SENESCO TECHNOLOGIES INC
Form 10-K/A
October 28, 2009

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K/A
(Amendment No. 1)

(Mark One)

x ANNUAL REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.

For the fiscal year ended June 30, 2009

OR

o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.

For the transition period from _____ to _____

Commission file number: 001-31326

SENESCO TECHNOLOGIES, INC.

(Exact name of registrant as specified in its charter)

Delaware	84-1368850
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
303 George Street, Suite 420, New Brunswick, New Jersey	08901
(Address of principal executive offices)	(Zip Code)

(732) 296-8400

(Registrant's telephone number, including area code)

None

Securities registered under Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, $0.01 par value per share.	NYSE Amex

Securities registered under Section 12(g) of the Act:

None.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No x

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act . Yes ¨ No x

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, in any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T ((§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ¨ No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definitions of “accelerated filer”, “large accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer ¨	Accelerated filer ¨
Non-accelerated filer ¨	Smaller reporting company x

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No x

As of September 15, 2009, the aggregate market value of the registrant’s common stock held by non-affiliates of the registrant was $7,899,030, based on the closing sales price as reported on the NYSE Amex on that date.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of September 15, 2009:

Class	Number of Shares
Common Stock, $0.01 par value	22,604,007

Explanatory Note

We are filing this Amended and Restated Annual Report on Form 10-K/A of Senesco Technologies, Inc. (the "Form 10-K") to include the information required by Part III of the Form 10-K as we no longer anticipate filing our proxy statement for the 2009 annual meeting, within 120 days of June 30, 2009. With the exception of the inclusion of information required by Part III, no information contained in this Form 10-K has been changed.

TABLE OF CONTENTS

PART I

Item 1. Business.

Our Business

The primary business of Senesco Technologies, Inc., a Delaware corporation incorporated in 1999, and its wholly-owned subsidiary, Senesco, Inc., a New Jersey corporation incorporated in 1998, collectively referred to as "Senesco," "we," "us" or "our," is to utilize our patented and patent-pending genes, primarily eucaryotic translation initiation Factor 5A, or Factor 5A, and deoxyhypusine synthase, or DHS, and related technologies for inhibition in human health applications to develop novel approaches to treat inflammatory diseases and cancer.

In agricultural applications we are developing and licensing Factor 5A, DHS and Lipase to enhance the quality and productivity of fruits, flowers, and vegetables and agronomic crops through the control of cell death, referred to herein as senescence, and growth in plants.

Human Health Applications

We believe that our gene technology could have broad applicability in the human health field, by either inhibiting or inducing apoptosis. Inhibiting apoptosis may be useful in preventing or treating a wide range of inflammatory and ischemic diseases attributed to premature apoptosis. Inducing apoptosis may be useful in treating certain forms of cancer because the cancerous cells have failed to initiate apoptosis on their own due to damaged or inhibited apoptotic pathways.

We have commenced preclinical in-vivo and in-vitro research to determine the ability of Factor 5A to regulate key execution genes, pro-inflammatory cytokines, receptors, and transcription factors, which are implicated in numerous apoptotic diseases.

Certain preclinical human health results to date include:

- Performing efficacy, toxicological and dose-finding studies in mice for our potential multiple myeloma drug candidate, SNS-01. SNS-01 is a nano-encapsulated combination therapy of Factor 5A and an siRNA against Factor 5A. Our efficacy study in severe combined immune-deficient mice with subcutaneous human multiple myeloma tumors tested SNS-01 dosages ranging from 0.15 mg/kg to 1.5 mg/kg. In these studies, mice treated with a dose of either 0.75 mg/kg or 1.5 mg/kg both showed a 91% reduction in tumor volume and a decrease in tumor weight of 87% and 95%, respectively. For mice that received smaller doses of either 0.38 mg/kg or 0.15 mg/kg, there was also a reduction in tumor volume (73% and 61%, respectively) and weight (74% and 36%, respectively). All of the treated mice, regardless of dose, survived. This therapeutic dose range study provided the basis for an 8-day maximum tolerated dose study in which normal mice received two intravenous doses of increasing amounts of SNS-01 (from 2.2 mg/kg). Body weight, organ weight and serum levels of liver enzymes were used as clinical indices to assess toxicity. A dose between 2.2 mg/kg and 2.9 mg/kg was well tolerated with respect to these clinical indices, and the survival rate at 2.9 mg/kg was 80%. Those mice receiving above 2.9 mg/kg of SNS-01 showed evidence of morbidity and up to 80% mortality. The 2.9 mg/kg threshold, twice the upper end of the proposed therapeutic dose range, was therefore determined to be the maximum tolerated dose in mice.

- demonstrated significant tumor regression and diminished rate of tumor growth of multiple myeloma tumors in SCID mice treated with Factor 5A technology encapsulated in nanoparticles;

- increased median survival by approximately 250% in a tumor model of mice injected with melanoma cancer cells;

- induced apoptosis in both human cancer cell lines derived from tumors and in lung tumors in mice;

- induced apoptosis of cancer cells in a human multiple myeloma cell line in the presence of IL-6;

- measured VEGF reduction in mouse lung tumors as a result of treatment with our genes;

- decreased ICAM and activation of NFkB in cancer cells employing siRNA against Factor 5A;

- increased the survival rate in H1N1 mouse influenza survival studies from 14% in untreated mice to 52% in mice treated with our siRNA against Factor 5A. Additionally, the treated mice reversed the weight loss typically seen in infected mice and had other reduced indicators of disease severity as measured by blood glucose and liver enzymes.

- increased the survival, while maintaining functionality, of mouse pancreatic islet cells isolated for transplantation, using intraperitaneal administration of our technology. Initial animal studies have shown that our technology administered prior to harvesting beta islet cells from a mouse, has a significant impact not only on the survival of the beta islet cells, but also on the retention of the cells' functionality when compared to the untreated beta islet cells. Additional studies have shown that the treated beta islet cells survive a pro-inflammatory cytokine challenge, while maintaining their functionality with respect to insulin production. These further studies also revealed Factor-5A's involvement in the modulation of inducible nitric oxide synthase (iNOS), an important indicator of inflammation; and

- increased the survival rate of mice in a lethal challenge sepsis model. Additionally, a broad spectrum of systemic pro-inflammatory cytokines were down-regulated, while not effecting the anti-inflammatory cytokine IL-10.

Accelerating Apoptosis

The data from our pre-clinical studies indicate that the up-regulation of Factor 5A induces cell death in cancer cells through both the p53 (intrinsic) and cell death receptor (extrinsic) apoptotic pathways. Tumors arise when abnormal cells fail to undergo apoptosis due to an inability to activate their apoptotic pathways. Just as the Factor 5A gene appears to facilitate expression of the entire suite of genes required for programmed cell death in plants, the Factor 5A gene appears to regulate expression of a suite of genes required for programmed cell death in human cells. Because the Factor 5A gene appears to function at the initiation point of the apoptotic pathways, both intrinsic and extrinsic, we believe that our gene technology has potential application as a means of combating a broad range of cancers. Based on the results obtained through our in-vitro studies, we have found that up-regulating Factor 5A results in: (i) the up-regulation of p53; (ii) increased inflammatory cytokine production; (iii) increased cell death receptor formation; and (iv) increased caspase activity. These features, coupled with a simultaneous down-regulation Bcl-2, result in apoptosis of cancer cells. In addition, our in-vitro studies have shown that the up-regulation of Factor 5A also down-regulates VEGF, a growth factor which allows tumors to develop additional vascularization needed for growth beyond a small mass of cells.

Inhibiting Apoptosis

Our preclinical studies indicate that down-regulation of our proprietary Factor 5A gene may have potential application as a means for controlling the effects of a broad range of diseases that are attributable to premature cell death, ischemia, or inflammation. Such inflammatory diseases include glaucoma, heart disease, and other certain inflammatory diseases such as Crohn's disease, sepsis and diabetic retinopathy. We have performed preclinical research of certain inflammatory diseases. Using small inhibitory RNA's, or siRNA's, against Factor 5A to inhibit its expression, the results of our studies have indicated a reduction in pro-inflammatory cytokine formation and the formation of receptors for LPS, interferon-gamma and TNF-alpha. Our studies have also indicated that by inhibiting Factor 5A, iNOS, MAPK, NFkB, JAK1 and ICAM are downregulated, which decreases the inflammatory cytokines formed through these pathways. Additionally, a mouse study has indicated that our siRNA is comparable to a steroid and to a prescription anti-TNF drug in its ability to reduce cytokine response to LPS. Other mouse studies have also indicated that the siRNA against Factor 5A (i) protects thymocyte cells from apoptosis and decreases formation of MPO, TNF-a, MIP-1alpha, and IL-1 in the lungs of mice challenged with LPS and (ii) increases the survival rate in which sepsis was induced by a lethal injection of LPS and (iii) reduces blood serum levels of inflammatory proteins, such as IL-1, IL-2, IL-6, IL-12, TNF-a, IFNg and MIP-1alpha, while not effecting IL-10, an anti-inflammatory cytokine. Other experiments utilizing siRNA to Factor 5A include inhibition of or apoptosis during the processing of mouse pancreatic beta islet cells for transplantation, the inhibition of early inflammatory changes associated with type-1 diabetes in an in-vivo rat model.

Proteins required for cell death include p53, interleukins, TNF-a and other cytokines and caspases. Expression of these cell death proteins is required for the execution of apoptosis. Based on our studies, we believe that down-regulating Factor 5A by treatment with siRNA inhibits the expression of p53, a major cell death transcription factor that in turn controls the formation of a suite of other cell death proteins. In addition, we believe that the down-regulation of Factor 5A up-regulates Bcl-2, a suppressor of apoptosis.

Human Health Target Markets

We believe that our gene technology may have broad applicability in the human health field, by either inhibiting or accelerating apoptosis. Inhibiting apoptosis may be useful in preventing or treating a wide range of inflammatory and ischemic diseases attributed to premature apoptosis, including diabetes, diabetic retinopathy and lung inflammation, among others. Accelerating apoptosis may be useful in treating certain forms of cancer because the body's immune system is not able to force cancerous cells to undergo apoptosis.

Our preclinical research has yielded data that we have presented to various biopharmaceutical companies that may be prospective licensees for the development and marketing of potential applications of our technology. Additionally, we are using the proceeds of our most recent financing to advance our research in multiple myeloma with the goal of initiating a Phase I clinical trial, and may select additional human health indications to bring into clinical trials. We believe that the success of our future operations will likely depend on our ability to transform our research and development activities into a commercially feasible technology.

Human Health Research Program

Our human health research program, which has consisted of pre-clinical in-vitro and in-vivo experiments designed to assess the role and method of action of the Factor 5A genes in human diseases, is being performed by approximately eleven (11) third party researchers, at our direction, at Mayo Clinic, the University of Virginia and the University of Waterloo.

Our research and development expenses incurred on human health applications were approximately 74% of our total research and development expenses for the year ended June 30, 2009. Our research and development expenses incurred on human health applications were approximately 56% of our total research and development expenses for the year ended June 30, 2008. Since inception, the proportion of our research and development expenses on human health applications has increased, as compared to our research and development expenses on agricultural applications. This change is primarily due to the fact that our research focus on human health has increased and some of our research costs for plant applications have shifted to our license partners.

Our planned future pre-clinical research and development initiatives for human health include:

- Multiple Myeloma. Our objective is to advance our technology for the potential treatment of multiple myeloma with the goal of initiating a clinical trial. In connection with the potential clinical trial, we have engaged a clinical research organization, or CRO, to assist us through the process. We have also determined the delivery system for our technology, contracted for the supply of pharmaceutical grade materials to be used in toxicology and human studies, performed certain toxicology studies, and have contracted with a third party laboratory to conduct additional toxicology studies. Together with the assistance of our CRO, we will have additional toxicology studies performed with the goal of filing an investigational new drug application, or IND application, with the U.S. Food and Drug Administration, or FDA, for their review and consideration in order to initiate a clinical trial. Assuming that we have adequate funding, we estimate that it will take approximately fifteen (15) months from June 30, 2009 to complete these objectives.

- Lung Inflammation. A mouse model system has been conducted to illustrate the siRNA to Factor 5A's ability to reduce morbidity and mortality of lung inflammation caused by the up-regulation of pro-inflammatory cytokines induced by a pathogen.

    - Other. We may continue to look at other disease states in order to determine the role of Factor 5A.

In order to pursue the above research initiatives, as well as other research initiatives that may arise, we recently completed private placements of $1.7 million of common stock and warrants. It will be necessary for us to raise a significant amount of additional working capital in the near future to continue to pursue some of the above initiatives as well as new initiatives, if any. If we are unable to raise the necessary funds, we may be required to significantly curtail the future development of some of our research initiatives and we will be unable to pursue other possible research initiatives.

We may further expand our research and development program beyond the initiatives listed above to include other research centers.

Human Health Competition

Our competitors in human health that are presently attempting to distribute their technology have generally utilized one of the following distribution channels:

- Entering into strategic alliances, including licensing technology to major marketing and distribution partners; or
- developing in-house production and marketing capabilities.

In addition, some competitors are established distribution companies, which alleviates the need for strategic alliances, while others are attempting to create their own distribution and marketing channels.

There are many large companies and development stage companies working in the field of apoptosis research including: Amgen Inc., Centocor, Inc., Genzyme Corporation, OSI Pharmaceuticals, Inc., Novartis AG, Introgen Therapeutics, Inc., Genta, Incorporated., and Vertex Pharmaceuticals, Inc., amongst others.

Agricultural Applications

Our agricultural research focuses on the discovery and development of certain gene technologies, which are designed to confer positive traits on fruits, flowers, vegetables, forestry species and agronomic crops. To date, we have isolated and characterized the senescence-induced Lipase gene, DHS, and Factor 5A in certain species of plants. Our goal is to modulate the expression of these genes in order to achieve such traits as extended shelf life, increased biomass, increased yield and increased resistance to environmental stresses and disease, thereby demonstrating proof of concept in each category of crop.

Certain agricultural results to date include:

- longer shelf life of perishable produce;
- increased biomass and seed yield;
- greater tolerance to environmental stresses, such as drought and soil salinity;
- greater tolerance to certain fungal and bacterial pathogens;
- more efficient use of fertilizer; and
- advancement to field trials in banana, lettuce, and trees.

The technology presently utilized by the industry for increasing the shelf life in certain flowers, fruits and vegetables relies primarily on reducing ethylene biosynthesis, and therefore only has application to the crops that are ethylene-sensitive. Because Factor 5A, DHS and Lipase are already present in all plant cells, our technology may be incorporated into crops by using either conventional breeding methods (non-genetically modified) or biotechnology techniques.

We have licensed this technology to various strategic partners and have entered into a joint venture. We may continue to license this technology, as opportunities present themselves, to additional strategic partners and/or enter into additional joint ventures. Our commercial partners have licensed our technology for use in turfgrass, canola, corn, soybean, cotton, banana, alfalfa, rice and certain species of trees and bedding plants, and we have obtained proof of concept for enhanced post harvest shelf life, seed yield, biomass, and resistance to disease in several of these plant species.

We have ongoing field trials of certain trees and bananas with our respective partners. The initial field trials conducted with ArborGen over a three year period in certain species of trees have concluded and the trees have been harvested for wood quality assessment. Preliminary data from our joint field trials show significantly enhanced growth rates in some of the trees relative to controls. Selected trees from the field trials were harvested and their wood chemistry and density was assessed. There were no differences in key economic characteristics of wood, such a lignin, cellulose and specific gravity, between the trees with the enhanced growth attributes and untreated control trees, which indicates that the faster growth does not result in lower wood quality. Additional field trials for enhanced growth rates and other traits are currently being performed with ArborGen.

To date, banana field trials have indicated that our technology extends the shelf life of banana fruit by 100%. In addition to the post harvest shelf life benefits, an additional field trial generated encouraging disease tolerance data specific to Black Sigatoka (Black Leaf Streak Disease), for banana plants. Additional field trials for banana plants are ongoing for the combined traits of disease resistance and shelf life extension.

Commercialization by our partners may require a combination of traits in a crop, such as both post harvest shelf life and disease resistance, or other traits. Our near-term research and development initiatives include modulating the expression of DHS and Factor 5A genes in these plants and then propagation and phenotype testing of such plants.

Our ongoing research and development initiatives for agriculture include assisting our license and joint venture partners to:

- further develop and implement the DHS and Factor 5A gene technology in banana, canola, cotton, turfgrass, bedding plants, rice, alfalfa, corn, soybean and trees; and

- test the resultant crops for new beneficial traits such as increased yield, increased tolerance to environmental stress, disease resistance and more efficient use of fertilizer.

Agricultural Target Markets

In order to address the complexities associated with marketing and distribution in the worldwide market, we have adopted a multi-faceted commercialization strategy, in which we have entered into and plan to enter into, as the opportunities present themselves, additional licensing agreements or other strategic relationships with a variety of companies or other entities on a crop-by-crop basis. We anticipate revenues from these relationships in the form of licensing fees, royalties,, usage fees, or the sharing of gross profits. In addition, we anticipate payments from certain of our partners, which are described in the Agricultural Development and License Agreements section of this Form 10-K, upon our achievement of certain research and development benchmarks. This commercialization strategy allows us to generate revenue at various stages of product development, while ensuring that our technology is incorporated into a wide variety of crops. Our optimal partners combine the technological expertise to incorporate our technology into their product line along with the ability to successfully market the enhanced final product, thereby eliminating the need for us to develop and maintain a sales force.

Because the agricultural market is dominated by privately held companies or subsidiaries of foreign owned companies, market size and market share data for the crops under our license and development agreements is not readily available. Additionally, because we have entered into confidentiality agreements with our license and development partners, we are unable to report the specific financial terms of the agreements as well as any market size and market share data that our partners may have disclosed to us regarding their companies.

Agricultural Development and License Agreements

Through September 15, 2009, we have entered into eight (8) license agreements and one (1) joint collaboration with established agricultural biotechnology companies or, in the case of Poet, as more fully described below, an established ethanol company, as follows:

- In June 2002, we entered into a three-year worldwide exclusive development and option agreement with ArborGen, LLC to develop our technology in certain species of trees. In June 2006, ArborGen exercised their option to license our technology and in December 2006, converted the development and option agreement into a license agreement, referred to herein as the ArborGen Agreement. To date, the research being conducted by ArborGen has proceeded according to schedule. ArborGen has seen promising positive growth responses in greenhouse-grown seedlings. These initial greenhouse data led to the initiation of field trials by ArborGen in the second half of calendar 2004. At the end of the 2005 growing season, certain trees which were enhanced by our technology had approximately double the increase in volume relative to control trees. Further field trials are ongoing to support these data and to analyze the growth rates of trees which incorporate our technology. Under the ArborGen Agreement, we have received an upfront payment and benchmark payments and we may receive additional benchmark payments upon achievement of certain development milestones and royalties upon commercialization.

- In September 2002, we entered into an exclusive development and license agreement with Cal/West Seeds, referred to herein as the Cal/West License, to commercialize our technology in certain varieties of alfalfa. The Cal/West License will continue until the expiration of the patents set forth in the agreement, unless terminated earlier by either party pursuant to the terms of the agreement. The Cal/West License also grants Cal/West an exclusive option to develop our technology in various other forage crops. The Cal/West development effort successfully incorporated our technology into their alfalfa seed as of July 2004. Seed transformation and greenhouse trait analysis is ongoing. Under the Cal/West License, we have received an upfront payment and we may receive benchmark payments as certain development milestones are achieved and a royalty upon commercialization based upon the volume of alfalfa seed sold that contains our technology.

- In March 2004, we entered into an exclusive development and license agreement with The Scotts Company, referred to herein as the Scotts Agreement, to commercialize our technology in turfgrass and certain species of bedding plants. Scotts is working on incorporating our technology to enhance a variety of traits in these plants, including environmental stress resistance, disease resistance and enhanced bloom properties. We are collaborating with Scotts in the areas of ornamental bedding plants and turfgrass. A large-scale greenhouse evaluation of bedding plants was being conducted and additional greenhouse testing is planned. Transformation and initial tissue culture screening of events have been undertaken in turfgrass. In tissue culture, turfgrass containing our technology has grown more successfully than control turfgrass without our technology. Greenhouse testing of the grass containing our technology is the next planned development step. Under the Scotts Agreement, we have received an upfront payment and benchmark payments. In January 2006, the development and license agreement with The Scotts Company was amended. Due to a change in the corporate financial policy at Scotts, Scotts requested to defer certain milestone payments, which were to be made on a calendar basis. We agreed and these payments have now been deferred and incorporated in the amount to be paid to us upon commercialization. Additionally, the commercialization fee has been increased. All other aspects of the agreement remain unchanged, and the project continues to move forward without interruption. We may also receive royalties upon commercialization from the net sales of turfgrass seed and bedding plants containing our technology.

- In October 2005, we entered into an agreement with Poet to license our proprietary gene technology to Poet to improve aspects of Poet’s ethanol production capabilities. We are currently revising our work plan to incorporate our technology into those aspects of Poet's ethanol production. We will receive an annual payment for each Poet facility that incorporates our technology. If Poet incorporates our technology into each of its facilities, we would be entitled to receive an annual payment in excess of $1,000,000.

- On November 8, 2006, we entered into a license agreement with Bayer CropScience GmbH for the development and commercialization of Canola. Under the terms of the agreement, we received an upfront payment, will receive milestone payments upon the achievement of certain development milestones and will receive commercialization fees based upon specified benchmarks. In August, 2008, Bayer CropScience GmbH successfully completed the first development milestone related to this license.

- On July 17, 2007 we entered into a license agreement with Bayer CropScience AG for the development and commercialization of cotton. Under the terms of the agreement, we received an upfront payment, will receive milestone payments upon the achievement of certain development milestones, and additionally, upon commercialization, and a royalty on net sales.

- On August 6, 2007 we entered into a license agreement with Monsanto for the development and commercialization of corn and soy. Under the terms of the agreement, we received an upfront payment, will receive milestone payments upon the achievement of certain development milestones, and additionally, upon commercialization, and a royalty on net sales.

- On September 11, 2007 we entered into a license agreement with Bayer CropScience AG for the development and commercialization of rice. Under the terms of the agreement, we received an upfront payment, will receive milestone payments upon the achievement of certain development milestones, and additionally, upon commercialization, and a royalty on net sales.

In December 2008, the Development and License Agreement with the Harris Moran Seed Company, or Harris Moran, was terminated by mutual agreement due to the corporate restructuring of Harris Moran. Harris Moran has reported that its parent company, Limagrain, restructured its vegetable seed operations and that Harris Moran will now be part of a new business unit with Clause (France) and Marco Polo (Thailand). This restructuring has resulted in a consolidation of research and development efforts amongst Harris Moran and its sister companies that will not encompass our technology. Harris Moran made us aware of this shift in research and development focus and presented us with a letter on December 1, 2008 formally ending the relationship through the mutual agreement of the parties. Pursuant to the terms of the Development and License Agreement, all rights to use our technology in lettuce and melon revert to us.

Joint Venture

On May 14, 1999, we entered into an agreement with Rahan Meristem Ltd., or Rahan Meristem, an Israeli company engaged in the worldwide export marketing of banana germplasm, referred to herein as the Rahan Joint Venture. In general, bananas are grown either for local domestic consumption or grown for export. According to the Food and Agriculture Organization of the United Nations, there were approximately 16 million metric tons of bananas exported in 2004. The level of production equates to the fruit of approximately 480 million banana plants. A percentage of these plants are replaced each year with new banana seedlings. Rahan Meristem accounts for approximately 10% of the worldwide export of enhanced banana seedlings.

We have contributed, by way of a limited, exclusive, worldwide license to the Rahan Joint Venture, access to our technology, discoveries, inventions and know-how, whether patentable or otherwise, pertaining to plant genes and their cognate expressed proteins that are induced during senescence for the purpose of developing, on a joint basis, genetically enhanced banana plants which will result in a banana that has a longer shelf life. Rahan Meristem has contributed its technology, inventions and know-how with respect to banana plants. Rahan Meristem and Senesco have equally shared the expense of field trials.

All aspects of the Rahan Joint Venture's research and development initiative are proceeding on time. Both the DHS and lipase genes have been identified and isolated in banana, and the Rahan Joint Venture is currently in the process of silencing these genes. Two Israeli field trials indicated that Senesco's proprietary technology extends the shelf life of the banana fruit up to 100%, while allowing the banana fruit to ripen normally. Later field trials have indicated what we believe are promising disease tolerance results and we are currently performing additional field trials to further assess disease tolerance. However, as the banana modified with our technology may be considered a genetically modified organism, or GMO, shelf life extension may have to be combined with disease tolerance to gain acceptance by the growers.

Agricultural Research Program

Our agricultural research and development is performed by three (3) researchers, at our direction, at the University of Waterloo, where the technology was developed. Additional agricultural research and development is performed by our partners in connection with the Scotts Agreement, the ArborGen License, the Cal/West License, the Bayer Licenses, the Monsanto License and through the Rahan Joint Venture.

The discoverer of our technology, John E. Thompson, Ph.D., is the Associate Vice President, Research and former Dean of Science at the University of Waterloo in Ontario, Canada, and is our Executive Vice President and Chief Scientific Officer. Dr. Thompson is also one of our directors and owns 2.9% of the outstanding shares of our common stock, $0.01 par value, as of June 30, 2009. On September 1, 1998, we entered into, and have extended through August 31, 2010, a research and development agreement with the University of Waterloo and Dr. Thompson as the principal inventor. The Research and Development Agreement provides that the University of Waterloo will perform research and development under our direction, and we will pay for the cost of this work and make certain payments to the University of Waterloo. In return for payments made under the Research and Development Agreements, we have all rights to the intellectual property derived from the research.

Agricultural Competition

Our competitors in both human health and agriculture that are presently attempting to distribute their technology have generally utilized one of the following distribution channels:

- licensing technology to major marketing and distribution partners;
- entering into strategic alliances; or
- developing in-house production and marketing capabilities.

In addition, some competitors are established distribution companies, which alleviates the need for strategic alliances, while others are attempting to create their own distribution and marketing channels.

Our competitors in the field of delaying plant senescence are companies that develop and produce transformed plants with a variety of enhanced traits. Such companies include: Mendel Biotechnology; Renessen LLC; Exelixis Plant Sciences, Inc.; Syngenta International AG; and Eden Bioscience Corporation, among others.

Agricultural Development Program

Generally, projects with our licensees and joint venture partner begin by transforming seed or germplasm to incorporate our technology. Those seeds or germplasm are then grown in our partners' greenhouses. After successful greenhouse trials, our partners will transfer the plants to the field for field trials. After completion of successful field trials, our partners may have to apply for and receive regulatory approval prior to initiation of any commercialization activities.

Generally, the approximate time to complete each sequential development step is as follows:

Seed Transformation	approximately 1 to 2 years
Greenhouse	approximately 1 to 2 years
Field Trials	approximately 2 to 5 years

The actual amount of time spent on each development phase depends on the crop, its growth cycle and the success of the transformation achieving the desired results. As such, the amount of time for each phase of development could vary, or the time frames may change.

The development of our technology with Poet is different than our other licenses in that we are modifying certain production inputs for ethanol. That process involves modifying the inputs, testing such inputs in Poet's production process and if successful, implementing such inputs in Poet's production process on a plant by plant basis.

The status of each of our projects with our partners is as follows:

Project	Partner	Status
Banana	Rahan Meristem	
- Shelf Life		Field trials
- Disease Resistance		Field trials
Trees	Arborgen	
- Growth		Field trials
Alfalfa	Cal/West	Greenhouse
Corn	Monsanto	Proof of concept ongoing
Cotton	Bayer	Proof of concept ongoing
Canola	Bayer	Seed transformation
Rice	Bayer	Proof of concept ongoing
Soybean	Monsanto	Proof of concept ongoing
Turfgrass	The Scotts Company	Greenhouse
Bedding Plants	The Scotts Company	Greenhouse
Ethanol	Poet	Modify inputs

Commercialization by our partners may require a combination of traits in a crop, such as both shelf life and disease resistance, or other traits.

Based upon our commercialization strategy, we anticipate that there may be a significant period of time before plants enhanced using our technology reach consumers. Thus, we have not begun to actively market our technology directly to consumers, but rather, we have sought to establish ourselves within the industry through presentations at industry conferences, our website and direct communication with prospective licensees.

Consistent with our commercialization strategy, we intend to attract other companies interested in strategic partnerships or licensing our technology, which may result in additional license fees, revenues from contract research and other related revenues. Successful future operations will depend on our ability to transform our research and development activities into a commercially feasible technology.

Intellectual Property

We have nineteen (19) issued patents from the United States Patent and Trademark Office, or PTO, and twenty-six (26) issued patents from foreign countries, thirty-three (33) of which are for the use of our technology in agricultural applications and twelve (12) of which relate to human health applications.

In addition to our forty-five (45) patents, we have a wide variety of patent applications, including divisional applications and continuations-in-part, in process with the PTO and internationally. We intend to continue our strategy of enhancing these new patent applications through the addition of data as it is collected.

Government Regulation

At present, the U.S. federal government regulation of biotechnology is divided among three agencies: (i) the U.S. Department of Agriculture regulates the import, field-testing and interstate movement of specific types of genetic engineering that may be used in the creation of transformed plants; (ii) the Environmental Protection Agency regulates activity related to the invention of plant pesticides and herbicides, which may include certain kinds of transformed plants; and (iii) the FDA regulates foods derived from new plant varieties. The FDA requires that transformed plants meet the same standards for safety that are required for all other plants and foods in general. Except in the case of additives that significantly alter a food's structure, the FDA does not require any additional standards or specific approval for genetically engineered foods but expects transformed plant developers to consult the FDA before introducing a new food into the market place.

In addition, our ongoing preclinical research with cell lines and lab animal models of human disease is not currently subject to the FDA requirements that govern clinical trials. However, use of our technology, if developed for human health applications, will also be subject to FDA regulation. Generally, the FDA must approve any drug or biologic product before it can be marketed in the United States. In addition, prior to being sold outside of the U.S., any products resulting from the application of our human health technology must be approved by the regulatory agencies of foreign governments. Prior to filing a new drug application or biologics license application with the FDA, we would have to perform extensive clinical trials, and prior to beginning any clinical trial, we need to perform extensive preclinical testing which could take several years and may require substantial expenditures.

We believe that our current activities, which to date have been confined to research and development efforts, do not require licensing or approval by any governmental regulatory agency. However, we, or our licensees, may be required to obtain such licensing or approval from governmental regulatory agencies prior to the commercialization of our genetically transformed plants and the application of our human health technology.

Employees

In addition to the eleven (11) scientists performing funded research for us at Mayo Clinic, the University of Virginia, and the University of Waterloo, we have five (5) employees and one (1) consultant, four (4) of whom are executive officers and who are involved in our management. We do not anticipate hiring any additional employees over the next twelve months.

The officers are assisted by a Scientific Advisory Board that consists of prominent experts in the fields of plant and human cell biology as follows:

- Alan Bennett, Ph.D., who serves as the Chairman of the Scientific Advisory Board, is the Associate Vice Chancellor of the Office of Technology Transfer at the University of California. His research interests include the molecular biology of tomato fruit development and ripening, the molecular basis of membrane transport, and cell wall disassembly.

- Charles A. Dinarello, M.D., who serves as a member of the Scientific Advisory Board, is a Professor of Medicine at the University of Colorado School of Medicine, a member of the U.S. National Academy of Sciences and the author of over 500 published research articles. In addition to his active academic research career, Dr. Dinarello has held advisory positions with two branches of the National Institutes of Health and positions on the Board of Governors of both the Weizmann Institute and Ben Gurion University.

- James E. Meier is an Associate Professor of Medicine at Beth Israel Deaconess Medical Center, a teaching hospital of Harvard Medical School. He is also a practicing physician in the Division of Hematology-Oncology at Beth Israel. Dr. Mier's research is funded by the NIH and he is a member of numerous professional societies.

Furthermore, pursuant to the Research and Development Agreements, a substantial amount of our research and development activities are conducted at the University of Waterloo under the supervision of Dr. Thompson, our Executive Vice President and Chief Scientific Officer. We utilize the University's research staff including graduate and post-graduate researchers.

We have also undertaken preclinical apoptosis research at the University of Colorado under the supervision of Dr. Dinarello. In addition to the research being conducted at the University of Colorado, we have also undertaken preclinical apoptosis research at Mayo Clinic, and the University of Virginia. This research is performed pursuant to specific project proposals that have agreed-upon research outlines, timelines and budgets. We may also contract research to additional university laboratories or to other companies in order to advance the development of our technology.

Safe Harbor Statement

The statements contained in this Annual Report on Form 10-K that are not historical facts are forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995. Such forward-looking statements may be identified by, among other things, the use of forward-looking terminology such as “believes,” “expects,” “may,” “will,” “should,” or “anticipates” or the negative thereof or other variations thereon or comparable terminology, or by discussions of strategy that involve risks and uncertainties. In particular, our statements regarding the anticipated growth in the markets for our technologies, the continued advancement of our research, the approval of our patent applications, the possibility of governmental approval in order to sell or offer for sale to the general public a genetically engineered plant or plant product, the successful implementation of our commercialization strategy, including the success of the ArborGen Agreement, the Cal/West License, The Scotts License, the Broin License, the Bayer Licenses, the Monsanto License, and the Research and Development Agreements, the successful implementation of the Rahan Joint Venture, statements relating to our patent applications, the anticipated long term growth of our business, the results of our preclinical studies, if any, our ability to comply with the continued listing standards of the NYSE Amex, and the timing of the projects and trends in future operating performance are examples of such forward-looking statements. The forward-looking statements include risks and uncertainties, including, but not limited to, our limited operating history, our need for additional capital to fund our operations until we are able to generate a profit, the current economic environment, our dependence on a single principal technology, our outsourcing of our research and development activities, our significant future capital needs, our dependence on our patents and proprietary rights and the enforcement of these rights, the potential for our competitors to allege that we are infringing upon their intellectual property rights, the potential that our technology infringes the intellectual property of our competitors or other third parties, the potential that our security measures may not adequately protect our unpatented technology, potential difficulty in managing our growth and expanding our operations, our lack of marketing or sales history and dependence on third-party marketing partners, our potential future dependence on joint ventures and strategic alliances to develop and market our technology, the intense competition in the human health and agricultural biotechnology industries, the various government regulations that our business is subject to, the potential that our preclinical studies and clinical trials of our human health applications may be unsuccessful, any inability to license from third parties their proprietary technologies or processes which we use in connection with the development of our technology, the length, expense and uncertainty associated with clinical trials for our human health technology, the potential that, even if we receive regulatory approval, consumers may not accept products containing our technology, our dependence on key personnel, the potential that certain provisions of our charter, by-laws and Delaware law could make a takeover difficult, increasing political and social turmoil, the potential that our management and other affiliates, due to their significant control of our common stock ability to significantly influence our actions, the potential that a significant portion of our total outstanding shares of common stock may be sold in the market in the near future, the limited trading market of our common stock, the potential that our common stock may be delisted from the NYSE Amex Exchange, fluctuations in the market price of our common stock, our dividend policy and potential for our stockholders to be diluted.

ITEM 1A: Factors That May Affect Our Business, Future Operating Results and Financial Condition

The more prominent risks and uncertainties inherent in our business are described below. However, additional risks and uncertainties may also impair our business operations. If any of the following risks actually occur, our business, financial condition or results of operations may suffer.

Risks Related to Our Business

We have a limited operating history and have incurred substantial losses and expect to incur future losses.

We are a development stage biotechnology company with a limited operating history and limited assets and capital. We have incurred losses each year since inception and had an accumulated deficit of $35,949,899 at June 30, 2009. We have generated minimal revenues by licensing our technology for certain crops to companies willing to share in our development costs. In addition, our technology may not be ready for commercialization for several years. We expect to continue to incur losses for the next several years because we anticipate that our expenditures on research and development, and administrative activities will significantly exceed our revenues during that period. We cannot predict when, if ever, we will become profitable.

We may need additional capital to fund our operations until we are able to generate a profit.

Our operations to date have required significant cash expenditures. Our future capital requirements will depend on the results of our research and development activities, preclinical and clinical studies, and competitive and technological advances.

In addition, the financings with YA Global Investments, L.P., referred to herein as YA Global, and Stanford Venture Capital Holdings, Inc., referred to herein as Stanford, are secured by all of our assets. If we default under the convertible notes, the investors may foreclose on our assets and our business. As a result, we will need to obtain more funding in the future through collaborations or other arrangements with research institutions and corporate partners, or public and private offerings of our securities, including debt or equity financing. We may not be able to obtain adequate funds for our operations from these sources when needed or on acceptable terms. Future collaborations or similar arrangements may require us to license valuable intellectual property to, or to share substantial economic benefits with, our collaborators. If we raise additional capital by issuing additional equity or securities convertible into equity, our stockholders may experience dilution and our share price may decline. Any debt financing may result in restrictions on our spending.

If we are unable to raise additional funds, we will need to do one or more of the following:

- delay, scale-back or eliminate some or all of our research and product development programs;

- license third parties to develop and commercialize products or technologies that we would otherwise seek to develop and commercialize ourselves;
- seek strategic alliances or business combinations;
- attempt to sell our company;
- cease operations; or
- declare bankruptcy.

We believe that at the projected rate of spending, and with the proceeds from the private placement completed in July 2009 and the proceeds from the proposed private placements pending NYSE AMEX approval, as of June 30, 2009, we should have sufficient cash and investments to maintain our present operations for the next six(6) months as of June 30, 2009.

We may be adversely affected by the current economic environment.

Our ability to obtain financing, invest in and grow our business, and meet our financial obligations depends on our operating and financial performance, which in turn is subject to numerous factors. In addition to factors specific to our business, prevailing economic conditions and financial, business and other factors beyond our control can also affect our business and ability to raise capital. We cannot anticipate all of the ways in which the current economic climate and financial market conditions could adversely impact our business.

We depend on a single principal technology and, if our technology is not commercially successful, we will have no alternative source of revenue.

Our primary business is the development and licensing of technology to identify, isolate, characterize and promote or silence genes which control the death of cells in humans and plants. Our future revenue and profitability critically depend upon our ability to successfully develop apoptosis and senescence gene technology and later license or market such technology. We have conducted experiments on certain crops with favorable results and have conducted certain preliminary cell-line and animal experiments, which have provided us with data upon which we have designed additional research programs. However, we cannot give any assurance that our technology will be commercially successful or economically viable for any crops or human health applications.

In addition, no assurance can be given that adverse consequences might not result from the use of our technology such as the development of negative effects on humans or plants or reduced benefits in terms of crop yield or protection. Our failure to obtain market acceptance of our technology or of our current or potential licensees to successfully commercialize such technology would have a material adverse effect on our business.

We outsource all of our research and development activities and, if we are unsuccessful in maintaining our alliances with these third parties, our research and development efforts may be delayed or curtailed.

We rely on third parties to perform all of our research and development activities. Our research and development efforts take place at the University of Waterloo in Ontario, Canada, where our technology was discovered, Mayo Clinic, the University of Virginia and with our commercial partners. At this time, we do not have the internal capabilities to perform our research and development activities. Accordingly, the failure of third-party research partners to perform under agreements entered into with us, or our failure to renew important research agreements with these third parties, may delay or curtail our research and development efforts.

We have significant future capital needs and may be unable to raise capital when needed, which could force us to delay or reduce our research and development efforts.

As of June 30, 2009, we had cash and highly-liquid investments of $1,430,569 and working capital of $1,259,300. In July 2009, we received aggregate net proceeds of approximately $900,000 from a private placement of our equity securities and entered into securities purchase agreements for an additional $725,000 of net proceeds from other private placement of our equity securities. The securities purchase agreements for the additional $725,000 of net proceeds is subject to NYSE AMEX approval before we may receive such net proceeds. Using our available reserves as of June 30, 2009 and the net proceeds from the private equity financings, we believe that we can operate according to our current business plan for the next six (6) months from June 30, 2009. To date, we have generated minimal revenues and anticipate that our operating costs will exceed any revenues generated over the next several years. Therefore, we will be required to raise additional capital in the future in order to operate in accordance with our current business plan, and this funding may not be available on favorable terms, if at all. If we are unable to raise additional funds, we will need to do one or more of the following:

- delay, scale back or eliminate some or all of our research and development programs;
- provide a license to third parties to develop and commercialize our technology that we would otherwise seek to develop and commercialize ourselves;
- seek strategic alliances or business combinations;
- attempt to sell our company;
- cease operations; or
- declare bankruptcy.

In addition, in connection with any funding, if we need to issue more equity securities than our certificate of incorporation currently authorizes, or more than 20% of the shares of our common stock outstanding, we may need stockholder approval. If stockholder approval is not obtained or if adequate funds are not available, we may be required to curtail operations significantly or to obtain funds through arrangements with collaborative partners or others that may require us to relinquish rights to certain of our technologies, product candidates, products or potential markets. Investors may experience dilution in their investment from future offerings of our common stock. For example, if we raise additional capital by issuing equity securities, such an issuance would reduce the percentage ownership of existing stockholders. In addition, assuming the exercise of all options and warrants outstanding and the conversion of the notes into common stock, as of June 30, 2009, we had 4,383,328 shares of common stock authorized but unissued and unreserved, which may be issued from time to time by our board of directors without stockholder approval. In connection with our private placement of equity securities, in July 2009, we issued an aggregate of an additional 1,055,555 shares of common stock and warrants to purchase 2,902,778 shares of common stock. Therefore, assuming the exercise of all options and warrants granted as of July 2009, we had 424,995 shares of common stock authorized but unissued, which may be issued from time to time by our board of directors without stockholder approval. Furthermore, we may need to issue securities that have rights, preferences and privileges senior to our common stock. Failure to obtain financing on acceptable terms would have a material adverse effect on our liquidity.

Since our inception, we have financed all of our operations through private equity and debt financings. Our future capital requirements depend on numerous factors, including:

- the scope of our research and development;
- our ability to attract business partners willing to share in our development costs;
- our ability to successfully commercialize our technology;
- competing technological and market developments;
- our ability to enter into collaborative arrangements for the development, regulatory approval and commercialization of other products; and
- the cost of filing, prosecuting, defending and enforcing patent claims and other intellectual property rights.

Our business depends upon our patents and proprietary rights and the enforcement of these rights. Our failure to obtain and maintain patent protection may increase competition and reduce demand for our technology.

As a result of the substantial length of time and expense associated with developing products and bringing them to the marketplace in the biotechnology and agricultural industries, obtaining and maintaining patent and trade secret protection for technologies, products and processes is of vital importance. Our success will depend in part on several factors, including, without limitation:

- our ability to obtain patent protection for our technologies and processes;
- our ability to preserve our trade secrets; and

- our ability to operate without infringing the proprietary rights of other parties both in the United States and in foreign countries.

As of June 30, 2009, we have been issued nineteen (19) patents by the PTO and twenty-six (26) patents from foreign countries. We have also filed numerous patent applications for our technology in the United States and in several foreign countries, which technology is vital to our primary business, as well as several Continuations in Part on these patent applications. Our success depends in part upon the grant of patents from our pending patent applications.

Although we believe that our technology is unique and that it will not violate or infringe upon the proprietary rights of any third party, we cannot assure you that these claims will not be made or if made, could be successfully defended against. If we do not obtain and maintain patent protection, we may face increased competition in the United States and internationally, which would have a material adverse effect on our business.

Since patent applications in the United States are maintained in secrecy until patents are issued, and since publication of discoveries in the scientific and patent literature tend to lag behind actual discoveries by several months, we cannot be certain that we were the first creator of the inventions covered by our pending patent applications or that we were the first to file patent applications for these inventions.

In addition, among other things, we cannot assure you that:

- our patent applications will result in the issuance of patents;
- any patents issued or licensed to us will be free from challenge and if challenged, would be held to be valid;
- any patents issued or licensed to us will provide commercially significant protection for our technology, products and processes;
- other companies will not independently develop substantially equivalent proprietary information which is not covered by our patent rights;
- other companies will not obtain access to our know-how;
- other companies will not be granted patents that may prevent the commercialization of our technology; or
- we will not incur licensing fees and the payment of significant other fees or royalties to third parties for the use of their intellectual property in order to enable us to conduct our business.

Our competitors may allege that we are infringing upon their intellectual property rights, forcing us to incur substantial costs and expenses in resulting litigation, the outcome of which would be uncertain.

Patent law is still evolving relative to the scope and enforceability of claims in the fields in which we operate. We are like most biotechnology companies in that our patent protection is highly uncertain and involves complex legal and technical questions for which legal principles are not yet firmly established. In addition, if issued, our patents may not contain claims sufficiently broad to protect us against third parties with similar technologies or products, or provide us with any competitive advantage.

The PTO and the courts have not established a consistent policy regarding the breadth of claims allowed in biotechnology patents. The allowance of broader claims may increase the incidence and cost of patent interference proceedings and the risk of infringement litigation. On the other hand, the allowance of narrower claims may limit the scope and value of our proprietary rights.

The laws of some foreign countries do not protect proprietary rights to the same extent as the laws of the United States, and many companies have encountered significant problems and costs in protecting their proprietary rights in these foreign countries.

We could become involved in infringement actions to enforce and/or protect our patents. Regardless of the outcome, patent litigation is expensive and time consuming and would distract our management from other activities. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we could because they have substantially greater resources. Uncertainties resulting from the initiation and continuation of any patent litigation could limit our ability to continue our operations.

If our technology infringes the intellectual property of our competitors or other third parties, we may be required to pay license fees or damages.

If any relevant claims of third-party patents that are adverse to us are upheld as valid and enforceable, we could be prevented from commercializing our technology or could be required to obtain licenses from the owners of such patents. We cannot assure you that such licenses would be available or, if available, would be on acceptable terms. Some licenses may be non-exclusive and, therefore, our competitors may have access to the same technology licensed to us. In addition, if any parties successfully claim that the creation or use of our technology infringes upon their intellectual property rights, we may be forced to pay damages, including treble damages.

Our security measures may not adequately protect our unpatented technology and, if we are unable to protect the confidentiality of our proprietary information and know-how, the value of our technology may be adversely affected.

Our success depends upon know-how, unpatentable trade secrets, and the skills, knowledge and experience of our scientific and technical personnel. As a result, we require all employees to agree to a confidentiality provision in their employment agreement that prohibits the disclosure of confidential information to anyone outside of our company, during the term of employment and thereafter. We also require all employees to disclose and assign to us the rights to their ideas, developments, discoveries and inventions. We also attempt to enter into similar agreements with our consultants, advisors and research collaborators. We cannot assure you that adequate protection for our trade secrets, know-how or other proprietary information against unauthorized use or disclosure will be available.

We occasionally provide information to research collaborators in academic institutions and request that the collaborators conduct certain tests. We cannot assure you that the academic institutions will not assert intellectual property rights in the results of the tests conducted by the research collaborators, or that the academic institutions will grant licenses under such intellectual property rights to us on acceptable terms, if at all. If the assertion of intellectual property rights by an academic institution is substantiated, and the academic institution does not grant intellectual property rights to us, these events could limit our ability to commercialize our technology.

As we evolve from a company primarily involved in the research and development of our technology into one that is also involved in the commercialization of our technology, we may have difficulty managing our growth and expanding our operations.

As our business grows, we may need to add employees and enhance our management, systems and procedures. We may need to successfully integrate our internal operations with the operations of our marketing partners, manufacturers, distributors and suppliers to produce and market commercially viable products. We may also need to manage additional relationships with various collaborative partners, suppliers and other organizations. Although we do not presently conduct research and development activities in-house, we may undertake those activities in the future. Expanding our business may place a significant burden on our management and operations. We may not be able to implement improvements to our management information and control systems in an efficient and timely manner and we may discover deficiencies in our existing systems and controls. Our failure to effectively respond to such changes may make it difficult for us to manage our growth and expand our operations.

We have no marketing or sales history and depend on third-party marketing partners. Any failure of these parties to perform would delay or limit our commercialization efforts.

We have no history of marketing, distributing or selling biotechnology products and we are relying on our ability to successfully establish marketing partners or other arrangements with third parties to market, distribute and sell a commercially viable product both here and abroad. Our business plan envisions creating strategic alliances to access needed commercialization and marketing expertise. We may not be able to attract qualified sub-licensees, distributors or marketing partners, and even if qualified, these marketing partners may not be able to successfully market agricultural products or human health applications developed with our technology. If our current or potential future marketing partners fail to provide adequate levels of sales, our commercialization efforts will be delayed or limited and we may not be able to generate revenue.

We will depend on joint ventures and strategic alliances to develop and market our technology and, if these arrangements are not successful, our technology may not be developed and the expenses to commercialize our technology will increase.

In its current state of development, our technology is not ready to be marketed to consumers. We intend to follow a multi-faceted commercialization strategy that involves the licensing of our technology to business partners for the purpose of further technological development, marketing and distribution. We have and are seeking business partners who will share the burden of our development costs while our technology is still being developed, and who will pay us royalties when they market and distribute products incorporating our technology upon commercialization. The establishment of joint ventures and strategic alliances may create future competitors, especially in certain regions abroad where we do not pursue patent protection. If we fail to establish beneficial business partners and strategic alliances, our growth will suffer and the continued development of our technology may be harmed.

Competition in the human health and agricultural biotechnology industries is intense and technology is changing rapidly. If our competitors market their technology faster than we do, we may not be able to generate revenues from the commercialization of our technology.

Many human health and agricultural biotechnology companies are engaged in research and development activities relating to apoptosis and senescence. The market for plant protection and yield enhancement products is intensely competitive, rapidly changing and undergoing consolidation. We may be unable to compete successfully against our current and future competitors, which may result in price reductions, reduced margins and the inability to achieve market acceptance for products containing our technology. Our competitors in the field of plant senescence gene technology are companies that develop and produce transgenic plants and include major international agricultural companies, specialized biotechnology companies, research and academic institutions and, potentially, our joint venture and strategic alliance partners. These companies include: Mendel Biotechnology, Inc., Renessen LLC, Exelixis Plant Sciences, Inc., Syngenta International AG, and Eden Bioscience Corporation, among others. Some of our competitors that are involved in apoptosis research include: Amgen Inc.; Centocor, Inc.; Genzyme Corporation; OSI Pharmaceuticals, Inc.; Novartis AG; Introgen Therapeutics, Inc.; Genta, Inc.; and Vertex Pharmaceuticals, Inc. Many of these competitors have substantially greater financial, marketing, sales, distribution and technical resources than us and have more experience in research and development, clinical trials, regulatory matters, manufacturing and marketing. We anticipate increased competition in the future as new companies enter the market and new technologies become available. Our technology may be rendered obsolete or uneconomical by technological advances or entirely different approaches developed by one or more of our competitors, which will prevent or limit our ability to generate revenues from the commercialization of our technology.

Our business is subject to various government regulations and, if we or our licensees are unable to obtain regulatory approval, we may not be able to continue our operations.

At present, the U.S. federal government regulation of biotechnology is divided among three agencies:

- the USDA regulates the import, field testing and interstate movement of specific types of genetic engineering that may be used in the creation of transgenic plants;

- the EPA regulates activity related to the invention of plant pesticides and herbicides, which may include certain kinds of transgenic plants; and

- the FDA regulates foods derived from new plant varieties.

The FDA requires that transgenic plants meet the same standards for safety that are required for all other plants and foods in general. Except in the case of additives that significantly alter a food's structure, the FDA does not require any additional standards or specific approval for genetically engineered foods, but expects transgenic plant developers to consult the FDA before introducing a new food into the marketplace.

Use of our technology, if developed for human health applications, will also be subject to FDA regulation. The FDA must approve any drug or biologic product before it can be marketed in the United States. In addition, prior to being sold outside of the U.S., any products resulting from the application of our human health technology must be approved by the regulatory agencies of foreign governments. Prior to filing a new drug application or biologics license application with the FDA, we would have to perform extensive clinical trials, and prior to beginning any clinical trial, we would need to perform extensive preclinical testing which could take several years and may require substantial expenditures.

We believe that our current activities, which to date have been confined to research and development efforts, do not require licensing or approval by any governmental regulatory agency. However, we are planning on performing clinical trials, which would be subject to FDA approval. Additionally, federal, state and foreign regulations relating to crop protection products and human health applications developed through biotechnology are subject to public concerns and political circumstances, and, as a result, regulations have changed and may change substantially in the future. Accordingly, we may become subject to governmental regulations or approvals or become subject to licensing requirements in connection with our research and development efforts. We may also be required to obtain such licensing or approval from the governmental regulatory agencies described above, or from state agencies, prior to the commercialization of our genetically transformed plants and human health technology. In addition, our marketing partners who utilize our technology or sell products grown with our technology may be subject to government regulations. If unfavorable governmental regulations are imposed on our technology or if we fail to obtain licenses or approvals in a timely manner, we may not be able to continue our operations.

Preclinical studies and clinical trials of our human health applications may be unsuccessful, which could delay or prevent regulatory approval.

Preclinical studies may reveal that our human health technology is ineffective or harmful, and/or clinical trials may be unsuccessful in demonstrating efficacy and safety of our human health technology, which would significantly limit the possibility of obtaining regulatory approval for any drug or biologic product manufactured with our technology. The FDA requires submission of extensive preclinical, clinical and manufacturing data to assess the efficacy and safety of potential products. Furthermore, the success of preliminary studies does not ensure commercial success, and later-stage clinical trials may fail to confirm the results of the preliminary studies.

Any inability to license from third parties their proprietary technologies or processes which we use in connection with the development of our technology may impair our business.

Other companies, universities and research institutions have or may obtain patents that could limit our ability to use our technology in a product candidate or impair our competitive position. As a result, we would have to obtain licenses from other parties before we could continue using our technology in a product candidate. Any necessary licenses may not be available on commercially acceptable terms, if at all. If we do not obtain required licenses, we may not be able to develop our technology into a product candidate or we may encounter significant delays in development while we redesign methods that are found to infringe on the patents held by others.

Clinical trials for our human health technology will be lengthy and expensive and their outcome is uncertain

Before obtaining regulatory approval for the commercial sales of any product containing our technology, we must demonstrate through clinical testing that our technology and product containing our technology is safe and effective for use in humans. Conducting clinical trials is a time-consuming, expensive and uncertain process and typically requires years to complete. In our industry, the results from preclinical studies and early clinical trials often are not predictive of results obtained in later-stage clinical trials. Some products and technologies that have shown promising results in preclinical studies or early clinical trials subsequently fail to establish sufficient safety and efficacy data necessary to obtain regulatory approval. At any time during clinical trials we or the FDA might delay or halt any clinical trial for various reasons, including:

- occurrence of unacceptable toxicities or side effects;
- ineffectiveness of the product candidate;
- negative or inconclusive results from the clinical trials, or results that necessitate additional studies or clinical trials;
- delays in obtaining or maintaining required approvals from institutions, review boards or other reviewing entities at clinical sites;
- delays in patient enrollment; or

- insufficient funding or a reprioritization of financial or other resources.

Any failure or substantial delay in successfully completing clinical trials and obtaining regulatory approval for our product candidates could severely harm our business.

Even if we receive regulatory approval, consumers may not accept products containing our technology, which will prevent us from being profitable since we have no other source of revenue.

We cannot guarantee that consumers will accept products containing our technology. Recently, there has been consumer concern and consumer advocate activism with respect to genetically-engineered agricultural consumer products. The adverse consequences from heightened consumer concern in this regard could affect the markets for agricultural products developed with our technology and could also result in increased government regulation in response to that concern. If the public or potential customers perceive our technology to be genetic modification or genetic engineering, agricultural products grown with our technology may not gain market acceptance.

We depend on our key personnel and, if we are not able to attract and retain qualified scientific and business personnel, we may not be able to grow our business or develop and commercialize our technology.

We are highly dependent on our scientific advisors, consultants and third-party research partners. Our success will also depend in part on the continued service of our key employees and our ability to identify, hire and retain additional qualified personnel in an intensely competitive market. Although we have employment agreements with all of our key employees and a research agreement with Dr. John Thompson, these agreements may be terminated upon short or no notice. We do not maintain key person life insurance on any member of management. The failure to attract and retain key personnel could limit our growth and hinder our research and development efforts.

Certain provisions of our charter, by-laws and Delaware law could make a takeover difficult.

Certain provisions of our certificate of incorporation and by-laws could make it more difficult for a third party to acquire control of us, even if the change in control would be beneficial to stockholders. Our certificate of incorporation authorizes our board of directors to issue, without stockholder approval, except as may be required by the rules of the NYSE Amex Exchange, 5,000,000 shares of preferred stock with voting, conversion and other rights and preferences that could adversely affect the voting power or other rights of the holders of our common stock. Similarly, our by-laws do not restrict our board of directors from issuing preferred stock without stockholder approval.

In addition, we are subject to the Business Combination Act of the Delaware General Corporation Law which, subject to certain exceptions, restricts certain transactions and business combinations between a corporation and a stockholder owning 15% or more of the corporation’s outstanding voting stock for a period of three years from the date such stockholder becomes a 15% owner. These provisions may have the effect of delaying or preventing a change of control of us without action by our stockholders and, therefore, could adversely affect the value of our common stock.

Furthermore, in the event of our merger or consolidation with or into another corporation, or the sale of all or substantially all of our assets in which the successor corporation does not assume our outstanding equity awards or issue equivalent equity awards, our current equity plans require the accelerated vesting of such outstanding equity awards.

Increasing political and social turmoil, such as terrorist and military actions, increase the difficulty for us and our strategic partners to forecast accurately and plan future business activities.

Recent political and social turmoil, can be expected to put further pressure on economic conditions in the United States and worldwide. These political, social and economic conditions may make it difficult for us to plan future business activities.

Risks Related to Our Common Stock

Our management and other affiliates have significant control of our common stock and could significantly influence our actions in a manner that conflicts with our interests and the interests of other stockholders.

As of June 30, 2009, our executive officers, directors and affiliated entities together beneficially own approximately 59.7% of the outstanding shares of our common stock, assuming the exercise of options and warrants which are currently exercisable or will become exercisable within 60 days of June 30, 2009, held by these stockholders. As of July 9, 2009, upon the closing of our private placement of equity securities, our executive officers, directors and affiliated entities together beneficially own approximately 57.9% of the outstanding shares of our common stock, assuming the exercise of options and warrants which are currently exercisable or will become exercisable within 60 days of July 9, 2009, held by these stockholders. As a result, these stockholders, acting together, will be able to exercise significant influence over matters requiring approval by our stockholders, including the election of directors, and may not always act in the best interests of other stockholders. Such a concentration of ownership may have the effect of delaying or preventing a change in control of us, including transactions in which our stockholders might otherwise receive a premium for their shares over then current market prices. Stanford is one such major stockholder of the Company.

In February 2009, the SEC filed a civil lawsuit accusing certain executives of Stanford of fraud and the company's assets were subsequently placed in receivership. It is unclear at this point, what impact, if any, the ongoing investigation of Stanford may have on the Company.

A significant portion of our total outstanding shares of common stock may be sold in the market in the near future, which could cause the market price of our common stock to drop significantly.

As of June 30, 2009, we had 19,812,041 shares of our common stock issued and outstanding, of which approximately 5,319,639 shares are registered pursuant to registration statements on Form S-3 and the remainder of which are either eligible to be sold under SEC Rule 144 or are in the public float. In addition, we have registered 2,632,194 shares of our common stock underlying warrants previously issued on the Form S-3 registration statement and we registered 6,137,200 shares of our common stock underlying options granted or to be granted under our stock option plan. As of July 9, 2009, upon closing of our private placement of equity securities and the exercise of warrants on July 14, 2009, we had 21,817,596 shares of our common stock issued and outstanding. Consequently, sales of substantial amounts of our common stock in the public market, or the perception that such sales could occur, may have a material adverse effect on our stock price.

Our common stock has a limited trading market, which could limit your ability to resell your shares of common stock at or above your purchase price.

Our common stock is quoted on the NYSE Amex Exchange and currently has a limited trading market. The NYSE Amex Exchange requires us to meet minimum financial requirements in order to maintain our listing. We currently do not believe that we meet the continued listing requirements of the NYSE Amex Exchange. If we do not meet the continued listing standards, we could be delisted. We cannot assure you that an active trading market will develop or, if developed, will be maintained. As a result, our stockholders may find it difficult to dispose of shares of our common stock and, as a result, may suffer a loss of all or a substantial portion of their investment.

If our common stock is delisted from the NYSE Amex Exchange, we may not be able to list on any other stock exchange, and our common stock may be subject to the “penny stock” regulations, which may affect the ability of our stockholders to sell their shares.

The NYSE Amex Exchange requires us to meet minimum financial requirements in order to maintain our listing. Currently, we do not believe that we meet the $6,000,000 minimum net worth continued listing requirement of the NYSE AMEX Exchange. We have not yet received a notice of noncompliance from the NYSE AMEX Exchange. If we do receive a notice of noncompliance, we plan to submit a plan to the NYSE AMEX Exchange discussing how we intend to regain compliance with the continued listing requirements. If the NYSE AMEX does not accept our plan or we are unable to execute on the plan, it is possible that we will be delisted. If we are delisted from the NYSE Amex Exchange, our common stock likely will become a “penny stock”. In general, regulations of the SEC define a “penny stock” to be an equity security that is not listed on a national securities exchange or the NASDAQ Stock Market and that has a market price of less than $5.00 per share or with an exercise price of less than $5.00 per share, subject to certain exceptions. If our common stock becomes a penny stock, additional sales practice requirements would be imposed on broker-dealers that sell such securities to persons other than certain qualified investors. For transactions involving a penny stock, unless exempt, a broker-dealer must make a special suitability determination for the purchaser and receive the purchaser’s written consent to the transaction prior to the sale. In addition, the rules on penny stocks require delivery, prior to and after any penny stock transaction, of disclosures required by the SEC.

If our stock is not accepted for listing on the NYSE Amex Exchange, we will make every possible effort to have it listed on the Over the Counter Bulletin Board, or the OTC Bulletin Board. If our common stock were to be traded on the OTC Bulletin Board, the Securities Exchange Act of 1934, as amended, and related SEC rules would impose additional sales practice requirements on broker-dealers that sell our securities. These rules may adversely affect the ability of stockholders to sell our common stock and otherwise negatively affect the liquidity, trading market and price of our common stock.

We believe that the listing of our common stock on a recognized national trading market, such as the NYSE Amex Exchange, is an important part of our business and strategy. Such a listing helps our stockholders by providing a readily available trading market with current quotations. Without that, stockholders may have a difficult time getting a quote for the sale or purchase of our stock, the sale or purchase of our stock would likely be made more difficult and the trading volume and liquidity of our stock would likely decline. The absence of such a listing may adversely affect the acceptance of our common stock as currency or the value accorded it by other parties. In that regard, the absence of a listing on a recognized national trading market will also affect our ability to benefit from the use of our operations and expansion plans, including for use in licensing agreements, joint ventures, the development of strategic relationships and acquisitions, which are critical to our business and strategy and none of which is currently the subject of any agreement, arrangement or understanding, with respect to any future financing or strategic relationship it may undertake. A delisting from the NYSE Amex Exchange could result in negative publicity and could negatively impact our ability to raise capital in the future.

The market price of our common stock may fluctuate and may drop below the price you paid.

We cannot assure you that you will be able to resell the shares of our common stock at or above your purchase price. The market price of our common stock may fluctuate significantly in response to a number of factors, some of which are beyond our control. These factors include:

- quarterly variations in operating results;
- the progress or perceived progress of our research and development efforts;
- changes in accounting treatments or principles;
- announcements by us or our competitors of new technology, product and service offerings, significant contracts, acquisitions or strategic relationships;
- additions or departures of key personnel;
- future offerings or resales of our common stock or other securities;
- stock market price and volume fluctuations of publicly-traded companies in general and development companies in particular; and
- general political, economic and market conditions.

Because we do not intend to pay, and have not paid, any cash dividends on our shares of common stock, our stockholders will not be able to receive a return on their shares unless the value of our common stock appreciates and they sell their shares.

We have never paid or declared any cash dividends on our common stock and we intend to retain any future earnings to finance the development and expansion of our business. We do not anticipate paying any cash dividends on our common stock in the foreseeable future. Therefore, our stockholders will not be able to receive a return on their investment unless the value of our common stock appreciates and they sell their shares.

Our stockholders may experience substantial dilution as a result of the conversion of outstanding convertible debentures, or the exercise of options and warrants to purchase our common stock.

As of June 30, 2009, we have granted options outside of our stock option plan to purchase 10,000 shares of our common stock and outstanding warrants to purchase 18,713,443 shares of our common stock. In addition, as of June 30, 2009, we have reserved 9,437,884 shares of our common stock for issuance upon the exercise of options granted or available to be granted pursuant to our stock option plan, all of which may be granted in the future. The exercise of these options and warrants will result in dilution to our existing stockholders and could have a material adverse effect on our stock price. In addition, any shares issued in connection with the YA Global financing or Stanford financing, as further discussed elsewhere in this Form 10-Q, can also have a dilutive effect and a possible material adverse effect on our stock price. The conversion price of the warrants are also subject to certain anti-dilution adjustments. The agreements with YA Global and Stanford provide for the potential issuance of up to a total of 61,833,332 shares of our common stock, of which 13,883,332 shares are included in outstanding warrants noted above.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

We lease office space in New Brunswick, New Jersey for a current monthly rental fee of $6,612, subject to certain escalations for our proportionate share of increases, over the base year of 2001, in the building's operating costs. The monthly rental fee will continue to increase by one percent each year through the expiration date of the lease. The lease expires in May 2011. The space is in good condition, and we believe it will adequately serve as our headquarters over the term of the lease. We also believe that this office space is adequately insured by the lessor.

Item 3. Legal Proceedings.

We are not currently a party to any legal proceedings; however, we may become involved in various claims and legal actions arising in the ordinary course of business.

Item 4. Submission of Matters to a Vote of Security Holders.

None.

PART II

Item 5. Market for Registrant's Common Equity, Related StockholderMatters and Issuer Purchases of Equity Securities.

Our common stock trades on the NYSE Amex Exchange under the symbol SNT.

The following table sets forth the range of the high and low sales price for our common stock for each of the quarters since the quarter ended September 30, 2007, as reported on the NYSE Amex Exchange.

Quarter Ended	Common Stock High	Common Stock Low
September 30, 2007	$ 1.25	$ 0.78
December 31, 2007	$ 1.05	$ 0.38
March 31, 2008	$ 1.28	$ 0.29
June 30, 2008	$ 1.99	$ 1.00
September 30, 2008	$ 1.81	$ 0.88
December 31, 2008	$ 1.25	$ 0.50
March 31, 2009	$ 0.87	$ 0.33
June 30, 2009	$ 0.97	$ 0.43

As of September 15, 2009, the approximate number of holders of record of our common stock was 240. This number does not include "street name" or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions.

We have neither paid nor declared dividends on our common stock since our inception and we do not plan to pay dividends on our common stock in the foreseeable future. We expect that any earnings, which we may realize, will be retained to finance the growth of our company.

The following table provides information about the securities authorized for issuance under our equity compensation plans as of June 30, 2009.

EQUITY COMPENSATION PLAN INFORMATION

	Number of securities to be issued upon exercise of outstanding options, warrants and rights and restricted stock units	Weighted-average exercise price of outstanding options, warrants and rights and restricted stock units	Number of securities remaining available for future issuance under equity compensation plans
Equity compensation plans approved by security holders	4,550,412(1)	$ 1.70	5,887,472(2)

Equity compensation plans not approved by security holders	—	—	—
Total	4,550,412(1)	$ 1.70	5,887,472(2)

(1) Issued pursuant to our 1998 Stock Plan and 2008 Stock Plan.

(2) Available for future issuance pursuant to our 2008 Stock Plan.

RECENT SALES OF UNREGISTERED SECURITIES

Transaction with Partlet Holdings

On July 9, 2009, we entered into a Securities Purchase Agreement, referred to herein as the Partlet Securities Purchase Agreement, with Partlet Holdings Ltd., which is an accredited investor, pursuant to which we will issue and sell up to an aggregate of 1,111,111 shares, referred to herein as the Shares, of our common stock at $0.90 per share and each of a Series A warrant, referred to herein as the Partlet Series A Warrant, and a Series B warrant, referred to herein as the Partlet Series B Warrant, (collectively the Partlet Series A Warrant and Partlet Series B Warrant shall be referred to herein as the Partlet Warrants).

The Partlet Series A Warrant entitles the holder to purchase 1,000,000 shares of our common stock at $0.01 per warrant share. The Partlet Series A Warrant has a term of seven years and is exercisable immediately after the date of grant.

The Partlet Series B Warrant entitles the holder to purchase 2,055,555 shares of our common stock at $0.60 per warrant share. The Partlet Series B Warrant has a term of seven years and is not exercisable until after the six-month anniversary after the date of grant.

On July 9, 2009, we closed on $950,000 of aggregate proceeds of the private placement and, on that date, issued (i) a total of 1,055,555 Shares (ii) a Partlet Series A Warrant to purchase 950,000 shares of our common stock and (iii) a Partlet Series B Warrant to purchase 1,952,778 shares of our common stock. On September 22, 2009 we received stockholder approval to close on the remaining $50,000 in proceeds and will close on that amount upon receiving approval from the NYSE Amex Exchange.

Transaction with Each of Robert and Tim Forbes

On July 29, 2009, we entered into a Securities Purchase Agreement, referred to herein as the Forbes Securities Purchase Agreement, with each of Robert Forbes and Timothy Forbes, each of whom is an accredited investor, pursuant to which, subject to stockholder approval, it is anticipated that we will issue and sell an aggregate of 444,444 shares of common stock at $0.90, referred to herein as the Shares, per share and each of a Series A warrant, referred to herein as the Forbes Series A Warrants, and a Series B warrant, referred to herein as the Forbes Series B Warrants. Each of Robert Forbes and Timothy Forbes are the brothers of Christopher Forbes who is a director of Senesco. Mr. Christopher Forbes will not be deemed to be the beneficial owner of, nor will he have a pecuniary interest in the Shares or Warrants issued to his brothers.

The Forbes Series A Warrants entitle the holders to purchase, in the aggregate, up to 400,000 shares of our common stock at $0.01 per warrant share. The Forbes Series A Warrants have a term of seven years and are exercisable immediately after the date of grant.

The Forbes Series B Warrants entitle the holders to purchase, in the aggregate, up to 405,556 shares of our common stock at $0.60 per warrant share. The Forbes Series B Warrants have a term of seven years and are not exercisable until after the six-month anniversary after the date of grant.

On September 22, 2009 we received stockholder approval to close on the Forbes Securities Purchase Agreements and will close on the Forbes Securities Purchase Agreements upon receiving approval from the NYSE Amex Exchange.

Transaction with Insiders and Affiliates

On July 29, 2009, we entered into a Securities Purchase Agreement, referred to herein as the Affiliate's Securities Purchase Agreement with each of Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst, Warren Isabelle and the Thomas C. Quick Charitable Foundation, referred to herein as the Affiliate Investors. each of whom is an accredited investor, pursuant to which, subject to stockholder approval, it is anticipated that we will issue and sell an aggregate of 144,444 Shares of our common stock at $0.90 per share and each of a Series A warrant, referred to herein as the Affiliate's Series A Warrants, and a Series B warrant, referred to herein as the Affiliate's Series B Warrants. Each of Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst and Warren Isabelle serve on the Company's board. The Thomas C. Quick Charitable Foundation is an affiliate of our board member Thomas C. Quick.

The Affiliate's Series A Warrants entitle the holders to purchase in the aggregate, up to 130,000 shares of our common stock at $0.01 per warrant share. The Affiliates Series A Warrants have a term of seven years and are exercisable immediately after the date of grant.

The Affiliate's Series B Warrants entitle the holders to purchase, in the aggregate, up to 131,807 shares of our common stock at $0.60 per warrant share. The Affiliate's Series B Warrants have a term of seven years and are not exercisable until after the six-month anniversary after the date of grant.

On September 22, 2009 we received stockholder approval to close on the Affiliate's Securities Purchase Agreements and will close on the Affiliates Securities Purchase Agreements upon receiving approval from the NYSE Amex Exchange.

Transaction with Cato Research Ltd.

On July 29, 2009, we entered into a Securities Agreement with Cato Holding Company, referred to herein as Cato, who is an accredited investor, pursuant to which, subject to stockholder approval, it is anticipated that we will issue an aggregate of 194,444 Shares of the Company's common stock at $0.90 per share and each of a Series A warrant, referred to herein as the Cato Series A Warrant, and a Series B warrant, referred to herein as the Cato Series B Warrant. The Shares will be issued to Cato in exchange for amounts currently owed by us to Cato Research Ltd. in the amount of $175,000. Cato Research Ltd. is an affiliate of Cato.

The Cato Series A Warrant entitles the holder to purchase in the aggregate, up to 175,000 shares of our common stock at $0.01 per warrant share. The Cato Series A Warrant has a term of seven years and is exercisable immediately after the date of grant.

The Cato Series B Warrant entitles the holder to purchase, in the aggregate, up to 177,431 shares of our common stock at $0.60 per warrant share. The Cato Series B Warrant has a term of seven years and is not exercisable until after the six-month anniversary after the date of grant.

The foregoing proceeds cannot be closed upon until we receive approval for the transactions from the NYSE AMEX Exchange and comply with other customary closing conditions. Assuming all of the proceeds of the private placements can be closed upon, we anticipate that we will receive gross proceeds equal to $705,000.

Transactions with YA Global and Stanford

On August 1, 2007 and August 29, 2007, we entered into binding Securities Purchase Agreements with YA Global and Stanford to sell to each of YA Global and Stanford up to $5,000,000 of secured convertible notes and accompanying warrants for an aggregate gross proceeds of $10,000,000. The convertible notes convert into our common stock at a fixed price of $0.90 per share subject to certain adjustments, referred to herein as the Fixed Conversion Price, for a period of two years immediately following the signing date. After the second anniversary of the signing date, the convertible notes may convert into shares of our common stock at the lower of the fixed conversion price or 80% of the lowest daily volume-weighted average price, referred to herein as the VWAP, of our common stock during the five trading days prior to the conversion date. The maturity date of each of the convertible notes for YA Global is December 30, 2010. The maturity date of each of the convertible notes for Stanford is December 31, 2010. At the fixed conversion price, the number of shares of common stock issuable upon conversion of the $10,000,000 of convertible notes and shares of common stock to be issued upon exercise of the warrants represents, in the aggregate, 24,994,444 shares, plus an estimated additional 2,000,000 shares for the payment of interest in stock under the convertible notes.

The convertible notes accrue interest on their outstanding principal balances at an annual rate of 8%. We have the option to pay interest in cash or, upon certain conditions, common stock. If we pay interest in our common stock, the stock will be valued at a 10% discount to the average daily VWAP for the five day trading period prior to the interest payment date, referred to herein as the Interest Shares.

At our option, we can redeem a portion of, or all of, the principal owed under the convertible notes by providing the investors with at least 30 business days' written notice, provided that, at the time of receipt of the notice, either: (A)(i) the VWAP of our common stock exceeds 130% of the Fixed Conversion Price for at least 20 of 30 prior trading days and (ii) there is an effective registration statement for the resale of our common stock that will be issued under the redemption or (B) we redeem a portion, or all, of the principal owed at a 20% premium above the principal then outstanding and any accrued interest thereupon. If we redeem all or any of the principal outstanding under the convertible notes, we will pay an amount equal to the principal being redeemed plus accrued interest.

If there is an effective registration statement for the resale of the shares underlying the convertible notes or if such shares become freely tradable under rule 144, we will have the option to force the investors to convert 50% and 100% of our then-outstanding convertible notes if our common stock price exceeds 150% and 175% of the Fixed Conversion Price, respectively, for any 20 out of 30 trading days; provided that such forced conversion meets certain conditions, referred to herein as the Call Option. If we exercise our Call Option prior to the third anniversary of the signing date, we will issue additional warrants to the investors equal to 50% of the number of shares underlying the convertible notes subject to the forced conversion. These warrants will be exercisable at the fixed conversion price and will have the same maturity as the other warrants issued under the YA Global Financing.

Our obligations under the convertible notes are secured by all of our and our subsidiary's assets and intellectual property, as evidenced by the Security Agreements and the Patent Security Agreements. Pursuant to a subordination agreement, YA Global is the senior secured creditor.

We have issued warrants to purchase an aggregate of 5,550,000 shares of our common stock to YA Global and warrants to purchase an aggregate of 8,333,333 of our common stock to Stanford. Such warrants are exercisable six months and one day from the date of issuance until their expiration on the date that is five years from the date of issuance. The warrants have been issued in two series. The exercise price of the Series A warrants is $1.01 per share, and the exercise price of the Series B warrants is $0.90 per share, subject to certain adjustments. The warrants provide a right of cashless exercise if, at the time of exercise, there is no effective registration statement registering the resale of the shares underlying the warrants.

The conversion rate of each convertible note and the exercise price of the Series B warrants are subject to adjustment for certain events, including dividends, stock splits, combinations and the sale of our common stock or securities convertible into or exercisable for our common stock at a price less than the then applicable conversion or exercise price.

The investors have a right of first refusal on any future funding that involves the issuance of our capital stock for so long as a portion of the convertible notes are outstanding.

The total gross proceeds from the issuance of the convertible notes and warrants is $10,000,000 before payment of 3.25% of the purchase price in commissions to Wainwright & Co., Inc., referred to herein as the Placement Agent. We have issued to the Placement Agent warrants to purchase 7% of the purchase price, or 777,777 shares, of our common stock with similar terms to the warrants that have been and will be issued to the investors. We have paid YA Global and Stanford a non-refundable structuring/due diligence fee of $30,000 each. We have also paid YA Global a commitment fee of 5% and Stanford a commitment fee of 7% of their respective purchase prices.

Specifics of YA Global Financing

Pursuant to the YA Global Securities Purchase Agreement, we have issued three convertible notes in the aggregate amount of $5,000,000 and two Series A warrants in the amount of 1,387,500 shares each on September 21, 2007 and October 16, 2007 and a Series B warrant in the amount of 2,775,000 shares on December 20, 2007. Through September 22, 2009, YA Global has converted $1,198,400 of the convertible notes into 2,310,844 shares of our common stock.

The convertible notes and warrants issued to YA Global are subject to a maximum cap of 30,500,000 on the number of shares of our common stock that can be issued upon the conversion of the convertible notes and the exercise of the warrants.

Specifics of Stanford Financing

Pursuant to the YA Global Securities Purchase Agreement, we have issued three convertible notes in the aggregate amount of $5,000,000 and Series A warrants in the aggregate amount of 4,166,666 shares and Series B warrants in the aggregate amount of 4,166,667 shares each on December 20, 2007 and June 30, 2008.

The convertible notes and warrants issued to Stanford will be subject to a maximum cap of 31,888,888 on the number of shares of our common stock that can be issued upon the conversion of the convertible notes and the exercise of the warrants.

The costs associated with the issuances to YA Global and Stanford in the amount of $1,291,427, $639,645 of which represent the black-scholes value of the warrants issued to the placement agent, have been recorded as deferred financing costs and are being amortized ratably over the term of the convertible notes.

We plan to use the proceeds of the foregoing financings for funding our research and development and for general corporate purposes.

PERFORMANCE GRAPH

The following graph compares the cumulative total stockholder return on our common stock with the cumulative total return on the NYSE Amex Market Value (U.S.) Index and the RDG Microcap Biotechnology Index for the period beginning July 1, 2004 and ending on the last day of our last completed fiscal year. The stock performance shown on the graph below is not indicative of future price performance.

	7/1/04	6/30/05	6/30/06	6/30/07	6/30/08	6/30/09
Senesco Technologies, Inc.	$ 100.00	$ 56.83	$ 60.32	$ 36.51	$ 58.73	$ 26.35
NYSE Amex Composite Index	$ 100.00	$ 131.88	$ 164.58	$ 205.93	$ 204.46	$ 151.95
RDG Microcap Biotechnology Index	$ 100.00	$ 76.14	$ 62.90	$ 42.63	$ 22.12	$ 15.62

The information in the performance graph is not deemed to be "soliciting material" or to be "filed" with the Securities and Exchange Commission, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or Securities Exchange act of 1934, each as amended, except to the extent that we specifically incorporate it by reference into such filing.

Item 6. Selected Financial Data.

The following Selected Financial Data should be read in conjunction with "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Item 8. Financial Statements and Supplementary Data" included elsewhere in this Annual Report on Form 10-K.

SELECTED FINANCIAL DATA

	Year Ended June 30,				
	2009	2008	2007	2006	2005
	(In thousands, except per share data)				
Statement of Operations Data:					
Revenue	$ 275	$ 457	$ 300	$ 67	$ 125
Operating expenses:					
General and administrative	2,206	2,291	2,413	1,920	2,030
Research and development	2,354	1,765	1,208	1,566	1,417
Total operating expenses	4,560	4,056	3,621	3,486	3,447
Loss from operations	(4,285)	(3,599)	(3,321)	(3,419)	(3,322)
Noncash income	-	-	-	-	136
Sale of state income tax loss - net	-	-	-	-	153
Amortization of debt discount and financing costs	(478)	(668)	-	-	-
Interest expense – convertible notes	(1,007)	(434)	-	-	-
Interest income, net	43	100	69	104	54
Net loss	$ (5,727)	$ (4,601)	$ (3,252)	$ (3,315)	$ (2,979)
Basic and diluted net loss per common share	$ (.30)	$ (.26)	$ (.19)	$ (.21)	$ (.21)
Basic and diluted weighted average number of common shares outstanding	18,888	17,660	16,917	15,469	14,054
Balance Sheet Data:					
Cash, cash equivalents and investments	$ 1,431	$ 6,176	$ 658	$ 1,168	$ 4,481
Working capital	1,259	5,673	259	859	3,959
Total assets	7,122	10,643	3,322	3,535	6,113
Accumulated deficit	(35,950)	(30,223)	(25,622)	(22,370)	(19,055)
Total stockholders' equity	5,668	9,836	2,690	2,952	5,590

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The discussion in "Management's Discussion and Analysis of Financial Condition and Results of Operations" contains trend analysis, estimates and other forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements include, without limitation, statements containing the words "believes," "anticipates," "expects," "continue," and other words of similar import or the negative of those terms or expressions. Such forward-looking statements are subject to known and unknown risks, uncertainties, estimates and other factors that may cause our actual results, performance or achievements, or industry results, to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Actual results could differ materially from those set forth in such forward-looking statements as a result of, but not limited to, the "Risk Factors" described in Part I, Item 1A. You should read the following discussion and analysis along with the "Selected Financial Data" and the financial statements and notes attached to those statements included elsewhere in this report.

Overview

We are a development stage company. We do not expect to generate significant revenues for approximately the next one to three years, during which time we will engage in significant research and development efforts. However, we have eight active agricultural license agreements to develop and commercialize our technology in corn, soy, cotton, rice, canola, trees, alfalfa, bedding plants, turf grass, and ethanol. Seven of the licenses provide for upfront payments, milestone payments and royalty payments to us upon commercial introduction. The ethanol license provides for annual payments for each of the licensee's ethanol production facilities that incorporates our technology. We also have entered into a joint venture to develop and commercialize our technology in banana plants. In connection with the joint venture, we will receive 50% of the profits from the sale of enhanced banana plants.

Consistent with our commercialization strategy, we intend to license our technology for additional crops, as the opportunities may arise, that may result in additional license fees, revenues from contract research and other related revenues. Successful future operations will depend on our and our partners' ability to transform our research and development activities into a commercially feasible technology.

We plan to employ the same partnering strategy in both the human health and agricultural target markets.

Our human health research program, which has consisted of pre-clinical in-vitro and in-vivo experiments designed to assess the role and method of action of the Factor 5A genes in human diseases, is performed by approximately thirteen third party researchers at our direction, at the University of Waterloo, Mayo Clinic and the University of Virginia.

Our primary human health initiative is to advance our technology for the potential treatment of multiple myeloma with the goal of initiating a clinical trial. In connection with the potential clinical trial, we have engaged a CRO to assist us through the process. We have also determined the delivery system for our technology, contracted for the supply of pharmaceutical grade materials to be used in toxicology and human studies and have contracted with a third party laboratory to conduct toxicology studies, Together with the assistance of our CRO, we will have the toxicology studies performed with the goal of filing an investigational new drug application, or IND application, with the U.S. Food and Drug Administration, or FDA, for the review and consideration in order to initiate a clinical trial. We estimate that it will take approximately fifteen (15) months from June 30, 2009 to complete these objectives.

Our preclinical human health research has yielded data that we have presented to various biopharmaceutical companies that may be prospective licensees for the development and marketing of potential applications for our technology.

Critical Accounting Policies and Estimates

Revenue Recognition

We record revenue under technology license and development agreements related to the following. Actual fees received may vary from the recorded estimated revenues.

- Nonrefundable upfront license fees that are received in exchange for the transfer of our technology to licensees, for which no further obligations to the licensee exist with respect to the basic technology transferred, are recognized as revenue on the earlier of when payments are received or collections are assured.
- Nonrefundable upfront license fees that are received in connection with agreements that include time-based payments are, together with the time-based payments, deferred and amortized ratably over the estimated research period of the license.
- Milestone payments, which are contingent upon the achievement of certain research goals, are recognized as revenue when the milestones, as defined in the particular agreement, are achieved.

The effect of any change in revenues from technology license and development agreements would be reflected in revenues in the period such determination was made. Historically, no such adjustments have been made.

Estimates of Expenses

Our research and development agreements with third parties provide for an estimate of our expenses and costs, which are variable and are based on the actual services performed by the third party. We estimate the aggregate amount of the expenses based upon the projected amounts that are set forth in the agreements, and we accrue the expenses for which we have not yet been invoiced. In estimating the expenses, we consider, among other things, the following factors:

- the existence of any prior relationship between us and the third party provider;
- the past results of prior research and development services performed by the third party provider; and
- the scope and timing of the research and development services set forth in the agreement with the third party provider.

After the research services are performed and we are invoiced, we make any adjustments that are necessary to accurately report research and development expense for the period.

Valuation Allowances and Carrying Values

We have recorded valuation allowances against our entire deferred tax assets of $11,520,000 at June 30, 2009 and $9,152,000 at June 30, 2008. The valuation allowances relate primarily to the net operating loss carryforward deferred tax asset where the tax benefit of such asset is not assured.

As of June 30, 2009 and 2008, we have determined that the estimated future discounted cash flows related to our patent applications will be sufficient to recover their carrying value.

We have determined that we are receiving the economic benefit of the agricultural patent applications as well as all of the issued patents and are amortizing the agricultural patent application costs and all of the issued patents over seventeen years on a straight-line basis.

We do not have any off-balance sheet arrangements.

Stock-Based Compensation

The fair value of each stock option and warrant is estimated on the date of grant using the Black-Scholes option-pricing model. Expected volatility is based on the historical volatility of our stock and of similar companies. The expected term of stock options and warrants granted is based upon the simplified method whereby expected term is calculated using the weighted average term of the vesting period of such options and warrants. The expected term is calculated for and applied to all groups of stock options and warrants as we do not expect substantially different exercise or post-vesting termination behavior amongst our employee population. The risk-free rate of stock options is based on the U.S. Treasury rate in effect at the time of grant for the expected term of the stock options and warrants. Expected forfeitures are based on historical data.

In connection with our Short-Term and Long-Term incentive plans, our management reviews the specific goals of such plans to determine if such goals have been achieved or are probable that they will be achieved. If the goals have been achieved or are probable of being achieved, then the amount of compensation expense determined on the date of grant related to those specific goals is charged to compensation expense at such time.

Convertible Notes

During the year ended June 30, 2008, we issued convertible notes and warrants for gross proceeds in the amount of $10,000,000. The proceeds have been allocated between convertible notes and warrants based upon their fair values, whereby the fair value of the warrants have been determined using the Black-Scholes model. The remaining amounts were allocated to the beneficial conversion feature based upon the effective conversion price compared to the fair value of the common stock on the date of issuance of the convertible notes and warrants. As such, all of the proceeds of the convertible notes and warrants were recorded as equity. The convertible notes are being amortized to interest expense using the effective yield method over the term of the notes.

Research Program

We do not expect to generate significant revenues for approximately the next one to three years, during which time we will engage in significant research and development efforts. We expect to spend significant amounts on the research and development of our technology. We also expect our research and development costs to increase as we continue to develop and ultimately commercialize our technology. However, the successful development and commercialization of our technology is highly uncertain. We cannot reasonably estimate or know the nature, timing and expenses of the efforts necessary to complete the development of our technology, or the period in which material net cash inflows may commence from the commercialization of our technology, including the uncertainty of:

- the scope, rate of progress and expense of our research activities;
- the interim results of our research;
- the expense of additional research that may be required after review of the interim results;
- the terms and timing of any collaborative, licensing and other arrangements that we may establish;
- the expense and timing of regulatory approvals;
- the effect of competing technological and market developments; and
- the expense of filing, prosecuting, defending and enforcing any patent claims or other intellectual property rights.

Liquidity and Capital Resources

Overview

As of June 30, 2009, our cash balance and investments totaled $1,430,569, and we had working capital of $1,259,300. In addition, upon the closing of our private equity financing on July 9, 2009, we received aggregate net proceeds of approximately $900,000. As of June 30, 2009, we had a federal tax loss carryforward of approximately $25,582,000 and a state tax loss carry-forward of approximately $19,219,000 to offset future taxable income. We cannot assure you that we will be able to take advantage of any or all of such tax loss carryforwards, if at all, in future fiscal years.

Contractual Obligations

The following table lists our cash contractual obligations as of June 30, 2009:

	Payments Due by Period				
Contractual Obligations	Total	Less than 1 year	1 - 3 years	4 - 5 years	More than 5 years
Research and Development Agreements (1)	$ 1,702,050	$ 1,702,050	$ —	$ —	$ —
Facility, Rent and Operating Leases (2)	$ 152,989	$ 79,420	$ 73,569	$ —	$ —
Employment, Consulting and Scientific Advisory Board Agreements (3)	$ 531,970	$ 519,264	$ 12,706	$ —	$ —
Total Contractual Cash Obligations	$ 2,387,009	$ 2,300,734	$ 86,275	$ —	$ —

(1) Certain of our research and development agreements disclosed herein provide that payment is to be made in Canadian dollars and, therefore, the contractual obligations are subject to fluctuations in the exchange rate.

(2) The lease for our office space in New Brunswick, New Jersey is subject to certain escalations for our proportionate share of increases in the building's operating costs.

(3) Certain of our employment and consulting agreements provide for automatic renewal, which is not reflected in the table, unless terminated earlier by the parties to the respective agreements.

We expect our capital requirements to increase significantly over the next several years as we commence new research and development efforts, increase our business and administrative infrastructure and embark on developing in-house business capabilities and facilities. Our future liquidity and capital funding requirements will depend on numerous factors, including, but not limited to, the levels and costs of our research and development initiatives and the cost and timing of the expansion of our business development and administrative staff.

Effective September 1, 2009, we extended our research and development agreement with the University of Waterloo for an additional one-year period through August 31, 2010, in the amount of CAD $650,400 or approximately USD $650,400, which is not included in the above table of contractual obligations. Research and development expenses under this agreement aggregated $653,104 for the year ended June 30, 2009 and USD $730,960 for the year ended June 30, 2008 and USD $5,280,368 for the cumulative period from inception through June 30, 2009. Total research and development expenses aggregated $2,353,962 for the year ended June 30, 2009 and $1,764,426 for the year ended June 30, 2008 and $12,311,557 for the cumulative period from inception through June 30, 2009.

Capital Resources

Since inception, we have generated revenues of $1,450,000 in connection with the initial fees and milestone payments received under our license and development agreements. We have not been profitable since inception, we will continue to incur additional operating losses in the future, and we will require additional financing to continue the development and subsequent commercialization of our technology. While we do not expect to generate significant revenues from the licensing of our technology for at least the next one to three years, we may enter into additional licensing or other agreements with marketing and distribution partners that may result in additional license fees, receive revenues from contract research, or other related revenue.

License Agreements

On July 17, 2007 we entered into a license agreement with Bayer CropScience AG for the development and commercialization of Cotton. Under the terms of the license agreement, we received an upfront payment, will receive milestone payments upon the achievement of certain development milestones, and additionally, upon commercialization, a royalty on net sales.

On August 6, 2007 we entered into a license agreement with Monsanto for the development and commercialization of Corn and Soy. Under the terms of the license agreement, we received an upfront payment, will receive milestone payments upon the achievement of certain development milestones, and additionally, upon commercialization, a royalty on net sales.

On September 11, 2007 we entered into a license agreement with Bayer CropScience AG for the development and commercialization of Rice. Under the terms of the agreement, we received an upfront payment, will receive milestone payments upon the achievement of certain development milestones, and additionally, upon commercialization, a royalty on net sales.

Financing

As discussed in Part II, Item 5, Recent Sales of Unregistered Securities, in this Annual Report on Form 10-K:

- On July 9, 2009, we entered into a Securities Purchase Agreement with Partlet Holdings Ltd., for the issuance of common stock and warrants for gross proceeds of $1,000,000.
- On July 29, 2009, we entered into Securities Purchase Agreements with each of Robert Forbes, Timothy Forbes and certain insiders and affiliates for the issuance of common stock and warrants for an aggregate gross proceeds of $530,000.
- On July 29, 2009, we entered into a Securities Purchase Agreement with Cato Holding Company for the issuance of common stock and warrants in exchange for amounts currently owed by us to Cato Research Ltd in the amount of $175,000.

- On August 1, 2007 and August 29, 2007, we entered into binding Securities Purchase Agreements with YA Global and Stanford and have sold to each of YA9 Global and Stanford $5,000,000 of secured convertible notes and accompanying warrants for aggregate gross proceeds in the amount of $10,000,000.

We anticipate that, based upon our current cash and investments and the proceeds from the above mentioned financings, we will be able to fund our operations for the next six (6) months from June 30, 2009. Over the next twelve months from June 30, 2009, we plan to fund our research and development and commercialization activities by:

- utilizing our current cash balance and investments,
- achieving some of the milestones set forth in our current licensing agreements,
- through the execution of additional licensing agreements for our technology, and
- through the placement of equity or debt instruments.

We cannot assure you that we will be able to raise money through any of the foregoing transactions, or on favorable terms, if at all.

Results of Operations

Fiscal Years ended June 30, 2008, 2007 and 2006

Revenue

Total revenues consisted of initial fees and milestone payments on our agricultural development and license agreements. During the fiscal year ended June 30, 2009, we earned revenue in the amount of $275,000, which consisted of milestone payments in connection with certain agricultural license agreements. During the fiscal year ended June 30, 2008, we earned revenue in the amount of $456,667, which consisted of the initial payments and the amortized portion of previous milestone payments received in connection with certain agricultural license agreements. During the year ended June 30, 2007, we earned revenue in the amount of $300,000 consisted of current milestone payments and the amortized portion of previous milestone payments in connection with certain agricultural license agreements.

We anticipate that we will continue to receive milestone payments in connection with our current agricultural development and license agreements while we continue to pursue our goal of attracting other companies to license our technologies in various other crops. Additionally, we anticipate that we will receive royalty payments from our license agreements when our partners commercialize their crops containing our technology. However, it is difficult for us to determine our future revenue expectations because we are a development stage biotechnology company. As such, the timing and outcome of our experiments, the timing of signing new partners and the timing of our partners moving through the development process into commercialization is difficult to accurately predict.

Operating expenses

	Year Ended June 30,							
	2009	2008	Change	%	2008	2007	Change	%
	(In thousands, except % values)							
General and administrative	$ 2,206	$ 2,291	$ (85)	(4) %	$ 2,291	$ 2,413	$ (122)	(5)%
Research and development	2,354	1,765	589	33%	1,765	1,208	557	46%
Total operating expenses	$ 4,560	$ 4,056	$ 504	12%	$ 4,056	$ 3,621	$ 435	12%

We expect operating expenses to increase over the next twelve months as we anticipate that research and development expenses and other general and administrative expenses will increase as we continue to expand our research and development activities.

General and administrative expenses

General and administrative expenses consist of the following:

	Year ended June 30,		
	2009	2008	2007
	(In thousands)		
Share-based compensation	$ 445	$ 749	$ 910
Payroll and benefits	690	669	616
Investor relations	245	305	278
Professional fees	416	261	217
Depreciation and amortization	112	97	166
Other general and administrative expenses	298	210	226
Total general and administrative expenses	$ 2,206	$ 2,291	$ 2,413

- Share-based compensation for Fiscal 2009 and 2008 consisted of the amortized portion of the Black-Scholes value of options, restricted stock units and warrants granted to directors, employees and consultants. During Fiscal 2009 and 2008, the following options, warrants and restricted stock units were granted:

	Fiscal 2009	Fiscal 2008
Options	834,812	1,069,600
Warrants	500	1,000
Restricted Stock Units	136,000	337,700

Additionally, during Fiscal 2008, 1,500,000 warrants were extended and repriced in connection with a financial advisory agreement.

Share-based compensation was lower in Fiscal 2009 primarily due to the extension and repricing of warrants in connection with the financial advisory agreement in fiscal 2008 The Black-Scholes value of the extension and

repricing of warrants amounted to $385 in Fiscal 2008.

Share-based compensation was lower in Fiscal 2008 due to the extension and repricing of warrants in connection with a financial advisory agreement. The Black-Scholes value of the extension and repricing of warrants amounted to $385 in Fiscal 2008 compared to $683 in Fiscal 2007. This was partially offset by an increase in the Black-Scholes value of the options and warrants granted during Fiscal 2008 compared to the Black-Scholes value of the options and warrants granted during Fiscal 2007 because we granted more options during Fiscal 2008.

- Payroll and benefits increased primarily as a result of salary and health insurance rate increases.

- Investor relations expense for Fiscal 2009 is lower than Fiscal 2008 primarily as a result of a decrease in the cost of the annual report and investor relations consulting costs.

Investor relations expense for Fiscal 2008 is higher than Fiscal 2007 primarily as a result of an increase in the cost of the annual report due to the inclusion of additional disclosures and the services of a proxy solicitor.

- Professional fees increased during Fiscal 2009 compared to Fiscal 2008 primarily as a result of an increase in accounting and legal fees. Legal fees increased primarily due to our multiple myeloma project and employee compensation review. Accounting and legal fees also increased primarily due to the review and filing of our securities filings.

- Professional fees increased during Fiscal 2008 compared to Fiscal 2007 primarily as a result of an increase in accounting and legal fees in connection with the additional disclosure included in the annual report.

- Depreciation and amortization increased during Fiscal 2009 compared to Fiscal 2008 primarily as a result of an increase in amortization of patent costs. .

- Depreciation and amortization decreased during Fiscal 2008 compared to Fiscal 2007 primarily as a result of a decrease in amortization of patent costs. During Fiscal 2008, we did not amortize the cost of our human health pending patent applications.

We expect general and administrative expenses to modestly increase over the next twelve months primarily due to an increase in payroll and benefits, insurance costs related to our multiple myeloma project and legal and accounting fees related to the increased regulatory environment surrounding our business.

Research and development expenses

	Year Ended June 30,							
	2009	2008	Change	%	2008	2007	Change	%
	(In thousands, except % values)							
Stock-based compensation	$ 62	$ 148	$ (86)	(58)%	$ 148	$ 60	$ 88	147%
Other research and development	2,292	1,617	675	38%	1,617	1,148	469	41%
Total research and development	$ 2,354	$ 1,765	$ 589	33%	$ 1,765	$ 1,208	$ 557	46%

- Stock-based compensation decreased during Fiscal 2009 compared to Fiscal 2008 primarily because the Black-Scholes calculated fair value of the options and warrants granted during Fiscal 2009 were lower than Fiscal 2008 because the number of options granted were lower in Fiscal 2009.

- Stock-based compensation increased during Fiscal 2008 compared to Fiscal 2007 primarily because the Black-Scholes calculated fair value of the options and warrants granted during Fiscal 2008 were higher than Fiscal 2007 because the number of options granted were higher in Fiscal 2008.

- Other research and development costs increased during Fiscal 2009 compared to Fiscal 2008 primarily as a result of the expansion of our human health programs, specifically our multiple myeloma project, which was partially offset by a decrease in the cost of our research agreement with the University of Waterloo due to the strengthening of the U.S. dollar against the Canadian dollar. .

- Other research and development costs increased during Fiscal 2008 compared to Fiscal 2007 primarily as a result of the initiation of our multiple myeloma project during Fiscal 2008. Additionally, the budget in connection with the research agreement with the University of Waterloo was increased and the U.S. dollar was weaker against the Canadian dollar.

The breakdown of our research and development expenses between our agricultural and human health research programs are as follows:

	Year ended June 30,					
	2009	%	2008	%	2007	%
	(In thousands, except % values)					
Agricultural research programs	$ 618	26%	$ 771	44%	$ 701	58%
Human health research programs	1,736	74%	994	56%	507	42%
Total research and development expenses	$ 2,354	100%	$ 1,765	100%	$ 1,208	100%

- Agricultural research expenses decreased during Fiscal 2009 compared to Fiscal 2008 primarily as a result of a decrease in the allocation of resources from agriculture to human health at the University of Waterloo and the strengthening of the U.S. dollar against the Canadian dollar.

- Agricultural research expenses increased during Fiscal 2008 compared to Fiscal 2007 primarily as a result of an increase in the budget in connection with our research agreement at the University of Waterloo, an increase in stock-based compensation, and the U.S. dollar was weaker against the Canadian dollar.

- Human health research expenses increased during Fiscal 2009 compared to Fiscal 2008 primarily as a result of the ongoing multiple myeloma project.

- Human health research expenses increased during Fiscal 2008 compared to Fiscal 2007 primarily as a result of the initiation of the multiple myeloma project.

We expect the percentage of human health research programs to increase as a percentage of the total research and development expenses as we continue to expand our human health initiatives.

Amortization of debt discount and financing costs

During Fiscal 2008, we issued $10,000,000 of convertible notes and warrants. The discount on the convertible notes is being amortized, using the effective yield, method over the term of the convertible notes. The related costs of issuance were recorded as deferred financing costs and are amortized on a straight line basis over the term of the convertible notes. As of June 30, 2009 there were $9,455,000 of convertible notes outstanding. As of June 30, 2008, there were $9,500,000 of the convertible notes outstanding.

Interest expense – convertible notes

Interest expense – convertible notes represents the fair value of the common stock issued in lieu of paying cash for the 8% coupon rate of interest related to the convertible notes issued during Fiscal 2008.

Interest income

	Year Ended June 30,									
	2007	2008	Change	%	2008	2007	Change	%		
	(In thousands, except % values)									
Interest income	$ 43	$ 100	$ (57)	(57)%	$ 100	$ 69	$ 31	45%		

The decrease in interest income for Fiscal 2009 compared to Fiscal 2008 is due to a lower average cash and investments balance during the year as well as lower interest rates.

The increase in interest income for Fiscal 2008 compared to Fiscal 2007 is due to a higher average cash and investments balance during the year.

From Inception on July 1, 1998 through June 30, 2009

From inception of operations on July 1, 1998 through June 30, 2009, we earned revenues in the amount of $1,450,000, which consisted of the initial license fees and milestone payments in connection with our various development and license agreements. We do not expect to generate significant revenues for at least the next one to three years, during which time we will engage in significant research and development efforts.

We have incurred losses each year since inception and have an accumulated deficit of $35,949,899 at June 30, 2009. We expect to continue to incur losses as a result of expenditures on research, product development and administrative activities.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Foreign Currency Risk

Our financial statements are denominated in United States dollars and, except for our agreement with the University of Waterloo, which is denominated in Canadian dollars, all of our contracts are denominated in United States dollars. Therefore, we believe that fluctuations in foreign currency exchange rates will not result in any material adverse effect on our financial condition or results of operations. In the event we derive a greater portion of our revenues from international operations or in the event a greater portion of our expenses are incurred internationally and denominated in a foreign currency, then changes in foreign currency exchange rates could effect our results of operations and financial condition.

Interest Rate Risk

We invest in high-quality financial instruments, primarily money market funds and United States treasury notes, with an effective duration of the portfolio of less than one year which we believe are subject to limited credit risk. We currently do not hedge our interest rate exposure. Due to the short-term nature of our investments, which we plan to hold until maturity, we do not believe that we have any material exposure to interest rate risk arising from our investments.

Item 8. Financial Statements and Supplementary Data.

The financial statements required to be filed pursuant to this Item 8 are included in this Annual Report on Form 10-K. A list of the financial statements filed herewith is found at "Item 15. Exhibits, Financial Statement Schedules."

Item 9. Changes in and Disagreements with Accountants on Accounting andFinancial Disclosure.

None.

Item 9A. Controls and Procedures.

Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this Annual Report on Form 10-K. Based on this evaluation, our chief executive officer and chief financial officer have concluded that, as of the end of such period, our disclosure controls and procedures were effective.

Internal Control Over Financial Reporting

Management's Annual Report on Internal Control Over Financial Reporting

Our company's management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act as a process designed by, or under the supervision of, our company's principle executive and principal financial officers and effected by our company's board of directors, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the U.S. and includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of our company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of our company are being made only in accordance with authorization of management and directors of our company; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management assessed the effectiveness of our company's internal control over financial reporting as of June 30, 2009. In making this assessment, management used the criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission, or COSO.

Based on this assessment, management has concluded that, as of June 30, 2009 our company's internal control over financial reporting is effective.

Management's report was not subject to attestation by the company's registered public accounting firm pursuant to temporary rules of the Securities and Exchange Commission that permit the Company to provide only management's report in this annual report.

Changes in Internal Controls Over Financial Reporting

No change in our internal controls over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during the fiscal year ended June 30, 2009 that has materially affected, or is reasonably likely to materially affect, our internal controls over financial reporting.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The following is a list of our current directors and executive officers, as of September 30, 2009, together with their ages and business backgrounds:

Name	Age	Capacities in Which Served	In Current Position Since
Bruce C. Galton	57	President and Chief Executive Officer, Director	October 2001
John E. Thompson, Ph.D.	68	Executive Vice President and Chief Scientific Officer, Director	July 2004
		Executive Vice President of Research and Development	October 1999 to July 2004
Sascha P. Fedyszyn	34	Vice President of Corporate Development and Secretary	January 1999
Joel P. Brooks	50	Chief Financial Officer and Treasurer	December 2000
Richard Dondero	59	Vice President of Research and Development	July 2004
Harlan W. Waksal, M.D. (1)	56	Chairman of the Board of Directors	June 2009
John. N. Braca (1) (2)	51	Director	October 2003
Christopher Forbes (3)	58	Director	January 1999
Warren J. Isabelle	57	Director	June 2009
Thomas C. Quick (3)	54	Director	February 1999
David Rector (1) (2)	62	Director	February 2002
Rudolf Stalder	68	Director	February 1999
Jack Van Hulst (2)	70	Director	January 2007

(1) Member of the Compensation Committee
(2) Member of the Audit Committee
(3) Member of the Corporate Governance Committee

None of our current executive officers are related to any other executive officer or to any of our directors. Our executive officers are elected annually by our board and serve until their successors are duly elected and qualified.

Bruce C. Galton has been our director since November 2001, and he was appointed our President and Chief Executive Officer on October 4, 2001. From April 2000 until June 2001, when it was acquired by Transgenomic, Inc., Mr. Galton was President and Chief Operating Officer and a director of Annovis, Inc., a manufacturer of specialty chemicals for DNA synthesis with operations in Pennsylvania and Glasgow, United Kingdom. From January 1985 to May 1999, Mr. Galton held various senior management positions at Cistron Biotechnology, Inc., including President and Chief Operating Officer from 1988 to 1997 and Chairman and Chief Executive Officer from 1997 to 1999. Cistron Biotechnology, Inc. was engaged in the research and development of certain cytokines, which act as key immune regulators. Mr. Galton is a trustee of the Interfaith Food Pantry (Morris County New Jersey) and is a former member of the Borough of Madison, New Jersey Downtown Development Commission and a former trustee of the Museum of Early Trades and Crafts. Mr. Galton had also served as a Councilman from 1996 through 1998 and a member of Madison's Planning Board from 1994 through 1998. Mr. Galton received a Bachelor of Science in Commerce with a major in Accounting from the University of Virginia in 1974 and a Master of Business Administration in Finance from Fairleigh Dickinson University in 1977.

John E. Thompson, Ph.D. has been our director since October 2001. Dr. Thompson was appointed our President and Chief Executive Officer in January 1999, and he continued in that capacity until September 1999 when he was appointed Executive Vice President of Research and Development. In July 2004, Dr. Thompson became our Executive Vice President and Chief Scientific Officer. Dr. Thompson is the inventor of the technology that we develop. Since July 2001, he has been the Associate Vice President, Research and, from July 1990 to June 2001, he was the Dean of Science at the University of Waterloo in Waterloo, Ontario, Canada. Dr. Thompson has a Ph.D. in Biology from the University of Alberta, Edmonton, and he is a Fellow of the Royal Society of Canada. Dr. Thompson is also the recipient of a Lady Davis Visiting Fellowship, the Sigma Xi Award for Excellence in Research, the CSPP Gold Medal and the Technion Visiting Fellowship.

Sascha P. Fedyszyn was appointed our Vice President of Corporate Development in January 1999 and was appointed our Secretary in January 2000. Mr. Fedyszyn has been a Vice President of Senesco since its inception in June 1998. Mr. Fedyszyn was also a Research Associate at the Logistics Management Institute from May 1995 to September 1995. Mr. Fedyszyn received a Bachelor of Arts degree in Biology from Princeton University in June 1997.

Joel Brooks was appointed our Chief Financial Officer and Treasurer in December 2000. From September 1998 until November 2000, Mr. Brooks was the Chief Financial Officer of Blades Board and Skate, LLC, a retail establishment specializing in the action sports industry. Mr. Brooks was Chief Financial Officer from 1997 until 1998 and Controller from 1994 until 1997 of Cable and Company Worldwide, Inc. He also held the position of Controller at USA Detergents, Inc. from 1992 until 1994, and held various positions at several public accounting firms from 1983 through 1992. Mr. Brooks is also a director and member of the audit committee of USA Technologies, Inc. Mr. Brooks received his Bachelor of Science degree in Commerce with a major in Accounting from Rider University in February 1983.

Richard Dondero was appointed our Vice President of Research and Development in July 2004. From July 2002 until July 2004, Mr. Dondero was a Group Leader in the Proteomics Reagent Manufacturing division of Molecular Staging, Inc., a biotech firm engaged in the measurement and discovery of new biomarkers. From 1985 through June 2001, Mr. Dondero served in several roles of increasing responsibility through Vice President of Operations and Product Development at Cistron Biotechnology, Inc. From 1977 through 1985, Mr. Dondero served as a senior scientist at Johnson and Johnson, and from 1975 through 1977, as a scientist at Becton Dickinson. Mr. Dondero received his Bachelor of Arts degree from New Jersey State University in 1972 and his Master of Science degree from Seton Hall University in 1976.

Harlan W. Waksal, M.D. has been our chairman of the board of directors since June 2009 and a director since October 2008. From July 2003 to present, Dr. Waksal has been the President and Sole Proprietor of Waksal Consulting L.L.C., which provides strategic business and clinical development counsel to biotechnology companies. Dr. Waksal co-founded the biotechnology company, ImClone Systems Inc. in 1984. From March, 1987 through July 2003, Dr. Waksal had served in various senior roles for ImClone Systems Incorporated as follows: March 1987 through April 1994 – President; April 1994 through May 2002 – Executive Vice President and Chief Operating Officer; May 2002 through July 2003 – President, Chief Executive Officer and Chief Operating Officer. Dr. Waksal also served as a director of ImClone Systems Incorporated from March 1987 through January 2005. Dr. Waksal is the Chairman of the New Jersey Region of the American Committee for the Weizmann Institute of Science, and he is also a member of the Boards of Trustees of The Montclair Art Museum, Oberlin College, InnoVida Holdings, LLC and the American Committee for the Weizmann Institute of Science. Dr. Waksal received a Bachelor of Arts in Biology from Oberlin College and an M.D. from Tufts University School of Medicine.

John N. Braca has been our director since October 2003. Mr. Braca has also served as a director and board observer for other healthcare, technology and biotechnology companies over the course of his career. From April 2006, Mr. Braca has been the managing director of Fountainhead Venture Group, a healthcare information technology venture fund based in the Philadelphia area. From May 2005 through March 2006, Mr. Braca was a consultant and advisor to GlaxoSmithKline management in their research operations. From 1997 to April 2005, Mr. Braca was a general partner and director of business investments for S.R. One, Limited, or S.R. One, the venture capital subsidiary of GlaxoSmithKline. In addition, from January 2000 to July 2003, Mr. Braca was a general partner of Euclid SR Partners Corporation, an independent venture capital partnership. Prior to joining S.R. One, Mr. Braca held various finance and operating positions of increasing responsibility within several subsidiaries and business units of GlaxoSmithKline. Mr. Braca is a licensed Certified Public Accountant in the state of Pennsylvania and is affiliated with the American Institute of Certified Public Accountants and the Pennsylvania Institute of Certified Public Accountants. Mr. Braca received a Bachelor of Science in Accounting from Villanova University and a Master of Business Administration in Marketing from Saint Joseph's University.

Christopher Forbes has been our director since January 1999. Since 1989, Mr. Forbes has been Vice Chairman of Forbes, Inc., which publishes Forbes Magazine and Forbes.com. From 1981 to 1989, Mr. Forbes was Corporate Secretary at Forbes. Prior to 1981, he held the position of Vice President and Associate Publisher. Mr. Forbes has been a director of Forbes, Inc. since 1977. Mr. Forbes is the Chairman of the American Friends of the Louvre, and he also sits on the Boards of The New York Academy of Art, and the Prince Wales Foundation. He is also a member of the Board of Advisors of The Princeton University Art Museum. Mr. Forbes received a Bachelor of Arts degree in Art History from Princeton University in 1972. In 1986, he was awarded the honorary degree of Doctor of Humane Letters by New Hampshire College and in 2003 was appointed a Chevalier of the Legion of Honor by the French Government.

Warren J. Isabelle has been our director since June 2009. Mr. Isabelle, is a founder and principal of Ironwood Investment Management L.L.C., located in Boston, MA. Mr. Isabelle founded Ironwood Investment management L.L.C in August, 1997. From 1983 until 1997 Mr. Isabelle was with Pioneer Management Corporation where he served most recently as Director of Research and Head of U.S. Equities. Mr. Isabelle has also, since January, 2004 served as a member of the Public Board and the Investment Committee of the University of Massachusetts Foundation.

Thomas C. Quick has been our director since February 1999. Since 2003, Mr. Quick has been the President of First Palm Beach Properties, Inc. From 2001 through 2003, Mr. Quick was the Vice Chairman of Quick & Reilly/Fleet Securities, Inc., successor to The Quick & Reilly Group, Inc., a holding company for four (4) major financial services businesses. From 1996 until 2001, Mr. Quick was the President and Chief Operating Officer and a director of Quick & Reilly/Fleet Securities, Inc. From 1985 to 1996, he was President of Quick & Reilly, Inc., a Quick & Reilly subsidiary and a national discount brokerage firm. Mr. Quick serves as a member of the Board of Directors and compensation committee of B.F. Enterprises. He is also a member of the Board of Directors of Best Buddies, The American Ireland Fund, Venetian Heritage, Inc. and serves on the Investment Advisory Board for the St. Jude Children's Hospital. He is a trustee of the National Corporate Theater Fund, Cold Spring Harbor Laboratories, the Norton Museum, the Inter-City Scholarship Foundation of New York City and an advisory board member of Christie, European. Mr. Quick is a graduate of Fairfield University.

David Rector has been our director since February 2002. Mr. Rector also serves as a director and member of the compensation and audit committee of the Dallas Gold and Silver Exchange (formerly Superior Galleries, Inc.), a director and sole officer of Standard Drilling, Inc., a director of Federated Sports & Enternainment, and a director, President and CEO of NanoDynamics, Inc. Mr Rector is also a director of CardOne Plus, Inc. and NuWest, Inc.. From May 2004 through December 2006, Mr. Rector had served in senior management positions with Nanoscience Technologies, Inc., a development stage company engaged in the development of DNA Nanotechnology. Also, since 1985, Mr. Rector has been the Principal of The David Stephen Group, which provides enterprise consulting services to emerging and developing companies in a variety of industries. From 1983 until 1985, Mr. Rector served as President and General Manager of Sunset Designs, Inc., a domestic and international manufacturer and marketer of consumer product craft kits, and a wholly-owned subsidiary of Reckitt & Coleman N.A. From 1980 until 1983, Mr. Rector served as the Director of Marketing of Sunset Designs. From 1971 until 1980, Mr. Rector served in progressive roles in the financial and product marketing departments of Crown Zellerbach Corporation, a multi-billion dollar pulp and paper industry corporation. Mr. Rector received a Bachelor of Science degree in Business/Finance from Murray State University in 1969.

Rudolf Stalder has been our director since February 1999 and was appointed as our Chairman and Chief Executive Officer on January 10, 2000. On October 4, 2001, Mr. Stalder resigned as our Chief Executive Officer. On June 8, 2009 Mr. Stalder resigned as our Chairman. Mr. Stalder is a former member of the Executive Boards of Credit Suisse Group and Credit Suisse First Boston and former Chief Executive Officer of the Americas Region of Credit Suisse Private Banking. Mr. Stalder joined Credit Suisse in 1980 as a founding member and Deputy Head of the Multinational Services Group. In 1986, he became Executive Vice President. He was named to Credit Suisse's Executive Board in 1989. In 1990, he became Head of the Commercial Banking Division and a Member of the Executive Committee. From 1991 to 1995, Mr. Stalder was Chief Financial Officer of Credit Suisse First Boston and a Member of the Executive Boards of Credit Suisse Group and Credit Suisse First Boston. He became head of the Americas Region of Credit Suisse Private Banking in 1995 and retired in 1998. Prior to moving to the United States, Mr. Stalder was a member of the Board of Directors for several Swiss subsidiaries of major corporations including AEG, Bayer, BTR, Hoechst, Saint Gobain, Solvay and Sony. He is a fellow of the World Economic Forum. He currently serves on the Board and is the treasurer of the Greater Bridgeport Symphony. He was a member of the Leadership Committee of the Consolidated Corporate Fund of Lincoln Center for the Performing Arts, Board of The American Ballet Theatre and a Trustee of Carnegie Hall. From 1991 through 1998, Mr. Stalder was Chairman of the New York Chapter of the Swiss-American Chamber of Commerce. He continues to serve as an Advisory Board Member of the American-Swiss Foundation. Mr. Stalder received a diploma in advanced finance management at the International Management Development Institute in Lausanne, Switzerland in 1976. He completed the International Senior Managers Program at Harvard University in 1985.

Jack Van Hulst has been our director since January 2007. Mr. Van Hulst also serves as a director and member of the compensation and audit committees of Napo Pharmaceuticals, Inc. and HiTech Pharmacal, Inc. Mr. Van Hulst is also an advisory board member of Arsenal Capital Partners and Chairman of The International Center in New York, a non-profit organization. He has more than 40 years of international experience in the pharmaceutical industry. He began his career in 1968 at Organon, which was subsequently acquired by AKZO, N.V., the multinational human and animal healthcare company, where he was based in Europe and the US and responsible for establishing AKZO's position in the US in the manufacturing and sales and marketing of fine chemicals. Mr. Van Hulst later became President of AKZO's US Pharmaceutical Generic Drug Business and was responsible for establishing AKZO in the US generic drug industry. From 1989 to 1999, Mr. Van Hulst successively owned and led two generic pharmaceutical companies, improving their operations and then selling them to a private equity group and a pharmaceutical company. From 1999 to 2005, he was Executive Vice President at Puerto Rico-based MOVA Pharmaceutical Corporation, a contract manufacturer to the pharmaceutical industry that recently merged with Canadian-based Patheon.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires a company's directors, officers and stockholders who beneficially own more than 10% of any class of equity securities of the company registered pursuant to Section 12 of the Exchange Act, collectively referred to herein as the Reporting Persons, to file initial statements of beneficial ownership of securities and statements of changes in beneficial ownership of securities with respect to the company's equity securities with the SEC. All Reporting Persons are required by SEC regulation to furnish us with copies of all reports that such Reporting Persons file with the SEC pursuant to Section 16(a).

Based solely on our review of the copies of such forms received by us and upon written representations of the Reporting Persons received by us, we believe that there has been compliance with all Section 16(a) filing requirements applicable to our Reporting Persons.

Code of Business Ethics and Conduct

On March 17, 2003, our board adopted a Code of Business Ethics and Conduct, which may also be found on our website at www.senesco.com. Our Code of Ethics contains written standards designed to deter wrongdoing and to promote:

- honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;
- full, fair, accurate, timely, and understandable disclosure in reports and documents filed with the SEC;
- compliance with applicable governmental laws, rules and regulations;
- the prompt internal reporting of violations of our Code of Ethics to an appropriate person or persons identified in our Code of Ethics; and
- accountability for adherence to our Code of Ethics.

Each of our employees, officers and directors completed a signed certification to document his or her understanding of and compliance with our Code of Ethics.

Audit Committee

We have an Audit Committee which committee was established in accordance with Section 3(a)(58)(A) of the Exchange Act. Our Audit Committee was established in July 1999. On June 27, 2008, our board adopted an Amended and Restated Audit Committee Charter. The primary responsibilities of our Audit Committee include:

- appointing, approving the compensation of, and assessing the independence of our independent registered public accounting firm;
- overseeing the work of our independent registered public accounting firm, including through the receipt and consideration of certain reports from our independent registered public accounting firm;
- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements and related disclosures;
- monitoring our internal control over financial reporting, disclosure controls and procedures and code of business conduct and ethics;
- discussing our risk management policies;
- establishing policies regarding hiring employees from our independent registered public accounting firm and procedures for the receipt and retention of accounting related complaints and concerns;
- meeting independently with our independent registered public accounting firm and management; and
- preparing the audit committee report required by SEC rules.

Previously, our Audit Committee was comprised of John N. Braca, David Rector and Thomas C. Quick. As previously announced, effective, December 18, 2008, our Audit Committee is currently comprised of John N. Braca, David Rector and Jack Van Hulst. Mr. Braca currently serves as the chairman of the Audit Committee. The NYSE AMEX currently requires an Audit Committee comprised solely of independent directors. Messrs. Braca, Rector and Van Hulst are "independent" members of our board. In addition, our board has determined that Mr. Braca satisfies the definition of an audit committee "financial expert".

Item 11. Executive Compensation.

This Compensation Discussion and Analysis explains the principles underlying our compensation policies and decisions and the principal elements of compensation paid to our executive officers during Fiscal 2009. Our Chief Executive Officer, Chief Financial Officer and all of our other executive officers included in the Summary Compensation Table will be referred to as the "named executive officers" for purposes of this discussion.

Compensation Objectives and Philosophy

The Compensation Committee, also referred to herein as the Committee, of the board is responsible for the following:

- to discharge the board's responsibilities relating to compensation of our directors and named executive officers;
- to have overall responsibility for approving and evaluating our director and officer compensation plans, policies and programs;
- to have responsibility for producing an annual report on executive compensation for inclusion in our proxy statement; and
- to review and discuss with Senesco management the Compensation Discussion & Analysis, which is included in Senesco's annual proxy statement.

As part of this process, the Committee seeks to accomplish the following objectives with respect to our executive compensation programs:

- to motivate, recruit and retain executives capable of meeting our strategic objectives;
- to provide incentives to ensure superior executive performance and successful financial results for us; and
- to align the interests of executives with the long-term interests of our stockholders.

The Committee seeks to achieve these objectives by:

- linking a substantial portion of compensation to our achievement of long-term and short-term financial objectives and the individual's contribution to the attainment of those objectives;

- providing long-term equity-based incentives and encouraging direct share ownership by executives with the intention of providing incentive-based compensation to encourage a long-term focus on company profitability and stockholder value; and

- understanding the marketplace and establishing a compensation structure that is adjusted for our position in the marketplace and our current financial condition and limited capital resources.

Setting Executive Compensation

In Fiscal 2008 and Fiscal 2009, the Committee engaged J. Richard and Co., also referred to herein as J. Richard, a nationally recognized compensation consulting firm, to provide competitive compensation data and general advice on our compensation programs and policies for our Chief Executive Officer, and J. Richard was available for consultation with the Committee to discuss the compensation programs for our other named executive officers. During Fiscal 2008 and Fiscal 2009, J. Richard performed a market analysis of the compensation paid by comparable companies and provided the Committee with recommended compensation ranges for the Chief Executive Officer based on the competitive data. In addition, the Chief Executive Officer provided recommendations to the Committee with respect to the compensation packages for those other named executive officers for Fiscal 2009, and the Committee also reviewed the Chief Executive Officer's recommendation against compensation paid by comparable companies.

For Fiscal 2008 and 2009, the Committee's objective to target each component of compensation listed below to be competitive with comparable positions at peer group companies, and to target the total annual compensation of each named executive officer at the appropriate level for comparable positions at the competitive peer group companies. For Fiscal 2008, our list of peer group companies was as follows: Introgen Therapeutics, Inc.; Kosan BioSciences, Inc.; Avalon Pharmaceuticals, Inc.; Atherogenics, Inc.; Keryx BioPharaceuticals, Inc.; Targeted Genetics Corporation; Neopharm, Inc.; Genta, Inc.; and Vion Pharmaceuticals, Inc.

During the current compensation review process, the Committee elected not to engage an independent compensation consultant. This decision was based on the Committee's belief that prior years analysis did not closely enough parallel the scope of our business relative to the breadth of operations in general, executive officers scope of duties and responsibilities, position in the life cycle, financial responsibilities, capitalization and size of management staff. The Committee also met with the Chief Executive Officer who agreed with the approach not to engage an outside consultant and agreed to provide a review of management's performance against objectives for the period to assist in ascertaining equity award levels.

The Committee elected to identify various companies in the biotech sector we felt were somewhat close in scope of operation to the Company. It became evident, as in prior years, that due to the key banner points listed above (the breadth of operations in general, executive officers scope of duties and responsibilities, position in the life cycle, financial responsibilities, capitalization and size of management staff) it is very difficult to identify such public entities for comparative purposes. For Fiscal 2009, the companies we elected to evaluate were as follows: Adolor Corporation (ADLR); MDRNA Inc. (MRNA); Anesiva Inc. (ANSV); Santarus Inc. (SNTS); Sequenom, Inc.(SQNM); Cubist (CBST); Lexicon (LXRX); and Targacept, Inc. (TRGT).

However, in determining the compensation of each named executive officer, the Committee also considers a number of other factors, including Senesco's recent performance and the named executive officer's individual performance, the Chief Executive Officer's recommendations and the importance of the executive's position and role in relation to execution of the Company's strategic plan. There is no pre-established policy for allocation of compensation between cash and non-cash components or between short-term and long-term components. Instead, the Committee determines the mix of compensation for each named executive officer based on its review of the competitive data, its subjective analysis of that individual's performance and contribution to our financial performance, the financial strength and outlook of the Company and, most of all, what is considered fair and reasonable based on the scope of operations and responsibilities. For the Chief Executive Officer, for Fiscal 2009, the Committee set his performance targets and compensation levels based upon the input from the Committee's analysis and from the Chief Executive Officer. For other named executive officers, the Committee sets performance targets and compensation levels after receiving recommendations from the Chief Executive Officer and reviewing those recommendations with the full Committee.

In selecting companies to survey for such compensation purposes, the Compensation Committee considered many factors not directly associated with the stock price performance of those companies, such as geographic location, development stage, organizational structure and market capitalization. For this reason, there is not a meaningful correlation between the companies included within the peer group identified for comparative compensation purposes and the companies included within the RDG Micro Biotechnology Index.

Components of Compensation

For Fiscal 2008, our executive compensation program included the following components:

- base salary;
- annual short-term equity incentives;
- long-term equity incentive awards; and
- change in control and other severance arrangements.

For Fiscal 2009, our executive compensation program included the following components:

- base salary;
- annual short-term equity incentives;
- a continuation of the long-term equity incentive program; and
- change in control and other severance arrangements.

Currently, for Fiscal 2010, our executive compensation program includes the following components:

- base salary;
- annual short-term equity incentives; and
- a continuation of the long-term equity incentive program.

The Committee seeks to align the named executive officers' and stockholders' interests in a pay for performance environment. On average, a large portion of an executive officer's total compensation is at risk, with the amount actually paid tied to achievement of pre-established objectives and individual goals.

Base Salary

In General – It is the Committee's objective to set a competitive rate of annual base salary or consulting fees for each named executive officer. The Committee believes competitive base salaries are necessary to attract and retain top quality executives, since it is common practice for public companies to provide their executive officers with a guaranteed annual component of compensation that is not subject to performance risk. However, the Committee recognizes that Senesco is still a development stage company, with little to no revenue currently and believes that developing too rigid of a compensation structure can become detrimental to the progress of the company.

When compared to comparable positions at the competitive peer group companies, it is the Committee's objective to target the base compensation level of executive officers below the 50th percentile because of our current financial position. Historically the compensation levels for our executive officers has been below the 25th percentile of competitive peer group companies. However, in determining the compensation of each executive officer, the Committee also considers a number of other factors, including recent Company and individual performance and the CEO's recommendations. There is no pre-established policy for allocation of compensation between cash and non-cash components or between short-term and long-term components. Instead, the Committee determines the mix of compensation for each executive officer based on its review of the competitive data and its subjective analysis of that individual's performance and contribution to the Company's financial performance.

Base Salary for Fiscal 2009 – For Fiscal 2009, each named executive officer's salary, except for the Executive Vice-President and Chief Scientific Officer, was increased to cover cost of living increases. The table below shows annual Fiscal 2009 and Fiscal 2008 base salary or consulting rates for each named executive officer:

Name	Title	2008 Salary	2009 Salary (1)	% Increase
Bruce C. Galton	President and Chief Executive Officer	$ 255,000	$ 255,000	0.0%
John E. Thompson	Executive Vice-President and Chief Scientific Officer	$ 65,000(2)	$ 65,000(2)	0.0%
Sascha P. Fedyszyn	Vice-President of Corporate Development and Secretary	$ 101,400	$ 107,500	6.0%
Joel P. Brooks	Chief Financial Officer and Treasurer	$ 150,800	$ 160,000	6.1%
Richard Dondero	Vice-President of Research and Development	$ 130,000	$ 143,000	10.0%

(1) Annual salary increase became effective July 1, 2008.
(2) Represents consulting fees paid under a consulting agreement.

There were no increases in base salary approved for Bruce C. Galton and John E. Thompson as the Compensation Committee deemed the scope of their resource management (i.e. personnel, operating budgets, and outside relationships) were commensurate, fair and reasonable relative to their current base salary rate.

Messrs. Fedyszyn and Brooks received approximately a 6% increase in base salary to (i) reflect a cost of living adjustment and (ii) their relative performance. Mr. Dondero also received approximately a 6% increase in base salary to reflect each of the foregoing plus an additional $5,000 range adjustment to bring his salary more in line with the other named executive officers. The Compensation Committee wishes to provide additional compensation to all of the named executive officers, including the chief executive officer, through the development of incentive programs based on the named executives performance and attainment of stated objectives that enhance shareholder value in order to (i) link a substantial portion of their compensation to the achievement of short-term and long-term objectives and (ii) to save cash given our limited capital resources.

During the course of the year, the Committee determined that we could in no manner financially support the terms of the various employment agreements in effect. The Committee issued a notice of non-renewal to all named executive officers in effect not renewing the employment agreements moving forward following the various upcoming anniversary dates of each agreement. We anticipate that each of the named executive officers will, following the expiration of their employment agreements, continue as employees on an "at will basis", meaning that either we or the employees may discontinue their employment with or without notice or cause. The employees' respective salaries, duties and titles will remain unchanged.

Base Salary for Fiscal 2010 – For Fiscal 2010, after a review of the factors discussed above, each named executive officer's salary was not increased.

Annual Bonuses for Fiscal 2009 and Fiscal 2010 – Bonuses are determined at the discretion of the board based upon the recommendation of the Committee. There were no cash bonuses granted during Fiscal 2009, and it is anticipated that there will be no cash bonuses granted for Fiscal 2010.

Short Term Incentive Equity Awards

In General – A portion of each named officer's compensation is provided in the form of short-term equity awards. It is the Committee's belief that properly structured equity awards are an effective method of aligning the short-term interests of our named executive officers with those of our stockholders.

Equity awards were made in the form of incentive stock options. The Committee has followed a grant practice of tying equity awards to its annual calendar year-end review of individual performance, its assessment of our performance and our operational results.

Restricted Stock Unit and Incentive Stock Option Short-Term Incentive Plan for Fiscal 2008 – Pursuant to the Company's Restricted Stock Unit and Incentive Stock Option Short-Term Incentive Plan, or STIP, covering Fiscal 2008, equity grants to our named executive officers were in the form of restricted stock units, also referred to herein as RSU's, and incentive stock options, also referred to herein as ISO's. Each RSU and ISO entitles the recipient to receive one share of our common stock upon vesting or upon a designated date or event following such vesting. Each ISO was granted with an exercise price of $0.99. Each named executive had the option of receiving their RSU grant in the form of RSU's or ISO's. If a named execute chose to receive ISO's in lieu of RSU's, then such named executive was granted twice as many ISO's, due to the $0.99 exercise price of such ISO's. All RSU's and ISO's were awarded together and were distributed in November 2008 after evaluation of the performance objectives identified further below under the heading STIP Performance Objectives, or SPO's.

The Committee will follow a grant practice of tying equity awards to its annual year-end review of individual performance, its assessment of our performance and our financial results. Accordingly, it is expected that any equity awards to the named executive officers will be made on an annual basis promptly after the release of our financial results. The Committee has established short-term incentive grant guidelines for eligible named executive officers each year based on competitive annual grant data provided by management's compensation consultant and by J. Richard, the Committee's compensation consultant.

The total amount of RSU's and ISO's in the STIP pool awarded to our named executive officers was 237,300 shares, which consisted of 112,700 RSU's and 124,600 ISO's, representing 1.4% of the outstanding shares as of July 1, 2007. The specific amount of RSU's and ISO's awarded to each individually named executive officer relating to the performance objectives were based on (i) the functional areas assessed by the underlying detailed objectives of each named executive officer, (ii) the weight of each of the functions of each named executive officer and (iii) the contribution to each function by each named executive officer.

The amount and percentage of the RSU's and ISO's awarded to all the named executive officers as a whole for their contributions to each of the STIP Performance Objectives were as follows:

STIP Performance Objective	Percentage of STIP RSU and ISO Award Pool	Total Amount of RSU's and ISO's Awarded As a Whole to All Named Executive Officers per SPO
First STIP Performance Objective. Contributions Relating to Cancer Target	45%	126,000
Second STIP Performance Objective. Contributions Relating to Financing	25%	45,938
Third STIP Performance Objective. Contributions Relating to Licensing and Support	15%	32,812
Fourth STIP Performance Objective. Contributions Relating to Intellectual Property Administration	4%	11,200
Fifth STIP Performance Objective. Contributions Relating to Investor Relations	3%	5,775
Sixth STIP Performance Objective. Contributions Relating to Website Administration	1%	1,925
Seventh STIP Performance Objective. Contributions Relating to Audits and Securities Filings	5%	9,625
Eighth STIP Performance Objective. Contributions Relating to the American Stock Exchange Duties	1%	1,750
Ninth STIP Performance Objective. Contributions Relating to the Future Financing Plan	1%	2,275

Each named executive officer eligible to receive an award pursuant to the STIP was required to be employed by the Company upon the vesting date in November 2008 (the "Vesting Date"). If a named executive officer was no longer employed by the Vesting Date, then such named executive officer's respective RSU or ISO award tied to such STIP Performance Objective would be forfeited. All named executive officers were employed on the Vesting Date. The Committee shall have the sole discretion to reinstate any eliminated portion or segment of a STIP Performance Objective award or that portion of a STIP Performance Objective award for an award to a successor to the STIP Performance Objectives.

Subject to the preceding paragraph, the approximate individual amounts and percentages of RSU and ISO awards to the named executive officers were as follows:

Name	Bruce C. Galton	Joel P. Brooks	Sascha P. Fedyszyn	John E. Thompson	Richard Dondero
Title	President and Chief Executive Officer	Chief Financial Officer and Treasurer	Vice-President of Corporate Development and Secretary	Executive Vice-President and Chief Scientific Officer	Vice-President of Research and Development
Type of Award	RSU	RSU	RSU	ISO	ISO
Percentage of 126,000 RSU's and ISO's Awarded for First SPO	20%	10%	10%	25%	35%
Number of RSU's and ISO's Awarded for the First SPO	15,750	7,875	7,875	39,376	55,124
Percentage of 45,938 RSU's and ISO's Awarded for the Second SPO	45%	45%	5%	0%	5%
Number of RSU's and ISO's Awarded for the Second SPO	19,687.5	19,687.5	2,188	0	4,375
Percentage of 32,812 RSU's and ISO's Awarded for the Third SPO	35%	5%	35%	15%	10%
Number of RSU's and ISO's Awarded for the Third SPO	9,187.5	1,312.5	9,187	7,875	5,250
Percentage of 11,200 RSU's and ISO's Awarded for the Fourth SPO	10%	0%	30%	30%	30%
Number of RSU's and ISO's Awarded for the Fourth SPO	700	0	2,100	4,200	4,200
Percentage of 5,775 RSU's and ISO's Awarded for the Fifth SPO	30%	30%	30%	0%	10%
Number of RSU's and ISO's Awarded for the Fifth SPO	1,575	1,575	1,575	0	1,050
Percentage of 1,925 RSU's and ISO's Awarded for the Sixth	10%	10%	70%	0%	10%

SPO

Name	Bruce C. Galton	Joel P. Brooks	Sascha P. Fedyszyn	John E. Thompson	Richard Dondero
Title	President and Chief Executive Officer	Chief Financial Officer and Treasurer	Vice-President of Corporate Development and Secretary	Executive Vice-President and Chief Scientific Officer	Vice-President of Research and Development
Type of Award	RSU	RSU	RSU	ISO	ISO
Number of RSU's and ISO's Awarded for the Sixth SPO	175	175	1,225	0	350
Percentage of 9,625 RSU's and ISO's Awarded for the Seventh SPO	20%	60%	10%	5%	5%
Number of RSU's and ISO's Awarded for the Seventh SPO	1,750	5,250	875	875	875
Percentage of 1,750 RSU's and ISO's Awarded for the Eighth SPO	50%	50%	0%	0%	0%
Number of RSU's and ISO's Awarded for the Eighth SPO	875	875	0	0	0
Percentage of 2,275 RSU's and ISO's Awarded for the Ninth SPO	30%	30%	10%	10%	20%
Number of RSU's and ISO's Awarded for the Ninth SPO	525	525	175	350	700
Total RSU's and ISO's Awarded	50,225	37,275	25,200	52,676	71,924
Percentage of 237,300 RSU's and ISO's Awarded for All SPOs	29%	21%	14%	15%	21%

In October 2008, the Committee determined that the executive officers had achieved the previously granted short-term performance milestones, and accordingly, determined to vest, effective two trading days following the Company's filing of its quarterly report on Form 10-Q for the quarter ended September 30, 2008, the foregoing RSUs/options as follows:

Mr. Galton received 50,255 RSUs;
Mr. Brooks received 37,275 RSUs;
Mr. Fedyszyn received 25,200 RSU;
Dr. Thompson received 52,676 options; and
Mr. Dondero received 71,924 options.

Restricted Stock Unit and Incentive Stock Option Short-Term Incentive Plan for Fiscal 2009 – Pursuant to the Company's Restricted Stock Unit and Incentive Stock Option Short-Term Incentive Plan, or STIP, covering Fiscal 2009, equity grants to our named executive officers will be in the form of restricted stock units, also referred to herein as RSU's, and incentive stock options, also referred to herein as ISO's. The RSU's and options were granted effective two days following the filing of our quarterly report on Form 10-Q for the quarter ended September 30, 2008. Each ISO will have an exercise price equal to the closing price on the day prior to the grant date, or $.60. Each RSU and ISO entitles the recipient to receive one share of our common stock upon vesting or upon a designated date or event following such vesting. Each named executive had the option of receiving their RSU grant in the form of RSU's or ISO's. If a named execute chose to receive ISO's in lieu of RSU's, then such named executive will be granted twice as many ISO's. All RSU's and ISO's will be awarded together and will be available for distribution upon evaluation of performance objectives that have been identified further below under the heading STIP Performance Objectives, or SPO's.

The Committee will follow a grant practice of tying equity awards to its annual year-end review of individual performance, its assessment of our performance and our financial results. Accordingly, it is expected that any equity awards to the named executive officers will be made on an annual basis promptly after the release of our financial results. The Committee has established short-term incentive grant guidelines for eligible named executive officers each year based on competitive annual grant data provided by management's compensation consultant and by J. Richard, the Committee's compensation consultant.

The total amount of RSU's and ISO's in the STIP pool awarded to our named executive officers was 264,000 shares, which consisted of 136,000 RSU's and 128,000 ISO's, representing 1.4% of the outstanding shares as of July 1, 2008. The specific amount of RSU's and ISO's awarded to each individually named executive officer relating to the performance objectives are based on (i) the functional areas assessed by the underlying detailed objectives of each named executive officer, (ii) the weight of each of the functions of each named executive officer, and (iii) the contribution to each function by each named executive officer.

The amount and percentage of the RSU's and ISO's awarded to all the named executive officers as a whole for their contributions to each of the STIP Performance Objectives was as follows:

STIP Performance Objective	Percentage of STIP RSU and ISO Award Pool	Total Amount of RSU's and ISO's Awarded As a Whole to All Named Executive Officers per SPO
First STIP Performance Objective. Contributions Relating to Finance Objectives	15%	30,900
Second STIP Performance Objective. Contributions Relating to Agricultural Licensing Objectives	20%	53,600
Third STIP Performance Objective. Contributions Relating to Human Health Objectives	25%	82,000
Fourth STIP Performance Objective. Contributions Relating to Investor Relations, Intellectual Property and Website Administration	25%	61,500
Fifth STIP Performance Objective. Contributions Relating to Organizational Objectives	15%	36,000

Each named executive officer eligible to receive an award pursuant to the STIP is required to be employed by the Company upon the vesting date in or around November 2009 (the "Vesting Date"). If a named executive officer is no longer employed by the Vesting Date, then such named executive officer's respective RSU or ISO award tied to such STIP Performance Objective will be forfeited. The Committee shall have the sole discretion to reinstate any eliminated portion or segment of a STIP Performance Objective award or that portion of a STIP Performance Objective award for an award to a successor to the STIP Performance Objectives.

The amount and percentage of RSU's and ISO's awarded to the named executive officers individually for their contributions to each of the STIP Performance Objectives may be modified, altered and redistributed by the Chief Executive Officer, subject to Committee review, to reflect (i) the actual performance of each named executive officer, (ii) the potential reassignment of duties of each named executive officer, and (iii) the unanticipated accomplishments by any of the named executive officers after the outset of the STIP that contribute significantly to stockholder value during Fiscal 2009.

Subject to the preceding paragraph, the approximate individual amounts and percentages of RSU and ISO awards to the named executive officers are as follows:

Name	Bruce C. Galton	Joel P. Brooks	Sascha P. Fedyszyn	John E. Thompson	Richard Dondero
Title	President and Chief Executive Officer	Chief Financial Officer and Treasurer	Vice-President of Corporate Development and Secretary	Executive Vice-President and Chief Scientific Officer	Vice-President of Research and Development
Type of Award	RSU	RSU	RSU	ISO	ISO
Percentage of 30,900 RSU's and ISO's Awarded for First SPO	41%	53%	3%	0%	3%
Number of RSU's and ISO's Awarded for the First SPO	12,300	16,000	800	0	1,800
Percentage of 53,600 RSU's and ISO's Awarded for the Second SPO	26%	0%	40%	15%	19%
Number of RSU's and ISO's Awarded for the Second SPO	10,400	0	16,000	12,000	15,200
Percentage of 82,000 RSU's and ISO's Awarded for the Third SPO	25%	5%	6%	23%	41%
Number of RSU's and ISO's Awarded for the Third SPO	12,500	2,500	3,000	23,000	41,000
Percentage of 61,500 RSU's and ISO's Awarded for the Fourth SPO	30%	10%	37%	5%	18%
Number of RSU's and ISO's Awarded for the Fourth SPO	15,000	5,000	18,500	5,000	18,000
Percentage of 36,000 RSU's and ISO's Awarded for the Fifth SPO	53%	15%	12%	13%	7%
Number of RSU's and ISO's Awarded for the Fifth SPO	15,800	4,500	3,700	8,000	4,000

In October 2009, after a review of each of the factors that compromise the short-term award program, the Committee determined that the executive officers had partially achieved the previously granted short-term performance milestones, and accordingly, determined to vest, effective two trading days following the Company's filing of its quarterly report on Form 10-Q for the quarter ended September 30, 2009, the foregoing RSUs/options as follows:

Mr. Galton will receive shares of common stock underlying his 49,500 RSUs;
Mr. Brooks will receive shares of common stock underlying his 26,600 RSUs;
Mr. Fedyszyn will receive shares of common stock underlying his 39,900 RSU;
Dr. Thompson received 48,000 options; and
Mr. Dondero received 76,000 options.

Restricted Stock Unit and Incentive Stock Option Short-Term Incentive Plan for Fiscal 2009—The Committee continues to evaluate the Company's objectives for Fiscal 2010. It is anticipated that the Committee will set objectives for the Company's named executive officers for Fiscal 2010.

Long-Term Incentive Equity Awards

In General – A portion of each named executive officer's compensation is provided in the form of long-term incentive equity awards as set forth in the Long-Term Incentive Plan (the "LTIP") discussed below. It is the Committee's belief that properly structured equity awards are an effective method of aligning the long term interests of our named executive officers with those of our stockholders.

Beginning with Fiscal 2008, equity awards havebeen made in the form of restricted stock units. The Committee will follow a grant practice of tying equity awards upon of the completion of certain event milestones ("LTIP Event Milestones") discussed below. Accordingly, it is expected that any equity awards to the named executive officers will be made promptly after the completion of each LTIP Event Milestone. The Committee has established long-term incentive grant guidelines for eligible named executive officers based on competitive annual grant data provided by management's compensation consultant and by J. Richard, the Committee's compensation consultant.

Long-Term Incentive Plan – Beginning on December 13, 2007 (the "LTIP Effective Date") and ending on the earlier of (i) the completion of the Third LTIP Event Milestone or (ii) three (3) years from the LTIP Effective Date, LTIP equity grants to our named executive officers are in the form of RSU's and ISO's. Each RSU and ISO entitles the recipient to receive one share of our common stock upon vesting or upon a designated date or event following such vesting. Each ISO was granted with an exercise price of $0.99. Each named executive had the option of receiving their RSU grant in the form of RSU's or ISO's. If a named execute chose to receive ISO's in lieu of RSU's, then such named executive was granted twice as many ISO's, due to the $0.99 exercise price of such ISO's.

The total RSU's and ISO's in the LTIP pool awarded to our named executive officers was 775,000 shares, which consisted of 225,000 RSU's and 550,000 ISO's, representing 3.9% of the outstanding shares as of July 1, 2009.

The amount and percentage of the RSU's awarded to all the named executive officers as a whole for the completion of each of the three LTIP Event Milestones are as follows:

LTIP Event Milestone	Percentage of LTIP RSU and ISO Award Pool	Total Amount of RSUs and ISO's Awarded As a Whole to All Named Executive Officers
First LTIP Event Milestone. The Execution of a Research Agreement to Conduct Phase I/II Trials at a Research Facility	20%	155,000
Second LTIP Event Milestone. The Filing and Acceptance by the U.S. FDA of an investigation new drug application, or IND, by the date set by the Committee	20%	155,000
Third LTIP Event Milestone. The Successful Completion of Phase I/II Trials Approved by the FDA by the date set by the Committee	60%	465,000

Each named executive officer eligible to receive an award pursuant to the LTIP is required to be employed by the Company upon the completion of each individual LTIP Event Milestone. If a named executive officer is no longer employed by the Company before the completion of an individual LTIP Event Milestone, then such named executive officer's respective RSU or ISO award tied to such uncompleted LTIP Event Milestone will be forfeited and so will that total portion of the whole LTIP award pool. The Committee shall have the sole discretion to reinstate any eliminated portion or segment of a LTIP Event Milestone award or that portion of a LTIP Event Milestone award for a successor to the LTIP Event Milestones.

The LTIP awards for each named executive officer upon the completion of each individual LTIP Event Milestone shall be as follows:

Name	Title	Percentage of Total RSU's Awarded Upon Completion of a LTIP Event Milestone	Number of RSU's Awarded upon Completion of First LTIP Event Milestone	Number of RSU's Awarded upon Completion of Second LTIP Event Milestone	Number of RSU's Awarded upon Completion of Third LTIP Event Milestone
Bruce C. Galton (1)	President and Chief Executive Officer	25%	25,000	25,000	75,000
Joel P. Brooks (1)	Chief Financial Officer and Treasurer	10%	10,000	10,000	30,000
Sascha P. Fedyszyn (1)	Vice-President of Corporate Development and Secretary	10%	10,000	10,000	30,000
John E. Thompson (2)	Executive Vice-President and Chief Scientific Officer	25%	50,000	50,000	150,000
Richard Dondero (2)	Vice-President of Research and Development	30%	60,000	60,000	180,000

(1) Represents RSU's.

(2) Represents ISO's.

As of the date hereof, none of the LTIP Event Milestones have been met.

It is the Committee's belief that RSU and ISO awards are essential to the retention of the named executive officers, crucial to our long-term financial successes and will help to advance the share ownership guidelines, which may be established by the Committee for the executive officers. The RSU's and ISO's have award schedules which provide a meaningful incentive for the named executive officer to remain in our service. These equity awards also serve as an important vehicle to achieve the Committee's objective of aligning management and stockholder interests. Equity awards in the form of RSU's and ISO's promote all of these objectives in a manner which is less dilutive to the stockholders than traditional option grants and provide a more direct correlation between our compensation cost that we must record for financial accounting purposes and the value delivered to the named executive officers.

Market Timing of Equity Awards. The Compensation Committee does not engage in any market timing of the equity awards made to the executive officers or other award recipients, and accordingly, there is no established practice of timing our awards in advance of the release of favorable financial results or adjusting the award date in connection with the release of unfavorable financial developments affecting our business. In addition, we will attempt, when possible, to make equity awards to our executive officers and directors promptly after the release of our financial results. For example, the current awards shall vest two trading days after the filing of our quarterly report on Form 10-Q for the quarter ended September 30, 2009.

Executive Benefits and Perquisites

In General – The named executive officers also are provided with certain market competitive benefits. They are currently not provided with any perquisites. It is the Committee's belief that such benefits are necessary for us to remain competitive and to attract and retain top caliber executive officers, since such benefits are typically provided by companies in the biotechnology industry and with other companies with which we compete for executive talent.

Retirement Benefits – The named executive officers may participate in the company-wide 401(k) plan. We do not make any contributions to the 401(k) plan and do not have any additional retirement benefits.

Other Benefits and Perquisites – All administrative employees, including the named executive officers, are eligible to receive standard health, disability, and life insurance. We do not provide any additional benefits and perquisites.

IRC Section 162(m) compliance

As a result of Section 162(m) of the Internal Revenue Code, publicly-traded companies such as us are not allowed a federal income tax deduction for compensation, paid to the Chief Executive Officer and the four other highest paid executive officers, to the extent that such compensation exceeds $1 million per officer in any one year and does not otherwise qualify as performance-based compensation. Currently, our stock option compensation packages are structured so that compensation deemed paid to an executive officer in connection with the exercise of a stock option should qualify as performance-based compensation that is not subject to the $1 million limitation. However, other awards, like RSU's and ISO's, made under that Plan may or may not so qualify. In establishing the cash and equity incentive compensation programs for the executive officers, it is the Committee's view that the potential deductibility of the compensation payable under those programs should be only one of a number of relevant factors taken into consideration, and not the sole governing factor. For that reason the Committee may deem it appropriate to continue to provide one or more executive officers with the opportunity to earn incentive compensation, including cash bonus programs tied to our financial performance and restricted stock units awards, which may be in excess of the amount deductible by reason of Section 162(m) or other provisions of the Internal Revenue Code. It is the Committee's belief that cash and equity incentive compensation must be maintained at the requisite level to attract and retain the executive officers essential to our financial success, even if part of that compensation may not be deductible by reason of the Section 162(m) limitation. For Fiscal 2008, none of our executive officer's compensation reached the $1 million limitation. The Committee will continue to evaluate such $1 million limitation in Fiscal 2010.

Report of the Compensation Committee

The Compensation Committee has reviewed and discussed the Compensation, Discussion and Analysis with management, and based on this review and these discussions, the Compensation Committee recommended to the board that the Compensation, Discussion and Analysis be included in the Company's Annual Report on Form 10-K.

This report is submitted on behalf of the

Compensation Committee

David Rector, Chairman

John N. Braca

Harlan W. Waksal, M.D.

Summary Compensation Table

The following Table sets forth information concerning compensation for services rendered in all capacities during the fiscal years ended June 30, 2009, June 30, 2008 and June 30, 2007 awarded to, earned by or paid to: (i) each person who served as our Chief Executive Officer; (ii) our Chief Financial Officer; and (iii) each of our three other executive officers whose total compensation for Fiscal 2009 was in excess of $100,000 and who were serving as our executive officers at the end of Fiscal 2009, collectively referred to herein as the Named Executives. No other executive officers who would have otherwise been includable in such table on the basis of total compensation for Fiscal 2009 have been excluded by reason of their termination of employment or change in executive status during that year.

Name and Principal Position (a)	Year (1) (b)	Salary ($)(2) (c)	Bonus ($)(3) (d)	Stock Awards ($) (5) (e)	Option Awards ($) (6) (f)	Non-Equity Incentive Plan Compensation ($) (g)	Change in Pension Value and Nonqualified Deferred Compensation Earnings ($) (h)	All Other Compensation ($) (4) (i)	Total ($) (j)
Bruce C. Galton	2009	$ 258,348	-	$ 39,600	$ 7,793	-	-	-	$ 305,741
(President and Chief	2008	$ 258,347	-	$ 49,723	$ 24,414	-	-	$ 14,711	$ 347,195
Executive Officer)	2007	$ 244,722	-	-	$ 34,000	-	-	-	$ 278,722
Joel P. Brooks	2009	$ 161,986	-	$ 16,800	$ 4,870	-	-	-	$ 183,656
(Chief Financial Officer	2008	$ 149,885	-	$ 36,903	$ 15,258	-	-	-	$ 202,046
and Treasurer)	2007	$ 143,450	-	-	$ 21,250	-	-	-	$ 164,700
Richard Dondero	2009	$ 145,507	-	-	$ 41,670	-	-	-	$ 187,177
(Vice-President of	2008	$ 130,008	-	-	$ 69,920	-	-	-	$ 199,928
Research)	2007	$ 124,500	-	-	$ 21,250	-	-	-	$ 145,750
Sascha P. Fedyszyn	2009	$ 108,091	-	$ 25,200	$ 4,870	-	-	-	$ 138,161
(Vice-President of	2008	$ 103,634	-	$ 24,948	$ 14,247	-	-	$ 3,731	$ 146,560
Corporate Development and Secretary)	2007	$ 95,750	-	-	$ 21,250	-	-	-	$ 117,000
John E. Thompson Ph.D.	2009	$ 65,000	-	-	$ 26,950	-	-	-	$ 91,950
(Executive Vice-President	2008	$ 65,000	-	-	$ 54,280	-	-	-	$ 119,280
and Chief Scientific	2007	$ 63,700	-	-	$ 21,250	-	-	-	$ 84,950

Officer)

_____

(1) Senesco's fiscal year ends on June 30.

(2) Such amount represents actual salary paid, including such amounts deferred in connection with our 401K plan.

(3) There were no bonuses earned or paid during the fiscal years ended June 30, 2009, June 30, 2008 and June 30, 2007.

(4) Such amount represents unused vacation time paid during the fiscal year ended June 30, 2008.

(5) The amounts shown for 2009 and 2008 are the compensation costs recognized in our financial statements for Fiscal 2009 and Fiscal 2008 related to RSU's awarded to each named executive officer in Fiscal 2009 and Fiscal 2008, to the extent we recognized compensation cost in 2009 and 2008 for such awards in accordance with the provisions of SFAS 123R. The fair values of the RSU's awarded were calculated based on the fair market value of the underlying shares of common stock on the respective grant dates and were not adjusted to take into account any estimated forfeitures. The following table shows the portion of the overall amount of the compensation cost in 2009 and 2008 attributable to each RSU.

Name	Grant Date	# of Shares Subject to RSU Associated With Cost	Compensation Cost in Fiscal 2009	Compensation Cost in Fiscal 2008
Bruce C. Galton	11/19/2008	66,000	$ 39,600	$ -
	12/13/2007	52,225	$ -	$ 49,723
Joel P. Brooks	11/19/2008	28,000	$ 16,800	$ -
	12/13/2007	37,275	$ -	$ 36,903
Sascha P. Fedyszyn	11/19/2008	42,000	$ 25,200	$ -
	12/13/2007	25,200	$ -	$ 24,948

(6) The amounts shown are the compensation costs recognized in our financial statements for Fiscal 2009 and Fiscal 2008 related to stock options granted to each named executive officer in Fiscal 2009 and Fiscal 2008 and prior years, to the extent we recognized compensation cost in Fiscal 2009 and Fiscal 2008 for such awards in accordance with the provisions of SFAS 123R. For a discussion of valuation assumptions used in the SFAS 123R calculations, see Note 7 of Notes to Consolidated Financial Statements. The grant date fair values used to calculate such compensation costs were not adjusted to take into account any estimated forfeitures. The following table shows the portion of the overall amount of the compensation cost in Fiscal 2009 and Fiscal 2008 attributable to each.

Name	Option Grant Date	Exercise Price	# of Shares Associated With Charge	Compensation Cost in Fiscal 2009	Compensation Cost in Fiscal 2008
Bruce C. Galton	12/13/2007	-	-	-	-
	12/14/2006	$ 1.08	40,000	$ 7,793	$ 16,320
	12/14/2005	$ 1.40	40,000	-	$ 8,094
Joel P. Brooks	12/13/2007	-	-	-	-
	12/14/2006	$ 1.08	25,000	$ 4,870	$ 10,199
	12/14/2005	$ 1.40	25,000	-	$ 5,059
Richard Dondero	11/19/2008	$ 0.60	80,000	$ 36,800	-
	12/13/2007	$ 0.99	71,924	-	$ 54,662
	12/14/2006	$ 1.08	25,000	$ 4,870	$ 10,199
	12/14/2005	$ 1.40	25,000	-	$ 5.059
Sascha P. Fedyszyn	12/13/2007	-	-	-	-
	12/14/2006	$ 1.08	25,000	$ 4,870	$ 10,199
	12/14/2005	$ 1.40	20,000	-	$ 4,048
John E. Thompson Ph.D.	11/19/2008	$ 0.60	48,000	$ 22,080	-
	12/13/2007	$ 0.99	52,676	-	$ 40,033
	12/14/2006	$ 1.08	25,000	$ 4,870	$ 10,199
	12/14/2005	$ 1.40	20,000	-	$ 4,048

-77-

Executive Compensation Agreements

On October 4, 2001, we hired Bruce C. Galton as our new President and Chief Executive Officer. In conjunction with Mr. Galton's appointment, we entered into a three-year employment agreement with Mr. Galton, effective October 4, 2001. The agreement automatically renewed for successive one-year terms thereafter, unless written notice of termination was provided at least 120 days prior to the end of the applicable term. Notice of termination of the agreement was provided on May 18, 2009 and Mr. Galton's employment agreement expired on October 4, 2009.

On July 1, 2003, Joel P. Brooks entered into an employment agreement with Senesco for a term of three (3) years. The agreement automatically renewed for successive one-year terms thereafter, unless written notice of termination was provided at least 120 days prior to the end of the applicable term. Notice of termination of the agreement was provided on May 18, 2009 and Mr. Brooks' employment agreement will expire on June 30, 2010. The agreement provides Mr. Brooks with an annual base salary of $122,000 plus certain benefits, including potential bonuses, equity awards and other perquisites as determined by the board. Our board has since approved several increases in Mr. Brooks' base salary, which is currently $160,000. The agreement also provides that Mr. Brooks is entitled to a lump sum payment of 1.0 times his annual base salary plus prior year bonus, if his employment with us is terminated by us, prior to a change of control, without cause or by him with good reason, as defined in his employment agreement. If there is a change in control within one year following Mr. Brooks' termination by us without cause, he is entitled to receive the difference between the monies actually received upon termination and 1.0 times his "base amount" as defined in the employment agreement. If Mr. Brooks' employment with us is terminated on or following a change in control during the term of the employment agreement, he is entitled to receive a lump sum payment equal to 1.0 times his "base amount".

On July 19, 2004, we hired Richard Dondero as our new Vice President of Research and Development. In conjunction with Mr. Dondero's appointment, we entered into a three-year employment agreement with Mr. Dondero, effective July 19, 2004. The agreement automatically renewed for successive one-year terms thereafter, unless written notice of termination was provided at least 120 days prior to the end of the applicable term. Notice of termination of the agreement was provided on May 18, 2009 and Mr. Dondero's employment agreement will expire on July 18, 2010. The agreement provides Mr. Dondero with an annual base salary of $110,000 plus certain benefits, including potential bonuses, equity awards and other perquisites as determined by our board. Our board has since approved several increases in Mr. Dondero's base salary, which is currently $143,000. The agreement also provides that Mr. Dondero is entitled to a lump sum payment of 1.0 times his annual base salary plus prior year bonus, if his employment with us is terminated by us, prior to a change of control, without cause or by him with good reason, as defined in his employment agreement. If there is a change in control within one year following Mr. Dondero's termination by us without cause, he is entitled to receive the difference between the monies actually received upon termination and 1.0 times his "base amount" as defined in the employment agreement. If Mr. Dondero's employment with us is terminated on or following a change in control during the term of the employment agreement, he is entitled to receive a lump sum payment equal to 1.0 times his "base amount".

On January 21, 1999, Sascha P. Fedyszyn entered into an employment agreement with Senesco for a term of two (2) years. The agreement automatically renewed for successive one-year terms thereafter, unless written notice of termination was provided at least 120 days prior to the end of the applicable term. Notice of termination of the agreement was provided on May 18, 2009 and Mr. Fedyszyn's employment agreement will expire on January 20, 2010. The agreement provides Mr. Fedyszyn with an annual base salary of $36,000 plus certain benefits, including potential bonuses, equity awards and other perquisites as determined by our board. Our board has since approved several increases in Mr. Fedyszyn's base salary, which is currently $107,500. The agreement also provides that Mr. Fedyszyn is entitled to a lump sum payment of 2.0 times his annual base salary plus prior year bonus, if his employment with us is terminated by us, prior to a change of control, without cause or by him with good reason, as defined in his employment agreement. If there is a change in control within one year following Mr. Fedyszyn's termination by us without cause, he is entitled to receive the difference between the monies actually received upon termination and 2.99 times his "base amount" as defined in the employment agreement. If Mr. Fedyszyn's employment with us is terminated on or following a change in control during the term of the employment agreement, he is entitled to receive a lump sum payment equal to 2.99 times his "base amount".

Grants of Plan-Based Awards

The following Grants of Plan Based Awards table provides additional information about stock and option awards and equity incentive plan awards granted to our named executive officers during the fiscal years ended June 30, 2009, June 30, 2008 and June 30, 2007.

		Estimated Future Payouts Under Non-Equity Incentive Plan Awards			Estimated Future Payouts Under Equity Incentive Plan Awards			All Other Stock Awards: Number of Shares of Stock or Units	All Other Option Awards: Number of Securities Under-lying Options	Exercise or Base Price of Option Awards	Grant Date Fair Value of Equity Awards
Name	Grant Date	Threshold ($)	Target ($)	Maximum ($)	Threshold (#) (1)	Target (#)	Maximum (#)	(#)	(#)	($/Sh)	($)
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	
Bruce C. Galton	11/19/2008	-	-	-	66,000(2)	-	-	-	-	-	-
	12/13/2007				125,000(2)						
Joel P. Brooks	11/19/2008				28,000(2)						
	12/13/2007	-	-	-	50,000(2)	-	-	-	-	-	-
Richard Dondero	11/19/2008	-	-	-	80,000(3)	-	-	-	-	-	-
	12/13/2007				300,000(3)						
Sascha P. Fedyszyn	11/19/2008	-	-	-	42,000(2)	-	-	-	-	-	-
	12/13/2007				50,000(2)						
John E. Thompson Ph.D.	11/19/2008	-	-	-	48,000(3)	-	-	-	-	-	-
	12/13/2007				250,000(3)						

(1) The performance-based RSU's and ISO's were granted under the 1998 Stock Plan and vest upon the achievement of certain performance milestones during Fiscal 2008, Fiscal 2009 and Fiscal 2010.

(2) Represents performance-based RSU's.

(3) Represents performance-based ISO's.

Outstanding Equity Awards at Fiscal Year-End

The following table summarizes the equity awards we have made to our named executive officers which are outstanding as of June 30, 2009.

	Option Awards					Stock Awards			
Name (a)	Number of Securities Underlying Unexercised Options (#) Exercisable (b)	Number of Securities Underlying Unexercised Options (#) Unexer-cisable (c)	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#) (d)	Option Exercise Price ($) (e)	Option Expiration Date (f)	Number of Shares or Units of Stock That Have Not Vested (#) (g)	Market Value of Shares or Units of Stock That Have Not Vested ($) (h)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#) (i)	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units of Other Rights That Have Not Vested ($) (j) (6)
Bruce C. Galton	130,000(1)	-	-	$ 2.10	10/05/2011	-	-	-	-
	300,000(2)	-	-	$ 2.05	12/01/2011	-	-	-	-
	50,000(3)	-	-	$ 2.16	06/19/2013	-	-	-	-
	30,000(3)	-	-	$ 3.15	12/16/2013	-	-	-	-
	35,000(3)	-	-	$ 3.45	12/16/2014	-	-	-	-
	40,000(3)	-	-	$ 1.40	12/14/2015	-	-	-	-
	40,000(3)	-	-	$ 1.08	12/14/2016	-	-	-	-
	-	-	-	-	-	-	-	191,000(5)	$ 158,530
Joel P. Brooks	25,000(3)	-	-	$ 2.25	12/01/2010	-	-	-	-
	15,000(3)	-	-	$ 2.15	11/01/2011	-	-	-	-
	12,500(3)	-	-	$ 1.65	10/09/2012	-	-	-	-
	20,000(3)	-	-	$ 2.16	06/19/2013	-	-	-	-
	15,000(3)	-	-	$ 3.15	12/16/2013	-	-	-	-
	20,000(3)	-	-	$ 3.45	12/16/2014	-	-	-	-
	25,000(3)	-	-	$ 1.40	12/14/2015	-	-	-	-
	25,000(3)	-	-	$ 1.08	12/14/2016	-	-	-	-
	-	-	-	-	-	-	-	78,000(5)	$ 64,740
Richard Dondero	10,000(3)	-	-	$ 3.45	12/16/2014	-	-	-	-
	25,000(3)	-	-	$ 1.40	12/14/2015	-	-	-	-
	25,000(3)	-	-	$ 1.08	12/14/2016	-	-	-	-
	71,924(4)			$ 0.99	12/13/2017	-	-	-	-
	-	-	300,000(4)	$ 0.99	12/13/2017	-	-	-	-
			80,000(4)	$ 0.60	11/19/2018	-	-	-	-
Sascha P. Fedyszyn	30,000(3)	-	-	$ 3.50	09/07/2009	-	-	-	-
	35,000(3)	-	-	$ 2.25	12/01/2010	-	-	-	-
	10,000(3)	-	-	$ 2.15	11/01/2011	-	-	-	-
	10,000(3)	-	-	$ 1.65	10/09/2012	-	-	-	-
	20,000(3)	-	-	$ 2.16	06/19/2013	-	-	-	-
	15,000(3)	-	-	$ 3.15	12/16/2013	-	-	-	-

	20,000(3)	-	-	$	3.45	12/16/2014	-	-	-	-
	20,000(3)	-	-	$	1.40	12/14/2015	-	-	-	-
	25,000(3)	-	-	$	1.08	12/14/2016	-	-	-	-
	-	-	-		-	-	-	-	92,000(5)	$ 76,360
John E. Thompson Ph.D.	80,000(3)	-	-	$	2.05	12/01/2011	-	-	-	-
	20,000(3)	-	-	$	2.35	01/07/2013	-	-	-	-
	20,000(3)	-	-	$	3.15	12/16/2013	-	-	-	-
	55,000(3)	-	-	$	3.45	12/16/2014	-	-	-	-
	20,000(3)	-	-	$	1.40	12/14/2015	-	-	-	-
	25,000(3)	-	-	$	1.08	12/14/2016	-	-	-	-
	52,676(4)	-	-	$	0.99	12/13/2017	-	-	-	-
	-	-	250,000(4)	$	0.99	12/13/2017	-	-	-	-
	-	-	80,000(4)	$	0.60	11/19/2018	-	-	-	-

(1) 100,000 of such options vested on the date of grant and an additional 10,000 options vested on each of the one month, two month and three month anniversary of the date of grant.

(2) 100,000 of such options vested on each of the first, second and third anniversary of the date of grant.
(3) One-third of such options vested on the date of grant and an additional one-third of such options vested or will vest on each of the first and second anniversary of the date of grant.
(4) Such amounts consist of performance based options which have vested upon the achievement of certain milestones or will vest if certain milestones are met under the Company's Short-Term and Long-Term incentive plan.
(5) Such amounts consist of performance based RSU's which will vest if certain milestones are met under the Company's Short-Term and Long-Term incentive plan.
(6) The amounts in this column are calculated by multiplying the number in column (i) by the closing price on June 30, 2009 of $0.83.

Options Exercised and Stock Vested

The table below shows option exercise and stock award vesting activity for our named executive officers during the year ended June 30, 2009.

	Option Awards		Stock Awards	
	Number of Shares Acquired on Exercise	Value Realized on Exercise	Number of Shares Acquired on Vesting	Value Realized on Vesting
Name	(#)	($)	(#)	($)(1)
(a)	(b)	(c)	(d)	(e)
Bruce C. Galton	—	—	50,225	$ 30,135
Joel P. Brooks	—	—	37,275	$ 22,335
Sascha Fedyzyn	—	—	25,200	$ 15,120
Richard Dondero	—	—	—	$ —
John E. Thompson, Ph.D.	—	—	—	$ —

(1) Such amounts in this column were calculated by multiplying the number in column (d) by the closing price on the date of vesting.

Employment Contracts, Termination of Employment, and Change-in-Control Arrangements

Executive Severance. Certain of our named executive officer's have employment agreements which contain severance provisions. The following table shows the potential incremental payments to our named executive officers in the event of their termination or termination in connection with a change of control of our company as of June 30, 2009.

	Bruce C. Galton (6)		Joel P. Brooks (7)		Richard Dondero (8)		Sasha Fedyszyn (9)	
Benefit	Without Cause $ (2)	Change in Control $ (3)	Without Cause $ (2)	Change in Control $ (3)	Without Cause $ (2)	Change in Control $ (3)	Without Cause $ (2)	Change in Control $ (3)
Cash Severance(4)	$ 382,500	$ 377,690	$ 160,000	$ 145,142	$ 143,000	$ 125,457	$ 215,000	$ 292,349
# of Months	18	18	12	12	12	12	24	36
Equity								
Unvested Restricted Stock	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Unvested RSU's	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Unvested Options	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Common Stock(5)	$ 382,500	$ 377,690	$ -	$ -	$ -	$ -	$ -	$ -
Other Benefits								
Health, Disability and Life Insurance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ 765,000	$ 755,380	$ 160,000	$ 145,142	$ 143,000	$ 125,457	$ 215,000	$ 292,349

(1) John E. Thompson, Ph.D. is not included on this table as he does not have an employment contract or any termination or change in control arrangements.

(2) Such amounts are calculated using the named executive's base salary in effect as of September 15, 2009 multiplied by the number of months of severance the named executive is entitled to.

(3) Such amounts are calculated using the named executive's average compensation paid during the past five years multiplied by the number of months of severance the named executive is entitled to.

(4) Such amounts are payable as a lump sum.

(5) Mr. Galton is entitled to receive an amount equal to one and one-half times his base salary, payable in the form of common stock in three annual installments, commencing on the date of termination, to be calculated based upon the market price of the common stock at each installment date.

(6) Mr. Galton's employment agreement terminated on October 4, 2009.

(7) Mr. Brooks' employment agreement will terminate on June 30, 2010.

(8) Mr. Dondero's employment agreement will terminate on July 19, 2010.

(9) Mr. Fedyszyn's employment agreement will terminate on January 21, 2010.

Equity Compensation Plans

The following table reflects information relating to equity compensation plans as of June 30, 2009.

	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans
Stock Option plans approved by security holders	4,550,412(1)	$ 1.70	5,887,472(2)
Equity compensation plans not approved by security holders	—	—	—
Total	4,550,412(1)	$ 1.70	5,887,472(2)

(1) Issued pursuant to our 1998 Stock Plan and 2008 Stock Plan.

(2) Available for future issuance pursuant to our 2008 Stock Plan.

Compensation of Directors

Equity Grants in Fiscal 2009:

We do not automatically grant options or other equity to our board. Our Compensation Committee reviews the equity program each year with its compensation consultant and determines the appropriate level of the equity awards as disclosed above. We provide reimbursement to directors for reasonable and necessary expenses incurred in connection with attendance at meetings of the board of directors and other Senesco business.

In accordance with a resolution unanimously approved by our board on November 19, 2008, we granted to our non-employee board members, options to purchase shares of our common stock, pursuant to and in accordance with our 1998 Stock Plan, as consideration for their service on our board through June 30, 2008, or Fiscal 2008 as follows:

Director	Number of Shares Underlying Options Granted	Grant Date	Exercise Price Per Share
Rudolf Stalder	80,000	November 19, 2008	$ 0.60
Christopher Forbes	50,000	November 19, 2008	$ 0.66
Thomas C. Quick	40,000	November 19, 2008	$ 0.60
John N. Braca	70,000	November 19, 2008	$ 0.60
David Rector	70,000	November 19, 2008	$ 0.60
Jack Van Hulst	40,000	November 19, 2008	$ 0.60

Except for options granted to Christopher Forbes, the options granted to the board have (i) an exercise price equal to the fair market value of our common stock on the date of grant, (ii) have a term of ten (10) years, and (iii) are exercisable as follows: (y) one-half (1/2) of the options were exercisable as of the date of grant; and (z) one-half (1/2) of the options shall become exercisable on the first anniversary of the date of grant. The options granted to Christopher Forbes have an exercise price equal to 110% of the fair market value of our common stock on the date of grant and have a term of five (5) years.

Commencing in Fiscal 2009, after review and consultation with the Compensation Committee's compensation consultant, we implemented a new compensation plan for our directors pursuant to which we pay to each director cash compensation as consideration for their service on our board as follows:

Annual (Base) Retainer	$ 10,000
Per Scheduled Board Meeting Fee	$ 1,500(1)
Per Committee Meeting Fee	$ 750(2)
Additional Annual Retainer:	
Chairman of the Board	$ 5,000
Audit Committee Chair	$ 3,500
Compensation Committee Chair	$ 3,500
Nominating and Corporate Governance	
Committee Chair	$ 1,500
Non-Chair Committee Member Additional	
Retainer (All Committees)	$ 1,000
Maximum Per Diem For All Meetings	$ 2,000

(1) $750 for telephonic meetings (less than 30 minutes: $375).

(2) $375 for telephonic meetings.

Such cash compensation is paid in quarterly increments. A director may elect, provided such election is made prior to the time the cash award is made, to receive, in lieu of such cash payments, either (i) restricted stock units, or RSU's, in an amount equal to such cash award or (ii) twice the number of options in an amount equal to such cash award. Such election to receive (y) cash or (z) equity in the form of RSU's or options applies for the entire year. The directors have all elected to receive options in lieu of cash for fiscal 2009 and fiscal 2010, except for Messers. Braca and Rector, who have elected to receive their retainer fees in cash and their meeting fees in options, and Mr. Isabelle, who has elected to receive his fees in cash. The RSU's or options are granted effective two days following the filing of our quarterly reports on Form 10-Q. The exercise price will be the closing price on the day before the grant date.

Director Compensation

The table below shows the compensation paid or awarded to our independent directors during the fiscal year ended June 30, 2009.

Name (a)	Fees Earned or Paid in Cash ($) (b)	Stock Awards ($) (c)	Option Awards (1) ($) (d)	Non-Equity Incentive Plan Compensation ($) (e)	Change in Pension Value and Nonqualified Deferred Compensation Earnings (f)	All Other Compensation ($) (g)	Total ($) (h)
Rudolf Stalder	-	-	$ 80,181	-	-	-	$ 80,181
Christopher Forbes	-	-	$ 50,654	-	-	-	$ 50,654
Thomas C. Quick	-	-	$ 40,494	-	-	-	$ 40,494
John N. Braca	$ 10,875	-	$ 62,351	-	-	-	$ 73,226
David Rector	$ 10,875	-	$ 62,351	-	-	-	$ 73,226
Jack Van Hulst	-	-	$ 50,706	-	-	-	$ 50,706
Harlan W. Waksal, M.D. (2)	-	-	$ 11,519	-	-	-	$ 11,519
Warren J. Isabelle (3)	-	-	-	-	-	-	-

(1) The amounts shown are the compensation costs recognized in our financial statements for Fiscal 2009 related to grants of stock options to each non-employee director in Fiscal 2009 and prior years, to the extent we recognized compensation cost in 2009 for such awards in accordance with the provisions of SFAS 123R. For a discussion of the valuation assumptions used in the SFAS 123R calculations, see Note 7 of Notes to Consolidated Financial Statements for the year ended June 30, 2009. The grant date fair values of the options used to calculate such compensation costs were not adjusted to take into account any estimated forfeitures. The following table shows the portion of the overall amount of the compensation cost in Fiscal 2009 attributable to each award.

(2) Dr. Waksal became a member of our board in October 2008.

(3) Mr. Isabelle became a member of our board in June 2009.

Director	Option Grant Date	Exercise Price	# of Shares Associated With Charge	Compensation Cost in Fiscal 2009
Rudolf Stalder	5/06/2009	$ 0.59	23,729	$ 10,915
	2/20/2009	$ 0.47	28,191	$ 10,149
	11/19/2008	$ 0.60	98,334	$ 31,250
	12/13/2007	$ 0.99	80,000	$ 27,867
Christopher Forbes	5/06/2009	$ 0.65	18,077	$ 6,508
	2/20/2009	$ 0.52	23,404	$ 7,021
	11/19/2008	$ 0.66	64,584	$ 20,167
	12/13/2007	$ 1.09	50,000	$ 16,958
Thomas C. Quick	5/06/2009	$ 0.59	16,949	$ 7,797
	2/20/2009	$ 0.47	22,340	$ 8,042
	11/19/2008	$ 0.60	53,750	$ 17,688
	12/13/2007	$ 0.99	20,000	$ 6,967
John N. Braca	5/06/2009	$ 0.59	11,441	$ 5,263
	2/20/2009	$ 0.47	12,766	$ 4,596
	11/19/2008	$ 0.60	80,000	$ 24,625
	12/13/2007	$ 0.99	80,000	$ 27,867
David Rector	5/06/2009	$ 0.59	11,441	$ 5,263
	2/20/2009	$ 0.47	12,766	$ 4,596
	11/19/2008	$ 0.60	80,000	$ 24,625
	12/13/2007	$ 0.99	80,000	$ 27,867
Jack Van Hulst	5/06/2009	$ 0.59	20,763	$ 9,551
	2/20/2009	$ 0.47	21,277	$ 7,660
	11/19/2008	$ 0.60	57,916	$ 19,562
	12/13/2007	$ 0.99	40,000	$ 13,933
Harlan W. Waksal, M.D.	5/06/2009	$ 0.59	19,492	$ 8,966
	2/20/2009	$ 0.47	7,092	$ 2,553
Warren J. Isabelle	-	-	-	-

As described above, on November 19, 2008, February 20, 2009, and May 6, 2009, each of our non-employee directors received options to purchase shares of our common stock pursuant to the provisions of the 1998 and 2008 Stock Plans. The options have an exercise price of $0.60 per share, $0.47 per share and $0.59 per share, respectively, the fair market value of the common stock on the grant dates (except for the grant to Christopher Forbes, which have an exercise price of $0.66 per share, $0.52 per share and $0.65 per share, respectively, 110% of the fair market value of the common stock on the grant date). The grant date fair value of each such option under SFAS 123R was $0.46 per option share, $0.42 per option share and $0.46 per option share, respectively, (except for Christopher Forbes, which has a grant date fair value of each such option under SFAS 123R of $0.44 per option share, $0.35 per option share and $0.36 per option share, respectively), for a total grant date fair value of $296,797, based on the Black-Scholes option pricing model, with no adjustment for estimated forfeitures.

The following table shows the total number of shares of our common stock subject to option awards (vested and unvested) for each non-employee director as of June 30, 2009:

Director	Total # of Options Outstanding
Rudolf Stalder	750,254
Christopher Forbes	356,065
Thomas C. Quick	293,039
John N. Braca	274,207
David Rector	304,207
Jack Van Hulst	149,956
Harlan W. Waksal, M.D.	26,584
Warren J. Isabelle	-

Dr. Thompson has received compensation for providing research and development management services to us. See "Certain Relationships and Related Transactions" which sets forth the details of the compensation for Dr. Thompson.

In October, 2009, the Committee granted the following options to the directors for their service during Fiscal 2009. Such grants shall be effective two trading days after we file our quarterly report on Form 10-Q for the quarter ended September 30, 2009:

Director	Total # of Options Granted
Rudolf Stalder	70,000
Christopher Forbes	40,000
Thomas C. Quick	25,000
John N. Braca	50,000
David Rector	50,000
Jack Van Hulst	30,000
Harlan W. Waksal, M.D.	70,000
Warren J. Isabelle	25,000

Such grants will vest one-half (1/2) upon the date of grant and the remaining one-half (1/2) will vest one year from the date of grant. The exercise price will be the closing price on the day before the grant date.

Compensation Committee Interlocks and Insider Participation

No member of the Compensation Committee is or has been an officer or employee of our company or any of our subsidiaries. In addition, no member of the Compensation Committee had any relationships with us or any other entity that requires disclosure under the regulations promulgated by the SEC, and none of our executive officers served on the Compensation Committee or board of any company that employed any member of our board.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The following table sets forth, as of October 20, 2009, the beneficial ownership of the common stock of by (i) each person known by us to be the beneficial owner of more than 5% of the total number of shares of our common stock outstanding as of such date; (ii) each of our directors and our named executive officers; and (iii) all of our directors and our current executive officers as a group.

Name and Address of Beneficial Owner (1)	Amount and Nature of Beneficial Ownership(2)	Percent of Class(3)
(i) Certain Beneficial Owners:		
Stanford Venture Capital Holdings, Inc. C/O Baker Botts L.L.P. 2001 Ross Avenue Dallas, TX 75201	13,624,250(4)	38.9%
Partlet Holdings Limited International House, 1st Floor 41, The Parade St. Helier, JERSEY, Channel Islands	2,111,110(5)	8.5%
(ii) Directors, Named Executives and Chief Executive Officer:		
Harlan W. Waksal, M.D.	55,084(6)	*
Rudolf Stalder.	1,017,254(7)	4.0%
Bruce C. Galton.	756,563(8)	3.0%
John E. Thompson, Ph.D..	844,676(9)	3.4%
Christopher Forbes	3,037,365(10)	11.8%
Thomas C. Quick	804,902(11)	3.2%
David Rector	336,540(12)	1.3%
Jack Van Hulst	152,067(13)	*
John N. Braca	317,629(14)	1.3%
Warren Isabelle	4,222(15)	*
Sascha P. Fedyszyn	218,560(16)	*
Joel P. Brooks	181,775(17)	*
Richard Dondero	131,924(18)	*
(iii) All Directors and current executive officers as a group (13 persons)	7,858,561(19)	27.1%

* Less than 1%

(1) Unless otherwise provided, all addresses should be care of Senesco Technologies, Inc., 303 George Street, Suite 420, New Brunswick, New Jersey 08901.

(2) Except as otherwise indicated, all shares of common stock are beneficially owned and sole investment and voting power is held by the persons named.

(3) Applicable percentage of ownership is based on 24,830,638 shares of our common stock outstanding as of October 20, 2009, plus any common stock equivalents and options or warrants held by such holder which are presently or will become exercisable within sixty (60) days after October 20, 2009.

(4) Includes 6,024,096 shares of common stock issuable upon conversion of secured convertible debentures and 4,916,668 shares of common stock issuable pursuant to presently exercisable warrants issued to Stanford Venture Capital Holdings, Inc. and 1,714,287 shares of common stock transferred from Stanford Venture Capital Holdings, Inc. to Stanford International Bank Limited.

(5) Excludes 2,055,556 shares underlying warrants which become exercisable more than sixty (60) days after October 20, 2009.

(6) Includes 40,084 shares of common stock issuable pursuant to presently exercisable options and warrants. Excludes 13,688 shares underlying warrants which become exercisable more than sixty (60) days after October 20, 2009

(7) Includes 770,483 shares of common stock issuable pursuant to presently exercisable warrants and options. Excludes 13,668 shares underlying warrants which become exercisable more than sixty (60) days after October 20, 2009.

(8) Includes 658,113 shares of common stock issuable pursuant to presently exercisable options and warrants. Excludes 191,000 shares of common stock underlying RSU's which become vested upon the achievement of certain performance milestones.

(9) Represents 572,000 shares of common stock held by 2091794 Ontario Ltd. and 272,676 shares of common stock issuable pursuant to presently exercisable options issued to John E. Thompson, Ph.D. Excludes 298,000 shares of common stock underlying options which become exercisable upon the achievement of certain performance milestones.

(10) Includes 845,566 shares of common stock issuable pursuant to presently exercisable warrants and options. Excludes 89,222 shares underlying warrants which become exercisable more than sixty (60) days after October 20, 2009.

(11) Represents 272,679 shares of common stock and 139,450 shares of common stock issuable pursuant to warrants issued to Thomas C. Quick Charitable Foundation. Represents 139,734 shares of common stock and 253,039 shares of common stock issuable pursuant to presently exercisable options or issued to Thomas C. Quick. Excludes 7,097 shares underlying warrants which become exercisable more than sixty (60) days after October 20, 2009.

(12) Includes 309,207 shares of common stock issuable pursuant to presently exercisable warrants and options. Excludes 3,042shares underlying warrants which become exercisable more than sixty (60) days after October 20,

2009.

(13) Includes 150,956 shares of common stock issuable pursuant to presently exercisable warrants and options. Excludes 1,014 shares underlying warrants which become exercisable more than sixty (60) days after October 20, 2009.

(14) Includes 281,207 shares of common stock issuable pursuant to presently exercisable warrants and options Excludes 2,028 shares underlying warrants which become exercisable more than sixty (60) days after October 20. 2009.

(15) Includes 2,000 shares of common stock issuable pursuant to presently exercisable warrants. Excludes 2,028 shares of common stock underlying warrants which become exercisable more than sixty (60) days after October 20, 2009.

(16) Includes 155,000 shares of common stock issuable pursuant to presently exercisable options. Excludes 92,000 shares of common stock underlying RSU's which become vested upon the achievement of certain performance milestones.

(17) Includes 157,500 shares of common stock issuable pursuant to presently exercisable options. Excludes 78,000 shares of common stock underlying RSU's which become vested upon the achievement of certain performance milestones.

(18) Represents 131,924 shares of common stock issuable pursuant to presently exercisable options. Excludes 380,000 shares of common stock underlying options which become exercisable upon the achievement of certain performance milestones.

(19) See Notes 6 through 18.

The following table provides information about the securities authorized for issuance under our equity compensation plans as of June 30, 2009.

EQUITY COMPENSATION PLAN INFORMATION

	Number of securities to be issued upon exercise of outstanding options, warrants and rights and restricted stock units	Weighted-average exercise price of outstanding options, warrants and rights and restricted stock units	Number of securities remaining available for future issuance under equity compensation plans
Equity compensation plans approved by security holders	4,550,412(1)	$ 1.70	5,887,472(2)
Equity compensation plans not approved by security holders	—	—	—
Total	4,550,412(1)	$ 1.70	5,887,472(2)

(1) Issued pursuant to our 1998 Stock Plan and 2008 Stock Plan.

(2) Available for future issuance pursuant to our 2008 Stock Plan.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

Contractual Relationships

Service Agreements

Christopher Forbes, our director, is also Vice Chairman of Forbes, Inc., which publishes Forbes Magazine. Forbes, Inc. has provided and will continue to provide us with introductions to strategic alliance partners and, from time to time, use of its office space. In recognition of these services, during the last two fiscal years, we granted to Forbes, Inc., warrants to purchase shares of our common stock as follows:

Date of Grant	# of Warrant Shares	Exercise Price	Value of Services on Date of Grant	# of Warrant Shares Vested
November 19, 2008	500	$ 0.60	$ 230	167
December 13, 2007	1,000	$ 0.99	$ 740	666

The exercise price of the warrants granted to Forbes, Inc. represented the fair market value of our common stock on the dates of grant.

Verge 180, Inc., a marketing communications firm, is 50% owned by Alan Brooks, a brother of Joel Brooks, our Chief Financial Officer and Treasurer. Verge 180, Inc. has provided and will continue to provide various services to us. We paid Verge 180, Inc. $43,910 and $58,273 in Fiscal 2009 and Fiscal 2008, respectively, for services in connection with the design and printing of our annual report and proxy for Fiscal 2008 and Fiscal 2007, respectively. Neither we nor Joel Brooks receives any remuneration from these services, and we believe that such services were provided on terms at least as favorable as we would have received from a third party.

Research and Development Agreements

Effective September 1, 1998, we entered into a three-year research and development agreement, which has been extended for successive periods through August 31, 2010, with John E. Thompson, Ph.D. and the University of Waterloo in Waterloo, Ontario, Canada, referred to as the University. Dr. Thompson is our director and officer and beneficially owns approximately 3.4% of our common stock. Dr. Thompson is the Associate Vice President, Research and former Dean of Science of the University. Dr. Thompson and the University will provide research and development under our direction. Research and development expenses under this agreement for the years ended June 30, 2009 and 2008 aggregated US $653,104 and US $730,960, respectively. Effective September 1, 2009, we, Dr. Thompson and the University extended the agreement for an additional one-year period through August 31, 2010 in the amount of CAN $656,820. As of October 1, 2009, such amount represented approximately US $640,000.

Consulting Agreement

Effective May 1, 1999, we entered into a three-year consulting agreement, which has been extended for successive periods through June 30, 2011, for research and development with Dr. Thompson. This agreement provided for monthly payments of $3,000 through June 2004. However, effective January 1, 2003, 2006 and 2007, the agreement was amended to increase the monthly payments from $3,000 to $5,000, from $5,000 to $5,200, and from $5,200 to $5,417, respectively.

Financial Advisory Agreement

On October 11, 2006, we entered into a three-year non-exclusive financial advisory agreement with Stanford Group Company ("Stanford"). As compensation under the agreement, previously issued warrants that were purchased by Stanford and its affiliates in a private placement were amended. The original exercise prices on 1,500,000 warrants, 750,000 of which had an exercise price of $3.25 and 750,000 of which had an exercise price of $2.00, were reduced to $2.00 and $1.50, respectively. Additionally, the original expiration dates of December 2006 and January 2007 were each extended for a three-year period through December 2009 and January 2010, respectively. Stock-based compensation in the amount of $683,000 related to the amendment of such warrants was recorded during the year ended June 30, 2007. Stanford was also granted piggyback registration rights in connection with the shares underlying the warrants.

On February 14, 2008, we amended the agreement. The amendment extended the term of the agreement through June 30, 2012 and expanded the services to be provided to us. As compensation for the term extension and expansion of services, previously issued warrants were amended. The exercise prices of the 1,500,000 shares of common stock underlying the warrants, 750,000 of which had an exercise price of $2.00 and 750,000 of which had an exercise price of $1.50, were reduced to $1.01. Additionally, the expiration dates of December 2009 and January 2010 were each extended through June 30, 2012. A compensation charge in the amount of $384,500 was recorded during the year ended June 30, 2008 in connection with extension and repricing of the warrants. The agreement may be terminated by either party upon sixty (60) days written notice.

In February, 2009, Stanford was put into receivership and no longer has the ability to perform the services provided for in the agreement. The Company has no further obligations under the agreeement

Debt / Equity Transactions

2006 Private Placement

In connection with a private placement in October 2006, we sold shares of our common stock and warrants to purchase our common stock to certain institutions, accredited investors and certain directors as follows:

	Amount	# of Shares	# of Warrants
Christopher Forbes	$ 1,000,000	883,002	441,501
Thomas C. Quick Charitable Foundation	$ 300,000	264,901	132,450
Rudolf Stalder	$ 105,841	93,458	46,729
Bruce C. Galton	$ 75,000	66,225	33,113
John N. Braca	$ 11,325	10,000	5,000
David Rector	$ 11,325	10,000	5,000

All of such warrants will become exercisable six months from the closing date at an exercise price equal to $1.18 and have a term of five (5) years.

2007 Private Placement of Convertible Notes and Warrants

Pursuant to a Securities Purchase Agreement dated August 29, 2007 (the “Signing Date”) with Stanford Venture Capital Holdings, Inc., (“SVCH”), on December 20, 2007 and June 30, 2008, we issued an aggregate of three convertible notes in the aggregate amount of $5,000,000 and three Series A and three Series B warrants in the aggregate amount of 8,333,333 shares. In connection with the issuance, we paid fees to SVCH in the amount of $380,000.

The convertible notes converted into our common stock at a fixed price of $0.90 per share subject to certain adjustments (the “Fixed Conversion Price”), through December 20, 2009. Due to the issuance of common stock and warrants in July 2009, the conversion price was adjusted to $0.85 per share. Also, due to another issuance of common stock and warrants in September 2009, the conversion price was adjusted to $0.83 per share. On December 20, 2009, the convertible notes may convert into shares of our common stock at the lower of the fixed conversion price or 80% of the lowest daily volume-weighted average price (the “VWAP”), of the common stock during the five trading days prior to the conversion date. The maturity date of each of the convertible notes is December 30, 2010.

The convertible notes accrue interest on their outstanding principal balances at an annual rate of 8%. We have the option to pay interest in cash or, upon certain conditions, common stock. If we pay interest in common stock, the stock will be valued at a 10% discount to the average daily VWAP for the five day trading period prior to the interest payment. During Fiscal 2008, we issued SVCH 76,924 shares of common stock as payment for $84,567 in interest.

The convertible notes and warrants are subject to a maximum cap of 31,888,888 on the number of shares of common stock that can be issued upon the conversion of the convertible notes and the exercise of the warrants.

2009 Private Placements

Transaction with Insiders and Affiliates

On July 29, 2009, we entered into a Securities Purchase Agreement with each of Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst, Warren Isabelle, and the Thomas C. Quick Charitable Foundation each of whom is an accredited investor, pursuant to which we issued and sold an aggregate of 144,444 shares of our common stock at $0.90 per share and each of a Series A warrant and a Series B warrant. Each of Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst and Warren Isabelle serve on the Company's board. The Thomas C. Quick Charitable Foundation is an affiliate of our board member Thomas C. Quick.

The Series A Warrants entitle the holders to purchase in the aggregate, up to 130,000 shares of our common stock at $0.01 per warrant share. The Series A Warrants have a term of seven years and are exercisable immediately after the date of grant.

The Series B Warrants entitle the holders to purchase, in the aggregate, up to 131,807 shares of our common stock at $0.60 per warrant share. The Series B Warrants have a term of seven years and are not exercisable until after the six-month anniversary after the date of grant.

The following table sets forth the transaction in greater detail.

	Amount	# of Shares	# of Series A Warrants (1)	# of Series B Warrants (2)
Christopher Forbes (3)	$ 88,000	97,778	88,000	177,222
Harlan W. Waksal, M.D. (3)	$ 13,500	15,000	13,500	13,688
Rudolf Stalder (3)	$ 13,500	15,000	13,500	13,688
Thomas C. Quick Charitable Foundation (4)	$ 7,000	7,778	7,000	7,097
David Rector (3)	$ 3,000	3,333	3,000	3,042
Warren Isabelle (3)	$ 2,000	2,222	2,000	2,028
John N. Braca (3)	$ 2,000	2,222	2,000	2,028
Jack Van Hulst (3)	$ 1,000	1,111	1,000	1,014

(1) All of such warrants were immediately exercisable at closing date at an exercise price equal to $0.01 and have a term of seven (7) years.

(2) All of such warrants will become exercisable six months from the closing date at an exercise price equal to $0.60 and have a term of seven (7) years.

(3) Such person is a director of the Company.

(4) The Thomas C. Quick Charitable foundation is an affiliate of our director, Thomas C. Quick.

Transaction with each of Robert and Tim Forbes

On July 29, 2009, we entered into a Securities Purchase Agreement with each of Robert Forbes and Timothy Forbes, each of whom is an accredited investor, pursuant to which we issued and sold an aggregate of 444,444 shares of common stock at $0.90 per share and each of a Series A warrant and a Series B warrant. Each of Robert Forbes and Timothy Forbes are the brothers of Christopher Forbes who is a director of Senesco. Mr. Christopher Forbes will not be deemed to be the beneficial owner of, nor will he have a pecuniary interest in the shares or warrants issued to his brothers. As consideration

The Series A Warrants entitle the holders to purchase in the aggregate, up to 400,000 shares of our common stock at $0.01 per warrant share. The Series A Warrants have a term of seven years and are exercisable immediately after the date of grant.

The Series B Warrants entitle the holders to purchase in the aggregate, up to 405,556 shares of our common stock at $0.60 per warrant share. The Series B Warrants have a term of seven years and are not exercisable until after the six-month anniversary after the date of grant.

The following table sets forth the transaction in greater detail.

		Amount	# of Shares	# of Series A Warrants (1)	# of Series B Warrants (2)
Robert Forbes (3)	$	300,000	333,333	300,000	304,167
Timothy Forbes (3)	$	100,000	111,111	100,000	101,389

(1) All of such warrants were immediately exercisable at closing date at an exercise price equal to $0.01 and have a term of seven (7) years.

(2) All of such warrants will become exercisable six months from the closing date at an exercise price equal to $0.60 and have a term of seven (7) years.

(3) Such person is the brother of a member of our board of directors, Christopher Forbes.

Review and Approval of Related Person Transactions

Our Audit Committee Charter requires that our Audit Committee review and approve or ratify transactions involving us and any executive officer, director, director nominee, 5% stockholder and certain of their immediate family members, also referred to herein as a related person. The policy and procedures cover any transaction involving a related person, also referred to herein as a related person transaction, in which the related person has a material interest and which does not fall under an explicitly stated exception set forth in the applicable disclosure rules of the SEC.

A related person transaction will be considered approved or ratified if it is authorized by the Audit Committee after full disclosure of the related person's interest in the transaction. In considering related person transactions, the Audit Committee will consider any information considered material to investors and the following factors:

- the related person's interest in the transaction;
- the approximate dollar value of the transaction;
- whether the transaction was undertaken in the ordinary course of our business;
- whether the terms of the transaction are no less favorable to us than terms that we could have reached with an unrelated third party; and
- the purpose and potential benefit to us of the transaction.

Item 14. Principal Accounting Fees and Services.

In October 2007, certain partners of Goldstein Golub Kessler LLP ("GGK") became partners of McGladrey & Pullen, LLP ("M&P") As a consequence, GGK resigned as our auditors October 22, 2007 and M&P was appointed as our new independent registered public accounting firm for the year ending June 30, 2008.

GGK had a continuing relationship with RSM McGladrey, Inc. (''RSM''), from which it leased auditing staff who were full time, permanent employees of RSM and through which its partners provided non-audit services. GGK has no full time employees and, therefore, none of the audit services performed were provided by permanent full-time employees of GGK. GGK manages and supervises the audit and audit staff, and is exclusively responsible for the opinion rendered in connection with its examination.

The aggregate fees billed by M&P, RSM and GGK for services performed for the years ended June 30, 2009 and 2008 are as follows:

	2008	2008
Audit Fees – McGladrey & Pullen, LLP	$ 105,000	$ 90,015
Audit Fees – Goldstein Golub Kessler LLP	-	16,374
Audit Related Fees – McGladrey & Pullen, LLP	8,000	4,926
Audit Related Fees – Goldstein Golub Kessler LLP	-	24,566
Tax Fees – RSM McGladrey, Inc.	5,815	6,418
All Other Fees	1,715	-
Total Fees	$ 120,530	$ 142,299

AUDIT FEES

The aggregate audit fees for the years ended June 30, 2009 and 2008 were primarily related to the audit of the our annual financial statements and review of those financial statements included in our quarterly reports on Form 10-Q and fees for professional services rendered in connection with documents filed with the Securities and Exchange Commission.

AUDIT RELATED FEES

Audit related fees for the years ended June 30, 2009 and 2008 were primarily incurred in connection with our equity offerings, fees in connection with correspondence with the SEC and the American Stock Exchange, , and fees in connection with attending the annual stockholders' meeting.

TAX FEES

Tax fees for the years ended June 30, 2009 and 2008 related to the review of our tax returns provided by and consultations relating to our STIP and LTIP plans.

ALL OTHER FEES

All other fees for the year ended June 30, 2009 related to consultations in connection with our short-term and long-term incentive plans.

Pre-Approval Policies and Procedures

In accordance with its charter, the Audit Committee is required to approve all audit and non-audit services provided by the independent auditors and shall not engage the independent auditors to perform the specific non-audit services prescribed by law or regulation.

The Audit Committee has adopted policies and procedures relating to the pre-approval of all audit and non-audit services that are to be performed by our independent registered public accounting firm. This policy generally provides that we will not engage our independent registered public accounting firm to render audit or non-audit services unless the service is specifically approved in advance by the Audit Committee or the engagement is entered into pursuant to one of the pre-approval procedures described below.

From time to time, the Audit Committee may pre-approve specified types of services that are expected to be provided to us by our independent registered public accounting firm during the next 12 months. Any such pre-approval is detailed as to the particular service or type of services to be provided and is also generally subject to a maximum dollar amount.

The Audit Committee has also delegated to the chairman of the Audit Committee the authority to approve any audit or non-audit services to be provided to us by our independent registered public accounting firm. Any approval of services by a member of the Audit Committee pursuant to this delegated authority is reported on at the next meeting of the Audit Committee.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

(a) (1) Financial Statements.

Reference is made to the Index to Financial Statements on Page F-1.

(a) (2) Financial Statement Schedules.

None.

(a) (3) Exhibits.

Reference is made to the Exhibit Index on Page 104.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized this 28th day of October 2009.

SENESCO TECHNOLOGIES, INC.

By: /s/ Bruce C. Galton
Bruce C. Galton, President and
Chief Executive Officer
(principal executive officer)

By: /s/ Joel Brooks
Joel Brooks, Chief Financial Officer
(principal financial and accounting officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Harlan W. Waksal, M.D Harlan W. Waksal, M.D.	Chairman and Director	October 28, 2009
/s/ Bruce C. Galton Bruce C. Galton	President and Chief Executive Officer (principal executive officer) and Director	October 28, 2009
/s/ Joel Brooks Joel Brooks	Chief Financial Officer and Treasurer (principal financial and accounting officer)	October 28, 2009
/s/ John E. Thompson John E. Thompson	Executive Vice President, Chief Scientific Officer and Director	October 28, 2009
/s/ John Braca John Braca	Director	October 28, 2009
/s/ Christopher Forbes Christopher Forbes	Director	October 28, 2009
/s/ Warren J. Isabelle Warren J. Isabelle	Director	October 28, 2009
/s/ Thomas C. Quick Thomas C. Quick	Director	October 28, 2009
/s/ David Rector David Rector	Director	October 28, 2009
/s/ Rudolf Stalder Rudolf Stalder	Director	October 28, 2009
/s/ Jack Van Hulst Jack Van Hulst	Director	October 28, 2009

EXHIBIT INDEX

Exhibit No.	Description of Exhibit
2.1	Merger Agreement and Plan of Merger by and among Nava Leisure USA, Inc., an Idaho corporation, the Principal Stockholders (as defined therein), Nava Leisure Acquisition Corp., and Senesco, Inc., dated October 9, 1998. (Incorporated by reference to Senesco Technologies, Inc. definitive proxy statement on Schedule 14A dated January 11, 1999.)
2.2	Merger Agreement and Plan of Merger by and between Senesco Technologies, Inc., an Idaho corporation, and Senesco Technologies, Inc., a Delaware corporation, dated September 30, 1999. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended September 30, 1999.)
3.1	Amended and Restated Certificate of Incorporation of Senesco Technologies, Inc. filed with the State of Delaware on January 22, 2007. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended December 31, 2006.)
3.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Senesco Technologies, Inc. filed with the State of Delaware on January 22, 2008. (Incorporated by reference to Exhibit 3.1 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended December 31, 2007.)
3.3 †	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Senesco Technologies, Inc. filed with the State of Delaware on September 22, 2009.
3.4	Amended and Restated By-laws of Senesco Technologies, Inc. as adopted on October 2, 2000. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2000.)
4.1	Form of Warrant with Parenteau Corporation. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 1999.)
4.2	Form of Warrant with Strategic Growth International, Inc. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 1999.)
4.3	Form of Warrant issued to Stanford Venture Capital Holdings, Inc. and certain officers of Stanford Venture Capital Holdings, Inc. (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2001.)
4.4	Form of Warrant issued to certain accredited investors (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on May 4, 2005.)
4.5	Form of Warrant issued to Oppenheimer & Co. Inc. or its designees, dated as of May 9, 2005. (Incorporated by reference to Exhibit 4.2 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 2005.)

Exhibit No.	Description of Exhibit
4.6	Form of Warrant issued to H.C. Wainwright & Co., Inc., or its designees, dated as of October 10, 2006 (Incorporated by reference to Exhibit 10.42 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)
4.7	Form or Warrant issued to certain accredited investors dated October 10, 2006 (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 10.40 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)
4.8	Form of Series A Warrant issued to YA Global Investments, L.P. (Incorporated by reference to Exhibit 4.15 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.9	Form of Series A Warrant issued to Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 4.16 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.10	Form of Debenture issued to YA Global Investments, L.P. (Incorporated by reference to Exhibit 4.17 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.11	Form of Debenture issued to Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 4.18 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.12	Form of Series B Warrant issued to YA Global Investments, L.P. (Incorporated by reference to Exhibit 4.19 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.13	Form of Series B Warrant issued to Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 4.20 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
4.14	Form of Warrant issued to H.C. Wainwright & Co., Inc or its designees. (Incorporated by reference to Exhibit 4.21 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30,2008.)
4.15	Form of Series A Warrant issued to Partlet Holdings Ltd. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 10, 2009.)
4.16	Form of Series B Warrant issued to Partlet Holdings Ltd. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 10, 2009.)
4.17	Form of Series A Warrant issued to each of Robert Forbes, Timothy Forbes, Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst, Warren Isabelle and the Thomas C. Quick Charitable Foundation. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 30, 2009.)

Exhibit No.	Description of Exhibit
4.18	Form of Series B Warrant issued to each of Robert Forbes, Timothy Forbes, Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst, Warren Isabelle and the Thomas C. Quick Charitable Foundation. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 30, 2009.)
4.19	Form of Series A Warrant issued to Cato Holding Company. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 30, 2009.)
4.20	Form of Series B Warrant issued to Cato Holding Company. (Incorporated by reference to Exhibit 4.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 30, 2009.)
10.1	Indemnification Agreement by and between Senesco Technologies, Inc. and Christopher Forbes, dated January 21, 1999. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 1998.)
10.2	Indemnification Agreement by and between Senesco Technologies, Inc. and Thomas C. Quick, dated February 23, 1999. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 1999.)
10.3	Indemnification Agreement by and between Senesco Technologies, Inc. and Ruedi Stalder, dated March 1, 1999. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 1999.)
10.4	Indemnification Agreement by and between Senesco Technologies, Inc. and Bruce C. Galton, dated October 4, 2001. (Incorporated by reference to Exhibit 10.10 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the quarterly period ended December 31, 2001.)
10.5	Indemnification Agreement by and between Senesco Technologies, Inc. and Jack Van Hulst, dated January 16, 2007. (Incorporated by reference to Exhibit 10.13 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007)
10.6	Indemnification Agreement by and between Senesco Technologies, Inc. and John Braca, dated October 8, 2003. (Incorporated by reference to Exhibit 10.38 of Senesco Technologies, Inc. annual report on Form 10-KSB for the period ended June 30, 2004.)
10.7	Indemnification Agreement by and between Senesco Technologies, Inc. and David Rector dated as of April, 2002. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended September 30, 2004.)
10.8	Indemnification Agreement by and between Senesco Technologies, Inc. and Harlan W. Waksal, M.D. dated as of October 24, 2008. (Incorporated by reference to Exhibit 10.8 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2009.)

Exhibit No.	Description of Exhibit
10. 9	Indemnification Agreement by and between Senesco Technologies, Inc. and Warren Isabelle dated as of June 8, 2009. (Incorporated by reference to Exhibit 10.9 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2009.)
10.10 *	Employment Agreement by and between Senesco, Inc. and Sascha P. Fedyszyn, dated January 21, 1999. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 1998.)
10.11*	Employment Agreement by and between Senesco Technologies, Inc. and Bruce C. Galton, dated October 4, 2001. (Incorporated by reference to Exhibit 10.9 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2001.)
10.12*	Employment Agreement by and between Senesco Technologies, Inc. and Joel Brooks, dated July 1, 2003. (Incorporated by reference to Exhibit 10.29 of Senesco Technologies, Inc. annual report on Form 10-KSB for the period ended June 30, 2003.)
10.13*	Employment Agreement by and between Senesco Technologies, Inc. and Richard Dondero, dated July 19, 2004. (Incorporated by reference to Exhibit 10.39 of Senesco Technologies, Inc. annual report on Form 10-KSB for the period ended June 30, 2004.)
10.14*	Consulting Agreement by and between Senesco Technologies, Inc. and John E. Thompson, Ph.D., dated July 12, 1999. (Incorporated by reference to Senesco Technologies, Inc. annual report on Form 10-KSB for the period ended June 30, 2000.)
10.15*	Amendment to Consulting Agreement of July 12, 1999, as modified on February 8, 2001, by and between Senesco, Inc. and John E. Thompson, Ph.D., dated December 13, 2002. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2002.)
10.16 *	Amendment # 5 to Consulting Agreement of July 12, 1999, as modified, by and between Senesco, Inc. and John E. Thompson, Ph.D., dated June 15, 2007. (Incorporated by reference to Exhibit 10.49 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.17 *	Amendment # 6 to Consulting Agreement of July 12, 1999, as modified, by and between Senesco, Inc. and John E. Thompson, Ph.D., dated June 25, 2009. (Incorporated by reference to Exhibit 10.17 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2009.)
10.18 +	License Agreement by and between Senesco Technologies, Inc. and Harris Moran Seed Company, dated November 19, 2001. (Incorporated by reference to Exhibit 10.8 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2001.)

Exhibit No.	Description of Exhibit
10.19 +	Development Agreement by and between Senesco Technologies, Inc. and ArborGen, LLC, dated June 28, 2002. (Incorporated by reference to Exhibit 10.31 of Senesco Technologies, Inc. annual report on Form 10-KSB for the year ended June 30, 2002.)
10.20 +	Commercial License Agreement by and between Senesco Technologies, Inc. and ArborGen, LLC dated as of December 21, 2006. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended December 31, 2006.)
10.21 +	Development and License Agreement by and between Senesco Technologies, Inc. and Calwest Seeds, dated September 14, 2002. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended September 30, 2002.)
10.22 +	Development and License Agreement by and between Senesco Technologies, Inc. and The Scotts Company, dated March 8, 2004. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 2004.)
10.23 +	Development and License Agreement with Broin and Associates, Inc. (currently known as Poet) dated as of October 14, 2004. (Incorporated by reference to Exhibit 10.2 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended September 30, 2004.)
10.24 +	License Agreement by and between Senesco Technologies, Inc. and Bayer CropScience GmbH, dated as of November 8, 2006. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-Q for the quarterly period ended December 31, 2006.)
10.25 +	License Agreement with Bayer CropScience AG dated as of July 23, 2007. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2007.)
10.26 +	Patent License Agreement with Monsanto Company dated as of August 6, 2007. (Incorporated by reference to Exhibit 10.2 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2007.)
10.27 +	License Agreement with Bayer CropScience AG dated as of September 17, 2007. (Incorporated by reference to Exhibit 10.3 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2007.)
10.28	Research Agreement by and among Senesco Technologies, Inc., Dr. John E. Thompson and the University of Waterloo, dated September 1, 1998, as amended. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 1998.)
10.29	Research Agreement by and among Senesco Technologies, Inc., Dr. John E. Thompson and the University of Waterloo, dated May 1, 2002. (Incorporated by reference to Exhibit 10.29 of Senesco Technologies, Inc. annual report on Form 10-KSB for the year ended June 30, 2002.)

Exhibit No.	Description of Exhibit
10.30	Amendment to Research Agreement by and among the University of Waterloo, Senesco, Inc., and Dr. John E. Thompson, Ph.D., dated August 1, 2007. (Incorporated by reference to Exhibit 10.42 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.31	Amendment to Research Agreement by and among the University of Waterloo, Senesco, Inc. and Dr. John E. Thompson, Ph.D., dated August 25, 2008. (Incorporated by reference to Exhibit 10.28 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2008.)
10.32	Amendment to Research Agreement by and among the University of Waterloo, Senesco, Inc. and Dr. John E. Thompson, Ph.D., dated August 27, 2009. (Incorporated by reference to Exhibit 10.32 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2009.)
10.33 +	Master Product Sale Agreement with VGXI, Inc. dated as of June 27, 2008. (Incorporated by reference to Exhibit 10.29 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2008.)
10.34	Master Product Sale Agreement with Polyplus-transfection dated as of June 30, 2008. (Incorporated by reference to Exhibit 10.30 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2008.)
10.35	Proposal for Manufacture and Supply by and between Avecia Biotechnology, Inc. and Senesco Technologies, Inc. dated as of September 4, 2008. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2008.)
10.36	Proposal for Biodistribution and Repeat Dose Toxicity Studies in Mice by and between BioReliance and Senesco Technologies, Inc. dated as of September 5, 2008. (Incorporated by reference to Exhibit 10.2 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2008.)
10.37	Services Agreement by and between KBI BioPharma, Inc. and Senesco Technologies, Inc. dated as of September 15, 2008. (Incorporated by reference to Exhibit 10.3 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended September 30, 2008.)
10.38	Agreement for Service on Senesco Technologies, Inc. Scientific Advisory Board by and between Senesco Technologies, Inc. and Dr. Charles A. Dinarello, dated February 12, 2002. (Incorporated by reference to Exhibit 10.6 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 2002.)
10.39	Agreement for Service on Senesco Technologies, Inc. Scientific Advisory Board by and between Senesco Technologies, Inc. and James W. Mier, M.D., dated April 2, 2007. (Incorporated by reference to Exhibit 10.43 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)

Exhibit No.	Description of Exhibit
10.40	Financial Advisory Agreement by and among Senesco Technologies, Inc., Stanford Group Company, Stanford Venture Capital Holdings, Inc., Stanford International Bank, Ltd., Ronald Stein, Daniel Bogar, Osvaldo Pi and William Fusselmann dated October 11, 2006. (Incorporated by reference to Exhibit 10.35 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)
10.41	Amendment No. 1 to the financial advisory agreement by and between Stanford Group Company and Senesco Technologies, Inc., dated February 14, 2008. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended December 31, 2007.)
10.42	Form of Securities Purchase Agreement by and between Senesco Technologies, Inc. and certain accredited investors (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on February 3, 2004.)
10.43	Amendment No. 1 to the Securities Purchase Agreement by and between Senesco Technologies, Inc. and Crestview Capital Master, L.L.C. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on February 13, 2004.)
10.44	Form of Securities Purchase Agreement by and between Senesco Technologies, Inc. and certain accredited investors (with schedule of parties and terms thereto). (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. Current Report on Form 8-K filed on May 4, 2005.)
10.45	Registration Rights Agreement by and among Senesco Technologies, Inc., Stanford Group Company, Stanford Venture Capital Holdings, Inc., Stanford International Bank, Ltd., Ronald Stein, Daniel Bogar, Osvaldo Pi and William Fusselmann dated October 11, 2006. (Incorporated by reference to Exhibit 10.36 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)
10.46	Form of Securities Purchase Agreement by and between Senesco Technologies, Inc. and certain accredited investors dated October 10, 2006 (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 10.38 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)
10.47	Form of Registration Rights Agreement by and between Senesco Technologies, Inc and certain accredited investors dated October 10, 2006 (with attached schedule of parties and terms thereto). (Incorporated by reference to Exhibit 10.39 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2006.)
10.48	Securities Purchase Agreement by and between Senesco Technologies, Inc. and YA Global Investments, L.P. (Incorporated by reference to Exhibit 10.44 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.49	Registration Rights Agreement by and between Senesco Technologies, Inc. and YA Global Investments, L.P. (Incorporated by reference to Exhibit 10.45 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)

Exhibit No.	Description of Exhibit
10.50	Securities Purchase Agreement by and between Senesco Technologies, Inc. and Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 10.46 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.51	Registration Rights Agreement by and between Senesco Technologies, Inc. and Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 10.47 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.52	Security Agreement dated as of September 21, 2007 by and between Senesco Technologies, Inc. and its subsidiaries and YA Global Investments, L.P. (Incorporated by reference to Exhibit 10.48 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2007.)
10.53	Security Agreement dated as of December 20, 2007 by and between Senesco Technologies, Inc. and its subsidiaries and Stanford Venture Capital Holdings, Inc. (Incorporated by reference to Exhibit 10.50 of Senesco Technologies, Inc. annual report on Form 10-K for the period ended June 30, 2008.)
10.54	Securities Purchase Agreement by and between Senesco Technologies, Inc. and Partlet Holdings Ltd. Dated as of July 9, 2009. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. Current Report on Form 8-K, filed on July 10, 2009.)
10.55	Securities Purchase Agreement by and between Senesco Technologies, Inc. and each of Robert Forbes, Timothy Forbes, Harlan W. Waksal, M.D., Rudolf Stalder, Christopher Forbes, David Rector, John N. Braca, Jack Van Hulst, Warren Isabelle and the Thomas C. Quick Charitable Foundation dated as of July 29, 2009. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. Current Report on Form 8-K , filed on July 30, 2009.)
10.56	Securities Purchase Agreement by and between Senesco Technologies, Inc. and Cato Holding Company dated as of July 29, 2009. (Incorporated by reference to Exhibit 10.2 of Senesco Technologies, Inc. Current Report on Form 8-K , filed on July 30, 2009.)
10.57	Office lease by and between Senesco Technologies, Inc. and Matrix/AEW NB, LLC, dated March 16, 2001. (Incorporated by reference to Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended March 31, 2001.)
10.58	First amendment of office lease by and between Senesco Technologies, Inc. and Matrix/AEW NB, LLC, dated May 13, 2005 (Incorporated by reference to Exhibit 10.8 of Senesco Technologies, Inc annual report on Form 10-KSB for the period ended June 30, 2005.)
10.59 *	1998 Stock Incentive Plan, as amended on December 13, 2002. (Incorporated by reference to Exhibit 10.7 of Senesco Technologies, Inc. quarterly report on Form 10-QSB for the period ended December 31, 2002.)

Exhibit No.	Description of Exhibit
10.60*	Senesco Technologies, Inc. 2008 Incentive Compensation Plan. (Incorporated by reference to Exhibit 10.1 of Senesco Technologies, Inc. quarterly report on Form 10-Q for the period ended December 31, 2008.)
21	Subsidiaries of the Registrant. (Incorporated by reference to Senesco Technologies, Inc. annual report on Form 10-KSB for the period ended June 30, 1999.)
23.1 †	Consent of Goldstein Golub Kessler LLP.
23.2 †	Consent of McGladrey & Pullen, LLP.
31.1 †	Certification of the principal executive officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2 †	Certification of the principal financial and accounting officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1 †	Certification of the principal executive officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2 †	Certification of the principal financial and accounting officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

* A management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 13(a) of Form 10-K.

† Filed herewith.

+ The SEC granted Confidential Treatment for portions of this Exhibit.