regulatory agencies will typically ask questions of drug sponsors. While we endeavor to answer all such questions in a timely fashion, or in the NDA filing, some questions may remain unanswered by the time we file our NDA. Unless the FDA opts not to pursue answers to these questions, submission of an NDA may be delayed or rejected.

PRE-CLINICAL TESTING AND CLINICAL DEVELOPMENT ARE LONG, EXPENSIVE AND UNCERTAIN PROCESSES. IF OUR DRUG CANDIDATES DO NOT RECEIVE THE NECESSARY REGULATORY APPROVALS, WE WILL BE UNABLE TO COMMERCIALIZE OUR DRUG CANDIDATES. We have not received, and may never receive, regulatory approval for the commercial sale of any of our drug candidates. We will need to conduct significant additional research and human testing before we can

Table of Contents

apply for product approval with the FDA or with regulatory authorities of other countries. Pre-clinical testing and clinical development are long, expensive and uncertain processes. Satisfaction of regulatory requirements typically depends on the nature, complexity and novelty of the product. It requires the expenditure of substantial resources. Data obtained from pre-clinical and clinical tests can be interpreted in different ways, which could delay, limit or prevent regulatory approval. The FDA may pose additional questions or request further clinical substantiation. It may take us many years to complete the testing of our drug candidates and failure can occur at any stage of this process. Negative or inconclusive results or medical events during a clinical trial could cause us to delay or terminate our development efforts.

Furthermore, interim results of preclinical or clinical studies do not necessarily predict their final results, and acceptable results in early studies might not be obtained in later studies.

Clinical trials have a high risk of failure. A number of companies in the pharmaceutical industry, including biotechnology companies, have suffered significant setbacks in advanced clinical trials, even after achieving what appeared to be promising results in earlier trials. If we experience delays in the testing or approval process or if we need to perform more or larger clinical trials than originally planned, our financial results and the commercial prospects for our drug candidates may be materially impaired. In addition, we have limited experience in conducting and managing the clinical trials necessary to obtain regulatory approval in the United States and abroad. Accordingly, we may encounter unforeseen problems and delays in the approval process. Although we may engage a clinical research organization with experience in conducting regulatory trials, errors in the conduct, monitoring and/or auditing could potentially invalidate the results.

OUR PATENT PROTECTION MAY NOT BE SUFFICIENT TO PROTECT US. Our current use patent for D-tagatose as a treatment for Type 2 diabetes expires in 2012. We are exploring the prospects of extending our exclusivity for D-tagatose for up to an additional five years. At present we only have rights for patents pending for triglycerides treatment. There can be no assurance these patents will be issued.

WE DO NOT CURRENTLY HAVE THE RESOURCES TO BECOME A FULL SCALE BIOTECHNOLOGY COMPANY AND WE MAY NOT BE ABLE TO ATTRACT A NECESSARY BUYER/LICENSEE/PARTNER/STRATEGIC PARTNER BEFORE WE EXPEND ALL OF OUR FUNDS. We intend to continue to develop D-tagatose as a viable triglycerides treatment and to continuously seek a sale, license, or partner. Our hope and expectation is that as we proceed with the development, incremental successes may allow us to negotiate a favorable transaction. There can be no assurance, however, that we will have such incremental successes, or even if we achieve them, that we will attract a buyer, licensee or partner. We have limited resources. As of June 30, 2010, the Company had cash and short-term investments of approximately $4.7 million and expects to expend all of this amount within the next six months. We will need to raise additional funds in 2010 to continue operations and will likely require additional capital raises thereafter to fully pursue the triglycerides opportunity and we may not be able to do so in a timely fashion.

REGULATORY AUTHORITIES MAY NOT APPROVE OUR PRODUCT EVEN IF IT MEETS SAFETY AND EFFICACY ENDPOINTS IN CLINICAL TRIALS. The FDA and foreign regulatory agencies can delay, limit or deny marketing approval for many reasons, including:

- a product candidate may not be considered safe or effective;
- the manufacturing processes or facilities we have selected may not meet the applicable requirements; and

- changes in 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 D-tagatose as a treatment for triglycerides could prevent us from ever generating meaningful revenues.

D-tagatose may not be approved even if it achieves 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 may also approve a product candidate for fewer or more limited indications than requested, or may grant approval subject to the performance of post-marketing studies.

Table of Contents

In addition, regulatory agencies may not approve the labeling claims that are necessary or desirable for the successful commercialization of D-tagatose.

OUR FINANCIAL RESOURCES ARE LIMITED AND WE WILL NEED TO RAISE ADDITIONAL CAPITAL IN THE FUTURE TO CONTINUE OUR BUSINESS. WE MAY NOT BE ABLE TO OBTAIN ADDITIONAL FINANCING IF NEEDED. As of June 30, 2010, the Company had cash and short-term investments of approximately $4.7 million and expects to expend all of this amount within the next six months. Our future capital requirements will depend on many factors, including the progress of the clinical trials and commercialization of D-tagatose, as well as general and administrative costs. Over the next 12 months, the Company expects that it will need to expend between $7 million and $13 million to support its development operations. We will need to raise additional funds in 2010 to continue operations and will likely require additional capital raises thereafter to fully pursue the triglycerides opportunity. We cannot ensure that additional funding will be available or, if it is available, that it can be obtained on terms and conditions we will deem acceptable. Any additional funding derived from the sale of equity securities is likely to result in significant dilution to our existing stockholders. These matters involve risks and uncertainties that may prevent us from raising additional capital or may cause the terms upon which we raise additional capital, if additional capital is available, to be less favorable to us than would otherwise be the case.

UNSTABLE MARKET CONDITIONS MAY HAVE SERIOUS ADVERSE CONSEQUENCES ON OUR BUSINESS. The recent economic downturn and market instability have made the business climate more volatile and more costly. Our general business strategy may be adversely affected by unpredictable and unstable market conditions, including:

- one or more of our current service providers, manufacturers and other partners may encounter difficulties during challenging economic times, which would directly affect our ability to attain our goals on schedule and on budget;
- demand for our consulting services may decrease resulting in a decrease in revenue;
- our ability to collect on trade receivables may be negatively impacted by slow payments or bad debt;
- our efforts to raise additional capital may be negatively impacted;
- additional funding may not be available or, if it is available, may not be on terms and conditions we deem acceptable;
- any additional funding derived from the sale of equity securities is likely to result in significant dilution to our existing stockholders; and
- failure to secure the necessary financing in a timely manner and on favorable terms could have a material adverse effect on our business strategy, financial performance, and stock price and could require us to delay or abandon the clinical development plans.

IF CLINICAL TRIALS OF D-TAGATOSE ARE PROLONGED, DELAYED OR SUSPENDED, IT MAY TAKE SIGNIFICANTLY LONGER AND COST SUBSTANTIALLY MORE TO OBTAIN APPROVAL FOR OUR DRUG CANDIDATE AND ACHIEVE PROFITABILITY, IF AT ALL. Each delay makes it more likely that we will need additional financing to complete our clinical trials. We cannot predict whether we will encounter additional problems that will cause us or regulatory authorities to delay or suspend the clinical trial, or delay the analysis of data from the trials. Any of the following could delay the clinical development of our drug candidates:

- ongoing discussions with the FDA regarding the scope or design of our trial;
- delays in receiving, or the inability to obtain, required approvals from reviewing entities at clinical sites selected for participation in our trial;
- a lower than anticipated retention rate of patients in the trial;
- the need to repeat the trial or conduct another trial as a result of inconclusive or negative results or unforeseen complications in testing;
- inadequate supply or deficient quality of materials necessary to conduct our trial;
- serious and unexpected drug-related side effects experienced by participants in our clinical trials;
- the placement by the FDA of a clinical hold on a trial; or

Table of Contents

- any restrictions on or post-approval commitments with regard to any regulatory approval we ultimately obtain that render the drug candidate not commercially viable.

WE WILL RELY ON THIRD PARTIES TO CONDUCT PORTIONS OF OUR TRIALS, AND THOSE THIRD PARTIES MAY NOT PERFORM SATISFACTORILY. We will rely on third parties to enroll qualified patients, conduct our trials, provide services in connection with such trials, and coordinate and oversee significant aspects of the trials. Our reliance on these third parties for clinical development activities reduces our control over these activities. Accordingly, these third party contractors may not complete activities on schedule, or may not conduct our trials in accordance with regulatory requirements or the trial design. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may be required to replace them or we may be required to provide these services with our own personnel. Although we believe there are a number of third party contractors we could engage to continue these activities, replacing a third party contractor may result in a delay or affect the trial. If this were to occur, our efforts to obtain regulatory approvals for and commercialize our drug candidate may be delayed.

OUR CORPORATE COMPLIANCE EFFORTS CANNOT GUARANTEE THAT WE ARE IN COMPLIANCE WITH ALL POTENTIALLY APPLICABLE REGULATIONS. The development, manufacturing, pricing, sales, and reimbursement of drug products are subject to extensive regulation by federal, state and other authorities within the United States and numerous entities outside of the United States. We are a relatively small company with only 11 employees. We also have significantly fewer employees than many other companies that have a product candidate in clinical development, and we rely heavily on third parties to conduct many important functions. While we believe that our corporate compliance program is sufficient to ensure compliance with applicable regulation, we cannot assure that we are or will be in compliance with all potentially applicable regulations. If we fail to comply with any of these regulations we could be subject to a range of regulatory actions including suspension or termination of clinical trials, the failure to approve our product candidate, restrictions on our products or manufacturing processes, withdrawal of products from the market, significant fines, or other sanctions or litigation.

WE DO NOT HAVE INTERNAL MANUFACTURING CAPABILITIES, AND IF WE FAIL TO DEVELOP AND MAINTAIN SUPPLY RELATIONSHIPS WITH OUTSIDE MANUFACTURERS, WE MAY BE UNABLE TO DEVELOP OR COMMERCIALIZE D-TAGATOSE. Our ability to develop and commercialize D-tagatose will depend in part on our ability to arrange for other parties to manufacture D-tagatose at a competitive cost, in accordance with regulatory requirements and in sufficient quantities for clinical testing and eventual commercialization. If we are unable to enter into or maintain commercial-scale manufacturing agreements on acceptable terms, or if we are unable to successfully bridge material from a manufacturer to the material initially used in the trials, the development and commercialization of D-tagatose could be delayed, which would adversely affect our ability to generate revenues and would increase our expenses.

FAILURE TO OBTAIN REGULATORY APPROVAL IN FOREIGN JURISDICTIONS WOULD PREVENT MARKETING OF D-TAGATOSE. We intend to have D-tagatose marketed both inside and outside of the United States. In order to market D-tagatose in the European Union and many other foreign jurisdictions, we must obtain separate regulatory approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ from that required to obtain FDA approval. The foreign regulatory approval process may include all of the risks associated with obtaining FDA approval. We may not obtain foreign regulatory approvals on a timely basis, if 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 foreign countries or by the FDA. We and our collaborators may not be able to file for regulatory approvals and may not receive necessary approvals to commercialize our products in any market. The failure to obtain these approvals could materially adversely affect our business, financial condition and results of operations.

EVEN IF OUR CLINICAL TRIALS ARE SUCCESSFUL, WE MAY NOT HAVE A COMMERCIALLY VIABLE DRUG OR PRODUCT. We have a number of hurdles to overcome to have a commercially viable drug or product even assuming our clinical trials are successful, including:

Table of Contents

- We must secure one or more manufacturers for D-tagatose and we must bridge the materials supplied by the current manufacturer(s) to the previously supplied materials to gain FDA approval.

- We must demonstrate that the product will be accepted in the market place. Even if the clinical trial is successful, the market may not accept the drug formulation or dosing, which would be three times a day in powder form for diabetes treatment.

IF PHYSICIANS AND PATIENTS DO NOT ACCEPT D-TAGATOSE, WE MAY NOT BE ABLE TO GENERATE SIGNIFICANT REVENUES FROM PRODUCT SALES. Even if we obtain regulatory approval for D-tagatose, it may not gain market acceptance among physicians, patients and the medical community for a variety of reasons including:

- timing of market introduction of competitive drugs;
- lower demonstrated clinical safety and efficacy compared to other drugs;
- lack of cost-effectiveness;
- lack of availability of reimbursement from managed care plans and other third-party payors;
- inconvenient administration;
- prevalence and severity of adverse side effects;
- drug interactions with other widely prescribed medications;
- potential advantages of alternative treatment methods;
- safety concerns with similar drugs marketed by others;
- the reluctance of the target population to try new therapies and of physicians to prescribe these therapies; and
- ineffective sales, marketing and distribution support.

If D-tagatose fails to achieve market acceptance, we would not be able to generate significant revenue or achieve profitability.

BIOTECHNOLOGY BUSINESS HAS A SUBSTANTIAL RISK OF PRODUCT LIABILITY CLAIMS. THE DEFENSE OF ANY PRODUCT LIABILITY CLAIM BROUGHT AGAINST US WILL DIVERT MANAGEMENT TIME AND REQUIRE SIGNIFICANT EXPENSE. We could be exposed to significant potential product liability risks that are inherent in the development, manufacture, sales and marketing of drugs and related products. Our insurance may not, however, provide adequate coverage against potential liabilities. Furthermore, product liability insurance is becoming increasingly expensive. As a result, we may be unable to maintain current amounts of insurance coverage or obtain additional or sufficient insurance at a reasonable cost to protect against losses that could have a material adverse effect on us. If a claim is brought against us, we might be required to pay legal and other expenses to defend the claim, as well as uncovered damage awards

resulting from a claim brought successfully against us. Furthermore, whether or not we are ultimately successful in defending any such claims, we might be required to redirect significant financial and managerial resources to such defense, and adverse publicity is likely to result.

WE HAVE SUSTAINED LOSSES IN THE PAST AND WE WILL SUSTAIN LOSSES IN THE FUTURE. We have incurred losses from continuing operations in prior years, including 2009 and 2008. Our net losses from continuing operations before taxes for the years ended December 31, 2009 and 2008 were $9.1 million and $6.2 million, respectively. The Company s cumulative deficit was $30.7 million at June 30, 2010. We expect to incur substantial losses in 2010 and thereafter until we find a purchaser/licensee. The Company s total cash used through the six months ended June 30, 2010 was $4.4 million. We may not return to profitable operations.

WE MAY NOT BE ABLE TO RETAIN OUR KEY EXECUTIVES AND PERSONNEL. As a small company, our success depends on the services of key employees in executive and other positions. The loss of the services of one or more of such employees could have a material adverse effect on us.

WE FACE INTENSE COMPETITION BY COMPETITORS. Our competitors in the biotechnology products business are numerous. Many of our competitors have significantly greater financial, marketing and distribution resources than we do. Our competitors may succeed in developing or marketing biotechnology products that are more effective than ours.

Table of Contents

WE FACE EVOLVING REGULATION OF CORPORATE GOVERNANCE AND PUBLIC DISCLOSURE THAT MAY RESULT IN ADDITIONAL EXPENSES AND CONTINUING UNCERTAINTY. Changing laws, regulations and standards relating to corporate governance and public disclosure, including the Sarbanes-Oxley Act of 2002, new SEC regulations and NASDAQ Stock Market LLC rules are creating uncertainty for public companies. We are presently evaluating and monitoring developments with respect to new and proposed rules and cannot predict or estimate the amount of the additional costs we may incur or the timing of these costs. For example, compliance with the internal control requirements of Section 404 of the Sarbanes-Oxley Act has to date required the commitment of significant resources to document and test the adequacy of our internal control over financial reporting. While our assessment, testing and evaluation of the design and operating effectiveness of our internal control over financial reporting resulted in our conclusion that, as of December 31, 2009, our internal control over financial reporting was effective, we can provide no assurance as to conclusions of management or by our independent registered public accounting firm with respect to the effectiveness of our internal control over financial reporting in the future. These new or changed laws, regulations and standards are subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We are committed to maintaining high standards of corporate governance and public disclosure. As a result, we intend to invest the resources necessary to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new or changed laws, regulations and standards differ from the activities intended by regulatory or governing bodies, due to ambiguities related to practice or otherwise, regulatory authorities may initiate legal proceedings against us, which could be costly and time-consuming, and our reputation and business may be harmed.

RISKS RELATED TO OWNERSHIP OF OUR COMMON STOCK

THE PRICE OF OUR COMMON STOCK HAS BEEN HIGHLY VOLATILE DUE TO SEVERAL FACTORS THAT WILL CONTINUE TO AFFECT THE PRICE OF OUR STOCK. Our common stock has traded as low as $0.25 and as high as $4.15 between January 1, 2009 and September 30, 2010. Some of the factors leading to this volatility include:

- relatively small amounts of our stock trading on any given day;
- fluctuations in our operating results;
- announcements of technological innovations or new products that we or our competitors make;
- developments with respect to patents or proprietary rights; and
- recent economic downturn and market instability.

OUR COMMON STOCK WILL BE DELISTED FROM NASDAQ CAPITAL MARKET SYSTEM IF WE FAIL TO COMPLY WITH CONTINUED LISTING STANDARDS. Our common stock is currently traded on the NASDAQ Capital Market under the symbol SPEX. If we fail to meet any of the continued listing standards of the NASDAQ Capital Market, our common stock could be delisted from the NASDAQ Capital Market. These continued listing standards include specifically enumerated criteria, such as:

- a $1.00 minimum closing bid price;

- shareholders equity of $2.5 million;
- 500,000 shares of publicly-held common stock with a market value of at least $1 million;
- 300 round-lot stockholders; and
- compliance with NASDAQ s corporate governance requirements, as well as additional or more stringent criteria that may be applied in the exercise of NASDAQ s discretionary authority.

Table of Contents

Minimum Bid Price Requirement

On July 21, 2008, NASDAQ notified the Company that its common stock failed to maintain a minimum bid price of $1.00 over the previous 30 consecutive business days as required by the NASDAQ Listing Rules. In October 2008, NASDAQ suspended enforcement of the minimum bid price and market value of publicly held shares requirements through January 16, 2009. On December 19, 2008, NASDAQ extended its suspension of the requirements until April 20, 2009 and on March 24, 2009 NASDAQ again extended the suspension until July 20, 2009.

On May 20, 2009, the Company received notification from NASDAQ confirming that it has regained compliance with the minimum bid price requirement for continued listing on NASDAQ under Listing Rule 5550(a)(2). In the letter, NASDAQ stated that this matter is now closed.

Independent Director Requirement

On April 17, 2009, the Company reported in the Current Report on Form 8-K filed with the Securities and Exchange Commission, that Mr. A. Paul Cox, Jr., one of our independent directors, passed away on April 13, 2009. On April 23, 2009, NASDAQ notified the Company that the Company no longer complied with NASDAQ Listing Rule 5605, which requires that a majority of the board of directors be comprised of independent directors.

On May 18, 2009, the Company received notification from NASDAQ confirming that it had regained compliance with the independent director requirement for continued listing on NASDAQ under Listing Rule 5605(b)(1). NASDAQ s determination was based on the Company s appointment of Thomas B. Peter to the Company s Board of Directors as reported in the Company s Current Report Form 8-K filed on May 14, 2009. In the letter, NASDAQ stated that this matter is now closed.

Minimum Shareholder Equity Requirement

At September 30, 2008, the Company s stockholders equity fell below the $10 million limit required for continued listing on the NASDAQ Global Market. Accordingly, the Company transferred its listing from the NASDAQ Global Market to the NASDAQ Capital Market, which has a lower stockholders equity limit of $2.5 million. At June 30, 2010, the Company s stockholders equity was $2.6 million.

In the future, if our common stock were to fail to meet the minimum bid price requirement or any of the other listing requirements it could be delisted from the NASDAQ Capital Market. In that case, trading of our common stock most likely will be conducted in the over-the-counter market (OTC) Bulletin Board market, an electronic bulletin board established for unlisted securities. Such delisting could also adversely affect our ability to obtain financing for the continuation of our operations and could result in the loss of confidence by investors, suppliers and employees.

WE COULD FAIL IN FINANCING EFFORTS OR BE DELISTED FROM NASDAQ IF WE FAIL TO RECEIVE SHAREHOLDER APPROVAL WHEN NEEDED. We are required under the NASDAQ Marketplace rules to obtain shareholder approval for any issuance of additional equity securities that would comprise more than 20% of the total shares of our common stock outstanding before the issuance of such securities sold at a discount to the greater of book or market value in an offering that is not deemed to be a public offering by NASDAQ. The maximum amount of securities to be offered in this offering exceeds the 20% standard and requires stockholder approval. We have obtained such approval at our August 31, 2010 annual stockholders meeting, but we must complete the offering by November 2010 to use such approval. In addition, funding of our operations in the future may require issuance of additional equity securities that would comprise more than 20% of the total shares of our common stock outstanding, but we might not be successful in obtaining the required shareholder approval for such an issuance. If we are unable to obtain financing due to shareholder approval difficulties, such failure may have a material adverse effect on our ability to continue operations.

DIVIDENDS ON OUR COMMON STOCK ARE NOT LIKELY. We do not anticipate paying cash dividends on our common stock in the foreseeable future. Investors must look solely to appreciation in the market price of the shares of our common stock to obtain a return on their investment.

Table of Contents

BECAUSE OF THE RIGHTS AGREEMENT AND ANTI-TAKEOVER PROVISIONS IN OUR CERTIFICATE OF INCORPORATION AND BYLAWS, A THIRD PARTY MAY BE DISCOURAGED FROM MAKING A TAKEOVER OFFER THAT COULD BE BENEFICIAL TO OUR STOCKHOLDERS. In 2001, we adopted a shareholder rights plan. The effect of this rights plan and of certain provisions of our Certificate of Incorporation, By-Laws, and the anti-takeover provisions of the Delaware General Corporation Law, could delay or prevent a third party from acquiring us or replacing members of our Board of Directors, even if the acquisition or the replacements would be beneficial to our stockholders. These factors could also reduce the price that certain investors might be willing to pay for shares of the common stock and result in the market price being lower than it would be without these provisions.

INSIDERS OWN A SIGNIFICANT PORTION OF OUR COMMON STOCK, WHICH COULD LIMIT OUR STOCKHOLDERS ABILITY TO INFLUENCE THE OUTCOME OF KEY TRANSACTIONS. As of June 30, 2010, our Officers and Directors and their affiliates owned approximately 14.9% of the outstanding shares of our common stock. As a result, our Officers and Directors are able to exert considerable influence over the outcome of any matters submitted to a vote of the holders of our common stock, including the election of our Board of Directors. The voting power of these stockholders could prevent or frustrate attempts to effect a transaction that is in the best interests of the other stockholders and could also discourage others from seeking to purchase our common stock, which might depress the price of our common stock.

RISKS RELATING TO THIS OFFERING

WE WILL HAVE IMMEDIATE AND BROAD DISCRETION OVER THE USE OF THE NET PROCEEDS FROM THIS OFFERING. There is no minimum offering amount required as a condition to closing this offering and therefore net proceeds from this offering will be immediately available to us to use at our discretion. We intend to use the net proceeds to further develop our product and for working capital and general corporate purposes. Our judgment may not result in positive returns on your investment and you will not have an opportunity to evaluate the economic, financial, or other information upon which we base our decisions.

FUTURE SALES BY OUR STOCKHOLDERS MAY ADVERSELY AFFECT OUR STOCK PRICE AND OUR ABILITY TO RAISE FUNDS IN NEW STOCK OFFERINGS. Sales of our common stock in the public market following this offering could lower the market price of our common stock. Sales may also make it more difficult for us to sell equity securities or equity-related securities in the future at a time and price that our management deems acceptable or at all.

YOU WILL EXPERIENCE IMMEDIATE AND SUBSTANTIAL DILUTION AS A RESULT OF THIS OFFERING AND MAY EXPERIENCE ADDITIONAL DILUTION IN THE FUTURE. You will incur immediate and substantial dilution as a result of this offering. After giving effect to the sale by us of 5,250 shares of convertible preferred stock and accompanying warrants to purchase an additional 2,100,000 shares of our common stock, and after deducting placement agent commissions and estimated offering expenses payable by us, investors in this offering can expect an immediate dilution of $0.90 per share, or 72%, at the public offering price, assuming no exercise of the warrants. In addition, in the past, we issued options and warrants to acquire shares of common stock. To the extent these options are ultimately exercised, you will sustain future dilution. We may also acquire or license other technologies or finance strategic alliances by issuing equity, which may result in additional dilution to our stockholders.

THERE IS NO PUBLIC MARKET FOR THE CONVERTIBLE PREFERRED STOCK OR THE WARRANTS BEING OFFERED IN THIS OFFERING. There is no established public trading market for the convertible preferred stock or the warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing the convertible preferred stock or the warrants on any securities exchange. Without an active market, the liquidity of the convertible preferred stock and the warrants will be limited.

THE OFFERING MAY NOT BE FULLY SUBSCRIBED AND, EVEN IF THE OFFERING IS FULLY SUBSCRIBED, WE WILL NEED ADDITIONAL CAPITAL IN THE FUTURE. IF ADDITIONAL CAPITAL IS NOT AVAILABLE, WE MAY NOT BE ABLE TO CONTINUE TO OPERATE OUR BUSINESS PURSUANT TO OUR BUSINESS PLAN OR WE MAY HAVE TO DISCONTINUE OUR

Table of Contents

OPERATIONS ENTIRELY. The placement agent in this offering will offer the securities on a best-efforts basis, meaning that we may raise substantially less than the total maximum offering amounts. No refund will be made available to investors if less than all of the securities are sold. Based on our proposed use of proceeds, we will likely need significant additional financing, which we may seek to raise through, among other things, public and private equity offerings and debt financing. Any equity financing will be dilutive to existing stockholders, and any debt financings will likely involve covenants restricting our business activities. Additional financing may not be available on acceptable terms, or at all.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, any prospectus supplement and the documents we incorporate by reference contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Forward looking statements reflect our current views with respect to future events and future forward performance, including in particular statements about our plans, objectives, expectations and prospects. You can identify these statements by forward-looking words such as anticipate, believe, estimate, expect, intend, plan, seek, forecasts, projects, could, may, will, would, hopes, and similar expressions. Although we believe that the p expectations and prospects reflected in or suggested by our forward-looking statements are reasonable, those statements involve uncertainties and risks, and we can give no assurance that our plans, objectives, expectations and prospects will be achieved. Important factors that could cause our actual results to differ materially from the results anticipated by the forward-looking statements are contained herein under Risk Factors and elsewhere in this prospectus. Any or all of these factors could cause our actual results and financial or legal status for future periods to differ materially from those expressed or referred to in any forward-looking statements. All written or oral forward-looking statements attributable to us are expressly qualified in their entirety by these cautionary statements. Forward-looking statements speak only as of the date on which they are made and we do not assume any obligation to update or revise any forward-looking statements that we make, whether as a result of new information, future events or otherwise.

We have identified some of the important factors that could cause future events to differ from our current expectations herein and in our most recent Annual Report on Form 10-K filed on March 30, 2010 including, without limitation, under the captions Item 1A. Risk Factors and Item 7. Management s Discussion and Analysis of Financial Condition and Results of Operations, which you should review carefully. Although we have attempted to list comprehensively these important factors, we also wish to caution investors that other factors may prove to be important in the future in affecting our operating results. New factors emerge from time to time, and it is not possible for us to predict all of these factors, nor can we assess the impact each factor or combination of factors may have on our business.

USE OF PROCEEDS

We estimate that the net proceeds to us from the sale of the securities offered under this prospectus, after deducting the estimated placement agent s fees and our estimated offering expenses, will be approximately $4.8 million if we sell the maximum amount of convertible preferred stock and warrants offered hereby. Because there is no minimum offering amount required as a condition to closing this offering, we may sell fewer than all of the securities offered hereby, which may significantly reduce the amount of proceeds received by us.

We currently intend to use the majority of the net proceeds to fund our operations and to continue the development of D-tagatose for diabetes and triglycerides, as well as for general corporate purposes. At this time we cannot estimate the allocation of the net proceeds of this offering among these anticipated uses. The amounts and timing of the expenditures may vary significantly depending on numerous factors, including the net proceeds to us from the sales of the securities offered under this prospectus and our need for and ability to raise additional capital to advance D-tagatose toward commercialization. We reserve the right to change the use of proceeds as a result of certain contingencies, such as those

discussed above and any future opportunities to evaluate, negotiate and complete one or more strategic or partnering transactions. Accordingly, our management will have broad discretion in the application of the net proceeds of this offering. Pending use of the net proceeds, we intend to invest the net proceeds in short-term, interest-bearing, investment-grade securities.

Table of Contents

MARKET PRICE OF COMMON STOCK

Our common stock trades under the symbol SPEX on the NASDAQ Capital Market. The following table sets forth the high and low closing prices for our common stock, as reported by the NASDAQ Capital Market, for the periods indicated.

Period	High	Low
2010		
First Quarter	$ 1.96	$ 1.10
Second Quarter	$ 1.47	$ 1.00
Third Quarter (through September 30, 2010)	$ 1.94	$ 1.16
2009		
First Quarter	$ 0.90	$ 0.25
Second Quarter	$ 2.67	$ 0.70
Third Quarter	$ 2.61	$ 1.10
Fourth Quarter	$ 4.15	$ 1.10
2008		
First Quarter	$ 1.30	$ 1.00
Second Quarter	$ 1.24	$ 0.65
Third Quarter	$ 0.82	$ 0.49
Fourth Quarter	$ 0.75	$ 0.20

On October 5, 2010, the closing price of our common stock, as reported by the NASDAQ Capital Market, was $1.38. As of October 5, 2010, we had approximately 800 holders of record of our common stock. We believe that the number of beneficial owners is substantially greater than the number of record holders because a large portion of our common stock is held of record through brokerage firms in street name.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our common stock and do not anticipate declaring or paying any cash dividends on our common stock in the foreseeable future. We expect to retain all available funds and any future earnings to support operations and fund the development and growth of our business. Our board of directors will determine whether we pay and the amount of future dividends (including cash dividends), if any.

CAPITALIZATION

The following table sets forth our capitalization as of June 30, 2010:

- on an actual basis;

- on a pro forma basis to give effect to our sale of 5,250 shares of convertible preferred stock in this offering, or 4,200,000 shares of common stock issuable upon conversion of the convertible preferred stock, less the placement agent s fees and our estimated offering expenses, and assuming the convertible preferred stock does not carry an embedded conversion feature. The following table assumes conversion of all of the Series B Preferred Stock in common stock.

You should read this table in conjunction with the section of this prospectus entitled Management s Discussion and Analysis of Financial Condition and Results of Operations and with our consolidated financial statements and the notes thereto and our unaudited interim condensed consolidated financial statements and the notes thereto, all of which is included elsewhere in this prospectus.

Table of Contents

	As of June 30, 2010 (unaudited)	
	Actual	**Pro Forma**
Preferred stock, $0.01 par value; 2,000,000 shares authorized; 0 shares issued and outstanding at June 30, 2010	$	$
Common stock, $0.005 par value; 50,000,000 shares authorized; 17,231,086 shares issued and 17,150,648 outstanding at June 30, 2010; 21,350,648 shares issued and outstanding pro forma;	86,155	107,155
Paid-in capital in excess of par value	33,634,927	38,548,927
Treasury stock, 80,438 shares at cost at June 30, 2010	(464,786)	(464,786)
Accumulated deficit	(30,654,490)	(30,654,490)
Total stockholders equity	$ 2,601,806	$ 7,536,806

The outstanding shares information in the table above excludes:

- 63,088 shares of common stock issuable upon the exercise of stock options issued under our equity incentive plan and outstanding as of June 30, 2010, at a weighted average exercise price of $1.61 per share;

- 661,136 shares of common stock available for future issuance under our equity incentive plan as of June 30, 2010;

- 1,104,348 shares of common stock issuable upon the exercise of outstanding warrants issued to the purchasers in the common stock and warrant financing we completed in November, 2009, at an exercise price of $3.25 per share;

- 82,826 shares of common stock issuable upon the exercise of outstanding warrants issued to the placement agent in connection with the common stock and warrant financing we completed in November, 2009, at an exercise price of $2.875 per share;

- 2,100,000 shares of our common stock issuable upon the exercise of warrants to be issued to the purchasers in this offering, at an exercise price of $1.50 per share; and

- 126,000 shares of our common stock issuable upon the exercise of warrants to be issued to the placement agent in connection with this offering, at an exercise price of $1.5625 per share.

DILUTION

If you invest in the securities being offered by this prospectus, you will suffer immediate and substantial dilution in the net tangible book value per share of common stock. Our net tangible book value as of June 30, 2010 was approximately $2,596,476, or approximately $0.15 per share of common stock. Net tangible book value per share is determined by dividing our net tangible book value, which consists of our total tangible assets less total liabilities, by the number of shares of our common stock outstanding on that date.

Dilution in net tangible book value per share represents the difference between the price per share paid by purchasers in this offering and the net tangible book value per share of our common stock immediately after this offering. Without taking into account any other changes in the net tangible book value after June 30, 2010, other than to give effect to our receipt of the estimated proceeds from the sale of 5,250 shares of convertible preferred stock and accompanying warrants to purchase shares of our common stock in this offering at an offering price of

Table of Contents

$1,000, or 4,200,000 shares of common stock issuable upon conversion of the convertible preferred stock at an effective acquisition price of $1.25, per share of common stock, less the estimated placement agent s fees and our estimated offering expenses, but before deducting related payment obligations, our net tangible book value as of June 30, 2010, after giving effect to the items above, would have been approximately $7.5 million, or approximately $0.35 per share of common stock. This represents an immediate increase of $0.20 in net tangible book value per share to our existing stockholders and an immediate dilution of $0.90 per share to purchasers of securities in this offering. The following table illustrates this per share dilution:

Assumed public offering price per share (unaudited)	$	1.25
Net tangible book value per share as of June 30, 2010 (unaudited)	$	0.15
Increase in net tangible book value per share attributable to this offering (unaudited)	$	0.20
Pro forma net tangible book value per share as of June 30, 2010, (unaudited)	$	0.35
Dilution in pro forma net tangible book value per share to new Investors in this offering (unaudited)	$	0.90

The above table is based on 17,150,648 shares of our common stock outstanding as of June 30, 2010 (as adjusted 21,350,648 shares of common stock to be issued in this offering), and excludes:

- 63,088 shares of common stock issuable upon the exercise of stock options issued under our equity incentive plan and outstanding as of June 30, 2010, at a weighted average exercise price of $1.61 per share;

- 661,136 shares of common stock available for future issuance under our equity incentive plan as of June 30, 2010;

- 1,104,348 shares of common stock issuable upon the exercise of outstanding warrants issued to the purchasers in the common stock and warrant financing we completed in November, 2009, at an exercise price of $3.25 per share;

- 82,826 shares of common stock issuable upon the exercise of outstanding warrants issued to the placement agent in connection with the common stock and warrant financing we completed in November, 2009, at an exercise price of $2.875 per share;

- 2,100,000 shares of our common stock issuable upon the exercise of warrants to be issued to the purchasers in this offering, at an exercise price of $1.50 per share; and

- 126,000 shares of our common stock issuable upon the exercise of warrants to be issued to the placement agent in connection with this offering, at an exercise price of $1.5625 per share.

To the extent that any options or warrants are exercised, new options or other equity awards are issued under our equity incentive plan, or we otherwise issue additional shares of common stock in the future, there will be further dilution to new investors.

Summary Financial Data

The following tables set forth our summary consolidated statement of operations data for the fiscal years ended December 31, 2009 and 2008, and for the six-month periods ended June 30, 2010 and 2009, and our summary consolidated balance sheets as of June 30, 2010 and December 31, 2009. Our statement of operations data for the fiscal years ended December 31, 2009 and 2008 and our balance sheet as of December 31, 2009 were derived from our audited consolidated financial statements. Our statement of operations data for the six months ended June 30, 2010 and 2009 and our balance sheet as of June 30, 2010 were derived from unaudited consolidated financial statements, all of which are included elsewhere in this prospectus.

The results indicated below and elsewhere in this prospectus are not necessarily indicative of our future performance. You should read this information together with Capitalization, Management s Discussion and

Table of Contents

Analysis of Financial Condition and Results of Operations, our consolidated financial statements and related notes included elsewhere in this prospectus.

Summary Consolidated Statements of Operations Data

	Year Ended December 31,		(Unaudited) Six Months Ended June 30,	
	2009	2008	2010	2009
Revenue	$ 1,359,110	$ 1,025,961	$ 659,430	$ 692,911
Operating expense				
Direct costs	449,293	397,645	231,899	239,665
Research and development	6,830,957	4,004,565	2,856,484	2,695,351
Selling, general and administrative	3,265,137	3,135,310	2,280,750	1,408,366
Loss from operations	(9,186,277)	(6,511,559)	(4,709,703)	(3,650,471)
Interest income and other expense	37,646	340,229	4,216	29,847
Income tax benefit		552,803		
Loss from continuing operations	(9,148,631)	(5,618,527)	(4,705,487)	(3,620,624)
Income from discontinued operations		1,482,993		
Net loss	$ (9,148,631)	$ (4,135,534)	$ (4,705,487)	$ (3,620,624)
Net loss per share, basic and diluted				
Continuing operations	$ (0.62)	$ (0.39)	$ (0.27)	$ (0.25)
Discontinued operations	$	$ 0.10	$	$
Net loss per share	$ (0.62)	$ (0.29)	$ (0.27)	$ (0.25)
Weighted average shares outstanding, basic and diluted	14,713,473	14,342,953	17,150,648	14,357,162

Summary Consolidated Balance Sheets Data

	June 30, 2010 (Unaudited)	December 31, 2009
Cash and cash equivalents	$ 4,585,803	$ 9,026,002
Total assets	$ 5,351,851	$ 10,155,308
Total liabilities	$ 2,750,045	$ 2,883,432
Accumulated deficit	$ 30,654,490	$ 25,949,003
Total stockholders equity	$ 2,601,806	$ 7,271,876

Table of Contents

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

Results of Operations Second Quarter 2010 Compared with Second Quarter 2009

Revenue and Direct Costs

Revenue and direct costs for the three and six months ended June 30, 2010 were consistent between years and are directly related to the Company s Health Sciences segment.

No substantial revenue is expected from the Biospherics segment until the Company is successful in selling or licensing its technology.

Research and Development

Research and development expenditures relate solely to the Biospherics segment and consist primarily of salaries and related personnel costs, fees paid to consultants and outside service providers, and other expenses related to our efforts to develop D-tagatose for future commercialization. We expense our research and development costs as they are incurred.

The clinical trials in the use of D-tagatose for the treatment of Type 2 diabetes have been the primary focus of the Biospherics segment. The R&D expenditures for 2010 and 2009 consisted of both the Phase 3 clinical trial and a related Phase 2 Dose Range study. The increase in R&D costs for the three months period ended June 30, 2010 over the same period in 2009 of $411,000 (36%) are related to concluding procedures for the Phase 3 trial.

The Dose Range trial and the efficacy portion of the Phase 3 trial will likely be completed in the second half of 2010. As we have determined that it would take several additional years of clinical trials and could cost as much as several hundred million dollars to seek and obtain FDA approval for D-tagatose as a diabetes drug, the safety portion of the Phase 3 trial has been terminated. We are actively seeking a pharma partner to continue the development of D-tagatose as a treatment for Type 2 diabetes.

Selling, General and Administrative

Our selling, general and administrative (S,G&A) expenses consist primarily of salaries and related expenses for executive, finance and other administrative personnel, professional fees and other corporate expenses, including facilities-related expenses. S,G&A expenses for the three and six months ended June 30, 2010 increased $541,000 (83%) and $832,000 (59%) over those of the prior year. The increase in S,G&A costs

between 2010 and 2009 is primarily related to the expansion of the Company s commercialization efforts of D-tagatose as a treatment for Type 2 diabetes and high-triglycerides.

Interest

Interest revenue in 2010 and 2009 was primarily derived from interest earned on the net proceeds of the sale of the InfoSpherix subsidiary in August 2007 and from the net proceeds of our November 2009 equity offering. Interest income for the six months ended June 30, 2010 decreased by $26,000 with the decrease in funds available for investing and the lower rates of return available in the market compared to the same period in 2009.

Results of Operations 2009 Compared with 2008

Revenue and Direct Costs

Revenue and direct contract costs are primarily related to our Health Sciences business, which started in July 2007 and has experienced a steady growth in business with new clients representing 52% of the growth between 2009 and 2008. Revenue increased $333,000 (32%) between years and direct costs increased $51,000

Table of Contents

(12%). The consulting business generally provides services on either a fixed-price basis or a time and expenses basis, charging hourly rates for each staff member involved in a project, based on his or her skills and experience. Engagement agreements typically provide for monthly billing and payment within thirty (30) days of receipt, and permit clients to terminate engagements at any time.

No substantial revenue is expected from the Biospherics segment until we are successful in selling or licensing its technology.

Research and Development

Research and development expenditures relate solely to the Biospherics segment and consist primarily of salaries and related personnel costs, fees paid to consultants and outside service providers, and other expenses related to our efforts to commercialize D-tagatose. We expense our research and development costs as they are incurred.

The clinical trials in the use of D-tagatose for the treatment of Type 2 diabetes have been the primary focus of the Biospherics segment. The R&D expenditures for 2009 and 2008 consisted of both the Phase 3 clinical trial and a related Phase 2 Dose Range study. The $2.8 million (71%) increase between years is related to the expansion of the Phase 3 trial to India and the related increase in the number of subjects participating in the trials.

In June 2009, we received the first batch of FDA current Good Manufacturing Practice (cGMP) D-tagatose, U.S. Pharmacopeia (USP) grade. This and subsequent batches are being used in the ongoing clinical trials.

In December 2009, we entered into a Manufacturing Support and Supply Agreement with Inalco S.p.A of Italy. Under the agreement we committed to the purchase of 25 metric tons of D-tagatose. The entire purchase commitment of $1,100,000 was realized as an expense in 2009. Of this amount $500,000 was paid in 2009, with the remaining balance payable in 2010. An additional $300,000 of D-tagatose, separate from the above Manufacturing Support and Supply Agreement, was also purchased in 2009 from Inalco.

Selling, General and Administrative

Our selling, general and administrative expenses consist primarily of salaries and related expenses for executive finance and other administrative personnel, professional fees and other corporate expenses, including facilities-related expenses. The $129,000 (4%) increase in selling, general and administrative costs between 2009 and 2008 is primarily related to the expansion of our commercialization efforts of D-tagatose as a treatment for Type 2 diabetes. These plans include the formation of regional Advisory Boards, with the first one held in October 2009.

Interest

Interest income in 2009 and 2008 was primarily derived from interest earned on the net proceeds of the sale of the InfoSpherix subsidiary in August 2007 and from the net proceeds of our November 2009 equity offering. Interest income between years decreased $310,000 with the decrease in funds available for investing and the lower rates of return available in the market.

Income Tax

The 2008 income tax expense is related to the $2 million gain on sale in November 2008.

Discontinued Operations

On August 15, 2007, we completed the sale of InfoSpherix for $17 million ($15 million at closing and $2 million following a 15-month escrow period), pursuant to the Stock Purchase Agreement dated June 25, 2007. The $2 million escrow balance was recorded as a gain on sale of the discontinued segment when it was realized in November 2008. The sale was conducted to allow us to focus substantially all of our efforts on Biospherics.

Table of Contents

The results of operations of the discontinued InfoSpherix segment, including the costs to sell the segment, are as follows:

		2008
Interest income	$	70,000
Gain on sale of segment		2,000,000
Income from discontinued operations before taxes	$	2,070,000

Sales Backlog

Our backlog as of December 31, 2009 and 2008 (consisting solely of backlog from the Health Sciences business) was approximately $770,000 and $1.2 million, respectively. We bill for our consulting services primarily on a time and expense basis and these amounts represent estimated contract values. Further, our consulting contracts are generally terminable or subject to postponement or delay at any time by clients. As a result, backlog at any particular time is not a reliable indicator of revenues for any future periods.

Critical Accounting Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of the contingent assets and liabilities at the date of the financial statements and revenue and expenses for the period reported. Estimates are based upon historical experience and various other assumptions that are believed to be reasonable under the circumstances. These estimates are evaluated periodically and form the basis for making judgments regarding the carrying values of assets and liabilities and the reported amount of revenue and expenses. Actual results may differ substantially from these estimates.

Our critical accounting policies are those we believe are the most important in determining our financial condition and results, and require significant subjective judgment by management as a result of inherent uncertainties. A summary of our significant accounting policies is set out in the notes to the consolidated financial statements. Such policies are discussed below.

Accounting for Taxes and Valuation Allowances

We currently have significant deferred tax assets, resulting from net operating loss carry forwards. These deferred tax assets may reduce taxable income in future periods. Based on our losses and our accumulated deficit, we have provided a full valuation allowance against the net deferred tax asset. Cumulative losses weigh heavily in the overall assessment of valuation allowances.

We expect to continue to maintain a full valuation allowance on future tax benefits until an appropriate level of profitability is sustained, or we are able to develop tax strategies that would enable us to conclude that it is more likely than not that a portion of our deferred tax assets would be realizable.

New Accounting Pronouncements

In June 2009, the Financial Accounting Standards Board (FASB) established the FASB Accounting Standards Codification (Codification) as the source of authoritative U.S. generally accepted accounting principles (GAAP) recognized by the FASB to be applied to nongovernmental entities and rules and interpretive releases of the SEC as authoritative GAAP for SEC registrants. The Codification supersedes all the existing non-SEC accounting and reporting standards upon its effective date and subsequently, the FASB will not issue new standards in the form of Statements, FASB Staff Positions or Emerging Issues Task Force Abstracts. This guidance is effective for interim periods ending after September 15, 2009. We adopted this guidance for the period ended September 30, 2009, with no effect on our consolidated results of operations and financial condition for the three and nine months ended September 30, 2009.

Table of Contents

In October 2009, the FASB issued ASC Update No. 2009-13, which amends the Revenue Recognition topic of the Codification. This update provides amendments to the criteria in Subtopic 605-25 of the Codification for separating consideration in multiple-deliverable arrangements. As a result of those amendments, multiple-deliverable arrangements will be separated in more circumstances than under existing U.S. GAAP. The amendments establish a selling price hierarchy for determining the selling price of a deliverable and will replace the term *fair value* in the revenue allocation guidance with *selling price* to clarify that the allocation of revenue is based on entity-specific assumptions rather than assumptions of a marketplace participant. The amendments will also eliminate the residual method of allocation and require that arrangement consideration be allocated at the inception of the arrangement to all deliverables using the relative selling price method and will require that a vendor determine its best estimate of selling price in a manner that is consistent with that used to determine the price to sell the deliverable on a stand-alone basis. These amendments will be effective prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010, with early adoption permitted. We are currently evaluating the impact the adoption of this update might have on our results of operations and financial position.

Liquidity and Capital Resources June 30, 2010

As of June 30, 2010, the Company had cash and short-term investments of approximately $4.7 million and expects to expend all of this amount within the next six months. Our working capital was $3.0 million as of June 30, 2010, compared to working capital of $7.7 million as of December 31, 2009. We have incurred substantial development costs in our efforts to explore whether D-tagatose is an effective treatment for Type 2 diabetes. We have financed our development activities through the remaining proceeds received from the 2007 sale of InfoSpherix and the November 2009 stock placement. Over the next 12 months, the Company expects that it will need to expend between $7 million and $13 million to support its development operations.

The Company recently announced that it is actively seeking a pharma partner to continue the diabetes development and that it will also explore D-tagatose as a potential treatment for high triglycerides. Accordingly, the Company has terminated the safety portion of its Phase 3 diabetes clinical trial and expects to shift its research and development focus to D-tagatose as a treatment for triglycerides.

We will need to raise additional funds in 2010 to continue operations and will likely require additional capital raises thereafter to fully pursue the triglycerides opportunity.

Fundraising will likely require the issuance of additional Company equity securities and a purchaser of such securities will likely insist that such securities be registered securities.

In November 2009, we obtained net proceeds of approximately $6 million in a registered direct primary offering. The common stock issued in the offering and the common stock which may be issued upon exercise of warrants issued in the offering have been registered under a Form S-3 registration statement declared effective by the Securities and Exchange Commission (SEC) in October 2009.

Pursuant to SEC rules, the Company may not be in a position to issue additional shares of its common stock in another registered direct primary offering under a Form S-3 registration statement until mid-November 2010. On July 2, 2010, the Company filed a Form S-1 registration statement with the SEC to begin the process of raising additional capital.

Further, NASDAQ rules require stockholder approval for certain stock issuances constituting 20% or more of a Company s issued and outstanding stock.

Liquidity and Capital Resources December 31, 2009

Our working capital was $7.7 million as of December 31, 2009.

We will need to raise additional funds in 2010 to continue our operations. Any such fundraising will likely require the issuance of additional Company equity securities and a purchaser of such securities will likely insist that such securities be registered securities.

Table of Contents

We cannot be assured that we will be able to attract purchasers of securities to raise the additional funds.

BUSINESS

General

We were organized as a Delaware corporation in 1967. Our principal segments are Biospherics, our biotechnology research and development business, and Health Sciences, a technical and regulatory consulting business. The Health Sciences segment was created in July 2007 when Claire L. Kruger, CEO and COO, joined us in advance of the anticipated sale of our wholly-owned subsidiary, InfoSpherix Incorporated. InfoSpherix was our information services segment and was sold on August 15, 2007 in a move to allow us to devote our resources to the activities of the Biospherics segment.

We have created two wholly-owned subsidiaries, Biospherics Incorporated and Spherix Consulting, Inc., for our two operating segments. Our Health Sciences contracts are now in the name of Spherix Consulting, Inc. and our patents and other assets and operations have been transferred into the name of Biospherics Incorporated. The subsidiaries began operations on January 1, 2009. We provide management, strategic guidance, business development, marketing and other services to our subsidiaries.

Our principal executive offices are located at 6430 Rockledge Drive, Suite 503, Bethesda, Maryland 20817, and our telephone number is (301) 897-2540.

Our common stock trades on the NASDAQ Capital Market system under the symbol SPEX.

Available Information

Our principal Internet address is www.spherix.com. We make available free of charge on www.spherix.com our annual, quarterly and current reports, and amendments to those reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

Biospherics

Biospherics is dedicated to development of D-tagatose. Until June 2010, this development was limited to developing D-tagatose as a novel, first-in-class treatment for Type 2 diabetes. The Company recently announced that it will actively seek a pharma partner to continue the diabetes

development and that it will also explore D-tagatose as a potential treatment for high triglycerides, a risk factor for atherosclerosis, myocardial infarction, and stroke.

Tagatose, a naturally occurring sugar, is a low-calorie, full-bulk sweetener previously approved by the Food and Drug Administration (FDA) as a GRAS (Generally Recognized As Safe) food ingredient. It is a true sugar that looks, feels, and tastes like table sugar. During human safety studies supporting food use, we discovered and patented a number of health and medical uses for D-tagatose. We hold the patents for use of D-tagatose as a treatment for Type 2 diabetes and the license for the pending PCT (Patent Cooperation Treaty) patents for D-tagatose in new formulations as a treatment for high blood triglycerides. The use patents for D-tagatose as a treatment for Type 2 diabetes expire in 2012, not including extensions. If approved for use as a drug by the FDA as a treatment for Type 2 diabetes, we believe we will be eligible for a five-year New Chemical Entity (NCE) exclusivity period following FDA approval. Similar legislation in Europe could provide seven years of market exclusivity in the European Union, if approved by the European Medicines Agency (EMA). If patents are awarded for the drugs for treatment of hypertriglyceridemia, twenty years of market exclusivity would be obtained in the USA. Exclusivity in other countries could also be obtained by filing individual applications in countries covered by the PCT.

Table of Contents

Diabetes Indication

We have conducted a Phase 3 trial to determine efficacy of D-tagatose as a treatment for Type 2 diabetes and are conducting a Phase 2 Dose Range trial to evaluate the effectiveness of lower doses of D-tagatose in treating Type 2 diabetes. D-tagatose is believed to depress elevations of blood sugar levels in diabetic patients by increasing glycogen synthesis while decreasing glycogen utilization, resulting in an improvement of blood sugar control and modulation of HbA1c. HbA1c is a key indicator that measures glycated hemoglobin in the blood and is a measure of long-term control of blood glucose. Glucose is a sugar molecule that serves as a primary energy storage mechanism and glycogen is a molecule that functions as secondary long-term energy storage in humans.

The Company has announced that its Phase 3 clinical trial showed that D-tagatose as a monotherapy in Type 2 diabetes showed a statistically significant ($p<0.05$) reduction in HbA1c levels of 0.4% at 10 months in relatively healthy people with diabetes (U.S. ITT LOCF, n=101 and Global PP, n=92)*. The reduction was even more pronounced among PP patients treated in the U.S., and the reduction in HbA1c generally increased over the 10 months patients were treated.

The data show that D-tagatose was more effective in the U.S. population than in the Indian population, as the PP patients in the U.S. who were treated with D tagatose had a reduction in HbA1c of 0.4% at two months, 0.6% at six months and 1.1% at 10 months on therapy ($p<0.05$). Patients in the study had a low average randomization HbA1c of 7.5% globally. An HbA1c level of 6% or below is considered normal. An 8% level is considered high. The American Diabetes Association recommends a goal of reducing HbA1c to 7% or below in people with diabetes.

Patients with HbA1c levels between 8.0% and 9.0% globally, which are at the high end of the inclusion criteria, showed 0.7% reduction on D-tagatose at 10 months of therapy (PP, not shown in table). This occurred in a subpopulation of patients using the drug per protocol, but was not with statistical significance ($p=0.09$) due to the small number of patients (n=30) with HbA1c values at those levels.

Tolerability data are still being analyzed, but the number of patients with one or more treatment-emergent adverse events in the active group (163) was comparable to those reported in the placebo group (166). No serious adverse event was deemed to be treatment related. No episodes of hypoglycemia or pancreatitis were reported in NEET.

In addition, preliminary data from the Phase 2 Dose Range study demonstrates reductions of HbA1c levels at doses lower than those used in the current Phase 3 trial. The doses being tested are: 2.5, 5.0, and 7.5 g, which are administered orally with meals, three times daily. After 6 months on drug, patients in the 7.5 g group experienced an average reduction of 0.3% in HbA1c over those of the 2.5 g group. Over the same period, the 5.0 g group averaged a reduction in HbA1c of 0.05% over those from the 2.5 g group. D-tagatose appears to begin showing an effect on HbA1c within the range of doses selected for this minimum-dose study. The Phase 3 efficacy study was conducted at a 15 g dose, three times a day.

Over the course of the Dose Range study, D-tagatose also changed the average serum triglycerides of the patients by -59 mg/dl by the end of the first month on therapy, a decrease from baseline at visit 2 (month 2) that remained at -41 mg/dl by the end of the 6 months of the trial. D-tagatose also changed serum LDL by an average -13 mg/dl by the end of the first month on therapy, while serum HDL was essentially unchanged (+0.9 mg/dl). The LDL:HDL ratio was improved for two of the three dose groups by an average of 0.3.

Notwithstanding the favorable interim and Phase 3 results, the cost burden of developing drugs specifically for diabetes has increased significantly within the last few years under evolving and more stringent FDA guidelines. A company-commissioned analysis estimates it would take several additional years of clinical trials and could cost as much as several hundred million dollars to achieve a New Drug Application (NDA) filing for D-tagatose under current FDA guidelines. European regulatory requirements are significantly lower and we believe Europe represents a better opportunity for development, especially given the longer exclusivity period granted to a new chemical entity. We have determined that continued development of D-tagatose as a treatment for Type 2 diabetes requires the involvement of a pharma partner with the resources needed to fund the rest of the development

*PP = Per-Protocol; ITT = Intent-to-Treat; LOCF = Last Observation Carried Forward

Table of Contents

and to bring it to market. We are hopeful that the recently announced Phase 3 results will further D-tagatose as an attractive candidate for further development by a pharma company. Accordingly, we are actively seeking a strategic relationship with a pharma company for the continued development of D-tagatose as a treatment for Type 2 diabetes.

Triglycerides Indication

Secondary endpoints of our diabetes trials include triglyceride measurements. High triglyceride levels are sometimes a symptom of conditions associated with heart disease such as obesity and metabolic syndrome, which is a condition associated with elevated glucose levels as well as excess fat around the waist, high blood pressure, high triglycerides and low HDL cholesterol. Interim results of our Phase 2 Dose Range Study demonstrate a substantial reduction in triglycerides from patients who received 7.5 grams of D-tagatose compared to patients who received 2.5 grams of D-tagatose. Because of the relatively small number of patients enrolled in our Phase 3 trial with significant triglyceride levels, the trial could not confirm D-tagatose s efficacy regarding triglycerides.

The program to investigate D-tagatose as a pharmaceutical agent to lower serum triglycerides will begin this year. As per a normal pharmaceutical development plan, initial studies may include appropriate animal models in order to fully explore the mechanism of action on lipid metabolism, including triglycerides as well as LDL and HDL cholesterol. The commercial intent of the triglyceride program is to develop a formulation, dose and dosing regimen appropriate for the lipid market segment and uniquely different from the diabetes market. Thus, Spherix s intent is to develop a completely new, second brand for triglycerides, separate from the diabetes brand. Our goal is to produce a robust proof of concept in a Phase 2 clinical study, and then seek a pharma partner for further development of the triglycerides drug product. We estimate that it will likely take up to three years to complete the studies/trials necessary to attract a pharma partner to complete the development and an additional 2-3 years to complete all necessary studies for an NDA filing.

We expect to incur substantial development costs in our Biospherics segment in the next several years, without substantial corresponding revenue. We intend to finance our development activities through the remaining proceeds received from the 2007 sale of InfoSpherix, the net proceeds of the November 2009 registered direct equity offering, the net proceeds from this offering, and additional funds we will seek to raise through the sale of additional stock in the future.

Manufacturing

We do not own or operate our own manufacturing facilities. We first acquired D-tagatose for use in the trials from Arla Foods Ingredients amba (Arla), our previous food and beverage use licensee. However, Arla has discontinued manufacture of D-tagatose. In 2009, our Biospherics subsidiary signed a Supply Agreement with Inalco, S.p.A., a manufacturer capable of providing us with batches of pharmaceutical grade D-tagatose for submission to the Drug Master File (DMF) in support of the planned NDA submission. We are now using both Inalco and Arla D-tagatose in the Phase 2 and 3 trials.

Food and Beverage Use

D-Tagatose has been approved for use as a sweetener in foods and beverages in the United States since 2001. D-Tagatose is 92% as sweet as sucrose, but with only 38% of the calories. In 1997, and through a subsequent amendment, the world-wide right to sell D-tagatose for food and beverage uses, and the right to manufacture D-tagatose for all uses, was licensed to Arla (formerly MD Foods Ingredients amba, MDFI) of Denmark. Arla has not been successful in generating any substantial market for D-tagatose, Arla has ceased manufacturing D-tagatose, and we have received no meaningful royalties from Arla under the license agreement.

Biospherics revenue from miscellaneous royalties accounted for 1% of our total revenue from continuing operations in 2009.

In June 2009, we terminated the 1996 license agreement pursuant to which we granted Arla Foods Ingredients amba (Arla) the food and beverage rights to D-tagatose. Per the termination agreement, we and Arla have fully released one another from all obligations.

Table of Contents

Health Sciences

In July 2007, we entered into the Health Sciences business when Claire L. Kruger, CEO and COO, joined us in advance of the anticipated sale of our wholly-owned subsidiary, InfoSpherix Incorporated. The Health Sciences business provides technical and regulatory consulting services to biotechnology and pharmaceutical companies, as well as providing technical support for our R&D activities.

During 2009 and 2008, Health Sciences provided services to 12 and 16 companies, respectively. We generally provide our services on either a fixed-price basis or a time and expenses basis, charging hourly rates for each staff member involved in a project, based on his or her skills and experience. Our engagement agreements typically provide for monthly billing and payment of our invoices within thirty days of receipt.

The projects range from safety analyses of food ingredients to safety analyses of pharmaceutical manufacturing and dispensing equipment. Many clients are large, well-known companies with a number of successful products on the market. The proliferation of new products in the food and pharmaceutical areas creates a growing need for such regulatory services.

Revenues are primarily derived from services provided in response to client requests or events that occur without notice, and engagements, generally billed as services are performed, are terminable or subject to postponement or delay at any time by clients. Revenues and operating margins for any particular quarter are generally affected by staffing mix, resource requirements, and timing and size of engagements.

Health Sciences is also monitoring and directing the Phase 3 clinical trial of D-tagatose for Biospherics.

Health Sciences revenue accounted for 99% of our total revenue in each of 2009 and 2008.

Government Contracts

None.

Market Concentration

During each of 2009 and 2008, 99% of our revenue was generated from the Health Sciences business. Revenue from five customers accounted for 19%, 16%, 14%, 12% and 11% in 2009, and three customers accounted for 38%, 14% and 14% of our revenue in 2008. No other single customer accounted for 10 percent or more of consolidated revenue. The loss of any of these customers could have a material effect on us if not replaced.

Patents

We have established a worldwide patent position for D-tagatose. These patents are detailed in the following table:

Patent No.	Patent Title	Issue Date	Expiration Date
Canada 2,077,257	Process for Manufacturing D-Tagatose	2/19/02	1/7/11
Finland 106861	Process for Manufacturing D-Tagatose	4/30/01	1/7/11
Japan 3,120,403	Process for Manufacturing D-Tagatose	10/20/00	1/7/11
Korea 190671	Process for Manufacturing D-Tagatose	1/21/99	1/7/11
EPO 0 518 874	Process for Manufacturing D-Tagatose	5/15/96	1/7/11
U.S. 5,447,917	D-Tagatose as Anti-Hyperglycemic Agent (1)	9/5/95	9/5/12
U.S, 5,356,879	D-Tagatose as Anti-Hyperglycemic Agent (1)	10/18/94	2/14/12
Canada 1,321,730	D-Tagatose as a Low-Calorie Carbohydrate Sweetener and Bulking Agent	8/31/93	8/31/10

(1) Patents pertaining to use of D-tagatose as treatment for Diabetes

Table of Contents

The following patents are pending:

Title	Filing Date	Status
D-Tagatose-Based Compositions And Methods For Preventing And Treating Atherosclerosis, Metabolic Syndrome And Symptoms Thereof	November 4, 2009	Pending*
D-Tagatose And Biguanide Compositions And Methods	April 1, 2010	Pending

*Licensed from the University of Kentucky Research Foundation

If approved for use as a drug by the FDA as a treatment for Type 2 diabetes, we believe that those patents related to the use of D-tagatose as an anti-diabetes treatment may be eligible for a five-year New Chemical Entity (NCE) exclusivity period following FDA approval. Similar legislation in Europe could provide seven years of market exclusivity in the European Union, if approved by the European Medicines Agency (EMA).

With respect to all of our inventions, we have received numerous patents, including foreign issues. In addition to our patent position, we rely on the common law protection of such information as trade secrets and on confidentiality agreements to protect the value of these assets.

Trademarks

We have trademarked each of Spherix and Biospherics.

Sales Backlog

Our backlog as of December 31, 2009 and 2008 from the Health Sciences business was approximately $770,000 and $1.2 million, respectively. We bill for our consulting services primarily on a time and expense basis and these amounts represent estimated contract values. Further, our consulting contracts are generally terminable or subject to postponement or delay at any time by clients. As a result, backlog at any particular time is not a reliable indicator of revenues for any future periods.

Competition

Biospherics

Competitors of Biospherics are numerous and include, among others, major pharmaceutical, chemical, consumer, and biotechnology companies; specialized firms; universities and other research institutions. Our competitors may succeed in developing technologies and products that are more effective than any that are being developed by us, and that could render our technology and potential products obsolete and noncompetitive. Many of these competitors have substantially greater financial and technical resources and production and marketing capabilities than us. If approved, our major competitor as a monotherapy in the treatment of Type 2 diabetes will be Metformin, which generated almost 50 million prescriptions in the U.S. market in 2009. In the triglyceride market, the main categories of pharmaceutical agents include: fenofibrates (Tricor®, gemfibrozil, generics) with global sales of $2.2 billion; niacin-based agents (with sales of $1 billion globally) and the Omega-2 oil products (Lovasa®/GSK) with prescription sales approaching $1 billion globally.

Health Sciences

Competitors of Health Sciences are numerous, including some that are much larger companies with greater resources. The segment s success in winning and retaining clients is heavily dependent on the efforts and reputation of its CEO. We believe the barriers to entry in particular areas of our consulting expertise are low.

Table of Contents

Research and Development

Biospherics expenditures for research and development were approximately $6.2 million and $4.0 million in 2009 and 2008, respectively. These expenditures were incurred in the ongoing efforts to commercialize D-tagatose.

In December 2009, we entered into a Manufacturing Support and Supply Agreement with Inalco S.p.A of Italy. Under the agreement we committed to the purchase of 25 metric tons of D-tagatose. The entire purchase commitment of $1,100,000 was booked as an expense in 2009. Of this amount $500,000 was paid in 2009, with the remaining balance payable in 2010. An additional $300,000 of D-tagatose, separate from the above Manufacturing Support and Supply Agreement, was also purchased in 2009 from Inalco.

Governmental Regulation

Our business activities are subject to a variety of Federal and state compliance, licensing, and certification requirements. Products such as D-tagatose may not be commercially marketed as a drug without prior approval from the FDA and comparable agencies in foreign countries. In the United States, the process for obtaining FDA approval typically includes pre-clinical studies, the filing of an Investigational New Drug application, or IND, human clinical trials and filing and approval of a New Drug Application, or NDA. The FDA may, at any time, impose a clinical hold on ongoing clinical trials. If the FDA imposes a clinical hold, clinical trials cannot commence or recommence without FDA authorization and then only under terms authorized by the FDA.

The results of the trials and other information are then submitted to the FDA in the form of an NDA for review and potential approval to commence commercial sales. In responding to an NDA, the FDA may grant marketing approval, request additional information in a complete response letter, or deny the approval if it determines that the NDA does not provide an adequate basis for approval. A complete response letter generally contains a statement of specific conditions that must be met in order to secure final approval of the NDA and may require additional testing. If and when those conditions have been met to the FDA s satisfaction, the FDA will typically issue an approval letter, which authorizes commercial marketing of the product with specific prescribing information for specific indications. Any approval required from the FDA might not be obtained on a timely basis, if at all.

Among the conditions for NDA approval is the requirement that the manufacturing operations conform on an ongoing basis with current Good Manufacturing Practices, or cGMP. A successful inspection of the manufacturing facility by the FDA is a prerequisite for final approval. Following approval of the NDA, the third-party manufacturer(s) remain subject to periodic inspections by the FDA. We also face similar inspections coordinated by the EMA by inspectors from particular European Union member countries that conduct inspections on behalf of the European Union and from other foreign regulatory authorities. Any determination by the FDA or other regulatory authorities of manufacturing or other deficiencies could materially adversely affect our business.

In general, regulatory requirements and approval processes in European Union (EU) countries are similar in principle to those in the United States and can be at least as costly and uncertain. The European Union has established a unified centralized filing and approval system administered by the Committee for Medicinal Products for Human Use designed to reduce the administrative burden of processing applications for pharmaceutical products derived from new technologies. In addition to obtaining regulatory approval of products, it is generally necessary to obtain regulatory approval of the facility in which the product will be manufactured.

However U.S. and EU requirements differ dramatically for antidiabetic medications. In the U.S. the FDA guidance requires 2/3 more subjects to be studied than in the EU, and also markedly increases the duration of the studies both for efficacy and safety. In addition, the FDA requirements for evaluating the cardiovascular risks associated with type 2 anti-diabetic medications markedly increases the study populations while also studying patients with relatively advance diabetes, some degree of renal impairment and at higher risk of cardiovascular events.

Requirements for the development of drugs to lower triglycerides have not changed and are similar in both the U.S. and EU. The development program is considerably simpler than with type 2 antidiabetic medications with a smaller number of subjects to be studied and clinical studies of substantially shorter duration to demonstrate efficacy and safety of the drugs.

Table of Contents

We are required to comply with the Sarbanes-Oxley Act of 2002, including the provisions of Section 404 on the assessment of internal controls as modified for non-accelerated filers. Starting with its year ended 2007, we performed an annual evaluation of the effectiveness of our internal control over financial reporting and reports on management s assessment of the adequacy of those controls in our annual report on Form 10-K.

The increase in accounting related regulations over the years, particularly those governing public companies, has had the effect of increasing our cost for external accounting services, from 0.3% of revenue in 1997 ($40,000) to 18% in 2009 ($240,000).

Environment

Compliance with current federal, state and local provisions regulating the discharge of materials into the environment, or otherwise relating to the protection of the environment, has not had, and in the opinion of management will not have, a material effect on our financial position, results of operations, capital expenditures, cash flows or competitive position.

Employees

We employ 11 individuals on a full- or part-time basis. Of this total, 10 are full-time employees. Our employees are not currently unionized, and management believes that our relations with such employees are harmonious.

PROPERTY

Our office is located in Bethesda, Maryland, where we lease 5,000 square feet of office space under a lease that expires March 31, 2013. We also leased 5,000 square feet of research lab and warehouse space for Biospherics in Annapolis, Maryland under a lease that expired June 30, 2009. The capacity of the Bethesda facility is adequate for our current needs.

MANAGEMENT

The following table sets forth information concerning the Spherix Board of Directors.

Name	Age	Position	Director Since
Douglas T. Brown	56	Director	2004
Claire L. Kruger	51	Director, and Chief Executive Officer	2007

Gilbert V. Levin	86	Director, and Chairman Emeritus	1967
Robert A. Lodder, Jr.	51	Director, and President	2005
Aris Melissaratos	66	Director	2008
Thomas B. Peter	57	Director	2009
Robert J. Vander Zanden	64	Director, and Chairman of the Board	2004

Mr. Douglas T. Brown, a Board Member since 2004, brings to the Board a broad understanding of the financial and other business aspects. He is currently Senior Vice President and Manager of the Corporate Banking Government Contracting Group for PNC Bank N.A., Washington, DC. Mr. Brown has been with PNC and its predecessor bank, Riggs Bank, since 2001 and previously worked for Bank of America, N.A. and its predecessor banks for 16 years as a Loan Officer, as well as a manager of Loan Officers in the Mid-Atlantic region. Subsequent to 1990, the majority of Mr. Brown s customers are companies that provided services to the Federal Government and State governments. Mr. Brown holds a B.A. degree in Political Science from American University and a graduate degree from The Stonier Graduate School of Banking at the University of Delaware. He is not now, nor has he been for the past five years, a director of a public, for-profit company other than us.

Table of Contents

Dr. Claire L. Kruger, elected to our Board of Directors in August 2007, and also elected Chief Executive Officer and Director of Health Sciences at that time, brings vast scientific and regulatory guidance expertise to the Board. Dr. Kruger received her Ph.D. in Toxicology from Albany Medical College, and her B.S. in Biology from Clarkson College. With more than 20 years of consulting experience, her primary areas of expertise are in foods, consumer products and pharmaceuticals, where she provides scientific, regulatory, and strategic support to clients in both the U.S. and international regulatory arenas. Dr. Kruger has conducted toxicity evaluations of foods and food contaminants, as well as health risk assessments and exposure assessments of drugs, cosmetics, and pesticides. Her clients include food, drug, and dietary supplement manufacturers, agricultural producers, biotechnology companies, trade associations, and law firms. In her role as a consultant, Dr. Kruger has been involved in the safety evaluation of a variety of consumer products, providing oversight of product compliance with current and emerging scientific and regulatory guidance. She is not now, nor has she been for the past five years, a director of a public, for-profit company other than us.

Dr. Gilbert V. Levin founded Spherix Incorporated in 1967 and served us in a variety of capacities from incorporation until his retirement in August 2008. In addition to his senior management experience, Dr. Levin brings to the Board the perspective of a major Company stockholder. He is currently Adjunct Professor in the Beyond Center of the College of Liberal Sciences, Arizona State University, and is an Honorary Professor at Cardiff University, Wales, UK. Dr. Levin previously served in the public health departments of Maryland, California, and the District of Columbia and, subsequently, as a research scientist and corporate official. Among his inventions are low-caloric sweeteners; biological nutrient removal (BNR) for municipal wastewater, rapid detection and identification of microorganisms; and the Labeled Release life detection experiment that landed on Mars in 1976 aboard NASA s Viking Mission. He holds a Bachelor s, Master s, and a Ph.D., all from The Johns Hopkins University, where he also served on its Board of Trustees and presently serves on its National Advisory Council for the Whiting School of Engineering. He is not now, nor has he been for the past five years, a director of a public, for-profit company other than us.

Dr. Robert A. Lodder, a Board member since 2005, and elected President in August 2007, brings his immeasurable scientific expertise to the Board. He served as a Professor of Pharmaceutical Sciences at the College of Pharmacy, University of Kentucky Medical Center, and holds joint appointments in the Department of Electrical and Computer Engineering and the Division of Analytical Chemistry of the Department of Chemistry at Kentucky. Dr. Lodder received his B.S. degree cum laude in Natural Science in 1981, and his M.S. in Chemistry in 1983 from Xavier University, Cincinnati, Ohio. He received his Ph.D. in Analytical Chemistry in 1988 from Indiana University. He was a founder of InfraReDx, Inc. in 1998 and Prescient Medical, Inc. in 2004. Neither of these companies are public, and they do not engage in business with Spherix. He is not now, nor has he been for the past five years, a director of a public, for-profit company other than us.

Mr. Aris Melissaratos, elected to our Board of Directors in February 2008, brings to the Board his immense business development and management experience. He currently serves as Senior Advisor to the President of The Johns Hopkins University with responsibilities for technology transfer, corporate partnerships, and enterprise development. From 2003 to 2007, he served as Secretary of Business and Economic Development for the State of Maryland, driving the state s unemployment figures to an impressive 3.6% and positioning Maryland for leadership in the emerging knowledge economy. He worked for Westinghouse Electric Corporation for 32 years, culminating as the corporation s Chief Technology Officer and Vice President for Science and Technology, responsible for running Westinghouse s research and development functions. He also served as the Chief Operations Officer for the company s Defense Electronics Group, where he was responsible for managing 16,000 employees (9,000 engineers) and $3.2 billion dollars of sales. After Westinghouse, he became Vice President of Thermo Electron Corporation and CEO of its Coleman Research Corporation and Thermo Information Solutions subsidiaries. He formed Armel Scientifics, LLC, which invested in over 30 start-up companies in Life Sciences and Advanced Technology. He holds a B.E.S. in electrical engineering from The Johns Hopkins University, a Master of Science in engineering management from George Washington University, and has completed the program for Management Development at the Harvard University School of Business. He completed the course work for a Ph.D. in International Politics at the Catholic University of America but did not complete the dissertation. Mr. Melissaratos currently serves as a member of the Board of Directors of Avatech Solutions, Inc. in Owings Mills, Maryland, a software and technology firm; and as a member of the Advisory Board of Stronghold Advisors, a middle-market advisory firm in the Mid-Atlantic region, in Columbia, Maryland. Neither of these companies engage in business with us.

Table of Contents

Mr. Thomas B. Peter, elected to our Board of Directors in May 2009, brings his vast pharmaceutical and clinical trial expertise to the Board. He has spent his entire 33-year career in the pharmaceutical industry. Most recently, he served as a Regional Vice President for GlaxoSmithKline (GSK). Prior to that, Mr. Peter had significant experience dealing with managed care organizations, serving as Director of National Accounts Sales at GSK, and before that position, worked as a Group Marketing Director. Mr. Peter is a biology major graduate of Gettysburg College and a Master s graduate of St. Joseph s University in Philadelphia. He is not now, nor has he been for the past five years, a director of a public, for-profit company other than us.

Dr. Robert J. Vander Zanden, Board member since 2004, having served as a Vice President of R&D with Kraft Foods International, brings a long and distinguished career in applied technology, product commercialization, and business knowledge of the food science industry to us. Dr. Vander Zanden holds a Ph.D. in Food Science and an M.S. in Inorganic Chemistry from Kansas State University, and a B.S. in Chemistry from the University of Wisconsin Platteville, where he was named a Distinguished Alumnus in 2002. In his 30-year career, he has been with ITT Continental Baking Company as a Product Development Scientist; with Ralston Purina s Protein Technology Division as Manager Dietary Foods R&D; with Keebler as Group Director, Product and Process Development (with responsibility for all corporate R&D and quality); with Grupo Gamesa, a Frito-Lay Company, as Vice President, Technology; and with Nabisco as Vice President of R&D for their International Division. With the acquisition of Nabisco by Kraft Foods, he became the Vice President of R&D for Kraft s Latin American Division. Dr. Vander Zanden retired from Kraft Foods in 2004. He currently holds the title of Adjunct Professor and Lecturer in the Department of Food Science and Human Nutrition at Clemson University, where he also is a member of their Industry Advisory Board. His focus on achieving product and process innovation through training, team building and creating positive working environments has resulted in his being recognized with many awards for product and packaging innovation. Dr. Vander Zanden is not now, nor has he been for the past five years, a director of a public, for-profit company other than us.

Board Composition

Currently, the size of our board of directors is set at seven. Each of our directors serves a one-year term and is elected at each year s annual meeting of stockholders. Our board of directors has determined that a majority of its members, Messrs. Brown, Melissaratos, Peter and Vander Zanden, are independent under the rules of the NASDAQ Capital Market.

Meetings and Meeting Attendance

During 2009, our board of directors met nine (9) times, the audit committee of our board of directors met six (6) times and the compensation committee of our board of directors met two (2) times. During 2009, each member of our board of directors nominated for re-election attended 75% or more of the aggregate of (i) the total number of meeting of our board of directors held during the period of such member s service and (ii) the total number of meetings of committees on which such member served, during the period of such member s service. We encourage all directors to attend our annual stockholders meetings. All directors (except Dr. Gilbert V. Levin) attended our 2009 annual meeting of stockholders.

Audit Committee

The Audit Committee members are Mr. Brown, Chair; Mr. Melissaratos, and Dr. Vander Zanden. The Committee has authority to review our financial records, deal with our independent auditors, recommend to the Board policies with respect to financial reporting, and investigate all aspects of our business. The Audit Committee Charter is available on our website at www.spherix.com. Each member of the Audit Committee satisfies the independence requirements and other established criteria of NASDAQ and the Securities and Exchange Commission. The Board of Directors believes that, while the members of its Audit Committee have substantial financial and management experience and are fully qualified to carry out the functions of the Audit Committee, none of its members meets the requirements of an audit committee financial expert as defined in the Securities and Exchange Commission rules.

Table of Contents

Compensation Committee

The Compensation & Benefits Committee oversees our executive compensation and recommends various incentives for key employees to encourage and reward increased corporate financial performance, productivity and innovation. Its members are Mr. Melissaratos, Chair; Mr. Peter and Dr. Vander Zanden. There were two (2) meetings during this time period. The Compensation Committee Charter is available on our website at www.spherix.com.

Executive Committee

The Executive Committee may act on behalf of the Board of Directors on matters requiring action in the interim between meetings of the full Board. Its members are Dr. Vander Zanden, Chair; Dr. Kruger and Dr. Lodder.

Nominating Committee

The Nominating Committee recommends to the Board, for adoption by the Board, the proposed Board for election by the stockholders. Its members are Mr. Peter, Chair; Mr. Brown and Mr. Melissaratos. The Nominating Committee Charter is available on our website at www.spherix.com. The Nominating Committee does not have any formal minimum qualifications for Director candidates. The Nominating Committee identifies candidates by first evaluating current members of the Board who are willing to continue in service. If any member of the Board does not wish to continue in service or if the Board decides not to re-nominate a member for re-election, the Nominating Committee then identifies the desired skills and experience of a new candidate(s).

Code of Ethics

We have adopted a worldwide Code of Ethics, which is available on our website at www.spherix.com.

Executive Officers

The executive officers are elected annually by the Board of Directors and are listed in the following table.

Name	Age	Position
Robert L. Clayton	46	CFO and Treasurer
Claire L. Kruger	51	Chief Executive Officer and Chief Operating Officer

Robert A. Lodder	51	President

Drs. Kruger and Lodder s professional experience are discussed above.

Mr. Robert L. Clayton was elected to the Office of CFO in August 2007, and was elected Director of Finance and Treasurer in May 2005. Mr. Clayton previously served as Controller. Prior to joining us, he was a Senior Auditor for the public accounting firm Rubino & McGeehin Chartered. Mr. Clayton holds a B.S. in business and management from the University of Maryland and a C.P.A. from the District of Columbia. He is not now, nor has he been for the past five years, a director of a public, for-profit company other than us.

EXECUTIVE AND DIRECTOR COMPENSATION

We strive to pay our named executive officers at or near the median paid by comparable companies. In 2007, the Compensation Committee hired an outside company, Equilar, Inc., to compare the total compensation of our executives to the total compensation of fourteen (14) companies identified by Equilar, Inc. to be peer companies to us. The Equilar Report on Executive Compensation showed that our executives are not compensated at the same level as colleagues in peer companies. Based upon our fiscal health, however, it was determined by the Compensation Committee that in 2008 and 2009 no special efforts should be made to bring executive total compensation to equivalent levels of those in peer companies. The Compensation Committee recommended to the

Table of Contents

Board the salary adjustments for our executive officers. In 2010, the Board approved annual salaries for Dr. Kruger, Dr. Lodder and Mr. Clayton of $270,000, $220,000 and $200,000, respectively.

The following Summary of Compensation table sets forth the compensation paid by us during the two years ended December 31, 2009, to all executive officers earning in excess of $100,000 during any year.

Summary of Compensation

Name and Principal Position	Year	Salary ($)	Bonus ($)	Stock Award ($)(1)	Option Award ($)(2)	Non-Equity Incentive Plan Compensation ($)(3)	Change in Pension Value and Non-Qualified Deferred Compensation Earnings ($)	All Other Compensation ($)	Total ($)
C. Kruger	2009	190,000		10,850		95,000			295,850
CEO and COO	2008	186,667		18,600		76,000			281,267
R. Lodder	2009	170,000				59,500			229,500
President	2008	166,667		22,500		68,000			257,167
R. Clayton	2009	228,031			940				228,971
CFO and Treasurer	2008	224,625			940				225,565

(1) On August 1, 2007, C. Kruger was granted 30,000 shares in restricted stock with a market price on the date of grant of $1.86. The restricted stock vested in equal amounts of 10,000 shares on August 1, 2007, August 1, 2008 and August 1, 2009. On August 16, 2007, R. Lodder was granted 15,000 shares in restricted stock with a market price of the date of grant of $2.00. The restricted stock vested in equal amounts of 7,500 shares on March 1, 2008 and September 1, 2008.

(2) On February 17, 2006, R. Clayton was granted stock options for 2,000 shares, respectively. Information regarding forfeiture and assumptions made in the valuation are disclosed in Note 7.

(3) Awards pursuant to the May 12, 2005 Spherix Incorporated Incentive Compensation Plan.

Outstanding Equity Awards at Fiscal Year-End

	Option Awards				Stock Awards	
Number of Securities Underlying Unexercised Options (#)	Number of Securities Underlying Unexercised Options (#)	Option Exercise	Option Expiration	Number of Shares or Units of Stock that have not Vested	Market Value of Shares or Units of Stock that have not

Name	Exercisable	Unexercisable	Price ($)	Date	(#)	Vested ($)
C. Kruger						
R. Lodder						
R. Clayton	1,000	500(1)	$ 2.20	2/15/2011		

(1) Vested on 2/16/2010.

Potential Payment Upon Termination or Change in Control

We have agreed to pay our officers one year salary and health and welfare (COBRA) benefits upon termination by us or following a change of control.

Unless otherwise agreed by the Board of Directors, the named executive officers would be entitled to severance upon termination of employment pursuant to our severance policy. The policy provides:

Table of Contents

Completed Service Years	Severance Pay
> 1 year	10 days
1 but less than 2 years	15 days
2 but less than 3 years	20 days
3 but less than 4 years	25 days
4 or more years	30 days

Director Compensation

The following table summarizes the compensation paid to non-employee directors during the year ended December 31, 2009.

Name	Fees Earned Paid in Cash ($)	Stock Awards ($)	All Other Compensation ($)	Total ($)
Douglas T. Brown	22,900	10,000		32,900
A. Paul Cox	4,900			4,900
Gilbert V. Levin			*	*
Aris Melissaratos	21,300	10,000		31,300
Thomas B. Peter	10,300			10,300
Robert J. Vander Zanden	23,500	10,000		33,500

* Under employment agreements with Dr. Gilbert V. Levin and Mrs. M. Karen Levin, our founders, we have agreed to provide Dr. and Mrs. Levin each with lifetime payments of $12,500 each quarter and to fund long-term lifetime healthcare and health insurance policies following their retirements on August 14, 2008 and January 4, 2006, respectively. At December 31, 2009, our liability for both Dr. and Mrs. Levin was estimated to be $480,000 for the lifetime payments and $240,000 for funding the long-term lifetime healthcare and health insurance policies based on actuarially determined amounts. The non-current portion of these amounts is reported on the accompanying balance sheet as deferred compensation. During 2009 and 2008, we paid Dr. and Mrs. Levin a combined total of $135,000 and $123,000 in post-retirement benefits. In addition, Dr. Levin also received $87,000 in salaries during 2008. Dr. Levin continues to serve as a member of the Board of Directors.

Non-employee directors receive the following annual compensation for service as a member of the Board:

Annual Retainer	$	5,000	To be paid in cash at May Board Meeting annually.
Stock Options	$	10,000	Number of shares to be calculated by dividing $10,000 by the closing stock price the day of the May Board Meeting. Option will vest immediately and be exercisable for a period of five (5) years.
Board Meeting Fees	$	2,500	To be paid for all in-person Board Meetings. Members must be present to be paid.
Committee Meeting Fees	$	800	To be paid for all in-person Committee Meetings. Members must be present to be paid.
Teleconference Fees	$	300	To be paid for all teleconferences called by either the Chairman of the Board, the President, or by the Chairman of the relevant Committee. Members must be on-line to be paid.
Additional Retainer	$	1,000	To be paid to the Chairman of the Audit Committee.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth the shares of Common Stock beneficially owned by all executive officers and directors as a group as of December 31, 2009. Except for Dr. Levin and his wife, no person is known by us to own beneficially more than 5% of the outstanding Common Stock. The ownership of Dr. Levin is detailed below.

Table of Contents

Title of Class	Name of Beneficial Owner	Amount and Nature of Ownership	Percent Of Class
Common	Douglas T. Brown	46,318(2)	*
Common	Robert L. Clayton	1,500(2)	*
Common	Claire L. Kruger	30,000(2)	*
Common	Gilbert V. Levin	2,419,307(1) (2)	14.1%
Common	Robert A. Lodder, Jr.	27,852(2)	*
Common	Aris Melissaratos	16,281(2)	*
Common	Thomas B. Peter	6,666(2)	*
Common	Robert J. Vander Zanden	37,318(2)	*
Common	All Executive Officers and Directors as a Group	2,585,242(2)	15.1%

* Less than 1% of the outstanding shares of our Common Stock.

(1) Includes shares owned by M. Karen Levin.

(2) Included in the number of shares beneficially owned by D.T. Brown, R.L. Clayton, C.L. Kruger, G.V. Levin, R.A. Lodder, A. Melissaratos, T.B. Peter, R.J. Vander Zanden and All Executive Officers and Directors as a Group are 7,500, 1,500, 0, 0, 5,000, 0, 0, 7,500 and 21,500 shares, respectively, which such persons have a right to acquire within 60 days pursuant to stock options.

As of December 31, 2009, Dr. Levin, 3170 S. Ocean Boulevard, #602S, Palm Beach, FL 33480, beneficially owned in the aggregate 2,419,307 shares of Common Stock (14.1% of the 17,150,648 outstanding shares). As principal stockholders, Dr. Levin and his wife are considered control persons with respect to us.

All directors and executive officers as a group, beneficial owners of 2,585,242 shares of Common Stock, owned 15.1% of the 17,150,648 outstanding shares. With the exception of Cede & Co., the holder of record for certain brokerage firms and banks, no other person is known by us to own beneficially more than 5% of our outstanding Common Stock.

In February 2001, the Board of Directors adopted the Rights Agreement (the Agreement). The Agreement provides each Stockholder of record a dividend distribution of one right for each outstanding share of Common Stock. Rights become exercisable at the earlier of ten days following: (1) a public announcement that an acquirer has purchased or has the right to acquire 10% or more of our Common Stock, or (2) the commencement of a tender offer which would result in an offeror beneficially owning 10% or more of our outstanding Common Stock. All rights held by an acquirer or offeror expire on the announced acquisition date, and all rights expire at the close of business on December 31, 2010. Each right entitles a Stockholder to acquire, at a stated purchase price, 1/100 of a share of our preferred stock, which carries voting and dividend rights similar to one share of our Common Stock. Alternatively, a right holder may elect to purchase for the stated price an equivalent number of shares of our Common Stock at a price per share equal to one-half of the average market price for a specified period. In lieu of the stated purchase price, a right holder may elect to acquire one-half of the Common Stock available under the second option. The purchase price of the preferred stock fractional amount is subject to adjustment for certain events as described in the Agreement. At the discretion of a majority of the Board and within a specified time period, we may redeem all of the rights at a price of $0.001 per right. The Board may also amend any provisions of the Agreement prior to exercise.

CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Under employment agreements with Dr. Gilbert V. Levin and Mrs. M. Karen Levin, our founders, we have agreed to provide Dr. and Mrs. Levin each with lifetime payments of $12,500 each quarter to fund long-term lifetime healthcare and health insurance policies following their retirements on August 14, 2008 and January 4, 2006, respectively. At December 31, 2009, our liability for both Dr. and Mrs. Levin was estimated to be $480,000

Table of Contents

for the lifetime payments and $240,000 for funding the long-term lifetime healthcare and health insurance policies based on actuarially determined amounts. The non-current portion of these amounts is reported on the accompanying balance sheet as deferred compensation. During 2009 and 2008, we paid Dr. and Mrs. Levin a combined total of $135,000 and $123,00 in post-retirement benefits. In addition, Dr. Levin also received $87,000 in salary during 2008. Dr. Levin continues to serve as a member of the Board of Directors.

DESCRIPTION OF CAPITAL STOCK

The following is a description of our capital stock and the material provisions of our certificate of incorporation, bylaws and other agreements. The following is only a summary and is qualified by applicable law and by the provisions of our certificate of incorporation, bylaws and other agreements, copies of which are available as set forth under the caption Where You Can Find More Information.

General

Under our certificate of incorporation, we have 52,000,000 shares of authorized capital stock, of which 50,000,000 shares have been classified as common stock, $0.005 par value per share, and 2,000,000 shares have been classified as preferred stock, $0.01 par value per share. As of June 30, 2010, there were 17,150,648 shares of common stock outstanding and no outstanding shares of preferred stock.

Common Stock

Subject to the rights of the preferred stock, holders of common stock are entitled to receive such dividends as are declared by our board of directors out of funds legally available for the payment of dividends. We presently intend to retain any earnings to fund the development of our business. Accordingly, we do not anticipate paying any dividends on our common stock for the foreseeable future. Any future determination as to declaration and payment of dividends will be made at the discretion of our board of directors.

In the event of the liquidation, dissolution, or winding up of Spherix, each outstanding share of our common stock will be entitled to share equally in any of our assets remaining after payment of or provision for our debts, other liabilities and payments to our preferred stockholders.

Holders of common stock are entitled to one vote per share on matters to be voted upon by stockholders. There is no cumulative voting for the election of directors, which means that the holders of shares entitled to exercise more than fifty percent (50%) of the voting rights in the election of directors are able to elect all of the directors.

Holders of common stock have no preemptive rights to subscribe for or to purchase any additional shares of common stock or other obligations convertible into shares of common stock which we may issue after the date of this prospectus.

All of the outstanding shares of common stock are fully paid and non-assessable. Holders of our common stock are not liable for further calls or assessments.

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.

This prospectus also relates to preferred stock purchase rights attached to our common stock. References in this prospectus to common stock shall be deemed to include the preferred stock purchase rights attached hereto.

Preferred Stock

Our certificate of incorporation authorizes 2,000,000 shares of preferred stock. Our board of directors is authorized, without further stockholder action, to establish various series of such preferred stock from time to time and to determine the rights, preferences and privileges of any unissued series including, among other matters, any dividend rights, dividend rates, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms, the number of shares constituting any such series, and the description thereof and to issue any

Table of Contents

such shares. Although there is no current intent to do so, our board of directors may, without stockholder approval, issue shares of an additional class or series of preferred stock with voting and conversion rights which could adversely affect the voting power of the holders of the common stock or the convertible preferred stock. As of the date of this prospectus, there were no shares of preferred stock designated or outstanding. In connection with our adoption of the stockholder rights plan described below, our board of directors designated 500,000 shares of our preferred stock as Series A Junior Participating Preferred Stock.

One of the effects of the preferred stock may be to enable the board of directors to render more difficult or to discourage an attempt to obtain control of Spherix by means of a merger, tender offer, proxy contest or otherwise, and thereby to protect the continuity of the management.

In 2001, we adopted a stockholder rights plan in which rights to purchase shares of Series A Junior Participating Preferred Stock (Series A Preferred Stock) were distributed as a dividend at the rate of one right for each share of common stock held as of the close of business on March 1, 2001. The rights are designed to guard against partial tender offers and other abusive and coercive tactics that might be used in an attempt to gain control of Spherix or to deprive our stockholders of their interest in the long-term value of Spherix. These rights seek to achieve these goals by forcing a potential acquirer to negotiate with our board of directors (or go to court to try to force the Board of Directors to redeem the rights), because only the Board of Directors can redeem the rights and allow the potential acquirer to acquire our shares without suffering very significant dilution. However, these rights also could deter or prevent transactions that stockholders deem to be in their interests, and could reduce the price that investors or an acquirer might be willing to pay in the future for shares of our common stock.

Each right entitles the registered holder to purchase one one-hundredth of a share (a Unit) of our Series A Preferred Stock at a price of $16.00 per Unit, subject to adjustment. Each Unit of Series A Preferred Stock will be entitled to an aggregate dividend of 100 times the dividend declared per share of common stock. In the event of liquidation, the holders of the Units of Series A Preferred Stock will be entitled to an aggregate payment of 100 times the payment made per share of common stock. Each Unit of Series A Preferred Stock will have 100 votes, voting together with the common stock. Finally, in the event of any merger, consolidation or other transaction in which shares of common stock are exchanged, each Unit of Series A Preferred Stock will be entitled to receive 100 times the amount received per share of common stock. These rights are protected by customary anti-dilution provisions.

The rights will be exercisable only if a person or group acquires ten percent (10%) or more of our common stock (subject to certain exceptions stated in the plan) or announces a tender offer the consummation of which would result in ownership by a person or group of ten percent (10%) or more of our common stock. Our board of directors may redeem the rights at a price of $.001 per right. The rights will expire at the close of business on December 31, 2010 unless the expiration date is extended or unless the rights are earlier redeemed or exchanged by Spherix.

Series B Convertible Preferred Stock

The convertible preferred stock we are offering will be issued pursuant to a securities purchase agreement between each of the investors and us. We urge you to review the form of securities purchase agreement and certificate of designation authorizing the convertible preferred stock, which will be filed as exhibits to the registration statement of which this prospectus forms a part, for a complete description of the terms and conditions applicable to the convertible preferred stock. The following brief summary of the material terms and provisions of the convertible preferred stock is subject to, and qualified in its entirety by, the certificate of designation authorizing the convertible preferred stock. This prospectus also relates to the offering of the shares of our common stock upon the conversion of the convertible preferred stock issued to the investors in this offering.

We are authorized to issue 5,250 shares of Series B Convertible Preferred Stock, par value $0.01 per share, pursuant to the Certificate of Designation of Preferences, Rights and Limitations of Series B Convertible Preferred Stock we have filed with the Secretary of State of the State of Delaware. This certificate of designation has been authorized by our board of directors without approval by our stockholders pursuant to the authority vested in the board of directors under our certificate of incorporation.

The Series B Convertible Preferred Stock will be convertible at the option of the holder at any time into shares of our common stock at a conversion ratio determined by dividing the stated value of the convertible

Table of Contents

preferred stock, or $1,000, by a conversation price of $1.25 per share. The conversion price is subject to adjustment in the case of stock splits, stock dividends, combinations of shares and similar recapitalization transactions. The conversion price may also be subject to adjustment if we issue rights, options or warrants to all holders of our common stock entitling them to subscribe for or purchase shares of our common stock at a price per share less than the daily volume weighted average price of our common stock, if we distribute evidences of our indebtedness or assets or rights or warrants to subscribe for or purchase any security to all holders of our common stock, or if we consummate a fundamental corporate transaction such as a merger or consolidation, sale or other disposition of all or substantially all of our assets, or an exchange or tender offer accepted by the holders of 50% or more of our outstanding common stock. Subject to limited exceptions, a holder of shares of Series B Convertible Preferred Stock will not have the right to convert any portion of its Series B Convertible Preferred Stock if the holder, together with its affiliates, would beneficially own in excess of 4.99% of the number of shares of our common stock outstanding immediately after giving effect to its conversion.

The Series B Convertible Preferred Stock is entitled to receive dividends (on an as converted to common stock basis) to and in the same form as dividends actually paid on shares of our common stock.

Except as required by law, holders of our Series B Convertible Preferred Stock are not entitled to voting rights, except that the affirmative vote of the holders of 67% of the outstanding shares of convertible preferred stock is required to take certain actions that may adversely affect the rights or preferences of the holders of convertible preferred stock, including authorizing any class of stock ranking as to dividends, redemption or distribution of assets upon a liquidation, dissolution or winding up of our company senior to, or otherwise pari passu with, the Series B Convertible Preferred Stock and increasing the number of authorized shares of Series B Convertible Preferred Stock. In addition, without the prior written consent of the holders of at least 67% of the Series B Convertible Preferred Stock, we may not amend our certificate of incorporation or bylaws in any manner that materially and adversely affects any rights of the holders of the Series B Convertible Preferred Stock or repay or reacquire more than a de minimis number of shares of our common stock or securities convertible into or exercisable for our common stock.

The securities purchase agreement pursuant to which the Series B Convertible Preferred Stock will be issued prohibits us from issuing any shares of our common stock or any equity or debt securities convertible into our common stock for a period of 90 days after the closing of this offering.

We do not intend to list our Series B Convertible Preferred Stock on any securities exchange or automated quotation system.

Options

As of June 30, 2010, there were options held by our employees and others to purchase an aggregate of 63,088 shares of common stock, exercisable at a weighted average exercise price of $1.61 per share. We currently have 661,136 options/restricted stock available for grant under our equity incentive plan.

The $1.50 per share exercise price of the warrants may be paid in cash or, if we do not have an effective registration statement for the issuance of warrant shares at the time the warrant is exercised, in shares of common stock.

Limitations on Directors Liability

Our certificate of incorporation and bylaws contain provisions indemnifying our directors and officers to the fullest extent permitted by Delaware law.

In addition, as permitted by Delaware law, our certificate of incorporation provides that no director will be liable to us or our stockholders for monetary damages for breach of the director s fiduciary duty as a director. The effect of this provision is to restrict our rights and the rights of our stockholders in derivative suits to recover monetary damages against a director for breach of the director s fiduciary duty as a director, except that a director will be personally liable for:

Table of Contents

- any breach of his or her duty of loyalty to us or our stockholders;
- acts or omissions not in good faith which involve intentional misconduct or a knowing violation of law;
- the payment of dividends or the redemption or purchase of stock in violation of Delaware law; or
- any transaction from which the director derived an improper personal benefit.

This provision does not affect a director s liability under the federal securities laws.

To the extent that our directors, officers and controlling persons are indemnified under the provisions contained in our certificate of incorporation or Delaware law against liabilities arising under the Securities Act of 1933, we have been advised that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act of 1933 and is therefore unenforceable.

Provisions of Our Certificate of Incorporation and Delaware Law that May Have an Anti-Takeover Effect

Certain provisions set forth in our certificate of incorporation and Delaware law, which are summarized below, may have an anti-takeover effect and may delay, deter or prevent a tender offer or takeover attempt that a stockholder might consider to be in the stockholder s best interests, including attempts that might result in a premium being paid over the market price for the shares held by stockholders.

Delaware Takeover Statute

Section 203 of the Delaware General Corporation Law (DGCL) prohibits a Delaware corporation that is a public company from engaging in any business combination (as defined below) with any interested stockholder (defined generally as an entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with such entity or person) for a person of three years following the date that such stockholder became an interested stockholder, unless:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon consummation of 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 purposes of determining the number of shares outstanding those shares owned by persons who are directors and also officers and 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 such date, the business combination is approved by the board of directors 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 of the Delaware General Corporation Law defines business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain 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 of any class or series of the corporation beneficially owned by the interested stockholder; or
- 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.

Table of Contents

Undesignated Preferred Stock

Our certificate of incorporation contains provisions that permit our board of directors to issue, without any further vote or action by our stockholders, up to 2,000,000 shares of preferred stock in one or more series and, with respect to each such series, to fix the number of shares constituting the series and the designation of the series, any voting powers of the shares of the series, and any preferences and relative, participating, optional and other special rights and any qualifications, limitations or restrictions, of the shares of such series. Our board could authorize the issuance of shares of preferred stock that could have the effect of delaying, deferring or preventing a transaction or change in control that might involve a premium price for shares of our common stock or otherwise be in their interests.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer and Trust Company, LLC, whose address is 59 Maiden Lane, Plaza Level, New York, NY 10038.

Listing

Our common stock is listed on the NASDAQ Capital Market under the symbol SPEX . We have not applied to list our common stock on any other exchange or quotation system.

DESCRIPTION OF WARRANTS

The warrants we are offering will be issued pursuant to a securities purchase agreement between each of the investors and us. We urge you to review the form of securities purchase agreement and warrant, which will be filed as exhibits to the registration statement of which this prospectus forms a part, for a complete description of the terms and conditions applicable to the warrants. The following brief summary of the material terms and provisions of the warrants is subject to, and qualified in its entirety by, the form of warrant. This prospectus also relates to the offering of the shares of our common stock upon the exercise, if any, of the warrants issued to the investors in this offering. The warrants we are issuing to the placement agent in this offering to purchase shares of our common stock are not covered by this prospectus.

The warrants will have an exercise price of $1.50 per share of our common stock and will be exercisable at the option of the holder immediately after issuance through and including the date that is the fifth year anniversary of the initial exercise date. Subject to limited exceptions, a warrant holder will not have the right to exercise any portion of the warrant if the holder, together with its affiliates, would beneficially own in excess of 4.99% of the number of shares of our common stock outstanding immediately after the exercise.

The exercise price of the warrants, and in some cases the number of shares issuable upon exercise of the warrants, will be subject to adjustment in the event of stock splits, stock dividends, combinations and similar events affecting our common stock. The exercise price may also be subject to adjustment if we issue rights, options or warrants to all holders of our common stock entitling them to subscribe for or purchase share of our common stock at a price per share less than the daily volume weighted average price of our common stock or if we distribute evidences of our indebtedness or assets or rights or warrants to subscribe for or purchase any security to all holders of our common stock. In addition, in the event we consummate a fundamental corporate transaction such as a merger or consolidation with or into another person or other reorganization event in which our common stock is converted or exchanged for securities, cash or other property, or we sell, lease, license or otherwise dispose of all or substantially all of our assets or we or another person acquires 50% or more of our outstanding common stock, then following such event, the holders of the warrants will be entitled to receive, for each share that would have been issuable upon exercise of the warrants immediately prior to such fundamental transaction, the number of shares of common stock of the successor or acquiring corporation or of ours, if we are the surviving corporation, and any additional consideration receivable as a result of such fundamental transaction by a holder of the number of shares of common stock for which the warrant is exercisable immediately prior to such fundamental transaction. Further, if we are acquired by a company that does not have its common stock traded on a national securities exchange, the warrant holders will have the right to have us (or our successor corporation) repurchase the warrants at their fair market value. Any successor to us or surviving entity shall assume our obligations under the warrants.

Table of Contents

The warrant holders must surrender payment in cash of the aggregate exercise price of the shares being acquired upon exercise of the warrants. If, however, we are unable to offer and sell the shares underlying these warrants pursuant to this prospectus due to the ineffectiveness of the registration statement of which this prospectus is a part, then the warrants may only be exercised on a net or cashless basis. No fractional shares of common stock will be issued in connection with the exercise of a warrant. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price.

The warrants do not entitle the holders thereof to any voting rights, dividends or other rights as a stockholder of ours prior to the exercise of the warrants.

We do not intend to list the warrants on any securities exchange or automated quotation system.

PLAN OF DISTRIBUTION

We have entered into an engagement letter agreement, dated August 12, 2010, with Rodman & Renshaw, LLC pursuant to which, subject to the terms and conditions set forth in the agreement, Rodman & Renshaw, LLC has agreed to act as our exclusive placement agent in connection with this offering. The placement agent is not purchasing or selling any securities being offered by this prospectus, nor is it required to arrange for the purchase or sale of any specific number or dollar amount of the securities, but has agreed to use its reasonable best efforts to arrange for the sale of all of the securities in this offering. We will enter into a securities purchase agreement directly with investors in this offering.

There is no requirement that any minimum amount of securities or dollar amount of securities be sold in this offering and there can be no assurance that we will sell all or any of the securities being offered.

NASDAQ rules generally require stockholder approval for issuance of stock in excess of 20% of outstanding shares. On August 31, 2010, our stockholders provided such approval, subject to certain limitations, including:

- The aggregate number of shares issued in any offerings will not exceed 15,000,000 shares of our common stock (including pursuant to preferred stock, options, warrants, convertible debt or other securities exercisable for a convertible into common stock);

- The total aggregate consideration will not exceed $12 million in cash;

- The maximum discount at which securities will be offered will be equivalent to a discount of 20% below the market price of our common stock at the time of issuance; and

- Such offerings will occur within the three-month period commencing on August 31, 2010.

This offering will be conducted pursuant to the authority granted by our stockholders at the August 31, 2010 annual meeting.

Our agreement with the placement agent and the securities purchase agreement between us and each of the investors in this offering provide that the obligations of the placement agent and the investors are subject to certain conditions precedent, including, among other things, the absence of any material change in our business and delivery of a customary written legal opinion.

We currently anticipate that the closing of this offering will take place on or about October 13, 2010. On the scheduled closing date, the following will occur:

- we will receive funds in the amount of the aggregate purchase price of the securities being sold by us, less the amount of the fees we are paying to the placement agent;

Table of Contents

- the placement agent will receive the placement agent fee, reimbursement of certain expenses and compensation warrants to purchase shares of our common stock in accordance with the terms of the engagement letter agreement; and

- we will deliver, or cause to be delivered, the shares of convertible preferred stock and the warrants being sold.

We have agreed to pay the placement agent a cash fee equal to 6% of the gross proceeds of the sale of the securities in this offering and to reimburse the placement agent for its expenses, up to a maximum of 1.5% of the gross proceeds of the sale of the securities in this offering, but in no event more than $45,000. We have also agreed to grant compensation warrants to the placement agent to purchase up to that number of our shares of common stock equal to 3% of the number of shares of common stock underlying the common stock sold by us in this offering, or up to an aggregate of 126,000 shares. The compensation warrants will be substantially on the same terms as the warrants offered hereby, except that they will have an exercise price of $1.5625 per share and will be exercisable through and including the date that is the second year anniversary of the effective date of the registration statement of which this prospectus forms a part, and will comply with Financial Industry Regulatory Authority, or FINRA, Rule 5110(g) in that for a period of six months after the effective date of the registration statement of which this prospectus forms a part, neither the compensation warrants nor any shares issuable upon exercise of the compensation warrants shall be sold, transferred, assigned, pledged, or hypothecated, or be the subject of any hedging, short sale, derivative, put, or call transaction that would result in the effective economic disposition of the securities by any person, except the transfer of any security:

- by operation of law or by reason of reorganization of us;

- to any Financial Industry Regulatory Authority (FINRA) member firm participating in this offering and the officers or partners thereof, if all securities so transferred remain subject to the lock-up restriction described above for the remainder of the timer period;

- if the aggregate amount of our securities held by the placement agent or related persons does not exceed 1% of the securities being offered;

- that is beneficially owned on a pro-rata basis by all equity owners of an investment fund, provided that no participating member manages or otherwise directs investments by the fund, and participating members in the aggregate do not own more than 10% of the equity in the fund; or

- the exercise or conversion of any security, if all securities received remain subject to the lock-up restriction set forth above for the remainder of the time period.

The following table shows the per preferred share and total fees we will pay to the placement agent in connection with the sale of the units offered pursuant to this prospectus, assuming the purchase of all of the units being offered hereby. Because there is no minimum offering amount required as a condition to closing in this offering, the actual total offering fees, if any, are not presently determinable and may be substantially less than the maximum amount set forth below.

Per preferred share placement agent fees	$	60.00
Maximum offering total	$	315,000

We estimate that the total expenses of the offering by us, excluding the placement agent s fees, will be approximately $78,000.

The purchase price per preferred share, the effective acquisition price of the common stock underlying the convertible preferred stock, the dividend and other payments due the convertible preferred stock and the exercise price of the warrants were determined based on discussions with the placement agent.

Table of Contents

We have agreed to indemnify the placement agent and its respective affiliates against certain liabilities, including liabilities relating to and arising out of its activities under the engagement letter agreement. We have also agreed to contribute to payments the placement agent may be required to make in respect of such liabilities.

We have agreed that we will not issue, enter into any agreement to issue or announce the issuance or proposed issuance of any shares of our common stock, or securities that would entitle the holder thereof to acquire shares of our common stock, for a period of 90 days from the closing date of this offering without the prior written consent of purchasers holding at least two-thirds in interest of the convertible preferred stock (on an as converted basis) then outstanding.

A copy of the engagement letter agreement with the placement agent, the form of securities purchase agreement to be entered into with the investors in this offering and the form of common stock purchase warrant have been or will be filed as exhibits to the registration statement of which this prospectus forms a part.

The placement agent has informed us that it will not engage in over-allotment, stabilizing transactions or syndicate covering transactions in connection with this offering.

The transfer agent for our common stock is American Stock Transfer & Trust Company. We will act as transfer agent for the convertible preferred stock and warrants being offered hereby.

Our common stock is traded on the NASDAQ Capital Market under the symbol SPEX . The convertible preferred stock and the warrants being offered hereby are not expected to be eligible for trading on any market.

LEGAL MATTERS

Baxter, Baker, Sidle, Conn & Jones, P.A. of Baltimore, Maryland, our counsel in connection with the offering, has issued an opinion about the validity of the securities being offered.

EXPERTS

The financial statements and schedules included in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the report of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing in giving said reports.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly, and current reports, proxy statements, and other documents with the Securities and Exchange Commission. You may read and copy any document we file at the SEC s public reference room at 100 F Street NE, Washington, D.C. 20549. You should call 1-800-SEC-0330 for more information on the public reference room. The SEC maintains an internet site at http://www.sec.gov where certain information regarding issuers (including Spherix) may be found.

Table of Contents

SPHERIX INCORPORATED

INDEX TO FINANCIAL STATEMENTS

Table of Contents

Spherix Incorporated

Consolidated Statements of Operations

(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2010	**2009**	**2010**	**2009**
Revenue	$ 327,139	$ 332,241	$ 659,430	$ 692,911
Operating expense				
Direct costs	(112,270)	(109,123)	(231,899)	(239,665)
Research and development expense	(1,544,605)	(1,133,962)	(2,856,484)	(2,695,351)
Selling, general and administrative expense	(1,230,103)	(649,096)	(2,280,750)	(1,408,366)
Total operating expense	(2,886,978)	(1,892,181)	(5,369,133)	(4,343,382)
Loss from operations	(2,559,839)	(1,559,940)	(4,709,703)	(3,650,471)
Interest income	2,228	5,400	4,216	29,847
Loss before taxes	(2,557,611)	(1,554,540)	(4,705,487)	(3,620,624)
Income tax expense				
Net loss	$ (2,557,611)	$ (1,554,540)	$ (4,705,487)	$ (3,620,624)
Net loss per share, basic	$ (0.15)	$ (0.11)	$ (0.27)	$ (0.25)
Net loss per share, diluted	$ (0.15)	$ (0.11)	$ (0.27)	$ (0.25)
Weighted average shares outstanding, basic	17,150,648	14,357,162	17,150,648	14,357,162
Weighted average shares outstanding, diluted	17,150,648	14,357,162	17,150,648	14,357,162

The accompanying notes to financial statements are an integral part of these financial statements.

Table of Contents

Spherix Incorporated

Consolidated Balance Sheets

	June 30, 2010 (Unaudited)	December 31, 2009
ASSETS		
Current assets		
Cash and cash equivalents	$ 4,585,803	$ 9,026,002
Short-term investments, held to maturity	125,000	375,003
Trade accounts receivable, net	286,102	274,153
Other receivables	28,886	948
Prepaid expenses and other assets	95,141	209,255
Total current assets	5,120,932	9,885,361
Property and equipment, net	189,964	225,958
Patents, net of accumulated amortization of $41,622 and $38,588	5,330	8,364
Deposit	35,625	35,625
Total assets	$ 5,351,851	$ 10,155,308
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities		
Accounts payable and accrued expenses	$ 1,651,338	$ 1,714,140
Accrued salaries and benefits	396,896	388,665
Deferred revenue	65,932	90,915
Total current liabilities	2,114,166	2,193,720
Deferred compensation	540,000	580,000
Deferred rent	95,879	109,712
Total liabilities	2,750,045	2,883,432
Commitments and contingencies		
Stockholders equity		
Preferred stock, $0.01 par value, 2,000,000 shares authorized; none issued and outstanding		
Common stock, $0.005 par value, 50,000,000 shares authorized; 17,231,086 issued, and 17,150,648 shares outstanding at June 30, 2010 and December 31, 2009	86,155	86,155
Paid-in capital in excess of par value	33,634,927	33,599,510
Treasury stock, 80,438 shares, at cost at June 30, 2010 and December 31, 2009	(464,786)	(464,786)
Accumulated deficit	(30,654,490)	(25,949,003)
Total stockholders equity	2,601,806	7,271,876
Total liabilities and stockholders equity	$ 5,351,851	$ 10,155,308

The accompanying notes to financial statements are an integral part of these financial statements.

Table of Contents

Spherix Incorporated

Consolidated Statements of Cash Flows

(Unaudited)

	Six Months Ended June 30,	
	2010	**2009**
Cash flows from operating activities		
Net loss	$ (4,705,487)	$ (3,620,624)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	39,028	45,349
Loss on disposal of assets		5,599
Bad debt expense	40,000	
Stock-based compensation	35,417	15,880
Changes in assets and liabilities:		
Accounts receivable	(51,949)	(58,014)
Other receivables	(27,938)	31,081
Prepaid expenses and other assets	114,114	107,992
Accounts payable and accrued expenses	(54,571)	197,584
Deferred rent	(13,833)	(14,292)
Deferred compensation	(40,000)	(75,000)
Deferred revenue	(24,983)	56,969
Net cash used in operating activities	(4,690,202)	(3,307,476)
Cash flow from investing activities		
Proceeds from the maturity of short-term investments	250,003	295,088
Proceeds from the sale of fixed assets		500
Net cash provided by investing activities	250,003	295,588
Net decrease in cash and cash equivalents	(4,440,199)	(3,011,888)
Cash and cash equivalents, beginning of period	9,026,002	9,404,843
Cash and cash equivalents, end of period	$ 4,585,803	$ 6,392,955

The accompanying notes to financial statements are an integral part of these financial statements.

Table of Contents

Spherix Incorporated

Notes to the Consolidated Financial Statements

(Unaudited)

1. Basis of Presentation

The accompanying consolidated financial statements of the Company are unaudited and do not include all of the information and disclosures generally required for annual financial statements. In the opinion of management, the statements contain all material adjustments (consisting of normal recurring accruals) necessary to present fairly the Company s financial position as of June 30, 2010, the results of its operations for the three-month and six-month periods ended June 30, 2010 and 2009, and its cash flows for the six-month periods ended June 30, 2010 and 2009. This report should be read in conjunction with the Company s Annual Report on Form 10-K, which does contain the complete information and disclosure for the year ended December 31, 2009.

The Company operates via two principal segments, Biospherics and Health Sciences. Biospherics seeks to develop proprietary products for commercial application. Health Sciences provides technical and regulatory consulting services to biotechnology and pharmaceutical companies, as well as providing technical support for the Biospherics segment.

The Company has created two wholly-owned subsidiaries, Biospherics Incorporated and Spherix Consulting, Inc., for its two operating segments. The Company s Health Sciences contracts are now in the name of Spherix Consulting, Inc. and the Company s patents are in the name of Biospherics Incorporated. The subsidiaries began operations on January 1, 2009. Spherix now provides management, strategic guidance, business development, marketing and other services to its subsidiaries.

2. Liquidity and Capital Resources

As of June 30, 2010, the Company had cash and short-term investments of approximately $4.7 million and expects to expend all of this amount within the next six months. Our working capital was $3.0 million as of June 30, 2010, compared to working capital of $7.7 million as of December 31, 2009. We have incurred substantial development costs in our efforts to explore whether D-tagatose is an effective treatment for Type 2 diabetes. We have financed our development activities through the remaining proceeds received from the 2007 sale of InfoSpherix and the November 2009 stock placement. Over the next 12 months, the Company expects that it will need to expend between $7 million and $9 million to support its development operations.

The Company recently announced that it is actively seeking a pharma partner to continue the diabetes development and that it will also explore D-tagatose as a potential treatment for high triglycerides. Accordingly, the Company has terminated the safety portion of its Phase 3 diabetes clinical trial and expects to shift its research and development focus to D-tagatose as a treatment for triglycerides.

We will need to raise additional funds in 2010 to continue operations and will likely require additional capital raises thereafter to fully pursue the triglycerides opportunity.

Fundraising will likely require the issuance of additional Company equity securities and a purchaser of such securities will likely insist that such securities be registered securities.

Table of Contents

In November 2009, we obtained net proceeds of approximately $6 million in a registered direct primary offering. The common stock issued in the offering and the common stock which may be issued upon exercise of warrants issued in the offering have been registered under a Form S-3 registration statement declared effective by the Securities and Exchange Commission (SEC) in October 2009.

Pursuant to SEC rules, the Company may not be in a position to issue additional shares of its common stock in another registered direct primary offering under a Form S-3 registration statement until mid-November 2010. On July 2, 2010, the Company filed a Form S-1 registration statement with the SEC to begin the process of raising additional capital.

Further, NASDAQ rules require stockholder approval for certain stock issuances constituting 20% or more of a Company s issued and outstanding stock.

The Company cannot be assured that it will be able to attract a purchaser of securities to raise the additional funds it will likely require in 2010; that the Company will be able to obtain any required stockholder approval; or that the Company will be able to have a Form S-1 registration statement declared effective to complete such an offering.

3. Concentrations of Credit Risk

The Company maintains cash balances at several banks. Accounts at each institution are insured by the Federal Deposit Insurance Corporation up to $250,000. At June 30, 2010, the Company s cash and cash equivalents in excess of the FDIC limits were $4.4 million. The Company has not experienced any losses in such accounts and believes it is not exposed to any significant risks.

4. Use of Estimates and Assumptions

The accompanying consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America. This requires management to make estimates and assumptions that affect certain reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenue and expenses during the period. Accordingly, actual results could differ from those estimates and assumptions.

5. New Accounting Pronouncements

In October 2009, the Financial Accounting Standards Board (FASB) issued ASC Update No. 2009-13, which amends the Revenue Recognition topic of the Codification. This update provides amendments to the criteria in Subtopic 605-25 of the Codification for separating consideration in multiple-deliverable arrangements. As a result of those amendments, multiple-deliverable arrangements will be separated in more circumstances than under existing U.S. GAAP. The amendments establish a selling price hierarchy for determining the selling price of a deliverable

50

Table of Contents

and will replace the term fair value in the revenue allocation guidance with selling price to clarify that the allocation of revenue is based on entity-specific assumptions rather than assumptions of a marketplace participant. The amendments will also eliminate the residual method of allocation and require that arrangement consideration be allocated at the inception of the arrangement to all deliverables using the relative selling price method and will require that a vendor determine its best estimate of selling price in a manner that is consistent with that used to determine the price to sell the deliverable on a stand-alone basis. These amendments will be effective prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010, with early adoption permitted. We are currently evaluating the impact the adoption of this update might have on our results of operations and financial position.

OtherAccounting Standard Updates issued during the six months ended June 30, 2010 are not applicable to the Company and are not anticipated to have an effect on the Company s financial position or results of operations.

6. Short-term Investments

The Company s short-term investments consist of investments in debt securities held to maturity, which mature in one year or less, and are valued at amortized cost, which approximates fair value.

7. Fair Value Measurements

The Company has elected not to apply the fair value option to measure any of the financial assets and liabilities on its balance sheet not already valued at fair value under other accounting pronouncements. These other financial assets and liabilities are primarily short-term investments, accounts receivable, and accounts payable, which are reported at historical value. The fair value of these financial assets and liabilities approximates their fair value because of their short duration.

8. Net Loss Per Share

Basic net loss per common share has been computed by dividing net loss by the weighted-average number of common shares outstanding during the year. Diluted net loss per common share has been computed by dividing net loss by the weighted-average number of common shares outstanding without an assumed increase in common shares outstanding for common stock equivalents, as all common stock equivalents are antidilutive because of the loss position. At June 30, 2010, 12,188 of the Company s 63,088 outstanding options and 1,187,174 outstanding warrants were considered common stock equivalents as the exercise prices of these options were all below the average market price of the Company s common stock for the period. At December 31, 2009, none of the Company s 40,500 outstanding options or 1,187,174 warrants were considered common stock equivalents as the exercise prices were all above the average market price of the Company s common stock for the period.

9. Accounting for Stock-Based Compensation

For the three- and six-months ended June 30, 2010, the Company recognized $28,772 and $30,417 in stock-based compensation expense relating to 35,088 and 28,000 stock options awarded in May 2010 and February 2006, compared to $3,000 and $7,000 for the three- and six-months

Table of Contents

ended June 30, 2009, respectively. As of June 30, 2010, there were no unvested options to purchase common stock under the plans.

For the three- and six-months ended June 30, 2010, the Company recognized $3,000 and $5,000 in stock-based compensation expense relating to 11,900 and 30,000 shares in restricted stock the Company granted in August 2009 and 2007, compared to $5,000 and $9,000 for the three- and six-months ended June 30, 2009, respectively.

A summary of option activity under the Company s stock option plan for the six months ended June 30, 2010, is presented below:

Options	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
Outstanding at beginning of year	40,500	$ 2.57		
Granted	35,088	$ 1.14		
Exercised				
Expired or forfeited	12,500	$ 3.41		
Outstanding at June 30, 2010	63,088	$ 1.61	3.0	$ 7,368
Exercisable at June 30, 2010	63,088	$ 1.61	3.0	$ 7,368

10. Income Taxes

Deferred income taxes are recognized for the tax consequences in future years of differences between the tax bases of assets and liabilities and their financial reporting amounts at each year end, based on enacted tax laws and statutory tax rates applicable to the periods in which the differences are expected to affect taxable income. A valuation allowance is established based upon periodic assessments made by management to reduce deferred tax assets to the amount expected to be realized. Income tax expense is the current tax provision for the period and the change during the period in deferred tax assets and liabilities.

11. Information by Business Segment

Operating segments are components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company operates via two principal segments, Biospherics and Health Sciences. Biospherics seeks to develop proprietary products for commercial application. Health Sciences provides technical and regulatory consulting services to biotechnology and pharmaceutical companies, as well as aiding the Biospherics segment.

52

Table of Contents

Financial information by business segment for the three and six months ended June 30, 2010 and 2009 is summarized below:

		Three Months Ended June 30, 2010	2009	Six Months Ended June 30, 2010	2009
Revenue					
	Biospherics	$	$	$	$
	Health Sciences	327,000	332,000	659,000	693,000
	Total revenue	$ 327,000	$ 332,000	$ 659,000	$ 693,000
Operating (Loss) Income and Loss Before Income Taxes					
	Biospherics	$ (1,900,000)	$ (1,202,000)	$ (3,474,000)	$ (2,828,000)
	Health Sciences	54,000	186,000	155,000	349,000
	General	(714,000)	(544,000)	(1,390,000)	(1,172,000)
	Total operating loss	(2,560,000)	(1,560,000)	(4,709,000)	(3,651,000)
	Interest income	2,000	5,000	4,000	30,000
	Loss from operations before income taxes	$ (2,558,000)	$ (1,555,000)	$ (4,705,000)	$ (3,621,000)

		June 30, 2010	Dec 31, 2009
Identifiable Assets			
	Biospherics	$ 5,000	$ 8,000
	Health Sciences	314,000	274,000
	General corporate assets	5,033,000	9,873,000
	Total assets	$ 5,352,000	$ 10,155,000

12. Subsequent Events

The Company evaluated all events or transactions after June 30, 2010 through the date the financial statements were issued. During this period, the Company did not have any significant subsequent events.

Table of Contents

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders

Spherix Incorporated

We have audited the accompanying consolidated balance sheets of Spherix Incorporated (a Delaware corporation) and subsidiaries as of December 31, 2009 and 2008, and the related consolidated statements of operations, changes in stockholders equity, and cash flows for each of the two years in the period ended December 31, 2009. These financial statements are the responsibility of the Company s management. Our responsibility is to express an opinion on these 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 financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the 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 financial statements referred to above present fairly, in all material respects, the financial position of Spherix Incorporated as of December 31, 2009 and 2008, and the results of their operations and their cash flows for each of the two years in the period ended December 31, 2009 in conformity with accounting principles generally accepted in the United States of America.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1, the Company incurred a net loss of $9,148,631 during the year ended December 31, 2009, and, as of that date, the Company had $9,026,002 in cash, and used $7,832,625 in cash for operations for the year ended December 31, 2009. These factors, among others, as discussed in Note 1 to the financial statements, raise substantial doubt about the Company s ability to continue as a going concern. Management s plans in regard to these matters are also described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ Grant Thornton LLP

Baltimore, MD
March 30, 2010

Table of Contents

Spherix Incorporated

Consolidated Statements of Operations

For the years ended December 31, 2009 and 2008

	2009	2008
Revenue	$ 1,359,110	$ 1,025,961
Operating expense		
Direct costs	449,293	397,645
Research and development expense	6,830,957	4,004,565
Selling, general and administrative expense	3,265,137	3,135,310
Total operating expense	10,545,387	7,537,520
Loss from operations	(9,186,277)	(6,511,559)
Interest income	37,646	348,443
Interest expense		(2,220)
Other expense		(5,994)
Loss from continuing operations before taxes	(9,148,631)	(6,171,330)
Income tax benefit		552,803
Loss from continuing operations	(9,148,631)	(5,618,527)
Discontinued operations		
Income from discontinued operations		2,070,091
Income tax expense		(587,098)
Income from discontinued operations		1,482,993
Net loss	$ (9,148,631)	$ (4,135,534)
Net (loss) income per share, basic		
Continuing operations	$ (0.62)	$ (0.39)
Discontinued operations	$	$ 0.10
Net (loss) income per share, basic	$ (0.62)	$ (0.29)
Net (loss) income per share, diluted		
Continuing operations	$ (0.62)	$ (0.39)
Discontinued operations	$	$ 0.10
Net (loss) income per share, diluted	$ (0.62)	$ (0.29)
Weighted average shares outstanding, basic	14,713,473	14,342,953
Weighted average shares outstanding, diluted	14,713,473	14,342,953

The accompanying notes to financial statements are an integral part of these financial statements.

55

Table of Contents

Spherix Incorporated

Consolidated Balance Sheets

As of December 31, 2009 and 2008

	2009	2008
ASSETS		
Current assets		
Cash and cash equivalents	$ 9,026,002	$ 9,404,843
Short-term investments, held to maturity	375,003	1,894,434
Trade accounts receivable	274,153	281,342
Other receivables	948	37,223
Prepaid expenses and other assets	209,255	282,971
Total current assets	9,885,361	11,900,813
Property and equipment, net	225,958	310,365
Patents, net of accumulated amortization of $38,588 and $110,599	8,364	14,433
Deposit	35,625	35,625
Total assets	$ 10,155,308	$ 12,261,236
LIABILITIES AND STOCKHOLDERS EQUITY		
Current liabilities		
Accounts payable and accrued expenses	$ 1,714,140	$ 710,881
Accrued salaries and benefits	388,665	304,756
Deferred revenue	90,915	39,347
Total current liabilities	2,193,720	1,054,984
Deferred compensation	580,000	660,000
Deferred rent	109,712	136,736
Total liabilities	2,883,432	1,851,720
Commitments and contingencies		
Stockholders equity		
Preferred stock, $0.01 par value, 2,000,000 shares authorized; none issued and outstanding		
Common stock, $0.005 par value, 50,000,000 shares authorized; 17,231,086 and 14,437,600 issued, 17,150,648 and 14,357,162 outstanding at December 31, 2009 and 2008, respectively	86,155	72,188
Paid-in capital in excess of par value	33,599,510	27,602,486
Treasury stock, 80,438 shares, at cost at December 31, 2009 and 2008, respectively	(464,786)	(464,786)
Accumulated deficit	(25,949,003)	(16,800,372)
Total stockholders equity	7,271,876	10,409,516
Total liabilities and stockholders equity	$ 10,155,308	$ 12,261,236

Table of Contents

Spherix Incorporated

Consolidated Statements of Changes in Stockholders Equity

For the years ended December 31, 2009 and 2008

	Common Stock Shares	Common Stock Amount	Paid-in Capital in Excess of Par	Treasury Stock Shares	Treasury Stock Amount	Retained Earnings (Accumulated Deficit)	Stockholders Equity
Balance, January 1, 2008	14,399,140	$ 71,996	$ 27,508,418	80,438	$ (464,786)	$ (12,664,838)	$ 14,450,790
Stock-based compensation	38,460	192	94,068				94,260
Net loss						(4,135,534)	(4,135,534)
Balance, December 31, 2008	14,437,600	$ 72,188	$ 27,602,486	80,438	$ (464,786)	$ (16,800,372)	$ 10,409,516
Issuance of common stock							
Sale of common stock - registery direct, net	2,760,870	13,804	6,336,196				6,350,000
Cost of stock issuance			(416,347)				(416,347)
Stock-based compensation	32,616	163	77,175				77,338
Net loss						(9,148,631)	(9,148,631)
Balance, December 31, 2009	17,231,086	$ 86,155	$ 33,599,510	80,438	$ (464,786)	$ (25,949,003)	$ 7,271,876

The accompanying notes to financial statements are an integral part of these financial statements.

Table of Contents

Spherix Incorporated

Consolidated Statements of Cash Flows

For the years ended December 31, 2009 and 2008

	2009	2008
Cash flows from operating activities		
Net loss	$ (9,148,631)	$ (4,135,534)
Adjustments to reconcile net loss to net cash used in operating activities:		
Income from discontinued operations		(1,482,993)
Income tax benefit		(552,803)
Depreciation and amortization	84,377	85,718
Loss (gain) on sale of fixed assets	5,399	(14,701)
Patent write-off		9,860
Stock-based compensation	77,338	94,260
Changes in assets and liabilities:		
Receivables	43,464	(112,755)
Prepaid expenses and other assets	73,716	89,271
Accounts payable and accrued expenses	1,087,168	(410,670)
Deferred rent	(27,024)	(19,795)
Deferred compensation	(80,000)	51,000
Deferred revenue	51,568	24,182
Net cash used in activities of continuing operations	(7,832,625)	(6,374,960)
Net cash used in activities of discontinued operations		(34,295)
Net cash used in operating activities	(7,832,625)	(6,409,255)
Cash flows from investing activities		
Proceeds from the sale of subsidiary		2,070,091
Purchase of short-term investments		(1,894,434)
Proceeds from the sale of short-term investments	1,519,431	
Purchase of property and equipment		(183,403)
Proceeds from the sales of fixed assets	700	15,187
Net cash provided by investing activities of continuing operations	1,520,131	7,441
Net cash used in investing activities of discontinued operations		
Net cash provided by investing activities	1,520,131	7,441
Cash flows from financing activities		
Net change in book overdraft		(33,302)
Proceeds from issuance of common stock, net	5,933,653	
Net cash provided by (used in) financial activities of continuing operations	5,933,653	(33,302)
Net cash used in financing activities of discontinued operations		
Net cash provided by (used in) financing activities	5,933,653	(33,302)
Net decrease in cash and cash equivalents	(378,841)	(6,435,116)
Cash and cash equivalents, beginning of year	9,404,843	15,839,959
Cash and cash equivalents, end of year	$ 9,026,002	$ 9,404,843
Supplemental cash flow information		
Interest paid	$	$ 2,220

The accompanying notes to financial statements are an integral part of these financial statements.

Table of Contents

Spherix Incorporated

Notes to Consolidated Financial Statements

1. Summary of Significant Accounting Policies

Nature of Business and Basis of Presentation

The Company s principal segments are Biospherics, our biotechnology research and development business, and Health Sciences, a technical and regulatory consulting business. The Health Sciences segment was created in July 2007 when Claire L. Kruger, CEO and COO, joined the Company in advance of the anticipated sale of the Company s wholly-owned subsidiary, InfoSpherix Incorporated. The Health Sciences business provides technical and regulatory consulting services to biotechnology and pharmaceutical companies, as well as providing technical support for the Company s own R&D activities. The Company generally provides its services on either a fixed price basis or on a time and expenses basis, charging hourly rates for each staff member involved in a project, based on his or her skills and experience. InfoSpherix was the Company s information services segment and was sold on August 15, 2007 in a move to allow the Company to devote its resources to the activities of the Biospherics segment.

The Company has created two wholly-owned subsidiaries, Biospherics Incorporated and Spherix Consulting, Inc., for its two operating segments. The Company s Health Sciences contracts are now in the name of Spherix Consulting, Inc. and the Company s patents and other assets and operations have been transferred into the name of Biospherics Incorporated. The subsidiaries began operations on January 1, 2009. Spherix now provides management, strategic guidance, business development, marketing and other services to its subsidiaries.

The consolidated financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. However, as discussed in Note 2, the Company incurred a net loss of $9.1 million for the period ended December 31, 2009, and as of December 31, 2009, had $9 million in cash and investments to fund operations, but anticipates expending between $9 million and $11 million of cash flows from operations during 2010. In the absence of the Company being able to raise additional funds, this factor raises substantial doubt as to the Company s ability to continue as a going concern. The Company is currently pursuing opportunities to raise additional capital to support ongoing operations; however, the Company can provide no assurance that it will be able to secure these funds. The financial statements do not include any adjustments relating to the recoverability and classifications of recorded asset amounts or the amounts and classifications of liabilities or any other adjustments that may be necessary if the Company is unable to continue as a going concern.

The consolidated financial statements include the accounts of Spherix Incorporated, Biospherics Incorporated and Spherix Consulting, Inc. (collectively, the Company). All intercompany balances and transactions have been eliminated in consolidation.

On August 15, 2007, the Company sold InfoSpherix. Accordingly, the final payment received in 2008 from the sale of InfoSpherix is reported in the accompanying financial statements as discontinued operations in the Consolidated Statement of Operations.

Use of Estimates and Assumptions

The accompanying consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America. This requires management to make estimates and assumptions that affect certain reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenue and expenses during the period. Significant estimates include amortization and depreciation. Accordingly, actual results could differ from those estimates and assumptions.

The accompanying notes to financial statements are an integral part of these financial statements.

Table of Contents

Cash and Cash Equivalents

The Company considers all highly liquid investments with original maturities of three months or less when purchased to be cash and cash equivalents. At December 31, 2009, the Company had approximately $8.9 million invested in funds with a maturity of three months or less, which are included as cash and cash equivalents. The Company maintains cash balances at several banks. Accounts at each institution are insured by the Federal Deposit Insurance Corporation up to $250,000. At December 31, 2009, the Company s cash and cash equivalent in excess of the FDIC limits was $8.7 million. The Company has not experienced any losses in such accounts and believes it is not exposed to any significant credit risk on cash.

Short-term Investments

The Company s short-term investments consist of investments in debt securities, which mature in one year or less, and are valued at amortized cost, which approximates fair value.

Concentrations

During 2009 and 2008, revenue from five and three Health Sciences clients accounted for 72% and 66% of the Company s total revenue, respectively.

Property and Equipment and Depreciation

Property and equipment are stated at cost and consist of office furniture and equipment, computer hardware and software, and leasehold improvements. The Company computes depreciation and amortization under the straight-line method and typically over the following estimated useful lives of the related assets:

Office furniture and equipment	3 to 10 years
Computer hardware and software	3 to 5 years

Leasehold improvements are depreciated or amortized over the lesser of the term of the related lease or the estimated useful lives of the assets (generally 5 to 10 years). Major additions, improvements and renewals are capitalized at cost and ordinary repairs, maintenance, and renewals are expensed in the year incurred. Gains or losses from the sale or retirement of property and equipment result from the difference between sales proceeds (if any) and the assets net book value, and are recorded in the consolidated Statement of Operations.

Impairment of Long-Lived Assets

Whenever events or changes in circumstances indicate that the carrying amount of long-lived assets, including patents and property and equipment, may not be fully recoverable, the Company evaluates the probability that the future undiscounted net cash flows, without interest charges, will be less than the carrying amount of the assets. If any impairment is indicated as a result of this review, the Company would recognize a loss based on the amount by which the carrying amount exceeds the estimated undiscounted future cash flows. No such impairment was noted.

Patent Costs

Legal costs incurred in connection with patent applications and costs of acquiring patents are capitalized when incurred. When patents are granted, costs are amortized over a term representing the lesser of the life of the patent or the projected sales period of the product or process.

Revenue Recognition

Revenue is recognized when persuasive evidence of an arrangement exists, services have been rendered, the contract price is fixed or determinable and collectability is reasonably assured. On time and expense contracts revenue is recognized at contractually agreed-upon rates based upon direct labor hours expended and other direct

Table of Contents

costs incurred. Revenue for fixed-price contracts is recognized as deliverables or milestones are completed. Losses, if any, on contracts are recorded during the period when first determined.

Direct Costs

The Company s direct costs consist primarily of labor costs.

Selling, General and Administrative Expense

The Company s selling, general and administrative expenses consist primarily of executive management salaries and fringe benefits, sales and marketing costs, finance and accounting, human resources, as well as general corporate costs and costs related to being a public company.

Research and Development Costs

Research and development costs are charged to operations as incurred. Included in the 2009 research and development costs is $1.4 million in losses related to purchases of D-tagatose used for trial purposes.

Income Taxes

Deferred income taxes are recognized for the tax consequences in future years of differences between the tax bases of assets and liabilities and their financial reporting amounts at each year end, based on enacted tax laws and statutory tax rates applicable to the periods in which the differences are expected to affect taxable income. A valuation allowance is established based upon periodic assessments made by management to reduce deferred tax assets to the amount expected to be realized. Income tax expense is the current tax provision for the period and the change during the period in deferred tax assets and liabilities.

The Company s policy is to recognize interest and penalties on tax liabilities as interest expense. At December 31, 2009 and 2008, the Company had no unrecognized income tax benefits and recognized no interest or penalties on income tax liabilities.

Discontinued Operations

On August 15, 2007, the Company completed the sale of InfoSpherix for $17 million ($15 million at closing and $2 million following a 15-month escrow period), pursuant to the Stock Purchase Agreement dated June 25, 2007. The $15 million sale proceeds were reported as gain on sale of the discontinued segment in 2007. The $2 million escrow balance was recorded as a gain on sale of the discontinued segment and realized in November 2008. The sale was conducted to allow Spherix to focus substantially all of its efforts on Biospherics, with the principal focus on the commercialization of D-tagatose.

The results of operations of the discontinued InfoSpherix segment, including the costs to sell the segment, are as follows:

		2008
Interest revenue	$	70,000
Gain on sale of segment		2,000,000
Income from discontinued operations before taxes	$	2,070,000

Fair Value Information

The estimated fair value of the Company s financial instruments, which include cash, receivables, and accounts payable reported in the Consolidated Balance Sheet, approximate their carrying value given their short maturities.

Table of Contents

Accounting for Stock-Based Compensation

The Company applies the fair value method, which requires that the measurement of all employee share-based payments to employees, including grants of employee stock options, be expensed over their vesting period based on their value at the grant date using their fair value, determined using a prescribed option-pricing model. The Company uses a Black-Scholes option pricing model to value stock options. For each of the years ended December 31, 2009 and 2008, the Company recognized $13,000 in stock based compensation expense relating to 59,000 stock options awarded in February 2006 and $64,000 and $81,000 respectively, related to the issuance of restricted stock (see Note 8, Stockholders Equity).

Net Loss Per Share

Basic net loss per common share has been computed by dividing net loss by the weighted-average number of common shares outstanding during the year. Diluted net loss per common share has been computed by dividing net loss by the weighted-average number of common shares outstanding without an assumed increase in common shares outstanding for common stock equivalents, as common stock equivalents are antidilutive. At December 31, 2009, none of the Company s 40,500 outstanding options or 1,104,348 warrants were considered common stock equivalents as the exercise prices were all above the average market price of the Company s common stock for the period.

New Accounting Pronouncements

In June 2009, the Financial Accounting Standards Board (FASB) established the FASB Accounting Standards Codification (Codification) as the source of authoritative U.S. generally accepted accounting principles (GAAP) recognized by the FASB to be applied to nongovernmental entities and rules and interpretive releases of the SEC as authoritative GAAP for SEC registrants. The Codification supersedes all the existing non-SEC accounting and reporting standards upon its effective date and subsequently, the FASB will not issue new standards in the form of Statements, FASB Staff Positions or Emerging Issues Task Force Abstracts. This guidance is effective for interim periods ending after September 15, 2009. We adopted this guidance for the period ended September 30, 2009, with no effect on our consolidated results of operations and financial condition for the three and nine months ended September 30, 2009.

In December 2007, the FASB revised the authoritative guidance for business combinations, which establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, liabilities assumed, and any noncontrolling interest in the acquiree in a business combination. The guidance establishes principles stipulating how goodwill acquired in a business combination or a gain from a bargain purchase should be recognized and measured under a method established by the guidance referred to as the acquisition method. The guidance also expands the disclosure requirements related to the nature and financial impact of business combinations. We adopted this guidance as of January 1, 2009 and the adoption did not have an impact on our financial position, results of operations or cash flows.

In December 2007, the FASB revised the authoritative guidance for consolidation, which establishes accounting and reporting standards for the noncontrolling interest in a subsidiary and for the deconsolidation of a subsidiary. The guidance clarifies that a noncontrolling interest in a subsidiary is an ownership interest in the consolidated entity that should be reported as equity in the consolidated financial statements. The guidance also requires consolidated net income to be reported at amounts that include the amounts attributable to both the parent and the

noncontrolling interest. It also requires disclosure, on the face of the consolidated statement of income, of the amounts of consolidated net income attributable to the parent and to the noncontrolling interest. It also provides guidance when a subsidiary is deconsolidated and requires expanded disclosures in the consolidated financial statements that clearly identify and distinguish between the interests of the parent and the interests of the noncontrolling owners of a subsidiary. We adopted this guidance as of January 1, 2009 and the adoption did not have an impact on our financial position, results of operations or cash flows.

In June 2008, the FASB revised the authoritative guidance for earnings per share, which establishes that unvested share-based payment awards that contain non-forfeitable rights to dividends or dividend equivalents are participating securities and shall be included in the computation of earnings per share pursuant to the two-class

Table of Contents

method. In contrast, the right to receive dividends or dividend equivalents that the holder will forfeit if the award does not vest, does not constitute a participation right and such an award does not meet the definition of a participating security in its current form (that is, prior to the requisite service having been rendered for the award). We adopted this guidance as of January 1, 2009 and the adoption did not have an impact on our financial position, results of operations or cash flows.

In April 2009, the FASB revised the authoritative guidance for financial instruments. The guidance requires disclosures about fair value of financial instruments in interim financial statements as well as in annual financial statements. This guidance is effective for interim periods ending after June 15, 2009. We adopted this guidance in the second quarter of 2009, and the adoption did not have a material impact on our financial position, results of operations or cash flows.

In April 2009, the FASB revised the authoritative guidance for fair value measurements and disclosures to provide additional guidance in determining whether a market for a financial asset is not active and a transaction is not distressed for fair value measurement purposes. This guidance is effective for interim periods ending after June 15, 2009. We adopted this guidance for the period ending June 30, 2009. The adoption of this guidance did not have an impact on our financial position, results of operations or cash flows.

In April 2009, the FASB revised the authoritative guidance for investments in debt and equity securities to provide guidance in determining whether impairments in debt securities are other-than-temporary, and modifies the presentation and disclosures surrounding such instruments. This guidance is effective for interim periods ending after June 15, 2009. We adopted the provisions of this guidance for the period ending June 30, 2009. The adoption of this guidance had no material impact on our financial position, results of operations or cash flows.

In May 2009, the FASB revised the authoritative guidance for subsequent events, which establishes general standards of accounting for and disclosure of events that occur after the balance sheet date but before financial statements are issued or are available to be issued. This guidance is effective for financial statements issued for interim and annual reporting periods ending after June 15, 2009. We adopted this guidance for the period ended June 30, 2009, and the Company is not aware of any subsequent events which would require recognition or disclosure in the consolidated financial statements.

In October 2009, the FASB issued ASC Update No. 2009-13, which amends the Revenue Recognition topic of the Codification. This update provides amendments to the criteria in Subtopic 605-25 of the Codification for separating consideration in multiple-deliverable arrangements. As a result of those amendments, multiple-deliverable arrangements will be separated in more circumstances than under existing U.S. GAAP. The amendments establish a selling price hierarchy for determining the selling price of a deliverable and will replace the term *fair value* in the revenue allocation guidance with *selling price* to clarify that the allocation of revenue is based on entity-specific assumptions rather than assumptions of a marketplace participant. The amendments will also eliminate the residual method of allocation and require that arrangement consideration be allocated at the inception of the arrangement to all deliverables using the relative selling price method and will require that a vendor determine its best estimate of selling price in a manner that is consistent with that used to determine the price to sell the deliverable on a stand-alone basis. These amendments will be effective prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010, with early adoption permitted. We are currently evaluating the impact the adoption of this update might have on our results of operations and financial position.

In October 2009, the FASB issued ASC Update No. 2009-14, which amends the Software topic of the Codification. The amendments in this update change the accounting model for revenue arrangements that include both tangible products and software elements. Tangible products containing software components and nonsoftware components that function together to deliver the tangible product s essential functionality are no longer within the scope of the software revenue guidance in Subtopic 985-605 of the Codification. In addition, the amendments in this update

require that hardware components of a tangible product containing software components always be excluded from the software revenue guidance. In that regard, the amendments provide additional guidance on how to determine which software, if any, relating to the tangible product also would be excluded from the scope of the software revenue guidance. The amendments also provide guidance on how a vendor should allocate arrangement consideration to deliverables in an arrangement that includes both tangible products and software. The amendments

Table of Contents

also provide further guidance on how to allocate arrangement consideration when an arrangement includes deliverables both included and excluded from the scope of the software revenue guidance. These amendments will be effective prospectively for revenue arrangements entered into or materially modified in fiscal years beginning on or after June 15, 2010, with early adoption permitted. We are currently evaluating the impact the adoption of this update might have on our results of operations and financial position.

2. Liquidity

The Company s working capital was $7.7 million as of December 31, 2009. Over the next 12 months, the Company expects that it will need to expend between $9 million and $11 million to complete the Phase 2 and Phase 3 trials and to fund its increased market development and commercialization activities. The total cost of completing the trials is difficult to determine and can be affected by any number of factors including, but not limited to, the time to complete the trials.

The Company will need to raise additional funds in 2010 to continue its operations. Any such fundraising will likely require the issuance of additional Company equity securities and a purchaser of such securities will likely insist that such securities be registered securities.

In November 2009, the Company obtained net proceeds of approximately $6 million in a registered direct primary offering. The common stock issued in the offering and the common stock which may be issued upon exercise of warrants issued in the offering have been registered under a Form S-3 registration statement declared effective by the Securities and Exchange Commission (SEC) in October 2009.

Pursuant to SEC rules, the Company may not be in a position to issue additional shares of its common stock in another registered direct primary offering under a Form S-3 registration statement until mid-November 2010. Thus, if the Company wishes to conduct another registered direct primary offering before mid-November, 2010, it will likely have do so in whole or in part under a Form S-1 registration statement.

Further, NASDAQ rules require stockholder approval for any certain stock issuances constituting 20% or more of a Company s issued and outstanding stock.

The Company cannot be assured that it will be able to attract a purchaser of securities to raise the additional funds it will likely require in 2010; that the Company will be able to obtain any required stockholder approval; or that the Company will be able to have a Form S-1 registration statement declared effective to complete such an offering.

3. Fair Value Measurement

The Company has elected not to apply the fair value option to measure any of the financial assets and liabilities on its balance sheet not already valued at fair value under other accounting pronouncements. These other financial assets and liabilities are primarily short-term investments,

accounts receivable, accounts payable and debt, which are reported at historical value. The fair value of these financial assets and liabilities approximate their fair value because of their short duration.

4. Allowance for Doubtful Accounts

Management regularly reviews accounts receivable for uncollectible and potentially uncollectible accounts, and when necessary establishes an allowance for doubtful accounts. An allowance for doubtful accounts from continuing operations was not deemed necessary at December 31, 2009 and 2008.

5. Property and Equipment

During 2008, the Company relocated its headquarters to a smaller facility. The decrease in office furniture and equipment and the decrease in leasehold improvements are a direct result of this move. The components of property and equipment as of December 31, at cost are:

Table of Contents

	2009	2008
Computers	$ 14,000	$ 14,000
Office furniture and equipment	109,000	187,000
Leasehold improvements	229,000	283,000
Total cost	352,000	484,000
Accumulated depreciation and amortization	(126,000)	(174,000)
Property and equipment, net	$ 226,000	$ 310,000

The Company s depreciation expense for the years ended December 31, 2009 and 2008 was $78,000 and $78,000, respectively. In 2008, lease incentives under the Bethesda facility lease provided $150,000 in leasehold improvements, which is recognized on a straight line basis over the life of the lease.

6. Patents and Intangible Assets

The Company s amortization expense for the years ended December 31, 2009 and 2008 was $6,000 and $8,000, respectively. The Company s future amortization based on its patents and intangible assets at December 31, 2009 is as follows:

Year	Amortization Expense
2010	$ 7,000
2011	7,000
Total	$ 14,000

7. Accounts Payable and Accrued Expenses

Accounts payable and accrued expenses consisted of the following at December 31:

	2009	2008
Accounts payable	$ 961,000	$ 524,000
Purchase commitment	600,000	0
Deferred Compensation	140,000	113,000
Accrued expenses	13,000	74,000
	$ 1,714,000	$ 711,000

8. Stockholders Equity

Registered Direct

On November 16, 2009, the Company entered into a securities purchase agreement with certain investors to sell an aggregate of 2,760,870 shares of its common stock and warrants to purchase up to an additional 1,104,348 shares of its common stock to such investors for gross proceeds of approximately $6.3 million. The common stock and warrants were sold in units, with each unit consisting of one share of common stock and a warrant to purchase 0.40 of a share of common stock. The purchase price per unit was $ 2.30. Subject to certain ownership limitations, the warrants are exercisable at any time on or after the initial issue date and on or prior to November 16, 2014, but not thereafter, at an exercise price of $ 3.25. The exercise price of the warrants is subject to adjustment in the case of stock splits, stock dividends, combinations of shares and similar recapitalization transactions. The warrants are classified as equity instruments and are accounted for in additional-paid-in capital.

On November 6, 2009, in connection with the closing of our registered direct offering of convertible preferred stock and warrants to purchase common stock, the Company issued to Rodman & Renshaw, LLC, as partial consideration for its services as placement agent, warrants to purchase up to 82,826 shares of our common stock at an exercise price of $2.875 per share. The warrants are exercisable at the option of the holder at any time beginning on November 16, 2009 through and including November 16, 2011. These warrants were offered and sold

Table of Contents

by us in reliance upon exemptions from the registration statement requirements by Section 4(2) of the Securities Act of 1933, as amended, as transactions by an issuer not involving a public offering.

The net proceeds to the Company from the registered direct offering, after deducting placement agent fees and the Company s offering expenses, and excluding the proceeds, if any, from the exercise of the warrants issued in the offering, were approximately $6 million.

Restricted Stock

In August 2009 and 2008, the Company issued 26,664 and 38,460 shares, respectively, of restricted stock with a fair value of $40,000 in each year to its independent Board Members, which was recognized as compensation expense at the time of issue. The fair value of the above stock awards was based on the closing market price on the date of grant.

In August 2007, the Company granted 30,000 and 15,000 shares in restricted stock as part of the employment agreements for the Company s Chief Executive Officer and President. The fair value of the stock was $55,800 and $30,000, which was recognized as compensation expense over the respective vesting periods of two and one years.

Stock Option Plan

The Company has an Employees Stock Option Plan (the Plan) which permits issuance of both Incentive Stock Options (ISO) and Non-Qualified Stock Options, whereby options may be granted to officers, Directors and other key employees to purchase up to 1,000,000 shares of common stock in amounts determined by the Compensation Committee of the Board of Directors through December 31, 2010. During 2009 and 2008, no stock options were granted under the Plan. At December 31, 2009, 857,700 options were available for grant under the Plan. Options issued to employees typically vest over a four-year period and options issued to non-employee directors vested immediately upon being granted.

Activity for the two years ended December 31, 2009, for all option grants is shown below:

	2009 Shares	2009 Weighted Average Exercise Price	2008 Shares	2008 Weighted Average Exercise Price
Outstanding at beginning of year	40,500	$ 2.57	216,800	$ 7.36
Granted		$		$
Exercised		$		$
Expired or forfeited		$	(176,300)	$ 8.46
Outstanding at end of year	40,500	$ 2.57	40,500	$ 2.57

Options exercisable at end of year	39,750	39,000
Weighted-average fair value of options granted during the year	$	$
Price range of options		
Outstanding	$2.20-$3.41	$2.20-$3.41
Exercised	$	$
Expired or forfeited	$	$6.35-$8.67

Table of Contents

The following table summarizes information with respect to stock options outstanding at December 31, 2009:

Range of Exercise Price	Number of Options Outstanding at 12/31/09	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life
$2.20	28,000	$ 2.20	1.1
$3.41	12,500	$ 3.41	0.1
	40,500		

The following table summarizes information with respect to stock options exercisable at December 31, 2009:

Year of Option Expiration	Number of Options	Weighted Average Exercise Price	Price Range
2010	12,500	$ 3.41	$ 3.41
2011	27,250	$ 2.20	$ 2.20
All Years	39,750		

The Company used the following assumptions in the Black-Scholes calculation used to measure the fair value of stock-based compensation in accordance with SFAS 123R for stock options granted in 2006. No stock options were granted in 2009 or 2008.

	2006
Risk-free interest rate	4.59%
Expected life (years)	4
Volatility	140.9%
Dividend yield	0%

9. Income Taxes

Income tax from continuing operations for 2009 and 2008 was as follows:

	2009	2008
U.S. Federal income tax benefit	$	$ 465,000
State and local income tax benefit	$	$ 88,000
Total income tax benefit	$	$ 553,000

	2009	2008
Current income tax benefit	$	$ 553,000
Deferred income tax expense	$	$

Total income tax benefit	$	$ 553,000

Table of Contents

The tax effects of significant temporary differences representing deferred tax assets as of December 31, 2009 and 2008 are as follows:

	2009	2008
Property and equipment	$ (48,000)	$ (70,000)
Deferred rent	43,000	54,000
Accrued vacation	28,000	19,000
Tax credit	82,000	82,000
Deferred compensation	282,000	305,000
Net operating loss carryforward	10,941,000	8,001,000
Accrued bonus	103,000	
Stock based compensation	31,000	27,000
Inventory adjustments	434,000	
Other	1,000	1,000
	11,897,000	8,419,000
Valuation allowance	(11,897,000)	(8,419,000)
Deferred tax asset	$	$

At December 31, 2009 and 2008, the Company had net operating loss carryforwards for U.S. federal income tax purposes of approximately $27.4 million and $18.7 million, respectively, which will begin to expire in 2019. At December 31, 2009 and 2008, the Company had net operating loss carryforwards for state income tax purposes of approximately $37.3 million and $30.5 million, respectively, which will begin to expire in 2018. Based on the Company s historical losses and its accumulated deficit, the Company has provided a full valuation allowance against the net deferred tax asset.

Utilization of the net operating loss carryforwards and credit may be subject to a substantial annual limitation due to the ownership change limitations provided by the Internal Revenue Code of 1986, as amended, and similar state provisions. The Company has not performed a detailed analysis to determine whether an ownership change under Section 382 of the Internal Revenue Code occurred. The effect of an ownership change would be the imposition of an annual limitation on the use of net operating loss carryforwards attributable to periods before the change and could result in a reduction in the total net operating losses and research credits available.

Reconciliation between actual tax expenses and taxes computed at the statutory Federal rate of 34 percent for 2009 and 2008 are as follows:

	2009	2008
U.S. Federal income tax benefit at the statutory rate of 34%	$ 3,110,000	$ 2,432,000
Effect of permanent differences	$ (7,000)	$ (25,000)
State income taxes benefit (expense), net of federal tax benefit	494,000	(39,000)
Other	(119,000)	112,000
Change in valuation allowance	(3,478,000)	(1,928,000)
Income tax benefit	$	$ 552,000

Tax Uncertainties

The Company recognizes a tax benefit associated with an uncertain tax position when, in management s judgment, it is more likely than not that the position will be sustained upon examination by a taxing authority. For a tax position that meets the more-likely-than-not recognition threshold, the Company initially and subsequently measures the tax benefit as the largest amount that it judges to have a greater than 50% likelihood of being realized upon ultimate settlement with a taxing authority. The liability associated with unrecognized tax benefits is adjusted periodically due to changing circumstances, such as the progress of tax audits, case law developments and new or emerging legislation. The effective tax rate includes the net impact of changes in the liability for unrecognized tax benefits and subsequent adjustments as considered appropriate by management. The Company has not recognized any such adjustments. At December 31, 2009 and 2008, the Company had no material unrecognized income tax benefits and recognized no interest or penalties on income tax liabilities.

Table of Contents

The Company is subject to U.S. federal income tax and state and local income tax in multiple jurisdictions. The statute of limitations for the consolidated U.S. federal income tax return is closed for all tax years up to and including 2005, except for pre-2005 tax returns that generated net operating loss carry forwards that could be adjusted on audit. During 2009, an IRS audit of tax year 2006 was completed and no adjustments were proposed. Currently, no federal or state and local income tax returns are under examination by the respective taxing authorities.

10. Commitments and Contingencies

Government Contracts

Following the sale of InfoSpherix, the Company is no longer engaged in the performance of government contracts.

Purchase Commitments

During 2009, the Company entered into a purchase commitment with a supplier of the Company s D-Tagatose product. The agreement committed the Company to purchase 25 metric tons of D-Tagatose. The Company utilizes the D-Tagatose as a part of the Phase 3 trial of the Food and Drug Administration (FDA) study. This phase is necessary for the Company to be able to commercialize the product and as the products were not going to be available for sale, the Company wrote off the entire product value into Research and Development Costs. The amounts written off during the year from the agreement were $1.1 million.

Leases

The Company has commitments under an operating lease through 2013 relating to its administrative office in Bethesda, Maryland.

Future minimum rental payments required as of December 31, 2009, under the non-cancelable lease are as follows:

Year Ending December 31,		Operating Lease
2010		150,000
2011		155,000
2012		159,000
2013		40,000
	$	504,000

The Company s building lease contains step rent provisions, capital improvement funding, or other tenant allowances. Minimum rental payments including allowances on this lease are recognized on a straight-line basis over the term of the lease. In 2008, lease incentives under the Bethesda facility lease provided for $150,000 of leasehold improvements. The Company incurred net operating lease rental expenses of approximately $165,000 and $244,000 for the years 2009 and 2008, respectively.

Related Party Transactions

Employment, Deferred Compensation, and Consulting Agreements for Principal Stockholders

Under employment agreements with Dr. Gilbert V. Levin and Mrs. M. Karen Levin, the Company s founders, the Company has agreed to provide Dr. and Mrs. Levin each with lifetime payments of $12,500 each quarter and to fund long-term lifetime healthcare and health insurance policies following their retirements from the Company on August 14, 2008 and January 4, 2006, respectively. At December 31, 2009, the Company s liability for both Dr. and Mrs. Levin was estimated to be $480,000 for the lifetime payments and $240,000 for funding the long-term lifetime healthcare and health insurance policies based on actuarially determined amounts. The non-current portion of these amounts is reported on the accompanying balance sheet as deferred compensation. During

Table of Contents

2009 and 2008, the Company paid Dr. and Mrs. Levin a combined total of $135,000 and $123,000 in post-retirement benefits.

Dr. and Mrs. Levin have agreed to serve as consultants to the Company on an as-needed basis, at a specified daily rate. No consulting payments were made to the Levins during 2009 or 2008.

11. Employee Benefit Plans

Effective January 1, 1990, the Company established the Spherix Incorporated 401(k) Retirement Plan. The Plan is a discretionary defined contribution plan and covers substantially all employees who have attained the age of 21, have completed one year of service, and have worked a minimum of 1,000 hours in the past Plan or anniversary year.

Under provisions of the Plan, the Company, for any plan year, has contributed an amount equal to 50% of the participant s contribution or 2½% of the participant s eligible compensation, whichever is less. The Company may, at its own discretion, make additional matching contributions to participants. Company contributions, net of forfeitures, amounted to $15,000 and $9,000 in 2009 and 2008, respectively.

12. Information by Business Segment

Operating segments are components of an enterprise about which separate financial information is available that is evaluated regularly by the chief operating decision maker, or decision-making group, in deciding how to allocate resources and in assessing performance. The Company s principal segments are Biospherics, our biotechnology research and development business, and Health Sciences, a technical and regulatory consulting business.

Table of Contents

Financial information by business segment for the years ended December 31, 2009 and 2008 is summarized below:

		Year Ended December 31, 2009	2008
Revenues			
	Health Sciences Consulting	$ 1,350,000	$ 1,012,000
	Biospherics	9,000	14,000
	Total revenues	$ 1,359,000	$ 1,026,000
Operating Income (Loss) and Loss Before Income Taxes			
	Health Sciences Consulting	$ 691,000	$ 433,000
	Biospherics	(7,523,000)	(4,164,000)
	General and administration	(2,354,000)	(2,780,000)
	Total operating loss	(9,186,000)	(6,511,000)
	Interest income	37,000	348,000
	Interest expense		(2,000)
	Other expense		(6,000)
	Loss from continuing operations before income taxes	$ (9,149,000)	$ (6,171,000)
Identifiable Assets			
	Health Sciences Consulting	$ 274,000	$ 296,000
	Biospherics	8,000	21,000
	General corporate assets	9,873,000	11,944,000
	Total assets	$ 10,155,000	$ 12,261,000
Capital Expenditures			
	Health Sciences Consulting	$	$
	Biospherics		
	General corporate assets		333,000
	Total capital expenditures	$	$ 333,000
Depreciation and Amortization			
	Health Sciences Consulting	$	$
	Biospherics	6,000	5,000
	General corporate assets	78,000	81,000
	Total depreciation and amortization	$ 84,000	$ 86,000

Operating income (loss) from continuing operations consists of revenue less operating expenses. In computing operating loss, interest expense and income taxes were not considered. The operating income for the Health Sciences segment was 51% and 43% of that segment s revenue for 2009 and 2008.

Biospherics is concentrating all of its efforts on the Phase 3 clinical trial of its most promising product, D-tagatose as a treatment for hypertriglyceridemia and for Type 2 diabetes in humans. This product is in the development stage and will require substantial additional investment to bring to market.

Identifiable assets by business segment are those assets used in the Company s operations in each segment, such as accounts receivable, inventories, fixed assets, and patent costs. Corporate assets are principally cash and certain other assets not related to a particular segment s

operations.

13. Subsequent Events

The Company evaluated all events or transactions after December 31, 2009 through the date the financial statements were issued. During this period, the Company did not have any significant subsequent events.

Table of Contents

SPHERIX INCORPORATED

5,250 SHARES

CONVERTIBLE PREFERRED STOCK

WARRANTS TO PURCHASE UP TO 2,100,000 SHARES OF COMMON STOCK

PROSPECTUS

October 12, 2010