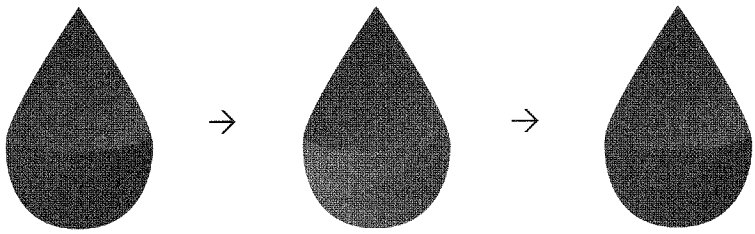


We make proven therapies safer.

ARX
THERAPEUTICS

INSIDE THE ARYx PIPELINE

ARY THERAPEUTICS
Making Proven Therapies Safer

CORPORATE OVERVIEW 2009

ARYx RETROMETABOLIC DRUG DESIGN

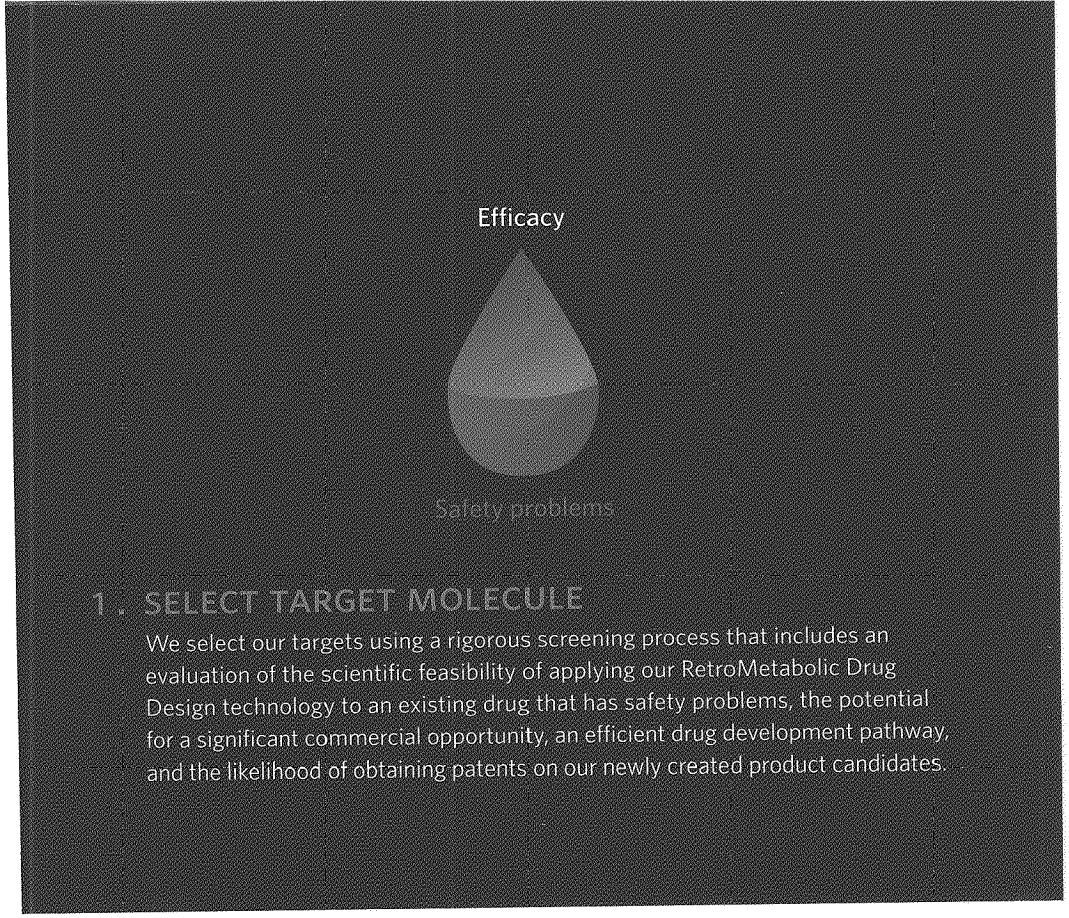
We make proven therapies safer.

Many approved drugs have serious and life threatening side effects that go undiscovered until the products have been launched and are in widespread use. ARYx's goal is to make these proven therapies safer by engineering out specific metabolic problems that can lead to drug-drug interactions, sometimes revealing off-target pharmacology and causing potentially dangerous side effects. Our products are carefully constructed and optimized to balance the need for safe metabolism with retention of therapeutic benefit. We are developing a portfolio of novel, oral product candidates aimed at large, chronic markets.

ARYx PRODUCTS: PROOF OF CONCEPT

LATE STAGE PRODUCT PIPELINE

PRODUCT	ORIGINAL DRUG	INDICATION
Tecarfarin (ATI-5923)	Warfarin	Anticoagulation
Budiodarone (ATI-2042)	Amiodarone	Atrial Fibrillation
ATI-7505	Cisapride	GI Disorders



1. SELECT TARGET MOLECULE

We select our targets using a rigorous screening process that includes an evaluation of the scientific feasibility of applying our RetroMetabolic Drug Design technology to an existing drug that has safety problems, the potential for a significant commercial opportunity, an efficient drug development pathway, and the likelihood of obtaining patents on our newly created product candidates.

Tecarfarin

Anticoagulation

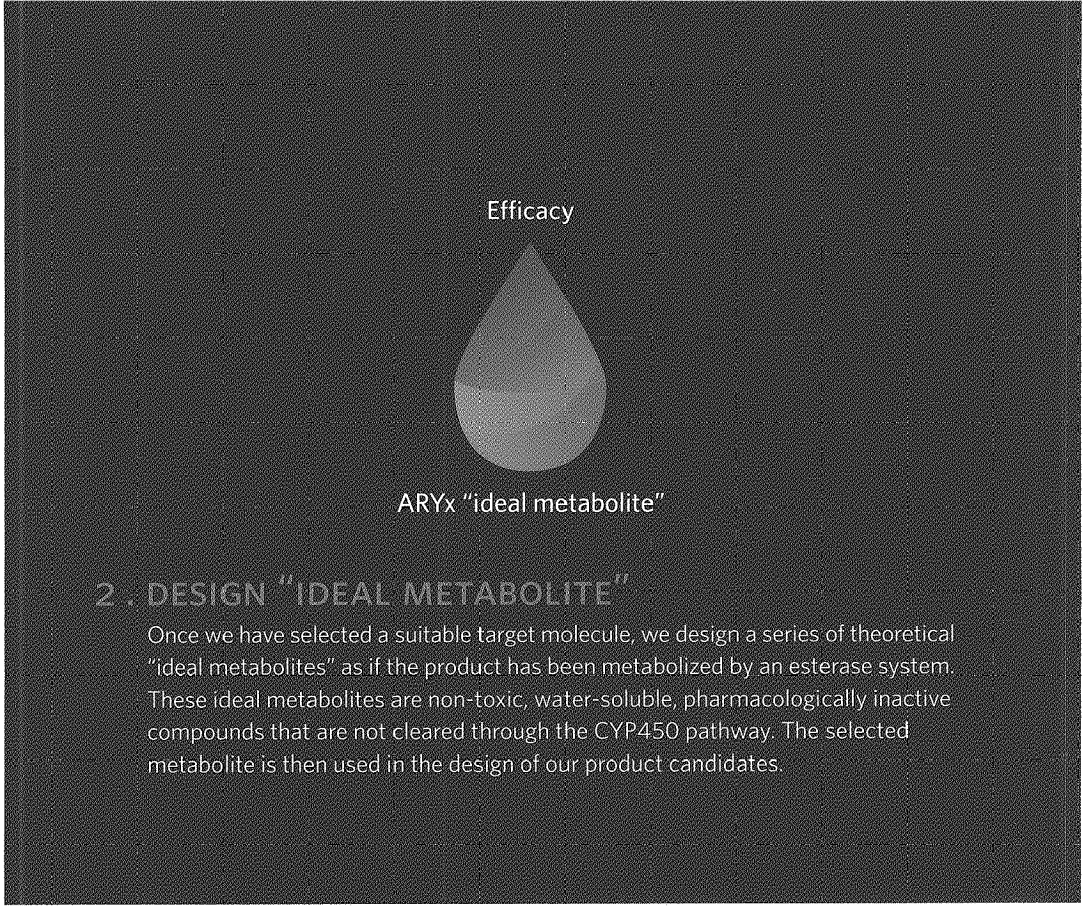
ORIGINAL DRUG: WARFARIN

- → "Gold Standard" oral anticoagulant therapy
- → After 50 years still in the top 20 drugs prescribed overall
- → Cited as # 2 reason for drug-related hospitalizations

OUR SOLUTION: TECARFARIN (ATI-5923)

- → Novel oral anti-coagulation therapy
- → Designed for enhanced safety & efficacy vs. warfarin
  - Optimized metabolism
  - Reduced drug-drug interactions
  - More accurate dosing
  - Intended to reduce instances of under/over anticoagulation

PATENT COVERAGE: **2025**



2. DESIGN "IDEAL METABOLITE"

Once we have selected a suitable target molecule, we design a series of theoretical "ideal metabolites" as if the product has been metabolized by an esterase system. These ideal metabolites are non-toxic, water-soluble, pharmacologically inactive compounds that are not cleared through the CYP450 pathway. The selected metabolite is then used in the design of our product candidates.

Budiodarone

Atrial Fibrillation

ORIGINAL DRUG: AMIODARONE

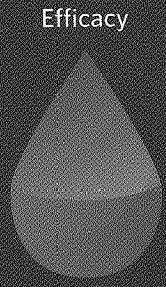
→ "Gold-standard" for the treatment of AFIB
→ Not labeled for AFIB in U.S.
→ Numerous safety issues due to drug accumulation

OUR SOLUTION: BUDIODARONE (ATI-2042)

→ Novel therapy for atrial fibrillation
→ Designed for enhanced safety vs. amiodarone
- Optimized metabolism
- Non-saturable excretion pathway
- Reduced drug-drug interactions

→ Significantly shorter biological half-life

PATENT COVERAGE (C of M): **2020**



3. CREATE ARYx PRODUCT

We engineer new chemical entities by adding back the active pharmacophore to the ideal metabolite with a structure intended to preserve the efficacy of the target molecule. The resulting ARYx product will utilize an alternative non-CYP450 metabolic pathway that should avoid the drug-drug interactions and off-target pharmacology of the original drug. These NCEs can now be broken down in the body by esterases to the "theoretical metabolites" on which they were based.

ATI-7505

Gastrointestinal Disorders

ORIGINAL DRUG: CISAPRIDE

- → Approved in US in 1993 for nighttime GERD; used in multiple upper and lower GI indications
- → $1 billion in sales at time of market withdrawal (2000)
- → hERG channel interaction, QTc prolongation & cardiovascular liability

OUR SOLUTION: ATI-7505

- → A novel prokinetic agent designed to have the same therapeutic benefits as cisapride without major safety concerns, including cardiac liabilities
- → Optimized metabolism
- → High selectivity, minimizing potential for off-target pharmacological effects
- → Potential for use in a wide range of upper and lower GI disorders

PATENT COVERAGE: **2025**

ARYx VALUE CREATION

CORPORATE OVERVIEW 2009

ARYx PRODUCT COMMERCIALIZATION

Transforming innovation into value.

ARYx's goal is to develop and commercialize a portfolio of internally discovered drugs designed to have the same therapeutic benefits of well-established, commercially successful oral drugs in large chronic markets—without the associated safety issues that have either limited or prohibited the full commercial potential of these existing drugs.

Our approach has yielded solid results. We have employed our RetroMetabolic Drug Design technology to re-engineer commercially successful products into promising new drugs with the potential for superior safety profiles. With multiple products in clinical trials, we expect to generate numerous opportunities to transform our innovations into meaningful value.

ARYx THERAPEUTICS
6300 DUMBARTON CIRCLE
FREMONT, CA 94555
T 510.585.2200 F 510.585.2202
ARYX.COM

SIGNIFICANT MARKET

TECARFARIN ANTICOAGULATION

THREE MAJOR INDICATIONS

2.4 M	510,000	340,000
PATIENTS (U.S.)	PATIENTS (U.S.)	PATIENTS (U.S.)
Atrial fibrillation	**Venous thromboembolism**	**Mechanical heart valves**

~80% OVERALL MARKET WOULD BE CONSIDERED FOR CHRONIC USE

33.6 M PRESCRIPTIONS FOR WARFARIN WRITTEN IN 2006 (U.S.)

$376 M ESTIMATED IN SALES FOR WARFARIN IN 2006 (U.S.)

Our product candidates target what we believe to be billion-dollar markets.

OPPORTUNITIES

BUDIODARONE
ATRIAL FIBRILLATION

AFFECTS

>6.4 M
PEOPLE (U.S., EU, JP)

2.4 M
PATIENTS (U.S.)

2.0 M
PATIENTS TREATED (U.S.)

MOST COMMON FORM OF CARDIAC ARRHYTHMIA

ESTIMATED TO BE RESPONSIBLE FOR **>75,000** STROKES PER YEAR (U.S.)

ATI-7505
GI DISORDERS

AFFECTS

~35-44 M
PEOPLE (U.S.)

Functional dyspepsia

~36-57 M
PEOPLE (U.S.)

Chronic constipation

~5 M
PATIENTS (U.S.)

Gastroparesis

~5.5 M
ADULTS (U.S.)

IBS-C

$17 B
SPENT WORLDWIDE EACH YEAR

GERD

ARYx PARTNERING STRATEGY

ARYx product candidates provide attractive partnering opportunities.
Once we have established proof-of-concept in the clinic, we consider licensing our product candidates to pharmaceutical companies. Because we are focused on developing oral products for large chronic markets, at some point each of our product candidates currently in development will require involvement from a pharmaceutical company with worldwide development and commercial capabilities in order to realize their full potential. The goal of any future collaboration we establish is to enable complete development of our products, increasing the likelihood that they can achieve clinical and commercial success.

FUTURE APPLICATIONS

We are leveraging our technology platform to develop a pipeline of new drugs.
We believe our RetroMetabolic Drug Design technology can be applied to many other drugs. According to a 2002 article in the *Journal of the American Medical Association,* over 10% of all new chemical entities approved by the FDA between 1975 and 1999 have either received "Black-Box" warnings or been withdrawn from the market after commercial launch. In addition, many drugs currently on the market exhibit safety concerns due to drug-drug interactions or off-target pharmacological effects. We expect that increased public, regulatory and congressional scrutiny of drug safety and adverse event reporting of prescription pharmaceuticals will lead to public awareness of serious safety concerns in additional drugs. ARYx continually evaluates this increasing pool of opportunities from which to select potential product candidates.

ARYx THERAPEUTICS
Making Proven Therapies Safer

STOCKHOLDER LETTER

APRIL 2009

Dear Fellow Stockholders,

I am pleased to report on ARYx's many accomplishments during 2008, a successful year in which we achieved three key corporate and clinical milestones and positioned ARYx well for future success. First, we continued to advance our lead programs through clinical trials and now have three product candidates at the proof of concept stage, with one in Phase 2/3 testing and two others that are Phase 3 enabled. Second, we initiated or continued discussions with potential pharmaceutical partners for each of our most advanced programs. Third, we strengthened our balance sheet through completion of a private placement in November 2008 and now have greater financial flexibility to enter into development and commercialization partnerships on terms reflecting the value we believe we have generated for our products.

We have entered a transformational period for the company as we move from proof of concept in the clinic toward proof of concept for our business strategy. This is evidenced by the significant progress we have made in advancing our novel products toward value-adding milestones.

Proof of Concept in the Clinic

We recently presented findings from a Phase 2b clinical trial testing the safety and efficacy of our novel antiarrythmic agent, budiodarone (ATI-2042), in the treatment of patients with atrial fibrillation (AF). The objective of our study was to measure the reduction in the AF burden, or the proportion of time a patient spent in AF, in paroxysmal AF patients compared to baseline and placebo. In our study, patients were monitored during four weeks of baseline and then were randomized to either placebo or one of three doses of our drug for 12 weeks, followed by a four week wash-out period, post treatment. We were able to measure AF burden in an objective and comprehensive manner as all patients had dual-chamber pacemakers previously implanted that have recording capabilities. Randomization was balanced across placebo and all active arms.

The complete trial results strongly indicate in a statistically significant and clinically relevant way the potential of budiodarone to be a highly effective and well-tolerated antiarrythmic therapy. Specifically, we saw a highly significant dose-response curve across all three active doses, with the AF burden slightly worsening in the placebo group over the treatment period. At the 200mg BID dose, patients got slightly better, by 400mg BID they had a statistically significant 54% reduction in burden, and at 600mg BID, they had a highly statistically significant 75% reduction in burden. It is quite reassuring to be able to demonstrate a dose response which is rarely seen in drugs in this class.

Data from this trial also supported our belief that budiodarone does not accumulate in tissues, thus avoiding what is believed to be a primary cause of many of the long-term toxicities of amiodarone, the current "gold standard" antiarrythmic therapy for its efficacy. As one measure, we saw that the effect of budiodarone ended, as expected, within the thirty-day washout period at the end of the study.

In November, we completed enrollment in a 600 patient Phase 2/3 clinical study of our novel anticoagulation therapy, tecarfarin (ATI-5923), evaluating it against the leading anticoagulant agent, warfarin. A key value driver for ARYx, this trial is designed to evaluate whether tecarfarin is superior to warfarin in its ability to maintain patients within a target therapeutic range as measured by a standard measure of anticoagulation known as the International Normalized Ratio or INR. Based on our discussions and correspondence with the U.S. Food and Drug Administration (FDA), we believe that INR should be an acceptable surrogate and primary endpoint for the pivotal trials of tecarfarin. Additionally, based upon interactions with the FDA, we believe this ongoing trial could be positioned as one of the required pivotal studies needed for product registration.

Patients in our Phase 2/3 trial are treated for a minimum of six months. The trial is a randomized, double-blind, active control study comparing tecarfarin with warfarin in patients who require chronic, oral anticoagulation therapy to avoid serious blood clotting resulting from those underlying conditions that require patients to seek anticoagulation therapy.

This is an important point because we are seeking an indication to treat any patient for whom anticoagulation therapy is deemed necessary, making this trial population essentially the same as the population for which warfarin is indicated.

As we have previously reported, an independent Data Safety Monitoring Board has met to review the data related to the patients in this study and, based on their evaluation of the safety and efficacy generated to date, have recommended that the study should continue as planned. The trial remains on schedule, the last patient will complete treatment this May, and we expect to have results to report by the end of June.

With ATI-7505, our novel prokinetic agent, we reported the successful results of a Thorough QT (TQT) study designed to determine whether or not ATI-7505 prolongs the QT interval of the heart. This is thought to be an important measure in the cardiac safety of a drug and is especially important for ATI-7505 given that a previous agent, cisapride, was withdrawn from the market due to cardiac liabilities. The results we reported were that ATI-7505 does not prolong the QT interval in a clinically meaningful way, supporting our belief that we have met one of our primary objectives in the design of ATI-7505. We now have received written confirmation from the FDA indicating concurrence with our interpretation of the results and that the study meets ICH E14 criteria for the design, conduct, and analysis of a TQT study.

Also last year, we announced successful results of a Phase 2b clinical trial testing the safety and efficacy of ATI-7505 in patients with chronic idiopathic constipation. The study achieved statistical significance at its primary endpoint, in the 80mg BID group, and all active doses that were tested demonstrated a clinically meaningful result. These Phase 2b results, along with the FDA response on the data from the TQT study, support the favorable efficacy and safety profile of ATI-7505 seen in earlier clinical studies and allow us to designate ATI-7505 as a Phase 3 enabled program.

Maximizing Value through Partnerships

Corporate alliances remain an essential part of our business strategy as we work to convert positive, late-stage data from our lead programs into high-value partnerships. We believe that each of our clinical-stage product candidates will require involvement from a pharmaceutical company with worldwide development and commercial capabilities to achieve full market potential. As a result, we are actively pursuing partners for our three most advanced programs and are in discussions with a number of pharmaceutical companies. We are dedicated to extracting maximum value for ARYx from any development and commercialization partnerships we enter into.

Proof of Concept for our Business Strategy

Our strategic objective is to make proven therapies safer, and in 2008 we made significant strides toward meeting that objective. ARYx now has three product candidates at the proof of concept stage, and they all share two common attributes. One, we have seen in the clinic that our products retain the efficacy of the innovator products on which they were modeled. Two, with the safety data we have compiled to date, it appears that we are successfully addressing the safety issues that have substantially limited use of the original products. In short, the clinical profiles we are generating with our products underscore the vision of our founders and the ability of our people to design safer drugs.

The significant progress made toward achieving our corporate and clinical goals has been a direct result of the focus and determination of everyone at ARYx. Looking ahead, I am confident that ARYx is well-positioned to reach its much-anticipated milestones as we continue to build both short- and long-term value for the company and its shareholders.

On behalf of the entire ARYx team, I thank you for your support.

Paul Goddard, Ph.D.
Chairman & Chief Executive Officer

ARYX THERAPEUTICS, INC.

6300 Dumbarton Circle
Fremont, California 94555

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS

To Be Held On May 20, 2009

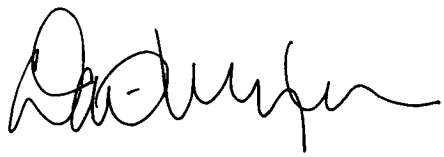
Dear Stockholder:

You are cordially invited to attend the Annual Meeting of Stockholders of **ARYX THERAPEUTICS, INC.**, a Delaware corporation (the "*Company*"). The meeting will be held on Wednesday, May 20, 2009 at 9:00 a.m. local time, at our headquarters located at 6300 Dumbarton Circle, Fremont, California 94555, for the following purposes:

1. To elect the three nominees for director named herein to hold office until the 2012 Annual Meeting of Stockholders.
2. To ratify the selection by the Audit Committee of the Board of Directors of Ernst & Young LLP as independent registered public accounting firm of the Company for the year ending December 31, 2009.
3. To conduct any other business properly brought before the meeting.

These items of business are more fully described in the Proxy Statement accompanying this Notice. The record date for the Annual Meeting is April 7, 2009. Only stockholders of record at the close of business on that date may vote at the meeting or any adjournment thereof.

By Order of the Board of Directors



David Nagler
Secretary

Fremont, California
April 22, 2009

You are cordially invited to attend the Annual Meeting in person. Whether or not you expect to attend the Annual Meeting, please complete, date, sign and return the enclosed proxy, or vote over the telephone or the Internet as instructed in these materials, as promptly as possible in order to ensure your representation at the meeting. A return envelope (which is postage prepaid if mailed in the United States) has been provided for your convenience. Even if you have voted by proxy, you may still vote in person if you attend the meeting. Please note, however, that if your shares are held of record by a broker, bank or other nominee and you wish to vote at the Annual Meeting, you must obtain a proxy issued in your name from that record holder.

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting of Stockholders to Be Held on Wednesday, May 20, 2009, at 9:00 a.m. local time at 6300 Dumbarton Circle, Fremont, California 94555.

The proxy statement and annual report to stockholders are available at *http://www.envisionreports.com/ARYX.*

ARYX THERAPEUTICS, INC.

6300 Dumbarton Circle
Fremont, California 94555

PROXY STATEMENT
FOR THE 2009 ANNUAL MEETING OF STOCKHOLDERS

May 20, 2009

QUESTIONS AND ANSWERS ABOUT THESE PROXY MATERIALS AND VOTING

Why am I receiving these materials?

We have sent you this proxy statement and the enclosed proxy card because the Board of Directors of **ARYx Therapeutics, Inc.** (sometimes referred to as the "*Company*" or "*ARYx*") is soliciting your proxy to vote at the 2009 Annual Meeting of Stockholders, or the Annual Meeting, including at any adjournments or postponements of the Annual Meeting. You are invited to attend the Annual Meeting to vote on the proposals described in this proxy statement. However, you do not need to attend the Annual Meeting to vote your shares. Instead, you may simply complete, sign and return the enclosed proxy card, or follow the instructions below to submit your proxy over the telephone or via the Internet.

We intend to mail this proxy statement and accompanying proxy materials on or about April 22, 2009 to all stockholders of record entitled to vote at the Annual Meeting.

Who can vote at the Annual Meeting?

Only stockholders of record at the close of business on April 7, 2009 will be entitled to vote at the Annual Meeting. On this record date, there were 27,372,235 shares of common stock outstanding and entitled to vote.

Stockholder of Record: Shares Registered in Your Name

If on April 7, 2009 your shares were registered directly in your name with ARYx's transfer agent, Computershare Trust Company, N.A., then you are a stockholder of record. As a stockholder of record, you may vote in person at the Annual Meeting or vote by proxy. Whether or not you plan to attend the Annual Meeting, we urge you to fill out and return the enclosed proxy card or vote by proxy over the telephone or on the Internet as instructed below to ensure your vote is counted.

Beneficial Owner: Shares Registered in the Name of a Broker or Bank

If on April 7, 2009 your shares were held not in your name, but rather in an account at a brokerage firm, bank, dealer, or other similar organization, then you are the beneficial owner of shares held in "street name" and these proxy materials are being forwarded to you by that organization. The organization holding your account is considered to be the stockholder of record for purposes of voting at the Annual Meeting. As a beneficial owner, you have the right to direct your broker or other agent regarding how to vote the shares in your account. You are also invited to attend the Annual Meeting. However, since you are not the stockholder of record, you may not vote your shares in person at the Annual Meeting unless you request and obtain a valid proxy from your broker or other agent.

What am I voting on?

There are two matters scheduled for a vote:

- Proposal 1, election of three directors; and
- Proposal 2, ratification of the selection by the Audit Committee of the Board of Directors of Ernst & Young LLP as independent registered public accounting firm of the Company for the year ending December 31, 2009.

What if another matter is properly brought before the meeting?

The Board of Directors knows of no other matters that will be presented for consideration at the Annual Meeting. If any other matters are properly brought before the Annual Meeting, it is the intention of the persons named in the accompanying proxy card to vote on those matters in accordance with their best judgment.

How do I vote?

- For Proposal 1, you may either vote "For" all the nominees to the Board of Directors or you may "Withhold" your vote for any nominee you specify.
- For Proposal 2, you may vote "For" or "Against" or abstain from voting.

The procedures for voting are fairly simple:

Stockholder of Record: Shares Registered in Your Name

If you are a stockholder of record, you may vote in person at the Annual Meeting, vote by proxy using the enclosed proxy card, vote by proxy over the telephone, or vote by proxy via the Internet. Whether or not you plan to attend the Annual Meeting, we urge you to vote by proxy to ensure your vote is counted. You may still attend the Annual Meeting and vote in person even if you have already voted by proxy.

- To vote in person, come to the Annual Meeting and we will give you a ballot when you arrive.
- To vote using the proxy card, simply complete, sign and date the enclosed proxy card and return it promptly in the envelope provided. If you return your signed proxy card to us before the Annual Meeting, we will vote your shares as you direct.
- To vote over the telephone, dial toll-free **1-800-652-VOTE (8683)** using a touch-tone phone and follow the recorded instructions. You will be asked to provide the company number and control number from the enclosed proxy card. Your vote must be received by 1:00 a.m., Central Time, on May 20, 2009 to be counted.
- To vote via the Internet, go to **http://www.envisionreports.com/ARYX** to complete an electronic proxy card. You will be asked to provide the company number and control number from the enclosed proxy card. Your vote must be received by 1:00 a.m., Central Time, on May 20, 2009 to be counted.

Beneficial Owner: Shares Registered in the Name of Broker or Bank

If you are a beneficial owner of shares registered in the name of your broker, bank, or other agent, you should have received a proxy card and voting instructions with these proxy materials from that organization rather than from ARYx. Simply complete and mail the proxy card to ensure that your vote is counted. Alternatively, you may vote by telephone or over the Internet as instructed by your broker or bank. To vote in person at the Annual Meeting, you must obtain a valid proxy from your broker, bank, or other agent. Follow the instructions from your broker or bank included with these proxy materials, or contact your broker or bank to request a proxy form.

We provide Internet proxy voting to allow you to vote your shares online, with procedures designed to ensure the authenticity and correctness of your proxy vote instructions. However, please be aware that you must bear any costs associated with your Internet access, such as usage charges from Internet access providers and telephone companies.

How many votes do I have?

On each matter to be voted upon, you have one vote for each share of common stock you own as of the close of business on April 7, 2009.

What if I return a proxy card or otherwise vote but do not make specific choices?

If you return a signed and dated proxy card or otherwise vote without marking voting selections, your shares will be voted, as applicable, "For" the election of all three nominees for director and "For" the ratification of the selection of Ernst & Young LLP as the independent registered public accounting firm of the Company for the year ending December 31, 2009. If any other matter is properly presented at the Annual Meeting, your proxyholder (one of the individuals named on your proxy card) will vote your shares using his best judgment.

Who is paying for this proxy solicitation?

We will pay for the entire cost of soliciting proxies. In addition to these proxy materials, our directors and employees may also solicit proxies in person, by telephone, or by other means of communication. Directors and employees will not be paid any additional compensation for soliciting proxies. We may also reimburse brokerage firms, banks and other agents for the cost of forwarding proxy materials to beneficial owners.

What does it mean if I receive more than one set of proxy materials?

If you receive more than one proxy card, your shares are registered in more than one name or are registered in different accounts. Please complete, sign and return **each** proxy card to ensure that all of your shares are voted.

Can I change my vote after submitting my proxy?

Yes. You can revoke your proxy at any time before the final vote at the Annual Meeting. If you are the record holder of your shares, you may revoke your proxy in any one of the following ways:

- You may submit another properly completed proxy card with a later date.
- You may grant a subsequent proxy by telephone or via the Internet.
- You may send a timely written notice that you are revoking your proxy to ARYx's Corporate Secretary at 6300 Dumbarton Circle, Fremont, California 94555.
- You may attend the Annual Meeting and vote in person. Simply attending the Annual Meeting will not, by itself, revoke your proxy.

Your most current proxy vote is the one that is counted.

If your shares are held by your broker or bank as a nominee or agent, you should follow the instructions provided by your broker or bank.

When are stockholder proposals due for next year's Annual Meeting?

Stockholders may submit proposals on matters appropriate for stockholder action at meetings of our stockholders in accordance with Rule 14a-8 promulgated under the Securities Exchange Act of 1934. For such proposals to be included in the proxy materials relating to our 2010 Annual Meeting of Stockholders, all applicable requirements of Rule 14a-8 must be satisfied and such proposals must be

received by us no later than December 21, 2009. However, if our 2010 Annual Meeting of Stockholders is not held between April 20, 2010 and June 18, 2010, then the deadline will be a reasonable time prior to the time we begin to print and mail the proxy materials for such meeting. Such proposals should be delivered to the attention of our Corporate Secretary at 6300 Dumbarton Circle, Fremont, California 94555.

Pursuant to our Bylaws, if you wish to bring a proposal before the stockholders or nominate a director at the 2010 Annual Meeting of Stockholders, but you are not requesting that your proposal or nomination be included in next year's proxy materials, you must notify our Corporate Secretary, in writing, not later than the close of business on February 19, 2010 nor earlier than the close of business on January 20, 2010. However, if our 2010 Annual Meeting of Stockholders is not held between April 20, 2010 and June 18, 2010, to be timely, your notice must be so received not earlier than the close of business on the 120th day prior to the 2010 Annual Meeting of Stockholders and not later than the close of business on the later of the ninetieth 90th day prior to the 2010 Annual Meeting of Stockholders or the 10th day following the day on which public announcement of the date of the 2010 Annual Meeting of Stockholders is first made. You are also advised to review our Bylaws, which contain additional requirements about advance notice of stockholder proposals and director nominations. Among other things, a stockholder's notice to our Corporate Secretary must set forth the information required by our Bylaws with respect to each matter the stockholder proposes to bring before the 2010 Annual Meeting of Stockholders. The chairman of the 2010 Annual Meeting of Stockholders may determine, if the facts warrant, that a matter has not been properly brought before the meeting and, therefore, may not be considered at the meeting. In addition, the proxy solicited by our Board of Directors for the 2010 Annual Meeting of Stockholders will confer discretionary voting authority with respect to (i) any proposal presented by a stockholder at that meeting for which we have not been provided with timely notice and (ii) any proposal made in accordance with our Bylaws, if the 2010 proxy statement briefly describes the matter and how our management's proxy holders intend to vote on it, if the stockholder does not comply with the requirements of Rule 14a-4(c)(2) promulgated under the Securities Exchange Act of 1934.

How are votes counted?

Votes will be counted by the inspector of election appointed for the meeting, who will separately count "For" and "Withhold" and, with respect to Proposal 2, "Against" votes, abstentions and broker non-votes. A broker non-vote occurs when a nominee, such as a broker or bank, holding shares for a beneficial owner does not vote on a particular proposal because the nominee does not have discretionary voting power with respect to that proposal and has not received instructions with respect to that proposal from the beneficial owner. In the event that a broker, bank, custodian, nominee or other record holder of our common stock indicates on a proxy that it does not have discretionary authority to vote certain shares on a particular proposal, then those shares will be treated as broker non-votes with respect to that proposal. Accordingly, if you own shares through a nominee, such as a broker or bank, please be sure to instruct your nominee how to vote to ensure that your vote is counted on each of the proposals.

Abstentions and broker non-votes will be treated as shares present for the purpose of determining the presence of a quorum for the transaction of business at the Annual Meeting. Abstentions will be counted towards the vote total for each proposal, and will have the same effect as "Against" votes. Broker non-votes have no effect and will not be counted towards the vote total for any proposal.

How many votes are needed to approve each proposal?

- For the election of directors, the three nominees receiving the most "For" votes (among votes properly cast in person or by proxy) will be elected. Only votes "For" or "Withheld" will affect the outcome.

- To be approved, "Proposal No. 2—Ratification of Selection of Independent Registered Public Accounting Firm," must receive "For" votes from the holders of a majority of shares present and entitled to vote either in person, by remote communication or by proxy. If you "Abstain" from voting, it will have the same effect as an "Against" vote. Broker non-votes will have no effect.

What is the quorum requirement?

A quorum of stockholders is necessary to hold a valid meeting. A quorum will be present if stockholders holding at least a majority of the outstanding shares entitled to vote are present at the meeting in person or represented by proxy. On the record date, April 7, 2009, there were 27,372,235 shares outstanding and entitled to vote.

Your shares will be counted towards the quorum only if you submit a valid proxy (or one is submitted on your behalf by your broker, bank or other nominee) or if you vote in person at the meeting. Abstentions and broker non-votes will be counted towards the quorum requirement. If there is no quorum, the holders of a majority of shares present at the meeting in person or represented by proxy may adjourn the meeting to another date.

How can I find out the results of the voting at the Annual Meeting?

Preliminary voting results will be announced at the Annual Meeting. Final voting results will be published in our Quarterly Report on Form 10-Q for the second quarter of 2009.

What proxy materials are available on the Internet?

This proxy statement and accompanying proxy materials, including our Annual Report on Form 10-K for the year ended December 31, 2008, are available at *http://www.envisionreports.com/ARYX*.

PROPOSAL 1

ELECTION OF DIRECTORS

Our Board of Directors, or our Board, is divided into three classes. Each class consists, as nearly as possible, of one-third of the total number of directors, and each class has a three-year term. Vacancies on the Board may be filled only by persons elected by a majority of the remaining directors. A director elected by the Board to fill a vacancy in a class, including a vacancy created by an increase in the number of directors, shall serve for the remainder of the full term of that class and until the director's successor is duly elected and qualified or such director's earlier death, resignation or removal.

Our Board presently has eight members. In 2008, our Board had nine members, including Dr. Robert Adelman who resigned from our Board in February 2009. In connection with Dr. Adelman's resignation, our Board reduced the authorized number of directors constituting the Board to eight members in accordance with our Bylaws.

There are three directors in the class whose term of office expires in 2009, Dr. Ekman and Messrs. Leonard and Sekhri, each of whom is currently a director of ARYx. If elected at the Annual Meeting, each of these nominees would serve until our 2012 Annual Meeting of Stockholders and until his successor has been duly elected and qualified, or, if sooner, until the director's death, resignation or removal. We encourage directors and nominees for director to attend the Annual Meeting.

Directors are elected by a plurality of the votes of the holders of shares present in person or represented by proxy and entitled to vote on the election of directors. The three nominees receiving the highest number of affirmative votes will be elected. Shares represented by executed proxies will be voted, if authority to do so is not withheld, for the election of the three nominees named below. If any nominee becomes unavailable for election as a result of an unexpected occurrence, your shares will be voted for the election of a substitute nominee proposed by our management. Each person nominated for election has agreed to serve if elected. Our management has no reason to believe that any nominee will be unable to serve.

THE BOARD RECOMMENDS A VOTE FOR THE ELECTION OF EACH NOMINEE TO THE BOARD.

MEMBERS OF THE BOARD OF DIRECTORS

The following is information for each of the members of our Board as of the date of this proxy statement.

Name	Position with ARYx	Age	Director Since	Expiration of Term
Paul Goddard, Ph.D.	Chairman of the Board and Chief Executive Officer	59	August 2003	2010
Peter G. Milner, M.D.	President, Research and Development and Director	53	February 1997	2011
David Beier	Director	60	August 2008	2010
Lars G. Ekman, M.D., Ph.D.	Director	58	November 2003	2009
Keith R. Leonard	Director	46	September 2005	2009
Herm Rosenman	Director	60	January 2006	2010
Paul J. Sekhri	Director	50	September 2004	2009
Nicholas Simon	Director	54	June 2002	2011

Nominees for Election for a Three-year Term Expiring at Our 2012 Annual Meeting

Lars G. Ekman, M.D., Ph.D.

Dr. Ekman is currently chairman and chief executive officer of Cebix Inc. Dr. Ekman has also served as executive vice president and president, global R&D of Elan Pharmaceuticals. Prior to joining Elan, he served as executive vice president, R&D, at Schwarz Pharma AG, a pharmaceutical company. Dr. Ekman has also served in a variety of senior scientific and clinical functions at Pharmacia Corp., which was acquired by Pfizer, Inc., a pharmaceutical company. Dr. Ekman is a board certified surgeon with a Ph.D. in experimental biology and has held several clinical and academic positions in both the United States and Europe. He obtained his doctorate degree and doctorate of medicine degree from the University of Gothenburg, Sweden. Dr. Ekman serves on the board of directors at Elan Pharmaceuticals, Amarin Corp., InterMune, and Cebix Inc.

Keith R. Leonard

Mr. Leonard has served as president and chief executive officer of Kythera Biopharmaceuticals, a biopharmaceutical company, since August 2005. From October 1991 to November 2004, Mr. Leonard held various positions with Amgen, Inc., a biopharmaceutical company, and its affiliates, most recently as senior vice president and general manager of Amgen Europe. Mr. Leonard holds a master of business administration from The Anderson School of Management, University of California, Los Angeles, a master of science in mechanical engineering from University of California, Berkeley, a bachelor of arts in history from University of Maryland, College Park, and a bachelor of science in engineering from University of California, Los Angeles.

Paul J. Sekhri

Mr. Sekhri has served as head of TPG Biotech, a financial services institution since January 2009. From December 2004 to December 2008, Mr. Sekhri served as President and Chief Executive Officer of Cerimon Pharmaceuticals. Prior to founding Cerimon, from October 2003 to December 2004, Mr. Sekhri was President and Chief Business Officer of ARIAD Pharmaceuticals, Inc., an oncology company. From December 2002 to September 2003, Mr. Sekhri was a partner at the Sprout Group, a venture capital affiliate of Credit Suisse, a financial services institution. From August 1999 to January 2003, Mr. Sekhri held various positions with Novartis Pharma AG, a pharmaceutical company, most recently as its senior vice president and head of global search and evaluation. Mr. Sekhri received his M.Sc. and B.Sc. from the University of Maryland, School of Medicine. Mr. Sekhri also serves on the Board of Directors at A.P.T. Pharmaceuticals, KAI Pharmaceuticals and the Cancer Research Institute. He is also a member of the Advisory Board for The BioExec Institute, Inc and an advisor to the Brookings Global Health Financing Initiative.

Directors Continuing in Office Until Our 2010 Annual Meeting

David Beier

Mr. Beier is currently Senior Vice President of global government and corporate affairs for Amgen Inc., one of the world's leading biotechnology companies. Mr. Beier is responsible for global health care issues, health economics and outcomes research, corporate communications and philanthropy, and government affairs at the United States federal and state levels as well as with international governmental entities and organizations. Prior to joining Amgen, Mr. Beier was a partner in the international law firm of Hogan & Hartson, and was Vice President of government affairs and public policy for Genentech, Inc. Mr. Beier's extensive government experience includes serving as chief domestic policy advisor to Vice President Al Gore and as staff counsel in the U.S. House of Representatives. He received a B.A. from Colgate University and his J.D. from Albany Law School.

Paul Goddard, Ph.D.

Dr. Goddard has served as the Chairman of our Board since August 2003 and was appointed our Chief Executive Officer in April 2005. From March 2000 to August 2005, Dr. Goddard served as chairman and part-time executive of several companies including A.P. Pharma, Inc. and XenoPort, Inc., a biopharmaceutical company. From October 1998 until March 2000, he was chief executive officer of Elan Pharmaceuticals, Inc., the largest division of Elan Corporation plc, a biotechnology company. He was chief executive officer of Neurex Corporation, a biotechnology company, from February 1991 until October 1998 when the company was acquired by Elan Corporation plc. Prior to 1991, Dr. Goddard held various senior management positions at SmithKline Beecham plc, a pharmaceutical company, including senior vice president strategic marketing and senior vice president Far East region. He obtained his doctorate degree from St. Mary's Hospital, London, in the area of etiology and pathophysiology of colon cancer. Dr. Goddard serves on the board of directors of Adolor Corporation, a biopharmaceutical company, as chairman of A.P. Pharma, Inc., a pharmaceutical company, and as lead director of Onyx Pharmaceuticals, Inc., a biopharmaceutical company.

Herm Rosenman

Since June 2001, Mr. Rosenman has served as the senior vice president of finance and chief financial officer of Gen-Probe Incorporated, a company that produces products for the clinical laboratory and blood screening. Mr. Rosenman received a B.B.A. in finance and accounting from Pace University and an M.B.A. in finance from the Wharton School of the University of Pennsylvania. Mr. Rosenman serves on the board of directors of Infinity Pharmaceuticals, Inc., a biopharmaceutical company.

DIRECTORS CONTINUING IN OFFICE UNTIL OUR 2011 ANNUAL MEETING

Peter G. Milner, M.D.

Dr. Milner is our co-founder and has served as our President, Research and Development, since April 2005. From February 1997 until February 2005, Dr. Milner served as our Chief Executive Officer. Dr. Milner is a board certified physician and cardiologist, and serves as voluntary clinical faculty at Stanford Veterans' Hospital. In June 1992, Dr. Milner co-founded CV Therapeutics, Inc., a biopharmaceutical company. Prior to CV Therapeutics, Inc., Dr. Milner was an assistant professor of medicine at Washington University in St. Louis, Missouri. Dr. Milner has numerous patents in his name and is the author of several scientific articles published in peer-reviewed journals. Dr. Milner attended the University of Liverpool, England where he received a bachelor of sciences degree with honors in biochemistry and a degree in medicine. He completed his postgraduate training in medicine at Johns Hopkins Medical School, cardiology and pharmacology at University of Virginia and molecular biology at Washington University in St. Louis. Dr. Milner is a Fellow of the American College of Cardiology, serves on the board of directors of California Healthcare Institute and the Scientific Advisory Board of Novartis Institute of Biomedical Research in Cambridge, Massachusetts.

Nicholas Simon

Mr. Simon has served as a Managing Director of Clarus Ventures, a venture capital firm focused on life sciences companies, since the firm's inception in February 2005. In addition, Mr. Simon has been a general partner of MPM BioVentures III, a healthcare venture capital fund, since October 2001. From April 2000 to July 2001, Mr. Simon was chief executive officer and founder of Collabra Pharma, Inc., a pharmaceutical company. Mr. Simon served in various management positions at Genentech, Inc., including as its vice president of business and corporate development. Mr. Simon is currently on the board of directors of several pharmaceutical companies: Achillion, Inc., Avanir, Inc., Neosil, Inc., QuatRx Pharmaceuticals Company, Pearl Therapeutics, Inc., Poniard Pharmaceuticals, Inc., Sientra, Inc. and Verus Pharmaceuticals, Inc. He is also on the advisory council of the Gladstone Institute, a private not-for-profit research institute affiliated with the University of California, San Francisco. Mr. Simon received a bachelor of sciences degree in microbiology from the University of Maryland and a masters in business administration in marketing from Loyola College.

CORPORATE GOVERNANCE AND BOARD MATTERS

INDEPENDENCE OF ARYX THERAPEUTICS' BOARD OF DIRECTORS

The NASDAQ Stock Market LLC ("*NASDAQ*") listing standards require that a majority of the members of a listed company's Board of Directors qualify as "independent," as affirmatively determined by the Board of Directors. Our Board consults with our outside counsel to ensure that the Board's determinations are consistent with relevant securities and other laws and regulations regarding the definition of "independent," including within the meaning of the applicable NASDAQ listing standards, as in effect from time to time.

Consistent with these considerations, after review of all relevant identified transactions or relationships between each director, or any of his family members, and ARYx, our senior management and our independent registered public accounting firm, the Board has affirmatively determined that the following six current directors are independent directors within the meaning of the applicable NASDAQ listing standards: Dr. Ekman and Messrs. Beier, Leonard, Rosenman, Sekhri and Simon. The Board has also affirmatively determined Dr. Adelman, who served as a director during 2008 and resigned from the Board in February 2009, to be an independent director in accordance with the applicable NASDAQ listing standards. In making this determination, the Board found that none of these directors or nominees for director had a material or other disqualifying relationship with ARYx. Dr. Goddard, our Chief Executive Officer, and Dr. Milner, our President, Research and Development, are not independent directors by virtue of their employment with the Company.

MEETINGS OF THE BOARD OF DIRECTORS

The Board met nine times during 2008. Each Board member attended 75% or more of the aggregate number of meetings of the Board and of the committees on which he served, held during the portion of 2008 for which he was a director or committee member.

As required under applicable NASDAQ listing standards, in 2008, our independent directors met four times in regularly scheduled executive sessions at which only independent directors were present.

INFORMATION REGARDING COMMITTEES OF THE BOARD OF DIRECTORS

The Board has three standing committees: an Audit Committee, a Compensation Committee and a Nominating and Corporate Governance Committee. Each of these committees has a written charter approved by the Board. The following table provides membership and meeting information for 2008 for each of the Board committees:

Name	Audit	Compensation	Nominating and Corporate Governance
Paul Goddard, Ph.D.			
Peter G. Milner, M.D.			
David W. Beier			
Lars G. Ekman, M.D., Ph.D.			X*
Keith R. Leonard	X		X
Herm Rosenman	X*		
Paul J. Sekhri	X	X*	
Nicholas Simon		X	
Total meetings in 2008	- 5 -	- 5 -	- 2 -

* Committee Chairman.

The above table does not reflect the service of Dr. Adelman, who resigned from our Board in February 2009, on our Compensation Committee and Nominating and Corporate Governance Committee during 2008. In connection with Dr. Adelman's resignation, our Board appointed Mr. Beier as a member of our Compensation Committee and Nominating and Corporate Governance Committee in February 2009.

Below is a description of each committee of the Board. The Board has determined that each member of each committee meets the applicable NASDAQ rules and regulations regarding "independence" and that each member is free of any relationship that would impair his or her individual exercise of independent judgment with regard to the Company. Each of our Board committees has adopted a written charter that is available to stockholders on our website at *http://www.aryx.com*, under the "*Investors—Corporate Governance*" tab. The contents of our website are not a part of this proxy statement.

Audit Committee

Our Audit Committee was established by the Board in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, to discharge the responsibilities of the Board with respect to our accounting, financial and other reporting and internal control practices and to oversee our independent registered public accounting firm. Specific responsibilities of our Audit Committee include:

- appointing and retaining a registered public accounting firm to serve as independent auditors to audit our financial statements, overseeing the independent auditors' work and determining the independent auditors' compensation;
- approving in advance all audit services and non-audit services to be provided to us by our independent auditors;
- reviewing and discussing with management and our independent auditors the results of the annual audit and the independent auditors' review of our quarterly financial statements;
- conferring with management and our independent auditors about the scope, adequacy and effectiveness of our internal accounting controls;
- reviewing and discussing with management and our independent auditors significant issues regarding accounting principles and policies and any material disagreements regarding financial reporting and accounting practices and policies;
- reviewing and approving all related-party transactions; and
- handling complaints regarding accounting, internal accounting controls or auditing matters and establishing procedures for the receipt, retention and treatment of such complaints.

The Board reviews the NASDAQ listing standards definition of independence for Audit Committee members on an annual basis and has determined that all members of our Audit Committee satisfy the independence requirements of Rule 10A-3 of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and the applicable NASDAQ listing standards. The Board has also determined that Mr. Rosenman is qualified as an audit committee financial expert within the meaning of the regulations of the Securities and Exchange Commission and the applicable NASDAQ listing standards. In making this determination, the Board has considered the nature and scope of experience Mr. Rosenman has previously had with reporting companies and his employment in the corporate finance sector. Both our independent registered public accounting firm and management periodically meet privately with our Audit Committee.

Report of the Audit Committee of the Board of Directors

The Audit Committee has reviewed and discussed the audited financial statements for the year ended December 31, 2008 with our management. The Audit Committee has discussed with our independent registered public accounting firm the matters required to be discussed by the Statement on Auditing Standards No. 114, *The Auditor's Communication with Those Charged with Governance*, as adopted by the Public Company Accounting Oversight Board (*"PCAOB"*) in Rule 3200T. The Audit Committee has also received the written disclosures and the letter from our independent registered public accounting firm required by the applicable requirements of the PCAOB regarding the independent accountants' communications with the audit committee concerning independence, and has discussed with the independent registered public accounting firm its independence. Based on the foregoing, the Audit Committee has recommended to the Board that the audited financial statements be included in our Annual Report on Form 10-K for the year ended December 31, 2008.

Mr. Herm Rosenman (Chairman)
Mr. Keith R. Leonard
Mr. Paul J. Sekhri

The material in this report is not "soliciting material," is furnished to, but not deemed "filed" with, the SEC and is not deemed to be incorporated by reference in any filing of ARYx under the Securities Act or the Exchange Act, other than our Annual Report on Form 10-K, where it shall be deemed to be "furnished," whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

Compensation Committee

The purpose of our Compensation Committee is to discharge the responsibilities of the Board to oversee our compensation policies, plans and programs, and to review and determine the compensation to be paid to our executive officers and directors. Specific responsibilities of our compensation committee include:

- reviewing and approving corporate performance goals and objectives relevant to the compensation of our executive officers;
- evaluating and approving the compensation plans and programs advisable for ARYx, as well as evaluating and approving the modification or termination of existing plans and programs;
- establishing policies with respect to equity compensation arrangements;
- reviewing regional and industry-wide compensation practices and trends to assess the adequacy and competitiveness of our executive compensation programs among comparable companies in our industry;
- reviewing and approving the terms of any employment agreements, severance arrangements, change-of-control protections and any other compensatory arrangements (including, without limitation, perquisites and any other form of compensation) for our executive officers;
- evaluating the efficacy of our compensation policy and strategy in achieving expected benefits to ARYx and otherwise furthering the Compensation Committee's policies; and
- reviewing with management our Compensation Discussion and Analysis and considering whether to recommend that it be included in our proxy statements and other filings.

Each member of our Compensation Committee is independent within the meaning of applicable NASDAQ listing standards, is a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act, and is an "outside director" as that term is defined in Section 162(m) of the Internal Revenue Code of 1986, as amended, or the Internal Revenue Code.

Compensation Committee Interlocks and Insider Participation

None of the members of the Compensation Committee is currently or has been at any time one of our officers or employees. None of our officers currently serves, or has served during the year ended December 31, 2008, as a member of the board of directors or compensation committee of any entity that has one or more officers serving as a member of our Board or the Compensation Committee.

Compensation Committee Report

The Compensation Committee has reviewed and discussed with management the Compensation Discussion and Analysis (*"CD&A"*) contained in this proxy statement. Based on this review and discussion, the Compensation Committee has recommended to the Board that the CD&A be included in this proxy statement and incorporated into our Annual Report on Form 10-K for the year ended December 31, 2008.

Mr. Paul J. Sekhri (Chairman)
Mr. David W. Beier
Mr. Nicholas Simon

The material in this report is not "soliciting material," is furnished to, but not deemed "filed" with, the SEC and is not deemed to be incorporated by reference in any filing of ARYx under the Securities Act or the Exchange Act, other than our Annual Report on Form 10-K, where it shall be deemed to be "furnished," whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

Nominating and Corporate Governance Committee

The Nominating and Corporate Governance Committee of our Board is responsible for, among other things:

- establishing criteria for Board membership and identifying, evaluating, reviewing and recommending candidates for election to our Board, as well as making recommendations to our Board regarding the membership of the committees of our Board;
- assessing the performance of our Board and its committees and of individual directors;
- developing, reviewing and assessing our corporate governance principles; and
- overseeing our legal, regulatory and ethical compliance programs, other than handling complaints related to accounting and financial matters, which are delegated to the Audit Committee.

Each member of our Nominating and Corporate Governance Committee is independent within the meaning of applicable NASDAQ listing standards.

Our Nominating and Corporate Governance Committee believes that candidates for director should have certain minimum qualifications, including the ability to read and understand basic financial statements, being over 21 years of age and having the highest personal integrity and ethics. The Nominating and Corporate Governance Committee also intends to consider such factors as possessing relevant expertise upon which to be able to offer advice and guidance to management, having sufficient time to devote to the affairs of ARYx, demonstrated excellence in his or her field, having the ability to exercise sound business judgment and having the commitment to rigorously represent the long-term interests of our stockholders. However, the Nominating and Corporate Governance Committee retains the right to modify these qualifications from time to time. Candidates for director nominees are reviewed in the context of the current composition of the Board, our operating requirements and the long-term interests of our stockholders. In conducting this assessment, the Nominating and Corporate

Governance Committee considers diversity, age, skills, and such other factors as it deems appropriate given the current needs of the Board and ARYx, to maintain a balance of knowledge, experience and capability. In the case of incumbent directors whose terms of office are set to expire, unless the Board chooses to undertake this assessment, the Nominating and Corporate Governance Committee reviews these directors' overall service to ARYx during their terms, including the number of meetings attended, level of participation, quality of performance, and any other relationships and transactions that might impair the directors' independence. For the Annual Meeting, the Nominating and Corporate Governance Committee assessed the qualifications and overall service of Dr. Ekman and Messrs. Leonard and Sekhri, before recommending to our Board these director nominees for reelection by our stockholders at the Annual Meeting. In the case of new director candidates, the Nominating and Corporate Governance Committee also determines whether the nominee is independent for NASDAQ purposes, which determination is based upon applicable NASDAQ listing standards, applicable SEC rules and regulations and the advice of counsel, if necessary. The Nominating and Corporate Governance Committee then uses its network of contacts to compile a list of potential candidates, but may also engage, if it deems appropriate, a professional search firm. The Nominating and Corporate Governance Committee conducts any appropriate and necessary inquiries into the backgrounds and qualifications of possible candidates after considering the function and needs of the Board. The Nominating and Corporate Governance Committee meets to discuss and consider the candidates' qualifications and then selects a nominee for recommendation to the Board by majority vote.

The Nominating and Corporate Governance Committee will consider director candidates recommended by stockholders. The Nominating and Corporate Governance Committee does not intend to alter the manner in which it evaluates candidates, including the minimum criteria set forth above, based on whether or not the candidate was recommended by a stockholder. Stockholders who wish to recommend individuals for consideration by the Nominating and Corporate Governance Committee to become nominees for election to the Board may do so by delivering a written recommendation to the Nominating and Corporate Governance Committee at the following address: c/o ARYx Therapeutics, Inc., 6300 Dumbarton Circle, Fremont, California 94555 at least 120 days prior to the anniversary date of the mailing of our proxy statement for the last Annual Meeting of Stockholders. Submissions must include the full name of the proposed nominee, a description of the proposed nominee's business experience for at least the previous five years, complete biographical information, a description of the proposed nominee's qualifications as a director and a representation that the nominating stockholder is a beneficial or record holder of our stock. Any such submission must be accompanied by the written consent of the proposed nominee to be named as a nominee and to serve as a director if elected.

Lead Independent Director

If at any time the Chairman of our Board is not an independent director, the Board may designate one of the independent directors then on our Board to serve as our lead independent director. The responsibilities of our lead independent director include:

- consulting with and acting as a liaison between the Board and Chairman of the Board;
- establishing the agendas for meetings of the Board and serving as chairman of such meetings in the absence of the Chairman of the Board;
- establishing the agenda and presiding over meetings of the independent members of the Board;
- coordinating with Board committee chairs regarding committee meeting agendas and informational requirements;
- presiding over any portions of meetings of the Board at which the evaluation or compensation of our Chief Executive Officer or the performance of the Board is presented or discussed;

- coordinating the activities of the other independent directors and performing such other duties as may be established or delegated by the Chairman of the Board; and
- otherwise consulting with the Chairman of the Board and management on matters relating to corporate governance and Board performance matters.

In performing the duties described above, the lead independent director is expected to consult with the chairmen of the committees of the Board and solicit their participation in order to avoid diluting the authority or responsibilities of such committees. If the Chairman of the Board is an independent director, then he or she shall perform the functions otherwise assigned to our lead independent director.

Since the Board has deemed Dr. Goddard, our current Chairman of the Board, to not be an independent director within the meaning of the applicable NASDAQ listing standards, the Board has designated Herm Rosenman as the lead independent director of the Board.

Stockholder Communications with the Board of Directors

Historically, we have not provided a formal process related to stockholder communications with the Board. Nevertheless, every effort has been made to ensure that the views of our stockholders are heard by the Board or individual directors, as applicable, and that appropriate responses are provided to our stockholders in a timely manner. We believe our responsiveness to stockholder communications to the Board has been excellent. Nevertheless, during the upcoming year the Nominating and Corporate Governance Committee will give full consideration to the adoption of a formal process for stockholder communications with the Board and, if adopted, publish it promptly and post it to our website.

Code of Conduct

In 2007, our Board adopted a Code of Conduct that applies to all of our employees, executive officers, directors and consultants, and incorporates guidelines designed to deter wrongdoing and to promote the honest and ethical conduct and compliance with applicable laws and regulations. In addition, our Code of Conduct incorporates our guidelines pertaining to topics such as conflicts of interest and workplace behavior. We have posted the text of our Code of Conduct on our website at *http://www.aryx.com* under the "*Investors—Corporate Governance*" tab. The contents of our website are not a part of this proxy statement. We intend to promptly disclose (1) the nature of any amendment to our Code of Conduct that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions and (2) the nature of any waiver, including an implicit waiver, from a provision of our Code of Conduct that is granted to one of these specified officers, the name of such person who is granted the waiver and the date of the waiver on our website in the future.

Corporate Governance Guidelines

In 2007, our Board adopted Corporate Governance Guidelines to assure that the Board and its Committees have the necessary authority and practices in place to review and evaluate our business operations as needed and to make decisions that are independent of our management. The guidelines are also intended to align the interests of directors and management with those of our stockholders. The Corporate Governance Guidelines set forth the practices the Board intends to follow with respect to board composition and selection, board meetings and involvement of senior management, Chief Executive Officer performance evaluation and succession planning, and Board committees.

DIRECTOR COMPENSATION

Cash Compensation Arrangements

Pursuant to our compensation program for non-employee directors, during 2008 each member of our Board who was not an employee or an officer of ARYx received the following cash compensation for Board services, as applicable:

- a $15,000 annual retainer for service as a Board member;
- a $5,000 supplemental annual retainer for service as chairman of the Audit Committee;
- a $2,500 supplemental annual retainer for service as chairman of the Nominating and Corporate Governance Committee or Compensation Committee;
- $2,000 for each Board meeting attended in person ($1,000 for meetings attended by video or telephone conference); and
- $1,000 for each Board committee meeting attended in person ($500 for meetings attended by video or telephone conference).

We reimburse our non-employee directors for their reasonable expenses incurred in attending meetings of our Board and committees of the Board.

In 2008, the Compensation Committee retained Radford Surveys + Consulting, or Radford, an independent compensation consulting firm, to provide us and the Compensation Committee with assistance in reviewing our non-employee director compensation. After reviewing the Radford report and related recommendations, the Compensation Committee and Board revised our cash compensation arrangement for non-employee directors, effective January 1, 2009, as follow:

- a $20,000 annual retainer for service as a Board member;
- a $15,000 or $7,500 supplemental annual retainer for service as chairman or member of the Audit Committee, respectively;
- a $10,000 or $5,000 supplemental annual retainer for service as chairman or member of the Compensation Committee, respectively;
- a $5,000 or $2,500 supplemental annual retainer for service as chairman or member of the Nominating and Corporate Governance Committee, respectively;
- a $5,000 supplemental annual retainer for services as lead independent director of the Board; and
- $2,000 for each Board meeting attended in person ($1,000 for meetings attended by video or telephone conference).

We continue to reimburse our non-employee directors for their reasonable expenses incurred in attending meetings of our Board and committees of the Board.

2007 Non-Employee Directors' Stock Option Plan

Our 2007 Non-Employee Directors' Stock Option Plan, or 2007 Directors' Plan, became effective in connection with our initial public offering in November 2007. The 2007 Directors' Plan provides for the automatic grant of nonstatutory stock options to purchase shares of our common stock to our non-employee directors over their period of service on our Board. As of December 31, 2008, the number of shares of common stock that may be issued under the 2007 Directors' Plan is 266,662 shares. The number of shares of common stock reserved for issuance will automatically increase on January 1st of each year through and including January 1, 2017, by the excess of (a) the

number of shares of common stock subject to options granted during the preceding calendar year, over (b) the number of shares added back to the share reserve during the preceding calendar year. If any option expires or terminates for any reason, in whole or in part, without having been exercised in full, the shares of common stock not acquired under such option will become available for future issuance under the 2007 directors' plan. The following types of shares issued under the 2007 directors' plan may again become available for the grant of new options: (a) any shares withheld to satisfy withholding taxes, (b) any shares used to pay the exercise price of an option in a net exercise arrangement and (c) shares tendered to us to pay the exercise price of an option.

Pursuant to the terms of the 2007 Directors' Plan, any individual who first becomes a non-employee director is automatically granted an option to purchase 16,666 shares of our common stock, with an exercise price equal to the then fair market value of our common stock. Each initial option vests in a series of 36 successive equal monthly installments measured from the date of grant. In addition, on April 30th of each year beginning in 2009, each non-employee director will automatically be granted a non-statutory stock option to purchase 6,666 shares of our common stock on that date with an exercise price equal to the then fair market value of our common stock. The shares subject to each such annual option vest in a series of 12 successive equal monthly installments measured from the date of grant. All stock options granted under the 2007 Directors' Plan will have a maximum term of ten years.

If a non-employee director's service relationship with us, or any of our affiliates, whether as a non-employee director or subsequently as an employee, director or consultant of ours or an affiliate, ceases for any reason other than disability or death, or after any 12-month period following a change in control, the optionee may exercise any vested options for a period of three months following the cessation of service. If such an optionee's service relationship with us, or any of our affiliates, ceases due to disability or death (or an optionee dies within a certain period following cessation of service), the optionee or a beneficiary may exercise the option for a period of 12 months in the event of disability, and 18 months in the event of death. If such an optionee's service terminates within 12 months following a specified change in control transaction, the optionee may exercise the option for a period of 12 months following the effective date of such a transaction. The option term may be extended in the event that exercise of the option following termination of service is prohibited by applicable securities laws. In no event, however, may an option be exercised beyond the expiration of its term.

In the event of certain significant corporate transactions, all outstanding options under the 2007 Directors' Plan may be assumed, continued or substituted for by any surviving or acquiring entity (or its parent company). If the surviving or acquiring entity (or its parent company) elects not to assume, continue or substitute for such options, then (a) with respect to any such options that are held by optionees then performing services for us or our affiliates, the vesting and exercisability of such options will be accelerated in full and such options will be terminated if not exercised prior to the effective date of the corporate transaction and (b) all other outstanding options will terminate if not exercised prior to the effective date of the corporate transaction. Our Board may also provide that the holder of an outstanding option not assumed in the corporate transaction will surrender such option in exchange for a payment equal to the excess of (a) the value of the property that the optionee would have received upon exercise of the option, over (b) the exercise price otherwise payable in connection with the option. In addition, the vesting and exercisability of options held by non-employee directors who are either required to resign their position in connection with a specified change in control transaction or are removed from their position in connection with such a change in control will be accelerated in full.

Director Compensation Table

The following table sets forth certain information with respect to the compensation of all our non-employee directors for the year ended December 31, 2008. Dr. Goddard, our Chief Executive Officer, and Dr. Milner, our President, Research and Development, are not listed in the following table since they are employees of ARYx and receive no additional compensation for serving on our Board or its committees.

Name	Fees Earned or Paid in Cash(1)	Option Awards(2)	Total
Robert Adelman, M.D.(3)	$29,500	$41,118	$70,618
David Beier	10,500	24,219	34,719
Lars G. Ekman, M.D., Ph.D.	29,500	40,393	69,893
Keith R. Leonard	30,500	41,570	72,070
Herm Rosenman	35,500	42,179	77,679
Paul J. Sekhri	32,000	41,118	73,118
Nicholas Simon	30,000	41,118	71,118

(1) Consists of fees earned for Board and committee meeting attendance.

(2) The dollar amounts in this column represent the compensation cost for the year ended December 31, 2008 of stock option awards granted pursuant to our equity compensation plans and thus include amounts from outstanding stock option awards granted in and prior to 2008. These amounts have been calculated in accordance with SFAS 123(R) using Black-Scholes option-pricing model. Pursuant to SEC rules, the amounts shown exclude the impact of estimated forfeitures related to service-based vesting conditions. No stock options were forfeited by any of our directors during 2008. Assumptions used in the calculation of these amounts are included in the notes to our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2008. These amounts reflect our accounting expense for these awards and do not correspond to the actual value that may be recognized by our directors.

(3) Dr. Adelman resigned from our Board in February 2009.

The following table shows certain information as to the grant dates and the fair market value of stock option grants to our non-employee directors:

Name	Grant Date	Number of Securities Underlying Options (#)	Exercise Price ($/Sh.)	Grant Date Fair Value ($)(1)
Robert Adelman, M.D.(2)	06/09/2005	15,000	$1.80	$29,004
	11/07/2007	16,666	8.10	71,878
David Beier(3)	08/28/2008	16,666	6.33	72,189
Lars Ekman, M.D., Ph.D.(4)	01/21/2004	7,500	0.90	—
	06/09/2005	7,500	1.80	14,502
	11/07/2007	16,666	8.10	71,878
Keith R. Leonard(5)	07/20/2005	15,000	1.80	29,043
	11/07/2007	16,666	8.10	71,878
Herm Rosenman(6)	04/19/2006	15,000	3.00	23,913
	11/07/2007	16,666	8.10	71,878
Paul J. Sekhri(7)	06/09/2005	15,000	1.80	29,004
	11/07/2007	16,666	8.10	71,878
Nicholas Simon(8)	06/09/2005	15,000	1.80	29,004
	11/07/2007	16,666	8.10	71,878

(1) Total stock-based compensation as determined under SFAS No. 123(R). Amounts are amortized over the requisite service period for each award.

(2) As of December 31, 2008, Dr. Adelman held options to purchase 31,666 shares of our common stock. Any outstanding options held by Dr. Adelman subject to vesting as of February 5, 2009, were cancelled as a result of Dr. Adelman's resignation from our Board.

(3) As of December 31, 2008, Mr. Beier held options to purchase 16,666 shares of our common stock.

(4) As of December 31, 2008, Dr. Ekman held options to purchase 31,666 shares of our common stock.

(5) As of December 31, 2008, Mr. Leonard held options to purchase 31,666 shares of our common stock.

(6) As of December 31, 2008, Mr. Rosenman held options to purchase 31,666 shares of our common stock.

(7) As of December 31, 2008, Mr. Sekhri held options to purchase 31,666 shares of our common stock.

(8) As of December 31, 2008, Mr. Simon held options to purchase 31,666 shares of our common stock.

PROPOSAL 2

RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Audit Committee of the Board has selected Ernst & Young LLP as our independent registered public accounting firm for the year ending December 31, 2009 and has further directed that management submit the selection of Ernst & Young LLP as our independent registered public accounting firm for ratification by the stockholders at the Annual Meeting. Ernst & Young LLP has audited our statement of financial positions since 2002 and the related statements of operations, stockholders' equity, and cash flows since our inception in 1997. Representatives of Ernst & Young LLP are expected to be present at the Annual Meeting. They will have an opportunity to make a statement if they so desire and will be available to respond to appropriate questions.

Neither our Bylaws nor other governing documents or law require stockholder ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm. However, the Audit Committee of the Board is submitting the selection of Ernst & Young LLP to the stockholders for ratification as a matter of good corporate practice. If the stockholders fail to ratify the selection, the Audit Committee of the Board will reconsider whether or not to retain that firm. Even if the selection is ratified, the Audit Committee of the Board in its discretion may direct the appointment of a different independent registered public accounting firm at any time during the year if they determine that such a change would be in the best interests of ARYx and our stockholders.

The affirmative vote of the holders of a majority of the shares present in person or represented by proxy and entitled to vote at the Annual Meeting will be required to ratify the selection of Ernst & Young LLP. Abstentions will be counted toward the tabulation of votes cast on proposals presented to the stockholders and will have the same effect as negative votes. Broker non-votes are counted towards a quorum, but are not counted for any purpose in determining whether this matter has been approved.

THE BOARD RECOMMENDS A VOTE FOR PROPOSAL 2.

INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FEES AND SERVICES

Aggregate fees billed to us by Ernst & Young LLP, our independent registered public accounting firm, during the years ended December 31, 2008 and 2007 were as follows:

	Year Ended	
	December 31, 2008	December 31, 2007
	(in thousands)	
Audit Fees(1)	$371,791	$ 263,961
Audit-Related Fees(2)	44,163	788,914
Tax Fees(3)	—	4,100
All Other Fees(4)	—	—
Total Fees	**$415,954**	**$1,056,975**

(1) *Audit Fees*—This category includes aggregate fees billed by our independent registered public accounting firm for the audit of our annual financial statements, review of financial statements included in our quarterly reports on Form 10-Q and services that are normally provided by the independent registered public accounting firm in connection with statutory and regulatory filings for those years.

(2) *Audit-Related Fees*—This category consists of services by our independent registered public accounting firm that, including accounting consultations on transaction related matters and required SEC regulatory filings, are reasonably related to the performance of the audit or review of our financial statements and are not reported above under Audit Fees.

(3) *Tax Fees*—This category consists of fees billed by our independent registered public accounting firm for services related to tax compliance, tax advice and tax planning. During the year ended December 31, 2007, Ernst & Young LLP provided services related to the transfer of certain tax work papers.

(4) *All Other Fees*—During the years ended December 31, 2008 and 2007, we did not incur any fees from Ernst & Young LLP for other professional services.

PRE-APPROVAL POLICIES AND PROCEDURES

The Audit Committee has adopted a policy and procedures for the pre-approval of audit and non-audit services rendered by our independent registered public accounting firm, Ernst & Young LLP. The policy generally pre-approves specified services in the defined categories of audit services, audit-related services and tax services up to specified amounts. Pre-approval may also be given as part of the Audit Committee's approval of the scope of the engagement of the independent registered public accounting firm or on an individual explicit case-by-case basis before the independent registered public accounting firm is engaged to provide each service. The pre-approval of services may be delegated to one or more of the Audit Committee's members, but the decision must be reported to the full Audit Committee at its next scheduled meeting.

Because our initial public offering commenced on November 13, 2007, the Audit Committee was not required to, and did not pre-approve, all of the fees described above in 2007. However, the Audit Committee has pre-approved all audit and permissible non-audit services by Ernst & Young LLP and has pre-approved all new services since the commencement of our initial public offering.

The Audit Committee has determined that the rendering of the services other than audit services by Ernst & Young LLP is compatible with maintaining the independent registered public accounting firm's independence.

EXECUTIVE COMPENSATION

COMPENSATION DISCUSSION AND ANALYSIS

Overview

Our executive compensation program is designed to help us attract, as needed, talented individuals to manage and operate all aspects of our business, to reward those individuals fairly over time and to retain those individuals who continue to meet our high expectations. The goals of our executive compensation program are to align our executive officers' compensation with our business objectives and the interests of our stockholders, to incentivize and reward our executive officers for our successes and to reflect the teamwork philosophy of our executive management team. To achieve these goals, our Compensation Committee establishes executive compensation and benefit packages that are generally based on a mix of base salary, cash incentive payments and equity awards, in the proportions that our Compensation Committee believes are the most appropriate to incentivize and reward our executive officers for achieving our objectives. Our executive compensation program is also intended to make us competitive in the San Francisco Bay Area and in the pharmaceutical and biotechnology industry, where there is significant competition for talented employees, and to be fair relative to other professionals within our organization. We believe that we must provide competitive compensation packages to attract and retain the most talented and dedicated executive officers possible and to help our executive management function as a stable team over the longer term.

Role of Our Compensation Committee in Setting Executive Compensation

Our Compensation Committee approves, administers and interprets our executive compensation program. The Compensation Committee was appointed by our Board, and consists solely of directors who are "outside directors" for purposes of Section 162(m) and "non-employee directors" for purposes of Rule 16b-3 under the Securities Exchange Act of 1934, as amended. Our Compensation Committee is comprised of Messrs. Sekhri, Simon and Beier.

The Compensation Committee has established a compensation philosophy for our company. It is applied to all employees including officers. Generally, the philosophy establishes that base cash salary, company-provided benefits (health, dental and vision care insurance, paid vacation and other holidays, and matches to employee contributions into a 401(k) plan), equity awards and discretionary cash incentive payments constitute total compensation. Although our Compensation Committee has not adopted any formal guidelines for allocating total compensation among these elements, we intend to implement and maintain compensation plans that tie a substantial portion of our executives' overall compensation to the achievement of corporate goals and value-creating milestones. We believe that performance and equity-based compensation are important components of the total executive compensation package for maximizing stockholder value while, at the same time, attracting, motivating and retaining highly-qualified executives. Our compensation philosophy also provides that total compensation is intended to remain competitive with similar biotechnology and pharmaceutical companies so that we can attract and retain the most talented and dedicated employees. However, the compensation of our executive officers is based in part on the terms of employment agreements we entered into with each of our executive officers at the time they joined the company. These agreements set forth the initial base salaries for our executive officers as well as initial targeted cash incentive payments and the equity awards provided (subject, in each case, to the final determination of our Compensation Committee or the Board).

None of our executive officers, other than our Chief Executive Officer, participate in the Compensation Committee's executive compensation discussions. The Compensation Committee does not delegate any of its functions to others in determining executive compensation. However, our Compensation Committee retains the services of a third-party executive compensation specialist from

time to time, as it sees fit, in connection with the establishment and administration of our executive compensation program and related policies.

Annual Review and Benchmarking of Executive Compensation

To assess the competitiveness of our executive compensation program and compensation levels, we conduct an annual benchmark review of the aggregate level of our executive compensation program, as well as the mix of elements used to compensate our executive officers. As part of this review, the Compensation Committee considers recommendations from Paul Goddard, our Chief Executive Officer, and human resources input from David Nagler, our Vice President Corporate Affairs, in determining executive compensation. While Dr. Goddard and Mr. Nagler provide valuable input to the Compensation Committee, they do not participate in determining their own compensation. The information provided by our human resources department consists of the results of our annual performance reviews.

After our initial public offering in November 2007, the Compensation Committee retained Radford Surveys + Consulting, or Radford, an independent compensation consulting firm, to provide us and the Compensation Committee with assistance in reviewing our overall compensation philosophy for 2008 in comparison to market trends and industry standards, designating a new peer group of companies for benchmarking and assessing competitive market data on executive compensation, as well as for non-executive employees. Radford also attends meetings from time to time at the request of the Compensation Committee and makes recommendations, including recommendations relating to executive compensation. Based on Radford's assessment and recommendation, 18 publicly-traded peer companies in the pharmaceuticals and biotechnology industry were used by the Compensation Committee as benchmarks for 2008 compensation, including the following:

- ACADIA Pharmaceuticals, Inc;
- Affymax, Inc.;
- Alexza Pharmaceuticals, Inc.;
- Cadence Pharmaceuticals, Inc;
- Coley Pharmaceuticals, Inc;
- MAP Pharmaceuticals, Inc;
- Synta Pharmaceuticals Inc.;
- Trubion Pharmaceuticals, Inc; and
- XenoPort, Inc.

The peer companies used for benchmarking for 2008 compensation were chosen because they had recently made initial public offerings and were generally similar to ours in terms of industry, capital structure, financial attributes, phase of products in development and competition for talent. During 2008, the Compensation Committee again retained Radford to advise on executive compensation, including assessing pay philosophy and recommending modification of our peer group of companies based on our current business parameters.

In connection with Radford's review, the Compensation Committee reviewed and updated the group of peer companies based on the criteria of similarly sized newly public companies by market capitalization, employee size and stage of development. Based on Radford's assessment and recommendation, the Compensation Committee revised our peer group to remove Coley Pharmaceuticals, Inc., among others, and add Cytori Therapeutics, Poniard Pharmaceuticals and Rigel Pharmaceuticals, among others, resulting in a peer group of 19 publicly traded companies.

Based on the Compensation Committee's philosophy, we benchmark our executive compensation against the median updated compensation paid by these peer companies. Elements of compensation benchmarked included base salary, cash incentive payments and long-term equity compensation. While benchmarking may not always be appropriate as a stand-alone tool for setting compensation due to the aspects of our business and objectives that may be unique to us, we generally believe that it is an important part of our decision-making process.

Elements of Our Executive Compensation Program

Our executive compensation program consists of three principal components: base salary, cash incentive payments based on achievement of performance milestones and long-term incentive compensation in the form of equity awards. Each component of our executive compensation program is designed to address specific compensation objectives. Base salary is generally reviewed independently of the incentive components and is designed to keep salaries at the lowest potential competitive level, allowing a greater portion of total compensation to be performance based. The Compensation Committee generally reviews cash incentive payments and long-term equity incentives in a more integrated manner, attempting to ensure that our executive officers are rewarded both on an annual basis (through cash incentive payments designed to recognize performance over an annual period) as well as over a sustained period (through long-term equity incentives based on an increase in stockholder value). In determining the amount and mix of compensation elements and whether each element provides the correct incentives and rewards for performance consistent with our short and long-term goals and objectives, the Compensation Committee relies on its judgment about each individual rather than adopting a formulaic approach to compensation decisions it believes are too narrowly responsive to short-term changes in business performance. As a result, the Compensation Committee does not utilize a fixed weighting system between compensation elements for each executive officer, but rather utilizes a subjective assessment of each executive officer's overall contribution to the business, scope of the executive officer's responsibilities and the executive officer's historical performance to determine that executive officer's annual compensation. Our executive officers are also eligible to participate, on the same basis as other employees, in our 401(k) plan and our other benefit programs generally available to all employees. Our executive officers do not receive any perquisites.

Base Salary. Each of our executive officers entered into an employment agreement with us at the time they joined the company that provided for an initial base salary, subject to annual increases determined by the Compensation Committee. We review company and individual performance annually, shortly after the end of each calendar year. As discussed above, Dr. Goddard and Mr. Nagler review the executive officers' salaries with the Compensation Committee in connection with the Compensation Committee's annual performance review. In establishing the base salaries of our executive officers for 2008 and 2009, our Compensation Committee took into account a number of factors, including the executive's seniority, position, functional role and level of responsibility and individual performance, and awarded salary increases based on increases in cost of living and competition for talent in the San Francisco Bay Area. The Compensation Committee believes that the base salaries of our executive officers should be generally targeted to the 50th percentile of the base salaries for comparable positions paid in comparable companies in the biotechnology and pharmaceutical industry. Base salaries of our executive officers will continue to be reviewed on an annual basis and adjustments will be made to reflect individual performance-based factors, as well as our company's financial status and the above-mentioned competitive factors. We do not intend to apply specific formulas to determine increases. Components of individual performance include core competencies such as job knowledge, delivery of results, communication, teamwork, quality, initiative and dependability, and also expense management, planning, process improvements, recruitment, retention, coaching, mentoring and other measurable company-specific goals.

Cash Incentive Payment. In addition to base salaries, our Compensation Committee has the authority to award discretionary cash incentive payments, or cash bonuses, annually to all of our employees, including our executive officers. The annual cash incentive payments are intended to compensate our executive officers for achieving corporate goals and for achieving what the Compensation Committee believes to be value-creating milestones. Our annual cash incentive payments are paid in cash in an amount reviewed and approved by our Compensation Committee and ordinarily are each paid in a single installment in the first quarter following the end of a given calendar year for performance in the prior year. Each executive officer is eligible for a discretionary annual cash incentive payment up to an amount equal to a specified percentage of such executive officer's salary. The target percentages are set at levels that, upon achievement of the target percentage, are likely to result in cash incentive payments that our Compensation Committee believes to be at approximately the 50th percentile of target amounts for comparable companies in the biotechnology and pharmaceutical industry. However, the actual cash incentive payments awarded in any year, if any, may be more or less than the established target percentages, depending on individual performance and the achievement of our corporate objectives. Whether or not a cash incentive payment is paid for any year is within the discretion of the Compensation Committee. The Compensation Committee also determines the size of the total pool of cash incentive payments that may be awarded, which is based in large part on our Board's determination of our success in achieving our corporate objectives for the plan year. The Compensation Committee determines the portion of the total pool, if any, that will be allocated to the executive officers as a group and the cash incentive payments for each of our executive officers. Dr. Goddard provides input to the Compensation Committee with respect to cash incentive payments for executive officers other than himself.

At the end of each year, our Compensation Committee determines the level of achievement for each corporate goal and value-creating milestone and for each individual performance goal, and awards credit for the particular level of achievement. Final determinations as to bonus levels are then based in part on the achievement of these corporate and individual goals or milestones, as well as our Board's assessment as to the overall success of our company and the development of our business. These goals and milestones and the proportional emphasis placed on each goal and milestone are subjective determinations which may vary, from time to time, depending on our overall strategic objectives and the job responsibilities of each executive officer, but relate generally to factors such as development and progression of our existing product candidates, achievement of clinical and regulatory milestones, this establishment of new collaborative arrangements, achievement of sales and marketing targets, and to financial factors such as raising or preserving capital and improving our results of operations.

In February 2008, the Compensation Committee established cash incentive payments to be paid in 2009 for performance in 2008 at a target percentage up to 50.0% of base salary for our Chief Executive Officer, up to 35.0% of base salary for our President, Research and Development and Chief Operating Officer, and up to 30.0% of base salary for each of our other executive officers. The corporate goals established by our Board for 2008 were substantially met, as generally were the individual goals of the executive officers. However, based on the cash position of the Company and our management's recommendation that all employees be eligible, the Board declined to award cash incentive payments or bonuses to named executive officers for performance in the year ended December 31, 2008. Each executive officer's individual performance goals are more fully described in the section below entitled "*—Compensation Actions for our Executive Officers.*" The 2008 corporate goals and milestones for our executive officers included the successful continued clinical development of our three lead product candidates: tecarfarin, budiodarone and ATI-7505. This included initiation of a Phase 2/3 clinical trial for tecarfarin, completion of a Phase 2b clinical trial for budiodarone and continued cooperation with strategic partner Procter & Gamble Pharmaceuticals, Inc., or P&G, in the development of ATI-7505 through termination of the collaboration with P&G in July 2008. An additional goal was set for the entrance of ATI-9242 into clinical development. Finally, the Company set goals for the continued advancement of additional potential product candidates into late stage research.

In February 2009, the Compensation Committee determined the corporate and individual goals and milestones that it will apply in determining cash incentive payments to executive officers, if any, for performance in 2009. The determination of whether actual cash incentive payments will be paid to individual executive officers will be made at the discretion of the Compensation Committee, provided that no payments shall be made until the Company has completed a corporate partnering transaction for one of its product candidates. The Board established the cash incentive payments to be paid under the Plan over the course of 2009 at target amounts expressed as a percentage of the 2009 annual base salary for each named executive officer: up to 75.0% of base salary for our Chief Executive Officer, up to 52.5% of base salary for our President, Research and Development and Chief Operating Officer, and up to 45.0% of base salary for each of our other executive officers. Given the strategic importance to us of entering into corporate partnerships for the full development and eventual commercialization of each of our lead product candidates, should they be approved by the appropriate regulatory agency, our Board has established the entering of such partnerships as the primary factor in determining whether cash incentive payments will be granted to our executive officers for performance in 2009. In the event that we complete one or more corporate partnering transactions, the Compensation Committee will determine the amount and timing of any bonus payment by evaluating the terms of the corporate partnering transaction, and the named executive officer's performance in such transaction.

The Compensation Committee has not determined whether it would attempt to recover cash incentive payments paid to our executive officers if the performance objectives that led to the determination of such payments were to be restated, or found not to have been met to the extent originally believed by the Compensation Committee. However, if we are required to restate our financial results due to our material noncompliance with any financial reporting requirements under the federal securities laws, as a result of misconduct, our Chief Executive Officer and Chief Financial Officer may be legally required to reimburse us for any bonus or other incentive-based or equity-based compensation they receive in accordance with the provisions of Section 304 of the Sarbanes-Oxley Act of 2002.

Long-Term Equity Compensation. The salary and cash incentive payment components of our executive compensation program are intended to compensate our executive officers for short-term performance. We believe that long-term performance is achieved through an ownership culture that encourages such performance by our executive officers through the use of equity-based awards. Our equity benefit plans have been established to provide certain of our employees, including our executive officers, with incentives to help align those employees' interests with the interests of our stockholders. Our Compensation Committee believes that the use of equity and equity-based awards offers the best approach to achieving our compensation goals and currently provides tax and other advantages to our employees relative to other forms of equity compensation. We believe that our equity benefit plans are an important retention tool for our employees.

We have not adopted stock ownership guidelines, and, other than for our co-founders, our equity benefit plans have provided the principal method for our executive officers to acquire equity or equity-linked interests in our company. Prior to our initial public offering in November 2007, we granted equity awards primarily through our 2001 Equity Incentive Plan, which was adopted by our Board and stockholders to permit the grant of stock options, stock appreciation rights, restricted stock and other stock-based awards to our officers, directors, scientific advisory board members, employees and consultants. In connection with our initial public offering, our Board adopted new equity benefit plans described under "*—Equity Benefit Plans*" below. The 2007 Equity Incentive Plan replaced our 2001 Equity Incentive Plan and, as described below, affords our Compensation Committee much greater flexibility in making a wide variety of equity awards. Participation in our 2007 Employee Stock Purchase Plan is available to all executive officers on the same basis as our other employees. The 2007 Non-Employee Directors Stock Option Plan provides for non-discretionary equity awards to our

non-employee directors. See "*Information Regarding the Board of Directors and Corporate Governance—Director Compensation*" for more detailed information on these non-discretionary equity awards.

In 2007 and 2008, certain of our named executive officers, who are designated below under "*—Summary Compensation Table*," were awarded stock options and restricted stock awards under our equity benefit plans in the amounts indicated in the section below entitled "*—Grants of Plan Based Awards*." In determining the size of the equity awards granted to our named executive officers in 2007 and 2008, as well as in February 2009, the Compensation Committee (or in certain instances our Board) took into account each named executive officer's position, scope of responsibility, ability to affect stockholder value, the individual's historic and recent performance, and our policy of looking to benchmark data from our peer companies with a goal of ensuring a level of long-term incentive compensation for our named executive officers as a group at approximately the 50th percentile of long-term incentive compensation for executive officers in similar positions with similar responsibilities at our peer companies. In the future, the Compensation Committee may deviate from this target level based on an executive officer's position and level of responsibility, potential contribution to the achievement of our long-term goals, equity award guidelines established by us and any other relevant factors.

Employment Agreements. Our executive officers are parties to employment agreements with us, which are more fully described under "*—Employment Agreements*" below.

Severance and Change of Control Benefits. Under their employment agreements, our executive officers are entitled to certain severance and change of control benefits, the terms of which are more fully described below under "*—Severance and Change of Control Benefits*." Our executive officers are generally entitled to a combination of a lump-sum severance payment, health insurance reimbursement and, in certain cases, accelerated vesting of stock options. We have found this combination of benefits to be generally typical for peer companies in our industry. With respect to change of control benefits, we provide severance compensation if an executive officer is terminated in connection with a change of control transaction to further promote the ability of our executive officers to act in the best interests of our stockholders even though they could be terminated as a result of the transaction. We also believe that the other severance benefits are appropriate, particularly with respect to a termination by us without cause, since in that scenario we and the executive have a mutually-agreed-upon severance package that is in place prior to any termination event which provides us with more flexibility to make a change in executive management if such a change is in our stockholders' best interests. As a result, we believe these severance and change of control benefits are an essential element of our executive compensation program and assist us in recruiting and retaining talented individuals.

Stock Appreciation Rights. Our 2007 Equity Incentive Plan authorizes us to grant stock appreciation rights, or SARs, which are more fully described below under "*—Equity Benefit Plans*." To date, no SARs have been awarded to any of our executive officers. However, our Compensation Committee, in its discretion, may in the future elect to make such grants to our executive officers if it deems it advisable.

Restricted Stock Awards. The Compensation Committee authorized the grant of restricted stock awards pursuant to our 2001 Equity Incentive Plan to our Chief Executive Officer in 2007 in the amount and under terms more fully described in the section below entitled "*—Compensation Actions for Our Executive Officers*." The Compensation Committee, in its discretion, may in the future elect to make additional restricted stock awards to our executive officers if they deem it advisable.

Other Benefits. We maintain a 401(k) plan in which all of our employees are entitled to participate. For more information about our 401(k) plan see the section below entitled "*—Post-Retirement Benefits*." We provide health care, dental and vision benefits to all full-time employees, including our executive officers. We also have a flexible benefits healthcare plan and a

flexible benefits childcare plan under which employees can set aside pre-tax funds to pay for qualified health care expenses and qualified childcare expenses not reimbursed by insurance. Under certain circumstances, we also provide limited reimbursement for the costs of childcare for children up to five years old. These benefits are available to all employees, including our executive officers, subject to applicable laws.

Compensation Actions for Our Executive Officers

Paul Goddard, Ph.D.—Chairman and Chief Executive Officer. Dr. Goddard's base salary effective as of January 1, 2009 is $451,000, reflecting an approximately 3% increase over his base salary in 2008. The Compensation Committee approved this increase in part to be competitive with the compensation offered by peer companies in our geographic area and to provide Dr. Goddard an adequate retention incentive. Dr. Goddard's individual performance goals mirrored our corporate goals, although he had the added goal of strengthening our management team and ensuring that our management team worked together effectively in continuing to move our products through research and development and in funding ARYx. In February 2008, the Compensation Committee granted Dr. Goddard a stock option under our 2007 Equity Incentive Plan to purchase 100,000 shares of common stock at an exercise price of $7.55 per share, reflecting the fair market value of our common stock on the date of grant. This stock option vests at the rate of 2,083 shares per month, measured from the date of grant, provided however, that to the extent Dr. Goddard ceases to serve as the Company's Chief Executive Officer but continues to serve as Chairman, the shares subject to the option award shall vest at a reduced rate, commencing from the date of Dr. Goddard's resignation or removal as Chief Executive Officer, of 1,041 shares per month for so long as Dr. Goddard continues to serve as Chairman. In addition, in February 2009 the Compensation Committee granted Dr. Goddard a stock option under our 2007 Equity Incentive Plan to purchase 200,000 shares of common stock at an exercise price of $2.70 per share, reflecting the fair market value of our common stock on the date of grant. This stock option vests at the rate of 4,168 shares per month, measured from the date of grant, provided however, that to the extent Dr. Goddard ceases to serve as the Company's Chief Executive Officer but continues to serve as Chairman, the shares subject to the option award shall vest at a reduced rate, commencing from the date of Dr. Goddard's resignation or removal as Chief Executive Officer, of 2,084 shares per month for so long as Dr. Goddard continues to serve as Chairman.

Peter G. Milner, M.D.—President, Research and Development and Director. Dr. Milner's base salary effective as of January 1, 2009 is $333,000, reflecting an approximately 3% increase over his base salary in 2008. The Compensation Committee approved this increase in part in order to be competitive with the compensation offered by peer companies in our geographic area and to provide Dr. Milner an adequate retention incentive. Dr. Milner received a discretionary non-cash bonus in the form of a gift card of $437, which reflects his contribution to achieving the ATI-9242 performance milestone. Dr. Milner's individual performance goals in 2008 included ensuring departments met their 2008 goals on time and on budget, reorganizing the research department, and supporting company business development. In February 2008, the compensation committee granted Dr. Milner a stock option under our 2007 Equity Incentive Plan to purchase 40,000 shares of common stock at an exercise price of $7.55 per share, reflecting the fair market value of our common stock on the date of grant. This stock option vests in equal monthly installments over 48 months measured from the date of grant. In addition, in February 2009, the Compensation Committee granted Dr. Milner a stock option under our 2007 Equity Incentive Plan to purchase 90,000 shares of common stock at an exercise price of $2.70 per share, reflecting the fair market value of our common stock on the date of grant. This stock option vests as follows: 25% of the shares subject to the award shall vest on the one-year anniversary of the date of grant, with the remaining shares vesting equally over the ensuing 36 months.

John Varian—Chief Operating Officer and Chief Financial Officer. Mr. Varian's base salary effective as of January 1, 2009 was $324,000, reflecting an approximately 3% increase over his base salary in

2008. The Compensation Committee approved this increase in part in order to be competitive with the compensation offered by peer companies in our geographic area and to provide Mr. Varian an adequate retention incentive. Mr. Varian's individual performance goals in 2008 included implementing a corporate development program, developing a pool of potential bidders for budiodarone, developing a financial model for business development purposes, and leading an effort to identify alternate plans to optimize the value of the research and feasibility programs. In February 2008, the compensation committee granted Mr. Varian a stock option under our 2007 Equity Incentive Plan to purchase 44,000 shares of common stock at an exercise price of $7.55 per share, reflecting the fair market value of our common stock on the date of grant. This stock option vests in equal monthly installments over 48 months measured from the date of grant. In addition, in February 2009, the Compensation Committee granted Mr. Varian a stock option under our 2007 Equity Incentive Plan to purchase 100,000 shares of common stock at an exercise price of $2.70 per share, reflecting the fair market value of our common stock on the date of grant. This stock option vests as follows: 25% of the shares subject to the award shall vest on the one-year anniversary of the date of grant, with the remaining shares vesting equally over the ensuing 36 months.

Pascal Druzgala, Ph.D.—Senior Vice President and Chief Scientific Officer. Dr. Druzgala's base salary effective as of January 1, 2009 was $283,000, reflecting an approximately 3% increase over his base salary as of June 1, 2008. The Compensation Committee approved this increase in part in order to be competitive with the compensation offered by peer companies in our geographic area and to provide Dr. Druzgala an adequate retention incentive. Dr. Druzgala received a discretionary non-cash bonus in the form of a gift card of $437, which reflects his contribution to achieving the ATI-9242 performance milestone. Dr. Druzgala's individual performance goals in 2008 were to select lead candidates for Investigational New Drug, or IND, applications in connection with ATI-24,000 and ATI-20,000; develop an IND-enabling package consisting of studies for the chosen IND program; and to continue to build and strengthen the role of research and pharmacology and take a leadership in publication strategy. In February 2008, the compensation committee granted Dr. Druzgala a stock option under our 2007 Equity Incentive Plan to purchase 35,000 shares of common stock at an exercise price of $7.55 per share, reflecting the fair market value of our common stock on the date of grant. This stock option vests in equal monthly installments over 48 months measured from the date of grant. In addition, in February 2009, the Compensation Committee granted Dr. Druzgala a stock option under our 2007 Equity Incentive Plan to purchase 60,000 shares of common stock at an exercise price of $2.70 per share, reflecting the fair market value of our common stock on the date of grant. This stock option vests as follows: 25% of the shares subject to the award shall vest on the one-year anniversary of the date of grant, with the remaining shares vesting equally over the ensuing 36 months.

Daniel Canafax, Pharm.D.—Vice President and Chief Development Officer. Dr. Canafax's base salary effective as of January 1, 2009 was $270,000, reflecting an approximately 3% increase over his base salary in 2008. The Compensation Committee approved this increase in part in order to be competitive with the compensation offered by peer companies in our geographic area and to provide Dr. Canafax an adequate retention incentive. Dr. Canafax received a discretionary non-cash bonus in the form of a gift card of $437, which reflects his contribution to achieving ATI-9242 performance milestone. Dr. Canafax's individual performance goals in 2008 were principally focused on leading the company's development team in the completion of a Phase 2 clinical trial and initiation of a Phase 2/3 clinical trial for tecarfarin, the completion of our Phase 2 clinical trial for budiodarone, and initiation of a clinical trial for ATI-9242. In February 2008, the compensation committee granted Dr. Canafax a stock option under our 2007 Equity Incentive Plan to purchase 60,000 shares of common stock at an exercise price of $7.55 per share, reflecting the fair market value of our common stock on the date of grant. This stock option vests in equal monthly installments over 48 months measured from the date of grant. In addition, in February 2009, the Compensation Committee granted Dr. Canafax a stock option under our 2007 Equity Incentive Plan to purchase 40,000 shares of common stock at an exercise price of $2.70 per share, reflecting the fair market value of our common stock on the date of grant. This

stock option vests as follows: 25% of the shares subject to the award shall vest on the one-year anniversary of the date of grant, with the remaining shares vesting equally over the ensuing 36 months.

David Nagler—Vice President, Corporate Affairs and Secretary. Mr. Nagler's base salary effective as of January 1, 2009 was $256,000, reflecting an approximately 3% increase over his base salary in 2008. The Compensation Committee approved this increase in part in order to be competitive with the compensation offered by peer companies in our geographic area and to provide Mr. Nagler an adequate retention incentive. Mr. Nagler's individual goals for 2008 included supporting corporate development through corporate communications and investor relations, executing a corporate workforce plan, acting as budiodarone project team leader, and working with management to implement a research team restructuring. In February 2008, the compensation committee granted Mr. Nagler a stock option under our 2007 Equity Incentive Plan to purchase 30,000 shares of common stock at an exercise price of $7.55 per share, reflecting the fair market value of our common stock on the date of grant. This stock option vests in equal monthly installments over 48 months measured from the date of grant. In addition, in February 2009, the Compensation Committee granted Mr. Nagler a stock option under our 2007 Equity Incentive Plan to purchase 60,000 shares of common stock at an exercise price of $2.70 per share, reflecting the fair market value of our common stock on the date of grant. This stock option vests as follows: 25% of the shares subject to the award shall vest on the one-year anniversary of the date of grant, with the remaining shares vesting equally over the ensuing 36 months.

Accounting and Tax Considerations

Effective January 1, 2006, we began accounting for stock-based compensation in accordance with Statement of Financial Accounting Standards No. 123(R), *Share-Based Payment*, or SFAS 123(R). Under the provisions of SFAS 123(R), compensation expense related to stock-based transactions, including employee and director stock-based awards, is estimated at the date of grant based on the stock award's fair value and is recognized as expense over the requisite service period. The Compensation Committee has determined to retain for the foreseeable future our stock option program as the sole component of its long-term executive compensation program, and, therefore, to record this expense on an ongoing basis according to SFAS 123(R). The Compensation Committee has considered, and may in the future consider, the grant of restricted stock or restricted stock units to our executive officers in lieu of or in addition to stock option grants in light of the accounting impact of SFAS 123(R) with respect to stock option grants and other considerations. Accounting rules also require us to record cash compensation as an expense at the time the obligation is incurred.

Section 162(m) of the Internal Revenue Code limits our deduction for federal income tax purposes to not more than $1 million of compensation paid to certain executive officers in a calendar year. Compensation above $1 million may be deducted if it is "performance-based compensation." The Compensation Committee has not yet established a policy for determining which forms of incentive compensation awarded to our executive officers shall be designed to qualify as "performance-based compensation." To maintain flexibility in compensating our executive officers in a manner designed to promote our objectives, the Compensation Committee has not adopted a policy that requires all compensation to be deductible. However, the Compensation Committee intends to evaluate the effects of the compensation limits of Section 162(m) on any compensation it proposes to grant, and the compensation committee intends to provide future compensation in a manner consistent with our best interests and those of our stockholders.

Conclusion

It is the opinion of the Compensation Committee that our compensation philosophy and related policies and elements described above provide the necessary incentives to properly align our performance and the interests of our stockholders while maintaining equitable and competitive executive compensation practices that enable us to attract and retain the highest caliber of executives.

SUMMARY COMPENSATION TABLE

The following table sets forth all of the compensation awarded to, earned by, or paid to our principal executive officer, principal financial officer and our four other highest paid executive officers for the years ended December 31, 2008, 2007 and 2006. The officers listed in the table below are referred to in this proxy statement as our "named executive officers."

Name and Principal Position	Year	Salary ($)	Bonus ($)(1)	Stock Awards ($)(2)	Option Awards ($)(3)	Non-Equity Incentive Plan Compensation ($)(4)	All Other Compensation ($)	Total ($)
Paul Goddard, Ph.D.	2008	437,850	—	20,271	396,204	—	2,602(5)	856,927
Chairman and Chief	2007	408,692	40,417	75,464	355,260	240,000	1,896(6)	1,121,729
Executive Officer	2006	400,000	40,175	60,500	198,441	110,000	1,806(6)	810,922
Peter G. Milner, M.D.	2008	322,857	437	—	125,260	—	13,335(7)	461,889
President, Research and	2007	309,695	417	—	40,320	80,000	11,172(8)	441,604
Development and Director	2006	300,675	175	—	24,528	110,000	688(6)	436,066
John Varian	2008	314,774	—	—	142,958	—	4,618(9)	462,350
Chief Operating Officer and	2007	301,941	417	—	62,030	70,000	10,084(10)	444,472
Chief Financial Officer	2006	284,850	175	—	39,821	75,000	791(11)	400,637
Pascal Druzgala, Ph.D. . . .	2008	270,118(20)	437	—	110,856	—	36,783(12)	418,194
Senior Vice President and	2007	252,368	417	—	38,804	60,000	38,054(13)	389,643
Chief Scientific Officer	2006	240,350	175	—	15,606	55,000	38,023(14)	349,154
Daniel Canafax, Pharm.D. .	2008	263,287	437	—	195,140	—	10,611(15)	469,475
Vice President and Chief	2007	224,091(21)	100,417	—	76,717	45,000	5,202(16)	451,426
Development Officer(20)	2006	—	—	—	—	—	—	—
David Nagler	2008	249,223	—	—	93,825	—	3,704(17)	346,752
Vice President, Corporate	2007	239,063	417	—	30,390	55,000	74,757(18)	399,626
Affairs and Secretary	2006	232,100	175	—	25,916	43,000	101,802(19)	402,993

(1) The amount for 2008 represents a discretionary non-cash bonus paid in the form of a gift card for the achievement of a performance milestone. The amounts for 2007 and 2006 represent a discretionary non-cash holiday bonus paid by us. For Dr. Goddard, the amounts for 2006 and 2007 also included a discretionary cash bonus of $40,000 in connection with the consummation of our collaboration with P&G. For Dr. Canafax, the amount in 2006 also included a sign-on bonus of $100,000.

(2) Represents the compensation expense attributable to stock awards earned by the named executive officers for 2008, whether granted in 2008 or in prior years. The compensation expense is based on the grant-date fair value of each performance share award as determined under Statement of Financial Accounting Standards No. 123 (revised), *Share-Based Payment* , or SFAS 123(R). Assumptions used in the calculation of the SFAS 123(R) grant-date fair value are set forth in Note 9 to our consolidated financial statements for the year ended

December 31, 2008 included in our Annual Report on Form 10-K for such year. Pursuant to SEC rules, the amount shown excludes the impact of estimated forfeiture related to service-based vesting conditions.

(3) Represents the SFAS 123(R) compensation expense attributable to stock options earned by the named executive officers for the applicable year, whether granted in the current year or in prior years. The compensation expense is based on the grant-date fair value of each stock option grant. Assumptions used in the calculation of the SFAS 123(R) grant-date fair value are set forth in Note 9 to our consolidated financial statements for the year ended December 31, 2008 included in our Annual Report on Form 10-K for such year. Pursuant to SEC rules, the amount shown excludes the impact of estimated forfeiture related to service-based vesting conditions.

(4) Represents cash incentive payments earned for the respective year but paid in the subsequent year based on our Compensation Committee's review of corporate performance and individual achievements for the respective year. For more information on our long-term incentive compensation program see "*Compensation Discussion and Analysis—Long-Term Equity Compensation.*"

(5) Consists of $2,602 in group term life insurance premiums paid by us.

(6) Represents group term life insurance premiums paid by us.

(7) Consists of $1,236 in group term life insurance premiums and $12,099 in matching 401(k) plan contributions paid by us.

(8) Consists of $714 in group term life insurance premiums and $10,459 in matching 401(k) plan contributions paid by us.

(9) Consists of $791 in group term life insurance premiums and $3,827 in matching 401(k) plan contributions paid by us.

(10) Consists of $450 in group term life insurance premiums and $9,635 in matching 401(k) plan contributions paid by us.

(11) Consists of $421 in group term life insurance premiums and $370 in long term disability insurance premiums paid by us.

(12) Consists of $1,095 in group term life insurance premiums and $35,688 housing allowance paid by us.

(13) Consists of $554 in group term life insurance premiums and a $37,500 housing allowance paid by us.

(14) Consists of $523 in group term life insurance premiums and a $37,500 housing allowance paid by us.

(15) Consists of $1,978 in group term life insurance premiums, $7,718 in matching 401(k) plan contributions and $915 in long-term disability insurance premiums paid by us.

(16) Consists of $970 in group term life insurance premiums, $608 in long-term disability insurance premiums and $3,624 in matching 401(k) plan contributions paid by us.

(17) Consists of $1,900 in group term life insurance premiums, $1,454 in matching 401(k) plan contributions and $350 in long-term disability insurance premiums paid by us.

(18) Consists of $971 in group term life insurance and $670 in long-term disability insurance premiums paid by us, and $73,116 resulting from our forgiveness of the principal amount and accrued interest due on a relocation loan made by us to Mr. Nagler.

(19) Consists of $338 in group term life insurance, $370 in long-term disability insurance premiums and a $70,987 housing allowance paid by us, together with $30,107 resulting from our forgiveness of the principal amount and accrued interest due on a relocation loan made by us to Mr. Nagler.

(20) The amount reflects an increase of Dr. Druzgala's base salary effective June 1, 2008.

(21) Dr. Canafax was hired in February 2007 and the amount reflects compensation earned for the period since hired.

GRANTS OF PLAN-BASED AWARDS DURING 2008

The following table sets forth certain additional information regarding grants of plan-based awards to our named executive officers for the year ended December 31, 2008.

Name	Grant Date	Estimated Future Payouts Under Non-Equity Incentive Plan Awards(1) Target ($)	All Other Stock Awards: # of Shares of Stock (#)	All Other Option Awards: # of Securities Underlying Options (#)	Exercise Price of Option Awards ($/Sh.)	Grant Date Fair Value of Stock and Option Awards ($)
Paul Goddard, Ph.D.	2/06/08	—	—	100,000	7.55	528,596
	—	258,925	—	—	—	—
Peter G. Milner, M.D.	2/06/08	—	—	40,000	7.55	211,439
	—	113,000	—	—	—	—
John Varian	2/06/08	—	—	44,000	7.55	232,583
	—	110,171	—	—	—	—
Pascal Druzgala, Ph.D.	2/06/08	—	—	35,000	7.55	185,008
	—	81,035	—	—	—	—
Daniel Canafax, Pharm.D.	2/06/08	—	—	60,000	7.55	317,157
	—	78,986	—	—	—	—
David Nagler	2/06/08	—	—	30,000	7.55	158,578
	—	74,767	—	—	—	—

(1) This column sets forth the target cash bonus amounts for each named executive officer for the year ended December 31, 2008 under our cash incentive payment program established by our Board of Directors. For Dr. Goddard, the target bonus was 50% of his salary and a potential discretionary cash bonus of $40,000. For Dr. Milner and Mr. Varian the target bonus was 35% of their respective base salaries and the target bonuses for Drs. Druzgala and Canafax and Mr. Nagler were 30% of their respective base salaries for 2008. The actual cash bonus award earned for the year ended December 31, 2008 is set forth in the Summary Compensation Table above. As such, the amounts set forth in this column do not represent additional compensation earned by our named executive officers for the year ended December 31, 2008. For a description of our cash incentive payment program, please see "*Compensation Discussion and Analysis—Elements of Our Executive Compensation Program—Cash Incentive Payments*" above.

EXECUTIVE EMPLOYMENT AGREEMENTS

Paul Goddard, Ph.D. In September 2005, we entered into an employment agreement with Dr. Goddard, Chairman of the Board and our Chief Executive Officer. The agreement provides that Dr. Goddard would receive an annual base salary of $400,000 and would be eligible to earn an annual bonus of up to 50% of his annual base salary contingent on the completion of specific business objectives to be determined by the Board. While not addressed in the agreement, these business objectives for Dr. Goddard were subsequently determined by our Compensation Committee to be as follows: (i) his successful assumption of the duties of Chief Executive Officer, (ii) his contribution towards our consummation of a strategic collaboration arrangement for ATI-7505 and (iii) his contribution towards the successful completion of our Series E preferred stock private financing. The agreement provided that the Board would set additional business objectives that, if the Board deemed accomplished, would raise Dr. Goddard's annual bonus by up to an additional $40,000 per year. The agreement provides that Dr. Goddard is employed "at-will," and his employment may be terminated at any time by us or Dr. Goddard. Dr. Goddard is also eligible to participate in our general employee benefit plans in accordance with the terms and conditions of such plans. The agreement provides Dr. Goddard with certain severance and change of control benefits. See "*—Severance and Change of*

Control Benefits" below. In December 2008, non-substantive amendments were made to this employment agreement in accordance with Internal Revenue Service regulations. Dr. Goddard's base salary has been increased since the date of his employment agreement primarily as a result of market conditions rather than Dr. Goddard's achievement of any business objectives.

Peter G. Milner, M.D. In September 2005, we entered into an employment agreement with Dr. Milner, our President, Research and Development and a member of the Board. The agreement provided that Dr. Milner would receive an annual base salary and would be eligible to earn an annual bonus appropriate to his position as established by the Compensation Committee, and contingent on the successful completion of specific business objectives mutually determined by Dr. Milner and our Board. These business objectives for Dr. Milner were mutually determined by our compensation committee and Dr. Milner to be as follows: (i) his successful transition to the duties of President, Research and Development, (ii) his contribution towards our consummation of a strategic collaboration arrangement for ATI-7505 and (iii) his contribution towards the successful completion of our Series E preferred stock private financing. The agreement reaffirmed prior issuances of stock options, including a stock option to purchase 33,333 shares of common stock under our 2001 Equity Incentive Plan issued pursuant to a prior employment agreement entered into in February 2005 and amended in September 2005. The shares subject to such stock option shall vest over a four year period, with 1/4th of the shares subject to the stock option vesting on the first anniversary of the grant date, and 1/48th of the shares subject to the stock option vesting monthly thereafter. The agreement provides that Dr. Milner is employed "at-will," and his employment may be terminated at any time by us or Dr. Milner. Dr. Milner is also eligible to participate in our general employee benefit plans in accordance with the terms and conditions of such plans. The agreement provides Dr. Milner with certain severance and change of control benefits. See "*—Severance and Change of Control Benefits*" below. Dr. Milner's base salary has been increased since the date of his employment primarily as a result of market conditions rather than Dr. Milner's achievement of any business objectives. In December 2008, non-substantive amendments were made to this employment agreement in accordance with Internal Revenue Service regulations.

John Varian. In November 2003, we entered into an employment agreement with Mr. Varian, our Chief Operating Officer and Chief Financial Officer. The agreement provided that Mr. Varian would receive an annual base salary of $260,000, a starting bonus of $30,000 and would be eligible to earn a bonus of $50,000 in 2004 for satisfaction of certain specified milestones. The agreement also provided for the issuance of a stock option to purchase 83,333 shares of common stock under our 2001 Equity Incentive Plan. The shares subject to such stock option vest over a four year period, with 1/4th of the shares subject to the stock option vesting on the first anniversary of the grant date, and 1/48th of the shares subject to the stock option vesting monthly thereafter. The agreement provides that Mr. Varian is employed "at-will," and his employment may be terminated at any time by us or Mr. Varian. Mr. Varian is also eligible to participate in our general employee benefit plans in accordance with the terms and conditions of such plans. The agreement provides Mr. Varian with certain severance and change of control benefits. See "*—Severance and Change of Control Benefits*" below. In December 2008, non-substantive amendments were made to this employment agreement in accordance with Internal Revenue Service regulations.

Pascal Druzgala, Ph.D. In July 2002, we entered into an employment agreement with Dr. Druzgala, our Senior Vice President and Chief Scientific Officer. The agreement provided that Dr. Druzgala would receive an annual base salary of $200,000 and would be eligible to earn an annual bonus of up to $50,000 for satisfaction of certain specified milestones. The agreement also provided for the issuance of a stock option to purchase 50,000 shares of common stock under our 2001 Equity Incentive Plan upon the closing of our Series C preferred stock financing. The shares subject to such stock option shall vest in equal monthly installments over four years. The agreement provides that Dr. Druzgala is employed "at-will," and his employment may be terminated at any time by us or Dr. Druzgala. Dr. Druzgala is also eligible to participate in our general employee benefit plans in

accordance with the terms and conditions of such plans. The agreement provides Dr. Druzgala with certain severance and change of control benefits. See "*—Severance and Change of Control Benefits*" below. In December 2008, non-substantive amendments were made to this employment agreement in accordance with Internal Revenue Service regulations.

Daniel Canafax, Pharm.D. In January 2007, we entered into an employment agreement with Dr. Canafax, our Vice President and Chief Development Officer. The agreement provided that Dr. Canafax would receive an annual base salary of $255,000, a starting bonus of $50,000, a bonus of $50,000 payable on August 1, 2007 and would be eligible to earn an annual bonus of up to 25% of his annual base salary for performance in 2007. The agreement also provided for the issuance of a stock option to purchase 83,333 shares of common stock under our 2001 Equity Incentive Plan. The shares subject to such stock option shall vest over a four year period, with 1/4th of the shares subject to the stock option vesting on the grant date, and 1/48th of the shares subject to the stock option vesting monthly from the date of the first anniversary of his employment with us. The agreement provides that Dr. Canafax is employed "at-will," and his employment may be terminated at any time by us or Dr. Canafax. Dr. Canafax is also eligible to participate in our general employee benefit plans in accordance with the terms and conditions of such plans. The agreement provides Dr. Canafax with certain severance and change of control benefits. See "*—Severance and Change of Control Benefits*" below. In December 2008, non-substantive amendments were made to this employment agreement in accordance with Internal Revenue Service regulations.

David Nagler. In July 2003, we entered into an employment agreement with Mr. Nagler, our Vice President, Corporate Affairs and Secretary. The agreement provided that Mr. Nagler would receive an annual base salary of $200,000 and would be eligible to earn a bonus of $25,000 in 2004 for satisfaction of certain specified milestones. The agreement also provided for the issuance of a stock option to purchase 30,000 shares of common stock under our 2001 Equity Incentive Plan. The shares subject to such stock option shall vest over a four year period, with 1/4th of the shares subject to the stock option vesting on the first anniversary of the grant date, and 1/48th of the shares subject to the stock option vesting monthly thereafter. The agreement provides that Mr. Nagler is employed "at-will," and his employment may be terminated at any time by us or Mr. Nagler. Mr. Nagler is also eligible to participate in our general employee benefit plans in accordance with the terms and conditions of such plans.

Severance and Change of Control Benefits

Paul Goddard, Ph.D. Our employment agreement with Dr. Goddard, our Chairman and Chief Executive Officer, provides that if he is terminated without good cause or resigns with good reason he will receive a lump sum severance payment in an amount equal to six months of his then-current base salary, subject to withholdings and deductions. In addition, if Dr. Goddard timely elects COBRA health insurance coverage, we will reimburse his COBRA premiums for a maximum of either six months following the date his employment terminates or until he is eligible for health insurance coverage from another source, whichever occurs sooner. In addition, as a condition of receiving these payments, Dr. Goddard must execute a general release of claims against the Company.

The stock option to purchase 238,333 shares of our common stock, granted to Dr. Goddard in March 2005 provides that if Dr. Goddard is terminated without good cause or resigns with good reason within 24 months following a change of control, the shares subject to such grants shall become fully vested as of Dr. Goddard's termination or resignation date. The stock option further provides that, in the absence of a change of control, Dr. Goddard shall be credited with one year of additional vesting upon his termination without good cause or resignation with good reason.

The following table describes the potential payments to Dr. Goddard upon his termination without good cause or resignation for good reason, both in connection with a change of control and not in connection with a change of control, as of December 31, 2008. The following table does not include

amounts in which Dr. Goddard had already vested as of December 31, 2008. Such vested amounts would include vested restricted stock grants and stock option awards, accrued wages and accrued vacation. The actual compensation to be paid can only be determined at the time of termination of employment.

	Change of Control			No Change of Control		
Name	Salary(1)	Equity Acceleration (2)(3)	Benefits(4)	Salary(1)	Equity Acceleration (2)(3)	Benefits(4)
Paul Goddard, Ph.D.	$218,925	$43,695	$6,004	$218,925	$43,695	$6,004

(1) Represents six months of continued salary based on 2008 base salary.

(2) Calculated based on price per share of our common stock of $2.90, the closing price of our common stock on December 31, 2008 as quoted on the NASDAQ Global Market, assuming a change of control were to consummate on that date.

(3) The remaining unvested shares under the stock option granted to Dr. Goddard in March 2005 will become vested within one year of December 31, 2008 pursuant to the terms of such stock option and subject to Dr. Goddard's continued service to ARYx.

(4) Represents six months of COBRA health benefits at the benefit rate for 2008.

Peter G. Milner, M.D. Our employment agreement with Dr. Milner, our President, Research and Development and a member of the Board, provides that if he is terminated without good cause or resigns with good reason he will receive a lump sum severance payment in an amount equal to 12 months of his then-current base salary, subject to withholdings and deductions. In addition, if Dr. Milner timely elects COBRA health insurance coverage, we will reimburse his COBRA premiums for a maximum of either 12 months following the date his employment terminates or until he is eligible for health insurance coverage from another source, whichever occurs sooner. In addition, as a condition of receiving these payments, Dr. Milner must execute a general release of claims against the Company.

If Dr. Milner is terminated without good cause or resigns with good reason within 13 months following a change of control, the stock options to purchase 33,333 and 20,833 shares of our common stock granted in February 2005 and September 2005, respectively, granted to Dr. Milner shall become fully vested as of Dr. Milner's termination or resignation date. While our other named executive officers are entitled to a lump sum severance payment equal to six months salary and to reimbursement of up to six months of COBRA health insurance premiums, Dr. Milner's higher levels of benefits reflect his prioritization of these components of compensation as part of the negotiation of his employment agreement.

The following table describes the potential payments to Dr. Milner upon his termination without good cause or resignation for good reason, both in connection with a change of control and not in connection with a change of control, as of December 31, 2008. The following table does not include amounts in which Dr. Milner had already vested as of December 31, 2008. Such vested amounts would include vested stock option awards, accrued wages and accrued vacation. The actual compensation to be paid can only be determined at the time of termination of employment.

	Change of Control			No Change of Control		
Name	Salary(1)	Equity Acceleration(2)	Benefits(3)	Salary(1)	Equity Acceleration	Benefits(3)
Peter G. Milner, M.D.	$322,857	$7,734	$12,009	$322,857	$ —	$12,009

(1) Represents 12 months of continued salary based on 2008 base salary.

(2) Calculated based on price per share of our common stock of $2.90, the closing price of our common stock on December 31, 2008 as quoted on the NASDAQ Global Market, assuming a change of control were to consummate on that date.

(3) Represents 12 months of COBRA health benefits at the benefit rate for 2008.

John Varian. Our employment agreement with Mr. Varian, our Chief Operating Officer and Chief Financial Officer, provides that if he is terminated without good cause or resigns with good reason, he will receive a lump sum severance payment in an amount equal to six months of his then-current base salary, subject to withholdings and deductions. In addition, if Mr. Varian timely elects COBRA health insurance coverage, we will reimburse his COBRA premiums for a maximum of either six months following the date his employment terminates or until he is eligible for health insurance coverage from another source, whichever occurs sooner. In addition, as a condition of receiving these payments, Mr. Varian must execute a general release of claims against the Company.

The following table describes the potential payments to Mr. Varian upon his termination without good cause or resignation for good reason, as of December 31, 2008. The following table does not include amounts in which Mr. Varian had already vested as of December 31, 2008. Such vested amounts would include vested stock option awards, accrued wages and accrued vacation. The actual compensation to be paid can only be determined at the time of termination of employment.

Name	Salary(1)	Benefits(2)
John Varian.	$157,387	$6,004

(1) Represents six months of continued salary based on 2008 base salary.

(2) Represents six months of COBRA health benefits at the benefit rate for 2008.

Pascal Druzgala, Ph.D. Our employment agreement with Dr. Druzgala, our Senior Vice President and Chief Scientific Officer, provides that if he is terminated without good cause or resigns with good reason he will receive a lump sum severance payment in an amount equal to six months of his then-current base salary, subject to withholdings and deductions. In addition, if Dr. Druzgala timely elects COBRA health insurance coverage, we will reimburse his COBRA premiums for a maximum of either six months following the date his employment terminates or until he is eligible for health insurance coverage from another source, whichever occurs sooner. In addition, as a condition of receiving these payments, Dr. Druzgala must execute a general release of claims against the Company.

The following table describes the potential payments to Dr. Druzgala upon his termination without good cause or resignation for good reason, as of December 31, 2008. The following table does not include amounts in which Dr. Druzgala had already vested as of December 31, 2008. Such vested amounts would include vested stock option awards, accrued wages and accrued vacation. The actual compensation to be paid can only be determined at the time of termination of employment.

Name	Salary(1)	Benefits(2)
Pascal Druzgala, Ph.D.	$135,059	$4,162

(1) Represents six months of continued salary based on 2008 base salary.

(2) Represents six months of COBRA health benefits at the benefit rate for 2008.

Daniel Canafax, Pharm.D. Our employment agreement with Dr. Canafax, our Vice President and Chief Development Officer, provides that if he is terminated without good cause or resigns with good reason he will receive a lump sum severance payment in an amount equal to six months of his then-current base salary, subject to withholdings and deductions. In addition, if Dr. Canafax timely

elects COBRA health insurance coverage, we will reimburse his COBRA premiums for a maximum of either six months following the date his employment terminates or until he is eligible for health insurance coverage from another source, whichever occurs sooner. In addition, as a condition of receiving these payments, Dr. Canafax must execute a general release of claims against the Company.

If Dr. Canafax is terminated without good cause or resigns with good reason within 13 months following a change of control, the stock option to purchase 83,333 shares of our common stock granted to Dr. Canafax shall become fully vested as of Dr. Canafax's termination or resignation date. In the absence of a change of control, Dr. Canafax shall be credited with six months of additional vesting of the shares subject to such stock option upon his termination without good cause or resignation with good reason.

The following table describes the potential payments to Dr. Canafax upon his termination without good cause or resignation for good reason, both in connection with a change of control and not in connection with a change of control, as of December 31, 2008. The following table does not include amounts in which Dr. Canafax had already vested as of December 31, 2008. Such vested amounts would include vested option awards, accrued wages and accrued vacation. The actual compensation to be paid can only be determined at the time of termination of employment.

	Change of Control			No Change of Control		
Name	Salary(1)	Equity Acceleration(2)	Benefits(3)	Salary(1)	Equity Acceleration(2)	Benefits(3)
Daniel Canafax, Pharm.D. . .	$131,644	$ —	$6,004	$131,644	$ —	$6,004

(1) Represents six months of continued salary based on 2008 base salary.

(2) Calculated based on price per share of our common stock of $2.90, the closing price of our common stock on December 31, 2008 as quoted on the NASDAQ Global Market, assuming a change of control were to consummate on that date.

(3) Represents six months of COBRA health benefits at the benefit rate for 2008.

Upon a change of control or certain other corporate transactions of ARYx, if the successor corporation refuses to assume or substitute the equity awards held by our employees, including our named executive officers, unvested stock options will fully vest. The table below shows our estimates of the amount of the benefit each of our named executive officers would have received if the unvested stock options held by them as of December 31, 2008 had become fully vested as a result of a change of control. The estimated benefit amount of unvested stock option awards was calculated by multiplying the number of in-the-money unvested options held by the applicable named executive officer by the difference between the closing price of our common stock on December 31, 2008, which was $2.90, and the exercise price of the stock option award.

Name	Number of Unvested Options at December 31, 2008 (#)	Total Estimated Benefit ($)
Paul Goddard, Ph.D.	118,890	43,695
Peter G. Milner, M.D.	49,080	7,734
John Varian	57,335	6,743
Pascal Druzgala, Ph.D.	44,585	5,386
Daniel Canafax, Pharm.D.	92,639	—
David Nagler	34,862	6,074

Outstanding Equity Awards at December 31, 2008

The following table sets forth certain information regarding outstanding equity awards granted to our named executive officers as of December 31, 2008:

		Option Awards				Stock Awards	
Name		Number of Securities Underlying Unexercised Options Exercisable (#)	Number of Securities Underlying Unexercised Options Unexercisable (#)	Option Exercise Price ($)	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested ($)(2)
Paul Goddard, Ph.D.	(5)	4,166	—	0.90(1)	7/23/2013	—	—
	(5)	120,000	—	1.80(1)	3/03/2015	—	—
	(6)	181,944	39,723	1.80(1)	3/03/2015	—	—
	(5)	100,000	—	1.80(1)	3/03/2015	—	—
	(6)	20,833	79,167	7.55(13)	2/05/2018	—	—
	(7)	—	—	—	—	693(3)	2,010
	(8)	—	—	—	—	14,580(4)	42,282
Peter G. Milner, M.D.	(9)	31,944	1,389	1.80(1)	1/15/2015	—	—
	(10)	15,191	5,642	1.80(1)	9/20/2015	—	—
	(11)	11,284	10,382	3.30(1)	2/14/2017	—	—
	(6)	8,333	31,667	7.55(13)	2/05/2018		
John Varian	(5)	83,333	—	0.90(1)	12/16/2013	—	—
	(9)	75,884	1,616	1.80(1)	1/18/2015	—	—
	(10)	12,152	4,514	1.80(1)	9/20/2015	—	—
	(11)	17,795	16,371	3.30(1)	2/14/2017	—	—
	(6)	9,166	34,834	7.55(13)	2/05/2018	—	—
Pascal Druzgala, Ph.D.	(5)	50,000	—	0.90(1)	7/23/2012	—	—
	(9)	17,951	382	1.80(1)	1/18/2015	—	—
	(10)	12,152	4,514	1.80(1)	9/20/2015	—	—
	(11)	13,020	11,980	3.30(1)	2/14/2017	—	—
	(6)	7,291	27,709	7.55(13)	2/05/2018		
Daniel Canafax, Pharm.D	(12)	38,194	45,139	3.30(1)	2/14/2017	—	—
	(6)	12,500	47,500	7.55(13)	2/05/2018		
David Nagler	(5)	3,333	—	0.90(1)	11/13/2012	—	—
	(5)	29,999	—	0.90(1)	7/23/2013	—	—
	(9)	47,325	1,008	1.80(1)	1/18/2015	—	—
	(10)	12,152	4,514	1.80(1)	9/20/2015	—	—
	(11)	6,076	5,590	3.30(1)	2/14/2017	—	—
	(6)	6,250	23,750	7.55(13)	2/05/2018	—	—

(1) Represents the per share fair value of our common stock as determined by our Board of Directors in good faith on the date of grant.

(2) The market value of the unvested shares has been calculated based on the closing price of our common stock as quoted on the NASDAQ Global Market on December 31, 2008.

(3) Our right to repurchase the unvested shares lapses on a monthly basis at the rate of 694.44 shares per month, contingent upon Dr. Goddard's continuous service to us.

(4) Our right to repurchase the unvested shares lapses on a monthly basis at the rate of 520.83 shares per month, contingent upon Dr. Goddard's continuous service to us.

(5) Represents fully vested but unexercised stock option awards as of December 31, 2008.

(6) 1/48th of the shares subject to the option award vest monthly over four years. For Dr. Goddard, the option award vests at the rate of 2,083 shares per month, measured from the date of grant, provided however, that to the extent Dr. Goddard ceases to serve as the Company's Chief Executive Officer but continues to serve as Chairman, the shares subject to the option award shall vest at a reduced rate, commencing from the date of Dr. Goddard's resignation or removal as Chief Executive Officer, of 1,041 shares per month for so long as Dr. Goddard continues to serve as Chairman.

(7) 1/3rd of the shares subject to the award vest one year from the grant date and 1/24th of the remaining shares vest monthly over the remaining two years, contingent on Dr. Goddard's continued employment with us.

(8) 1/48th of the shares subject to the award vest monthly over four years, contingent on Dr. Goddard's continued employment with us.

(9) Shares subject to the option award vest over a four year period, with 1/4th of the shares vesting on the first anniversary of the vesting commencement date and 1/48th of the shares vesting each month thereafter until fully vested. All of the shares subject to Dr. Milner's stock option award for 33,333 shares of common stock can be early exercised prior to vesting.

(10) 6/48th of the shares subject to the option award vested in July 2006, and 1/48th of the shares vest each month thereafter until fully vested.

(11) 1/4th of the shares subject to the option award vested on November 14, 2007, the date immediately following the closing of our initial public offering, and the remaining shares vest monthly over the remaining three years.

(12) 1/4th of the shares subject to the option award vested on February 15, 2007, the date of grant, and 1/48th of the shares vest monthly from the date of the first anniversary of his employment with us until fully vested.

(13) Calculated based on the closing price of our common stock as quoted on the NASDAQ Global Market on the date of grant.

Option Exercises and Stock Vested During 2008

The following table shows the number of restricted stock award shares vested and acquired upon exercise of stock options by our named executive officers during the year ended December 31, 2008:

	Stock Awards		Option Awards	
Name	Number of Shares Acquired on Vesting	Value Realized on Vesting(1)	Number of Shares Acquired on Exercise	Value Realized on Exercise
Paul Goddard, Ph.D.	14,580	$79,855	—	$ —

(1) Calculated based on the closing price of our common stock as quoted on the NASDAQ Global Market during 2008.

Pension Benefits

Our named executive officers did not participate in, or otherwise receive any benefits under, any pension or retirement plan sponsored by us during the year ended December 31, 2008.

Post-Retirement Benefits

We sponsor a 401(k) plan where our employees, including named executive officers, are eligible to participate. Our 401(k) plan provides that each participant may contribute a portion of his or her pre-tax compensation, up to a statutory limit, which for most employees is $15,500 in 2008. Participants that are 50 years or older can also make "catch-up" contributions, which in 2008 may be up to an additional $5,000 above the statutory limit. Employee contributions are held and invested by the plan's trustee. As permitted under our 401(k) plan, we match participant contributions up to 3.5% of a participant's annual compensation, subject to statutory limits.

During the year ended December 31, 2008, Drs. Milner and Canafax and Messrs. Varian and Nagler elected to defer a portion of their compensation under the 401(k) plan and, as a result, received corresponding matching contribution from us. See "*—Summary Compensation Table*" above for more details on the matching contributions paid by us for our named executive officers.

Nonqualified Deferred Compensation

During the year ended December 31, 2008, our named executive officers did not contribute to, or earn any amounts with respect to, any defined contribution or other plan sponsored by us that provides for the deferral of compensation on a basis that is not tax-qualified.

Equity Benefit Plans

2001 Equity Incentive Plan

Our Board adopted the 2001 Equity Incentive Plan, or 2001 Plan, in May 2001 and our stockholders approved the 2001 Plan in May 2002. Prior to November 2007, we granted options to our named executive officers under the 2001 Plan. The 2001 Plan was terminated in connection with our initial public offering so that no further awards may be granted under such plan. The Board has the authority to construe and interpret the terms of the 2001 Plan and the awards granted under it. Although the 2001 Plan has terminated, all outstanding options will continue to be governed by their existing terms. The following is a brief description of certain of the permissible terms of options granted under the 2001 Plan:

Exercise Price. The exercise price of incentive stock options may not be less than 100% of the fair market value of our common stock on the date of grant. The exercise price of nonstatutory stock options may not be less than 85% of the fair market value of our common stock on the date of grant. Each of the options granted to our named executive officers in 2008 carry an exercise price equal to 100% of the fair market value of our common stock on the date of grant.

Vesting. Shares subject to options under the 2001 Plan generally vest in a series of installments over an optionee's period of service, with a minimum vesting rate as to non-executive employees of at least 20% per year over five years from the date of grant. For the vesting terms for stock options and restricted stock awards granted to our named executive officers under the 2001 Plan, see the section above entitled "*—Outstanding Equity Awards at December 31, 2008.*"

Term. In general, the maximum term of options granted under the 2001 Plan is ten years from the date of grant. Unless the terms of an optionee's stock option agreement provide otherwise, if an optionee's service relationship with us, or any of our affiliates, ceases for any reason other than disability or death, the optionee may exercise the vested portion of any options for three months after the date of such termination. If an optionee's service relationship with us, or any of our affiliates, ceases due to disability or death (or an optionee dies within a certain period following cessation of service), the optionee or a beneficiary may exercise any vested options for a period of 12 months in the event of disability, and 18 months in the event of death. The option term may be extended in the event that exercise of the option following termination of service is prohibited by applicable securities laws. In no event, however, may an option be exercised beyond the expiration of its term.

Asset Sale or Merger. In the event of a sale of substantially all of our assets or a merger, the surviving or acquiring corporation may assume or substitute substantially equivalent stock awards for the outstanding stock awards granted under the 2001 Plan. If the surviving or acquiring corporation elects not to assume or substitute for outstanding stock awards granted under the 2001 Plan, then stock awards held by individuals whose service has not terminated prior to the sale of substantially all of our assets or a merger will be accelerated in full. Upon consummation of the asset sale or merger, all

outstanding stock awards will terminate to the extent not exercised or assumed by the surviving or acquiring corporation.

2007 Equity Incentive Plan

Our Board adopted the 2007 Equity Incentive Plan, or 2007 Plan, in July 2007 and our stockholders approved the 2007 Plan in October 2007. The 2007 Plan became effective in connection with our initial public offering. The 2007 Plan will terminate on July 17, 2017, unless terminated earlier by the Board. For more information on grants under the 2007 Plan during the year ended December 31, 2008, see "*—Compensation Actions for Our Executive Officers.*" The following is a brief description of certain of the permissible terms of stock awards granted under the 2007 Plan:

Stock Awards. The 2007 Plan provides for the grant of incentive stock options, nonstatutory stock options, restricted stock awards, restricted stock unit awards, stock appreciation rights, performance stock awards, and other forms of equity compensation, or. collectively, stock awards, which may be granted to employees, including officers, non-employee directors and consultants.

Share Reserve. The aggregate number of shares of common stock that may be issued pursuant to stock awards under the 2007 Plan is 1,356,146 shares as of December 31, 2008. The number of shares of common stock reserved for issuance will automatically increase on January 1st of each year through and including January 1, 2017, by the lesser of (a) 4.0% of the total number of shares of common stock outstanding on December 31st of the preceding calendar year or (b) a lesser number of shares of common stock determined by the Board prior to the start of a calendar year for which an increase applies. The maximum number of shares that may be issued pursuant to the exercise of incentive stock options over the term of the 2007 Plan is 6,666,666 shares.

No person may be granted stock options or stock appreciation rights covering more than 666,666 shares of common stock under the 2007 Plan during any calendar year. Such limitation is designed to help assure that any deductions to which we would otherwise be entitled upon the exercise of such stock options and stock appreciation rights, or upon the subsequent sale of shares acquired under such awards, will not be subject to the $1 million limitation on the income tax deductibility of compensation paid to certain executive officers imposed by Section 162(m) of the Internal Revenue Code.

If a stock award granted under the 2007 Plan expires or otherwise terminates without being exercised in full, the shares of common stock not acquired pursuant to the stock award again become available for subsequent issuance under the 2007 Plan. In addition, the following types of shares under the 2007 Plan will become available for the grant of new stock awards under the 2007 Plan: (a) shares that are forfeited to or repurchased by us prior to becoming fully vested; (b) shares subject to stock awards that are settled in cash; (c) shares withheld to satisfy income and employment withholding taxes; (d) shares used to pay the exercise price of an option in a net exercise arrangement; (e) shares tendered to us to pay the exercise price of an option; and (f) shares that are cancelled pursuant to an exchange or repricing program. Shares issued under the 2007 Plan may be previously unissued shares or reacquired shares, including shares bought on the open market.

Administration. The Board has delegated its authority to administer the 2007 Plan to our Compensation Committee. Subject to the terms of the 2007 Plan, our Board or an authorized committee, referred to as the plan administrator, determines recipients, dates of grant, the numbers and types of stock awards to be granted and the terms and conditions of the stock awards, including the period of their exercisability and vesting. Subject to the limitations set forth below, the plan administrator will also determine the exercise price of options granted, the consideration to be paid for restricted stock awards, and the strike price of stock appreciation rights.

The plan administrator has the authority to:

- reduce the exercise price of any outstanding option or the strike price of any outstanding stock appreciation right;
- cancel any outstanding option or stock appreciation right and to grant in exchange one or more of the following:
  - new options or stock appreciation rights covering the same or a different number of shares of common stock,
  - new stock awards,
  - cash, and/or
  - other valuable consideration; or
- engage in any action that is treated as a repricing under generally accepted accounting principles.

Stock Options. Incentive and nonstatutory stock options are granted pursuant to incentive and nonstatutory stock option agreements adopted by the plan administrator. The plan administrator determines the exercise price for a stock option provided that the exercise price of an incentive stock option and nonstatutory stock option cannot be less than 100% of the fair market value of our common stock on the date of grant. Options granted under the 2007 Plan vest at the rate specified by the plan administrator.

Generally, the plan administrator determines the term of stock options granted under the 2007 Plan, up to a maximum of ten years (except in the case of certain incentive stock options, as described below). Unless the terms of an optionee's stock option agreement provide otherwise, if an optionee's relationship with us, or any of our affiliates, ceases for any reason other than disability or death, the optionee may exercise any vested options for a period of three months following the cessation of service. If an optionee's service relationship with us, or any of our affiliates, ceases due to disability or death (or an optionee dies within a certain period following cessation of service), the optionee or a beneficiary may exercise any vested options for a period of 12 months in the event of disability, and 18 months in the event of death. The option term may be extended in the event that exercise of the option following termination of service is prohibited by applicable securities laws. In no event, however, may an option be exercised beyond the expiration of its term.

Acceptable consideration for the purchase of common stock issued upon the exercise of a stock option will be determined by the plan administrator and may include (a) cash or check, (b) a broker-assisted cashless exercise, (c) the tender of common stock previously owned by the optionee, (d) a net exercise of the option, (e) a deferred payment arrangement and (f) other legal consideration approved by the plan administrator.

Unless the plan administrator provides otherwise, options generally are not transferable except by will, the laws of descent and distribution, or pursuant to a domestic relations order. An optionee may designate a beneficiary, however, who may exercise the option following the optionee's death.

Tax Limitations on Incentive Stock Options. Incentive stock options may be granted only to our employees. The aggregate fair market value, determined at the time of grant, of shares of our common stock with respect to incentive stock options that are exercisable for the first time by an optionee during any calendar year under all of our stock plans may not exceed $100,000. No incentive stock option may be granted to any person who, at the time of the grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power or that of any of our affiliates, unless (a) the option exercise price is at least 110% of the fair market value of the stock subject to the option on the date of grant and (b) the term of the incentive stock option does not exceed five years from the date of grant.

Restricted Stock Awards. Restricted stock awards are granted pursuant to restricted stock award agreements adopted by the plan administrator. Restricted stock awards may be granted in consideration for: (a) cash, check, bank draft or money order, (b) past or future services rendered to us or our affiliates or (c) any other form of legal consideration approved by the plan administrator. Shares of common stock acquired under a restricted stock award may, but need not, be subject to forfeiture to us in accordance with a vesting schedule to be determined by the plan administrator. Rights to acquire shares under a restricted stock award may be transferred only upon such terms and conditions as set by the plan administrator.

Restricted Stock Unit Awards. Restricted stock unit awards are granted pursuant to restricted stock unit award agreements adopted by the plan administrator. Restricted stock unit awards may be granted in consideration for any form of legal consideration acceptable to the Board. A restricted stock unit award may be settled by cash, delivery of stock, a combination of cash and stock as deemed appropriate by the plan administrator or in any other form of consideration set forth in the restricted stock unit award agreement. Additionally, dividend equivalents may be credited in respect to shares covered by a restricted stock unit award. Except as otherwise provided in the applicable award agreement, restricted stock units that have not vested will be forfeited upon the participant's cessation of continuous service for any reason.

Stock Appreciation Rights. Stock appreciation rights are granted pursuant to stock appreciation rights agreements adopted by the plan administrator. The plan administrator determines the strike price for a stock appreciation right which cannot be less than 100% of the fair market value of the common stock on the date of grant. Upon the exercise of a stock appreciation right, we will pay the participant an amount equal to the product of (a) the excess of the per share fair market value of our common stock on the date of exercise over the strike price, multiplied by (b) the number of shares of common stock with respect to which the stock appreciation right is exercised. A stock appreciation right granted under the 2007 Plan vests at the rate specified in the stock appreciation right agreement.

The plan administrator determines the term of stock appreciation rights granted under the 2007 Plan up to a maximum of ten years. If a participant's service relationship with us, or any of our affiliates, ceases, then the participant, or the participant's beneficiary, may exercise any vested stock appreciation right for three months (or such longer or shorter period specified in the stock appreciation right agreement) after the date such service relationship ends. In no event, however, may a stock appreciation right be exercised beyond the expiration of its term.

Performance Stock Awards. The 2007 Plan permits the grant of performance stock awards that may qualify as performance-based compensation that is not subject to the $1.0 million limitation on the income tax deductibility of compensation paid to certain executive officers imposed by Section 162(m) of the Internal Revenue Code. To assure that the compensation attributable to one or more performance stock awards will so qualify, our compensation committee can structure one or more such awards so that stock will be issued or paid pursuant to such award only upon the achievement of certain pre-established performance goals during a designated performance period. The maximum benefit to be received by a participant in any calendar year attributable to performance stock awards may not exceed 666,666 shares of common stock.

Other Stock Awards. The plan administrator may grant other awards based in whole or in part by reference to our common stock. The plan administrator will set the number of shares under the award and all other terms and conditions of such awards.

Changes to Capital Structure. In the event that there is a specified type of change in our capital structure, such as a stock split, appropriate adjustments will be made to (a) the number of shares reserved under the 2007 Plan, (b) the maximum number of shares that may be issued pursuant to the exercise of incentive stock options, (c) the maximum number of stock options, stock appreciation rights

and performance stock awards for which any one person may be granted per calendar year and (d) the number of shares and exercise price or strike price, if applicable, of all outstanding stock awards.

Corporate Transactions. In the event of certain significant corporate transactions as set forth in the 2007 Plan, outstanding stock awards under the 2007 Plan may be assumed, continued or substituted for by any surviving or acquiring entity (or its parent company). If the surviving or acquiring entity (or its parent company) elects not to assume, continue or substitute for such stock awards, then (a) with respect to any such stock awards that are held by individuals whose service with us or our affiliates has not terminated prior to the effective date of the corporate transaction, the vesting and exercisability provisions of such stock awards will be accelerated in full and such awards will be terminated if not exercised prior to the effective date of the corporate transaction and (b) all other outstanding stock awards will terminate if not exercised prior to the effective date of the corporate transaction. The Board may also provide that the holder of an outstanding stock award not assumed in the corporate transaction will surrender such stock award in exchange for a payment equal to the excess of (a) the value of the property that the stock award would have received upon exercise of the stock award, over (b) the exercise price otherwise payable in connection with the stock award.

Changes in Control. Our Board has the discretion to provide that a stock award under the 2007 Plan will immediately vest as to all or any portion of the shares subject to the stock award (a) immediately upon the occurrence of certain specified change in control transactions, whether or not such stock award is assumed, continued or substituted by a surviving or acquiring entity in the transaction or (b) in the event a participant's service with us or a successor entity is terminated actually or constructively within a designated period following the occurrence of certain specified change in control transactions. Stock awards held by participants under the 2007 Plan will not vest on such an accelerated basis unless specifically provided by the participant's applicable award agreement.

2007 Employee Stock Purchase Plan

Additional long-term equity incentives are provided through our 2007 Employee Stock Purchase Plan, or the ESPP, in which all regular employees, including executive officers, employed by us or by any of our affiliates may participate and may contribute, normally through payroll deductions, up to 15% of their earnings for the purchase of our common stock under the ESPP. As of December 31, 2008, the ESPP authorizes the issuance of 322,369 shares of common stock pursuant to purchase rights granted to our employees or to employees of any of our designated affiliates. The number of shares of common stock reserved for issuance will automatically increase on January 1st of each year through and including January 1, 2017, by the lesser of (a) 1.0% of the total number of shares of common stock outstanding on December 31st of the preceding calendar year or (b) a lesser number of shares of common stock determined by our Board of Directors prior to the start of a year for which an increase applies. The maximum number of shares that may be issued pursuant to the exercise of purchase rights over the term of the ESPP is 1,666,666 shares. The ESPP is intended to qualify as an "employee stock purchase plan" within the meaning of Section 423 of the Internal Revenue Code.

The ESPP is implemented through a series of offerings of purchase rights to eligible employees. Under the ESPP, we may specify offerings with a duration of not more than 27 months, and may specify shorter purchase periods within each offering. Each offering will have one or more purchase dates on which shares of our common stock will be purchased for employees participating in the offering. Unless otherwise determined by the Board, common stock is purchased for accounts of employees participating in the ESPP at a price per share equal to the lower of (a) 85% of the fair market value of a share of our common stock on the first date of an offering or (b) 85% of the fair market value of a share of our common stock on the date of purchase. The first offering period under the ESPP commenced in August 2008. As of December 31, 2008, no shares of our common stock have been purchased under the ESPP as the initial offering period under the plan has not completed its term.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth certain information regarding the ownership of our common stock as of February 10, 2009 by: (i) each director and nominee for director; (ii) each of our executive officers; (iii) all of our executive officers and directors as a group; and (iv) all those known by us to be beneficial owners of more than five percent of our common stock. Unless otherwise indicated, the address for each of the beneficial owners in the table below is c/o ARYx Therapeutics, Inc., 6300 Dumbarton Circle, Fremont, California 94555.

	Beneficial Ownership(1)	
Beneficial Owner	**Number of Shares**	**Percent of Total**
5% Stockholders		
Entities affiliated with MPM Capital(2)	5,900,885	21.2%
Growth Equities Opportunities Fund, LLC(3)	5,810,056	20.3
Entities affiliated with OrbiMed Advisors(4)	3,704,533	13.4
Nomura Phase4 Ventures L.P.(5)	2,447,731	9.0
Jennison Associates LLC(6)	2,443,017	8.8
Executive Officers and Directors		
Paul Goddard, Ph.D.(7)	575,692	2.1
Peter G. Milner, M.D.(8)	431,034	1.6
Pascal Druzgala, Ph.D.(9)	296,237	1.1
John Varian(10)	206,789	*
David Nagler(11)	110,414	*
Daniel Canafax, Pharm. D.(12)	60,902	*
David Beier(13)	3,240	*
Lars G. Ekman, M.D., Ph.D.(14)	22,870	*
Keith R. Leonard(15)	22,870	*
Herm Rosenman(16)	22,870	*
Paul J. Sekhri(17)	22,870	*
Nicholas Simon(18)	5,928,157	21.2
All executive officers and directors as a group (12 persons)(19)	7,703,945	26.6%

* Represents beneficial ownership of less than one percent of the outstanding shares of our common stock.

(1) This table is based upon information supplied by officers, directors and principal stockholders and Schedules 13D and 13G, if any, filed with the SEC. Unless otherwise indicated in the footnotes to this table and subject to community property laws where applicable, ARYx believes that each of the stockholders named in this table has sole voting and investment power with respect to the shares indicated as beneficially owned. Applicable percentages are based on 27,346,403 shares outstanding on February 10, 2009, adjusted as required by rules promulgated by the SEC.

(2) Consists of 83,805 shares held by MPM Asset Management Investors 2002 BVIII LLC, or MPM AMI BV III ("AM 2002"), 358,453 shares held by MPM BioVentures III GmbH & Co. Beteiligungs KG ("BV KG"), 128,140 shares held by MPM BioVentures III Parallel Fund, LP ("BV Parallel"), 285,204 shares held by MPM BioVentures III, LP ("MPM III"), 4,241,787 shares held by MPM BioVentures III-QP, LP ("BV III QP") and 267,183 shares held by MPM BioVentures Strategic Fund, LP ("BV SF"). Also includes shares that the entities have a right to acquire within sixty (60) days of February 10, 2009 through the exercise of outstanding warrants: 8,817 by AM 2002, 37,713 by BV KG, 13,483 by BV Parallel, 30,007 by MPM III, and 446,293 by BV III QP. MPM BioVentures III GP, L.P. and MPM BioVentures III LLC, or MPM BV III LLC,

are the direct and indirect general partners of the above mentioned funds. Luke Evnin, Ansbert Gadicke, Michael Steinmetz, Nicholas Galakatos, Dennis Henner, Kurt Wheeler and Nicholas Simon, III, one of our directors, are members of MPM BV III LLC and MPM AMI BV III and share investment and voting power over the shares held by all the above-mentioned funds. Messrs. Evnin, Gadicke, Steinmetz, Galakatos, Henner, Wheeler and Simon each disclaim beneficial ownership of the shares held by such above-mentioned funds except to the extent of their respective proportionate pecuniary interests therein. The address of MPM Capital is 200 Clarendon Street, 54th Floor, Boston, MA 02116.

(3) Consists of 4,469,274 shares directly held by Growth Equity Opportunities Fund, LLC ("GEO") and indirectly held by New Enterprises Associates 12, Limited Partnership ("NEA 12"), the sole member of GEO, NEA Partners 12, Limited Partnership ("NEA Partners 12"), the sole general partner of NEA 12, NEA 12 GP, LLC ("NEA 12 GP"), the sole general partner of NEA Partners 12. and the individual managers of NEA 12 GP (NEA 12, NEA Partners 12, NEA GP 12 and the individual managers of NEA 12 GP together, the "Indirect Reporting Persons"). The individual managers of NEA 12 GP are M. James Barrett, Peter J. Barris, Forest Baskett, Ryan D. Drant, Patrick J. Kerins, C. Richard Kramlich, Krishna "Kittu" Kolluri, Charles M. Linehan, Charles W. Newhall III, Mark W. Perry, Scott D. Sandell and Eugene A. Trainor III. Also, includes 1,340,782 shares that GEO and the Indirect Reporting Persons have a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding warrants. The Indirect Reporting Persons disclaim beneficial ownership of such portion of the securities held by GEO in which the Indirect Reporting Persons have no pecuniary interest. The address of GEO is c/o New Enterprise Associates, 1119 St. Paul Street, Baltimore, MD 21202.

(4) Consists of 2,237,773 shares held by Caduceus Private Investments, LP ("Caduceus"); 46,580 shares held by OrbiMed Associates, LLC ("Associates"); and 1,055,786 shares held by UBS Juniper Crossover Fund, L.L.C. ("Juniper") Also includes shares that the entities have a right to acquire within sixty (60) days of February 10, 2009 through the exercise of outstanding warrants: 244,131 by Caduceus, 5,082 by Associates and 115,181 by Juniper. OrbiMed Capital GP I, LLC is the general partner of Caduceus. OrbiMed Advisors, LLC is a managing member of Associates and acts as investment advisor to certain collective investment funds which hold shares of the Issuer. Samuel D. Isaly owns controlling interests in OrbiMed Capital GP I, LLC and OrbiMed Associates, LLC and has investment and voting control over the shares held by the above mentioned funds. Mr. Isaly disclaims beneficial ownership of these shares except to the extent of his pecuniary interest therein. Robert Adelman, M.D., a former member of our Board, is an affiliate of the above mentioned funds. The address of OrbiMed Advisors LLC is 767 Third Avenue, 30th Floor, New York, NY 10017.

(5) Nomura Phase4 Ventures Limited, as manager of Nomura Phase4 Ventures LP, has voting and investment power over all the shares held by such fund. Nomura Phase4 Ventures Limited is a subsidiary of Nomura International plc which is a subsidiary of Nomura Europe Holdings plc, which in turn is a subsidiary of Nomura Holdings Inc., a publicly traded company. Mr. Hiromichi Aoki, the Head of Merchant Banking, Nomura International plc, and Dr. Denise Pollard-Knight, the Head of Nomura Phase4 Ventures, are the only two members of the board of directors of Nomura Phase4 Ventures Limited and both of them, acting together, exercise the voting and investment power of Nomura Phase4 Ventures Limited. Dr. Pollard-Knight disclaims beneficial ownership over any of the shares held by Nomura Phase4 Ventures LP except to the extent of her pecuniary interest therein. The address of Nomura Phase4 Ventures LP is Nomura House, 1 St Martin's-le-Grand, London EC1A 4NP, United Kingdom.

(6) Consists of 231,282 hares held by IFTCO as nominee for Pacific Select Fund Health Services Portfolio ("IFTCO") and 1,809,500 shares held by Hare & Co. ("Hare"). Also includes 44,635 shares and 357,600 shares that IFTCO and Hare respectively may acquire within 60 days of February 10, 2009 through the exercise of outstanding warrants. The address of these entities is c/o Jennison Associates LLC, 466 Lexington Avenue, New York, NY 10017.

(7) Includes 450,172 shares that Dr. Goddard has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options; 13,538 shares subject to our unvested share repurchase right as of February 10, 2009 and 57,187 shares held by Paul & Jaqueline Goddard Family Living Trust for which Dr. Goddard and his spouse are trustees.

(8) Includes 4,052 shares held by Naomi Milner; 31,903 shares held by Diarmuid Investments Ltd.; 8,982 shares held by Peter G. Milner 2007-1 Grantor Retained Annuity Trust (the "Milner Trust") for which Pascal Druzgala is trustee; 8,982 shares held by Susan C. Price Grantor Retained Annuity Trust (the "Price Trust") for which Pascal Druzgala is trustee; 7,684 held by Susan C. Price and 74,130 shares that Dr. Milner has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options. Dr. Milner is deemed to have shared voting and investment power over the shares held by Naomi Milner, Dr. Milner's sister, and Diarmuid Investments, Ltd. Dr. Milner spouse is the beneficiary of the Price Trust and Dr. Milner is the beneficiary of the Milner Trust.

(9) Includes 15,257 shares held in the Pascal Druzgala Grantor Retained Annuity Trust for which Dr. Druzgala is the trustee and beneficiary; 8,982 shares held in the Price Trust for which Dr. Druzgala is trustee; 8,982 shares held in the Milner Trust for which Dr. Druzgala is trustee and 106,318 shares that Dr. Druzgala has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options. Dr. Druzgala disclaims beneficial ownership of the shares held in the Price Trust and the Milner Trust.

(10) Consists of 206,789 shares that Mr. Varian has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options.

(11) Consists of 110,414 shares that Mr. Nagler has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options.

(12) Consists of 60,902 shares that Dr. Canafax has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options.

(13) Consists of 3,240 shares that Mr. Beier has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options.

(14) Consists of 22,870 shares that Dr. Ekman has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options.

(15) Consists of 22,870 shares that Mr. Leonard has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options.

(16) Consists of 22,870 shares that Mr. Rosenman has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options.

(17) Consists of 22,870 shares that Mr. Sekhri has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options. Mr. Sekhri, one of our directors, is a venture partner at MPM Capital but has no voting or investment power over any shares held by the entities affiliated with MPM Capital.

(18) Includes the shares described in Note (2) above and 22,870 shares that Mr. Simon has a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options. Mr. Simon disclaims beneficial ownership of the shares described in Note (2), except to the extent of his pecuniary interest therein.

(19) Includes 5,900,885 shares held by entities affiliated with certain of our directors and 1,126,315 shares that certain of our executive officers and directors have a right to acquire within 60 days of February 10, 2009 through the exercise of outstanding stock options.

SECTION 16(A) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Exchange Act requires our directors and executive officers, and persons who own more than ten percent of a registered class of our equity securities, to file with the SEC initial reports of ownership and reports of changes in ownership of our common stock and other equity securities. Our officers, directors and greater than ten percent stockholders are required by SEC regulations to furnish us with copies of all Section 16(a) forms they file.

To our knowledge, based solely on a review of the copies of such reports furnished to us and written representations that no other reports were required, during the year ended December 31, 2008, all Section 16(a) filing requirements applicable to our officers, directors and greater than ten percent beneficial owners were complied with.

CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Related-Person Transactions Policy and Procedures

Pursuant to our Code of Conduct, our executive officers and directors, including their immediate family members and affiliates, are not permitted to enter into any transactions with us without the prior consent of our Audit Committee, or the Board or any independent committee thereof in case it is inappropriate for our Audit Committee to review such transaction due to a conflict of interest. In approving or rejecting such proposed transactions, our Audit Committee or the Board, as applicable, shall consider the relevant facts and circumstances available and deemed relevant to the Audit Committee or the Board, as applicable, including but not limited to the risks, costs, benefits to us, the terms of the transactions, the availability of other sources for comparable services or products and, if applicable, the impact on a director's independence. Our Audit committee and/or Board shall approve only those transactions that, in light of known circumstances, are in, or are not inconsistent with, our best interests, as our Audit Committee or Board determines in the good faith exercise of its discretion. We have designated a compliance officer to generally oversee compliance with our Code of Conduct. All of the transactions described below were entered into prior to the adoption of our Code of Conduct.

Certain Related-Person Transactions

2008 Private Placement

In November 2008, we entered into a securities purchase agreement with certain institutional and other accredited investors pursuant to which we sold and issued, in a private placement, an aggregate of 9,649,545 shares of our common stock and warrants to purchase an aggregate of 2,894,864 shares of our common stock. Under the terms of the securities purchase agreement, the price for each share of common stock purchased was $2.20. The total number of shares of common stock underlying each purchaser's warrant was equal to 30% of the total number of shares purchased by such investor in the private placement with a purchase price per underlying share of common stock of $0.125. The combined purchase price of each share of common stock and each warrant to purchase 0.30 of a share of common stock issued in the private placement was $2.2375. The warrants are exercisable for a term of five years from November 14, 2008 and have an exercise price of $2.64 per share.

The shares of common stock and warrants to purchase common stock set forth in the table below were issued to certain of our existing stockholders in the private placement, including entities affiliated with MPM Capital and OrbiMed Advisors LLC, two of our principal stockholders. We believe the terms obtained or consideration that we received in connection with the private placement were

comparable to terms available or the amounts that would be received by us in arm's-length transactions.

Investor	Common Stock	Warrants	Aggregate Purchase Price ($)
Entities Affiliated with MPM Capital	1,787,710(1)	536,313(2)	$4,000,001
Entities affiliated with OrbiMed Advisors	1,214,646(3)	364,394(4)	2,717,770

(1) Consists of (i) 1,487,643 shares purchased by MPM BioVentures III-QP, L.P. ("BV III QP"), (ii) 100,022 shares purchased by MPM BioVentures III, L.P. ("BV III"), (iii) 29,391 shares purchased by MPM Asset Management Investors 2002 BVIII LLC ("AM 2002"), (iv) 44,943 shares purchased by MPM BioVentures III Parallel Fund, L.P. ("BV Parallel") and (v) 125,711 shares purchased by MPM BioVentures III GmbH & Co. Beteiligungs KG ("BV KG"). MPM BioVentures III GP, L.P. ("MPM III GP") and MPM BioVentures III LLC ("MPM III LLC") are the direct and indirect general partners of BV III QP, BV III, BV Parallel and BV KG and MPM BioVentures Strategic Fund, L.P. ("BV SF").

(2) Consists of warrants to purchase (i) 446,293 shares purchased by BV III QP, (ii) 30,007 shares purchased by BV III, (iii) 8,817 shares purchased by AM 2002, (iv) 13,483 shares purchased by BV Parallel and (v) 37,713 shares purchased by BV KG.

(3) Consists of (i) 2,237,773 shares purchased by Caduceus Private Investments, LP ("Caduceus"), (ii) 46,580 shares purchased by OrbiMed Associates, LLC ("Associates"), and (iii) 1,055,786 shares purchased by UBS Juniper Crossover Fund, L.L.C. ("Juniper"). OrbiMed Advisors, LLC is a managing member of OrbiMed Associates, LLC and acts as investment advisor to certain collective investment funds which hold shares of the Issuer.

(4) Consists of warrants to purchase (i) 244,131 shares purchased by Caduceus, (ii) 5,082 shares purchased by Associates, and (iii) 115,181 shares purchased by Juniper.

Upon closing of the private placement, we received gross proceeds of approximately $21.6 million. The net proceeds, after deducting placement agent fees and other expenses of approximately $1.2 million in the aggregate, were approximately $20.4 million. No expenses were paid directly or indirectly to our directors, officers or their associates, or to persons owning 10% or more of any of our equity securities.

Registration Rights Agreement

In connection with our November 2008 private placement as described above, we have entered into an amended and restated investor rights agreement with the investors in the private placement, including certain entities that our principal stockholders and/or affiliated with certain of our directors. As of December 31, 2008, the holders of an aggregate of 9,649,545 shares of our common stock and warrants to purchase an aggregate of 2,894,864 shares of our common stock are entitled to certain rights with respect to the registration of their shares pursuant to the terms and conditions of such agreement.

Investor Rights Agreement

We have entered into an amended and restated investor rights agreement with the prior holders of our convertible preferred stock and certain holders of warrants to purchase convertible preferred stock, including entities with which certain of our directors are affiliated. As of December 31, 2008, the holders of 7,550,086 shares of our common stock, including 189,647 shares of common stock issuable

upon the exercise of warrants outstanding, are entitled to certain rights with respect to the registration of their shares pursuant to the terms and conditions of such agreement.

Employment Agreements

We have entered into employment agreements with our executive officers. See *"Executive Compensation—Employment Agreements."*

Stock Option and Stock Award Grants to Executive Officers and Directors

We have granted stock options and/or stock awards to our executive officers and our non-employee directors. See *"Executive Compensation."*

Severance and Change of Control Arrangements

Some of our executive officers are entitled to certain severance and change of control benefits. For information regarding these arrangements, see *"Executive Compensation—Severance and Change of Control Benefits."*

Indemnification Agreements with Executive Officers and Directors

We have entered into an indemnification agreement with each of our directors and executive officers. These indemnification agreements require us, among other things, to indemnify, under the circumstances and to the extent provided in such agreements, our directors and executive officers for some expenses, including attorney's fees, judgments, fines and settlement amounts incurred by a director or executive officer in any action or proceeding arising out of his service as our director, officer, employee or other agent or any of our subsidiaries or any other company or enterprise to which the person provides services at our request. We also intend to enter into these indemnification agreements with our future executive officers and directors.

There is no pending litigation or proceeding involving any of our directors or executive officers for which indemnification is required or permitted, and we are not aware of any threatened litigation or proceeding that may result in a claim for indemnification.

HOUSEHOLDING OF PROXY MATERIALS

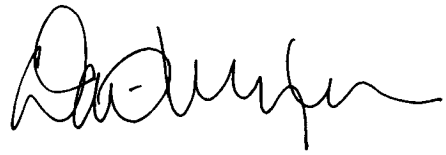
The SEC has adopted rules that permit companies and intermediaries (e.g., brokers) to satisfy the delivery requirements for proxy materials with respect to two or more stockholders sharing the same address by delivering a single set of proxy materials addressed to those stockholders. This process, which is commonly referred to as "householding," potentially means extra convenience for stockholders and cost savings for companies.

This year, a number of brokers with account holders who are our stockholders will be "householding" our proxy materials. A single set of proxy materials will be delivered to multiple stockholders sharing an address unless contrary instructions have been received from the affected stockholders. Once you have received notice from your broker that they will be "householding" communications to your address, "householding" will continue until you are notified otherwise or until you revoke your consent. If, at any time, you no longer wish to participate in "householding" and would prefer to receive a separate set of proxy materials, please notify your broker. Direct your written request to ARYx Therapeutics, Inc., Attn: Corporate Secretary, at 6300 Dumbarton Circle, Fremont, California 94555, or contact David Nagler, our Vice President, Corporate Affairs and Secretary at (510) 585-2200. Stockholders who currently receive multiple copies of the proxy materials at their addresses and would like to request "householding" of their communications should contact their brokers.

OTHER MATTERS

The Board knows of no other matters that will be presented for consideration at the Annual Meeting. If any other matters are properly brought before the meeting, it is the intention of the persons named in the accompanying proxy to vote on such matters in accordance with their best judgment.

By Order of the Board of Directors



David Nagler
Secretary

April 22, 2009

A copy of our Annual Report on Form 10-K to the Securities and Exchange Commission for the year ended December 31, 2008 is available without charge upon written request to: Corporate Secretary, ARYx Therapeutics, Inc., 6300 Dumbarton Circle, Fremont, California 94555.

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THREE LATE STAGE PRODUCTS

PRODUCT PIPELINE

PRODUCT	INDICATION	PHASE
Tecarfarin (ATI-5923)	Anticoagulation	Phase 2/3
Budiodarone (ATI-2042)	Atrial Fibrillation	Phase 3 Enabled
ATI-7505	GI Disorders	Phase 3 Enabled

ARYX THERAPEUTICS
Making Proven Therapies Safer

We have established proof of concept for three patented, oral product candidates, each aimed at large, chronic markets. Partnership discussions are ongoing for each.

Tecarfarin (ATI-5923)

Anticoagulation — **Phase 2/3**

CLINICAL SUMMARY

Completed enrollment in 600-patient Phase 2/3 study to assess safety and efficacy in the treatment of patients who require chronic, oral anticoagulation therapy

Current study designed to evaluate whether tecarfarin is superior to warfarin

Study may serve as one of the required pivotal studies needed for product registration

MILESTONES

Complete Phase 2/3 Trial (mid-2009)
Partner for worldwide development and commercialization

Budiodarone (ATI-2042)

Atrial Fibrillation — **Phase 3 Enabled**

CLINICAL SUMMARY

Completed Phase 2b study to assess safety and efficacy in the treatment of patients with paroxysmal atrial fibrillation (AF)

Statistically significant and clinically relevant results supporting the profile of budiodarone as a highly effective and well-tolerated antiarrhythmic therapy

Significant AF burden reduction with highest active dose over three month treatment period (75% reduction from baseline)

MILESTONES

Phase 2b trial completed (2008)
Partner for worldwide development and commercialization

ATI-7505

GI Disorders — **Phase 3 Enabled**

CLINICAL SUMMARY

Achieved primary endpoint in Phase 2b study testing the safety and efficacy of ATI-7505 in patients with chronic idiopathic constipation

In three prior Phase 2 studies, ATI-7505 showed a reduction in acid reflux, and in some measurements of nighttime heartburn, nighttime acid regurgitation, and multiple functional dyspepsia symptoms, as well as a dose-related increase in GERD erosion healing rates in patients with less severe erosions

Thorough QT study results show that ATI-7505 does not prolong the QT interval in a clinically meaningful way

MILESTONES

Phase 2b trial completed (2008)
Partner for worldwide development and commercialization

ARYx THERAPEUTICS 6300 DUMBARTON CIRCLE FREMONT, CA 94555
T 510.585.2200 F 510.585.2202 ARYX.COM

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2008

Or

☐ **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: 001-33782

ARYx THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**77-0456039**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
6300 Dumbarton Circle, Fremont, California	**94555**
(Address of principal executive offices)	(Zip Code)

(510) 585-2200

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	**Name of Each Exchange on Which Registered**
COMMON STOCK, $0.001 PAR VALUE	THE NASDAQ STOCK MARKET LLC

Securities registered pursuant to Section 12(g) of the Act:

None

(Title of class)

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

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

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 ☒ 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. ☒

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 the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐ Accelerated filer ☐ Non-accelerated filer ☐ (Do not check if a smaller reporting company) Smaller reporting company ☒

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

The aggregate market value of the registrant's common stock, $0.001 par value, held by non-affiliates of the registrant as of June 30, 2008 was $70,732,104 (based upon the closing sales price of such stock as reported on the Nasdaq Global Market on such date). Excludes an aggregate of 8,783,871 shares of the registrant's common stock held by officers, directors and affiliated stockholders. For purposes of determining whether a stockholder was an affiliate of the registrant at June 30, 2008, the registrant has assumed that a stockholder was an affiliate of the registrant at June 30, 2008 if such stockholder (i) beneficially owned 10% or more of the registrant's common stock and/or (ii) was affiliated with an executive officer or director of the registrant at June 30, 2008. Exclusion of such shares should not be construed to indicate that any such person possesses the power, direct or indirect, to direct or cause the direction of the management or policies of the registrant or that such person is controlled by or under common control with the registrant.

As of February 27, 2009, the registrant had 27,372,235 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Specified portions of the registrant's Proxy Statement for the 2009 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days of the end of the fiscal year covered by this Form 10-K are incorporated by reference in Part III of this Form 10-K.

ARYX THERAPEUTICS, INC.

2008 Annual Report on Form 10-K

Table of Contents

This Annual Report on Form 10-K contains 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, which are subject to the "safe harbor" created by those sections. Forward-looking statements are based on our management's beliefs and assumptions and on information currently available to our management. In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "could," "would," "expect," "plan," "anticipate," "believe," "estimate," "project," "predict," "potential" and similar expressions intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors, which may cause our actual results, performance, time frames or achievements to be materially different from any future results, performance, time frames or achievements expressed or implied by the forward-looking statements. We discuss many of these risks, uncertainties and other factors in this Annual Report on Form 10-K in greater detail under Part I—Item 1A. "Risk Factors." Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this filing. You should read this Annual Report on Form 10-K completely and with the understanding that our actual future results may be materially different from what we expect. We hereby qualify our forward-looking statements by these cautionary statements. Except as required by law, we assume no obligation to update these forward- looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

PART I

Item 1. Business

Overview

ARYx Therapeutics, Inc., or ARYx, is a biopharmaceutical company focused on developing a portfolio of internally discovered product candidates designed to eliminate known safety issues associated with well-established, commercially successful drugs. We use our RetroMetabolic Drug Design technology to design structurally unique molecules that retain the efficacy of these original drugs but are metabolized through a potentially safer pathway to avoid specific adverse side effects associated with these compounds. Our product candidate portfolio includes an oral anticoagulant, tecarfarin (ATI-5923), designed to have the same therapeutic benefits as warfarin, currently in Phase 2/3 clinical development for the treatment of patients who are at risk for the formation of dangerous blood clots; an oral antiarrhythmic agent, budiodarone (ATI-2042), designed to have the efficacy of amiodarone in Phase 2 clinical development for the treatment of atrial fibrillation, a form of irregular heartbeat; an oral prokinetic agent, ATI-7505, designed to have the same therapeutic benefits as cisapride in Phase 2 clinical development for the treatment of chronic constipation, gastroparesis, functional dyspepsia, irritable bowel syndrome with constipation, and gastroesophageal reflux disease; and a novel, next-generation atypical antipsychotic agent, ATI-9242, currently in Phase 1 clinical development for the treatment of schizophrenia and other psychiatric disorders. Additionally, we have several product candidates in preclinical development. Each of our product candidates is an orally available, patentable new chemical entity designed to address similar indications as those of the original drug upon which each is based. Our product candidates target what we believe to be multi-billion dollar market opportunities.

We were incorporated in the State of California on February 28, 1997 and reincorporated in the State of Delaware on August 29, 2007. We maintain a wholly-owned subsidiary, ARYx Therapeutics Limited, with registered offices in the United Kingdom, which has had no operations since its inception in September 2004 and was established to serve as a legal entity in support of our clinical trial activities conducted in Europe. We operate in a single business segment with regard to the development of human pharmaceutical products. Our principal executive offices are located at 6300 Dumbarton Circle, Fremont, California 94555, and our telephone number is (510) 585-2200. Our website address is

http://www.aryx.com. The information contained on, or accessible through, our website is not incorporated by reference into and does not form a part of this report.

Approximately 90% of approved drugs are metabolized by the cytochrome P450, or CYP450, enzyme system in the liver, a pathway used for the clearance of drugs from the body. Despite their commercial success, many drugs still have significant safety issues, often related to their metabolism. When multiple drugs are administered together, they may compete for metabolism by the CYP450 pathway, which has limited capacity. This can lead to reduced drug clearance, resulting in dangerous residual levels of the drugs and adverse drug-drug interactions. Our RetroMetabolic Drug Design technology utilizes a series of steps designed to eliminate specific unwanted effects of the original drug. Key to this approach is the creation of a pharmacologically inactive, nontoxic, easily excreted end product that we call the "ideal metabolite" which is not metabolized by the CYP450 pathway. Our product candidates are eliminated by a large capacity and generally non-saturable esterase pathway that exists in most tissues. The esterase pathway is an enzyme system that is a less used pathway for the clearance of drugs from the body. Through this esterase pathway, our product candidates are metabolized into the previously designed "ideal metabolite." In addition, we have eliminated specific off-target pharmacology from some of our product candidates. Off-target pharmacology occurs when a drug interacts directly with a system other than that for which it is intended. The off-target pharmacology that we address is the unintended and undesirable action of the drug at receptors other than those targeted, which may cause serious or sometimes fatal side effects.

We are engineering potentially safer oral product candidates that retain the efficacy of commercially successful drugs for well-established chronic markets. We have established proof of concept with our three leading product candidates, tecarfarin, budiodarone, and ATI-7505. The following is a summary of our product candidates that are currently in clinical development:

- *Tecarfarin for Anticoagulation.* Tecarfarin is an oral anticoagulant in Phase 2/3 clinical trials for the treatment of patients who are at risk for the formation of dangerous blood clots, such as those with atrial fibrillation or those at risk of venous thromboembolism. Tecarfarin was designed to have the same therapeutic benefits as the drug warfarin, which for over 50 years has been the oral anticoagulant of choice. Despite its widespread use, warfarin has several significant limitations. It is metabolized by CYP450 and has many drug-drug interactions that often lead to serious side effects. We designed tecarfarin to be metabolized through the esterase pathway, eliminating metabolism through CYP450 and avoiding drug-drug interactions. Warfarin also has a very steep dose response curve which means that a small change in dose may lead to a substantial change in the anticoagulation status of the patient. These two factors can create significant challenges in maintaining therapeutic levels of warfarin and this can put patients at risk for either life-threatening clotting or bleeding. In preclinical testing and in clinical testing to date, it appears that tecarfarin may be inherently more stable than warfarin due to its predictable metabolism through the esterase pathway that has a much larger capacity than CYP450. The rate of anticoagulation for both warfarin and tecarfarin is measured by the standard assay known as International Normalized Ratio, or INR. We completed a Phase 2 clinical trial with tecarfarin involving 66 patients. In this study, tecarfarin achieved a significant improvement in the maintenance of these patients at the targeted INR and also demonstrated a significant reduction in the occurrence of dangerously low levels of anticoagulation as well as a reduction in the occurrence of dangerously high levels of anticoagulation compared to these patients' historical levels of anticoagulation when on warfarin. We have also completed a pilot clinical trial of 50 patients to prepare for an ongoing large Phase 2/3 trial. In the pilot trial, we successfully established the trial methodologies for the current blinded Phase 2/3 trial, and, even though the primary purpose of the pilot trial was not to measure the effectiveness of tecarfarin in achieving the patients' target INR, the efficacy results essentially matched those of the earlier 66 patient study. In June 2008, we initiated a double-blind, parallel group, active control

Phase 2/3 clinical trial involving approximately 600 patients to study the efficacy of tecarfarin in a head-to-head comparison to warfarin. We announced, on November 3, 2008, that enrollment in this Phase 2/3 study had been completed. Each patient in this study will receive a minimum of six months of treatment with either tecarfarin or warfarin. In preliminary discussions, the U.S. Food and Drug Administration, or FDA, indicated that the ability to maintain patients within the targeted INR will likely be an acceptable surrogate and primary endpoint for tecarfarin's clinical development. Using INR maintenance as a surrogate and primary endpoint should reduce both the size of and time to complete our planned clinical trials for tecarfarin compared to clinical trials measuring survival rates or other outcomes. Based upon our discussions with the FDA, we believe the current Phase 2/3 clinical trial may qualify as a registration study.

- *Budiodarone for Atrial Fibrillation.* Budiodarone is an oral antiarrhythmic agent in Phase 2 clinical development for the treatment of patients with atrial fibrillation. Budiodarone was designed to have the efficacy of amiodarone, a drug that has been used for many years, despite its adverse side effects, because physicians consider it to be the most effective drug for treating patients with atrial fibrillation. Amiodarone accumulates in many different organs and can only be metabolized by CYP450, potentially leading to serious side effects that are not immediately reversible upon withdrawal of the drug. Since budiodarone is predominantly metabolized through the esterase pathway, it should avoid accumulation in organs and have reduced drug-drug interactions. We have completed a Phase 2 pilot study (CLN-208) with budiodarone involving six atrial fibrillation patients with implanted recordable pacemakers who failed previous drug therapy. This pilot study suggested that the effect of budiodarone improved as the dose increased. Based upon the results of this pilot study, we conducted an additional Phase 2b clinical trial to further demonstrate the efficacy of budiodarone in patients with atrial fibrillation. The clinical trial, which enrolled 72 patients, was a multi-centered, randomized, double blind, placebo-controlled study of the efficacy and safety of budiodarone in patients with paroxysmal atrial fibrillation, or PAF. All patients entering this study had previously implanted permanent pacemakers with appropriate diagnostic and recording capabilities. In December 2008, we announced successful top-line efficacy results from this Phase 2b clinical trial. By achieving statistical significance at the two highest doses of the three tested, the results essentially mirrored the findings of the earlier Phase 2 pilot study also conducted in paroxysmal atrial fibrillation patients. The Phase 2b study also demonstrated that patients in the study quickly returned to their pre-treatment level of atrial fibrillation once the treatment ended. The recently-announced complete safety results from this Phase 2b clinical trial indicate that budiodarone is generally safe and well-tolerated, and appears to avoid the tissue accumulation evident with amiodarone.

- *ATI-7505 for Gastrointestinal Disorders.* ATI-7505 is an oral prokinetic drug that speeds up the motion of contents through the gut, which has successfully completed Phase 2 clinical trials for the treatment of multiple gastrointestinal disorders including gastroesophageal reflux disease, or GERD, functional dyspepsia and chronic idiopathic constipation. ATI-7505 was designed to have the same therapeutic benefits as cisapride, a drug marketed by Johnson & Johnson as Propulsid in the United States. Launched in 1993, cisapride was withdrawn from the market in 2000 due to serious cardiovascular side effects. These side effects occurred as blood levels of the drug rose significantly when CYP450 clearance was inhibited because of the presence of other drugs cleared by the same metabolic pathway. We designed ATI-7505 to be metabolized through the esterase pathway, eliminating metabolism through CYP450 as well as eliminating the off-target cardiovascular effects. More than 900 subjects have been treated with ATI-7505 as part of our clinical trial program, which includes four Phase 2 trials to date. In June 2006, we entered into a collaboration agreement with Procter & Gamble Pharmaceuticals, Inc., or P&G, to develop and commercialize ATI-7505. On July 2, 2008, we received notice from P&G that it elected to exercise its option to terminate the collaboration agreement effective July 2, 2008. P&G

subsequently announced that it is exiting pharmaceutical drug development. Upon termination of the collaboration agreement by P&G, all rights to ATI-7505 reverted to ARYx. Also on July 2, 2008, we announced the overall successful results of a Thorough QT study, or TQT, on ATI-7505, which we believe supports the agent's favorable cardiac safety profile. On August 22, 2008, we announced the results of a Phase 2b clinical trial testing the safety and efficacy of ATI-7505 in patients with chronic idiopathic constipation. The clinical trial, conducted by P&G, was designed to enroll 400 patients evaluating four doses of the agent compared to placebo. As a result of the termination of the collaboration between ARYx and P&G, the study was terminated early after only 214 patients had been enrolled. In spite of the early termination of the study, ATI-7505 achieved statistical significance at the study's primary endpoint in the 80 mg twice daily dose. In addition, all doses tested demonstrated a clinically meaningful and desired increase in spontaneous bowel movements over baseline compared to placebo after one week of treatment. We intend to seek a new partner for ATI-7505.

- *ATI-9242 for Schizophrenia and Other Psychiatric Disorders.* ATI-9242 is a novel antipsychotic agent in Phase 1 clinical development for the treatment of schizophrenia and other psychiatric disorders. ATI-9242's receptor profile is targeted at the treatment of both the positive and the negative symptoms of schizophrenia as well as the improvement of cognitive function. To date, preclinical work has supported this profile. ATI-9242 is also designed to avoid certain drug-drug interactions by avoiding CYP450 enzymes for metabolism, as well as reduce certain metabolic problems associated with this class of therapy, including weight gain and type 2 diabetes. The Phase 1 single-dose clinical trial, testing the safety and tolerability of ATI-9242, is underway and is expected to be completed during 2009 or as financial resources allow.

Problems with Toxicity in Existing Drugs

Drugs are eliminated from the body by excretion generally through the urine or the bile. Some drugs may be excreted unchanged while others first undergo metabolism. Through a process of biotransformation, certain drugs are metabolized into other compounds, called metabolites, that are generally water soluble, allowing them to be easily excreted by the kidney or liver. How drugs are metabolized may have a direct impact on safety.

CYP450 is a family of naturally occurring enzymes, present primarily in the liver but also found in other organs, that are estimated to be responsible for the metabolism of approximately 90% of the drugs available today. The CYP450 system has evolved to break down the small amount of pharmacologically active or potentially toxic materials found in plants. However, this system's low capacity can process only small quantities of pharmacologically active substance at a time. In addition, certain drugs can inhibit the functioning of these enzymes while other pharmaceuticals induce the activity of the enzymes. When a person takes more than one drug at the same time, potentially harmful competition results for the limited quantity of CYP450 enzymes. As a result, drug-drug interactions occur because drugs are not able to be metabolized and instead remain in the body at elevated levels, potentially resulting in either an excessive on-target effect or off-target side effects. These unwanted effects are referred to as adverse drug reactions. For this reason, as reported by the FDA, the frequency of adverse drug reactions rises exponentially in patients taking multiple pharmaceuticals. For example, 80% of patients on the oral anticoagulant warfarin take at least one additional drug that interferes with its clearance. This is why warfarin use is the third most common cause of adverse drug reactions.

The increase in adverse drug reactions attributable to a patient taking several medications at the same time results from an increase in the circulating level of the drug in the body and the increased potential for a toxic effect either as a result of "over dosing" or an "off-target" effect. Altered drug level directly impacts the safety and efficacy of that drug. In order to be effective, a drug must circulate in the body in sufficient therapeutic levels to allow it to reach and impact its primary site of action. However, if the blood levels remain higher than required for the desired on-target pharmacological

effect to occur, then a toxic side effect can result either due to the drug over-loading the primary site of action (exaggeration of "on-target" pharmacology) or due to the drug affecting another site of action, causing an unwanted off-target side effect with potentially undesirable outcomes.

According to the FDA, it is estimated that over two million serious adverse drug reactions occur annually in the United States, resulting in more than 100,000 deaths. The FDA also reports that adverse drug reactions are the fourth leading cause of death in the United States, ahead of pulmonary disease, diabetes, AIDS, pneumonia, accidents and automobile deaths. Complications caused by adverse drug reactions are estimated to increase health care costs in the United States by approximately $136.0 billion per year.

Our Strategy

Our goal is to develop and commercialize a portfolio of internally discovered drugs designed to have the same therapeutic benefits of well-established, commercially successful oral drugs in large chronic markets without the associated safety issues that have either limited or prohibited the full commercial potential of these existing drugs. We believe that there are many drugs on the market today with known safety issues that may be amenable to our RetroMetabolic Drug Design technology. The steps we take to implement our strategy are:

- *Select attractive potential product candidates.* We select our potential product candidates using a well-established internal screening process that includes an evaluation of the scientific feasibility of applying our RetroMetabolic Drug Design technology to an existing drug that has safety problems, the potential for a commercial opportunity of at least $1.0 billion, the potential for a drug development pathway that can demonstrate we have retained efficacy and eliminated key safety problems in a reasonable period of time and for a reasonable cost, and the likelihood of obtaining patents on our newly created product candidate. We review each of these criteria with increasing scrutiny during each successive transition of the product candidate into the research, preclinical and clinical stages.
- *Generate proof-of-concept data for our product candidates.* We intend to generate proof-of-concept data for our product candidates by demonstrating that we have addressed the major safety concerns identified with the original drugs while retaining their efficacy. We plan to retain the rights to each of our product candidates at least until we have established its proof-of-concept in clinical trials. We have established proof-of-concept with each of our three leading drug candidates: tecarfarin for the treatment of patients in need of anticoagulation therapy; budiodarone for the treatment of patients with atrial fibrillation; and, ATI-7505 in patients with certain gastrointestinal disorders.
- *Partner with leading pharmaceutical companies to develop and commercialize our products.* Once we have established proof-of-concept, we will consider licensing our product candidates to pharmaceutical companies. Because we are focused on developing oral products for large chronic markets, at some point each of our product candidates currently in development will require involvement from a pharmaceutical company with worldwide development and commercial capabilities in order to fully realize their full potential. The goal of any future collaborations we establish is to provide for the sharing of development costs, provide us with additional development and commercial expertise and increase the likelihood our product candidates achieve clinical and commercial success.
- *Forward integrate commercially by building a sales and marketing infrastructure.* Under our former agreement with P&G, we obtained the right to co-promote ATI-7505 to endocrinologists and gastroenterologists. As we identify a new partner for ATI-7505, we will continue to seek the right to co-promote ATI-7505. Assuming we are able to negotiate a similar option with a new partner and ATI-7505 is successfully commercialized, we intend to create a sales force of

between 80 and 120 sales representatives in the United States. Once our sales force is established, we intend to internally develop, or possibly in-license, additional products which can be sold to these two physician specialties. We have undisclosed compounds and programs in the discovery stage which could be sold through a sales force focused on these physician specialties.

- *Leverage our technology platform to develop a pipeline of new drugs.* We believe our RetroMetabolic Drug Design technology can be applied to many other drugs. According to a 2002 article in the Journal of the American Medical Association, over 10% of all new chemical entities approved by the FDA between 1975 and 1999 have either received "Black-Box" warnings or been withdrawn from the market after commercial launch. In addition, many drugs currently on the market exhibit safety concerns due to drug-drug interactions or off-target pharmacological effects. We expect that increased public, regulatory and congressional scrutiny of drug safety and adverse event reporting of prescription pharmaceuticals will lead to public awareness of these serious safety concerns. We continually evaluate this increasing pool of opportunities from which to select potential product candidates.

Our RetroMetabolic Drug Design

A key element of our process is to determine whether our RetroMetabolic Drug Design technology can be successfully applied to an existing drug with safety problems. We apply our approach to reengineer drugs that are metabolized by the CYP450 enzyme pathway. In order to apply our technology, our scientists fully analyze the existing drug's pharmacological mechanisms, attributes and potential liabilities. It is our scientists' knowledge of how to design a product candidate that retains the on-target pharmacological effects of the existing drug while eliminating clearance primarily through the CYP450 pathway and eliminating the most important off-target liabilities that allows us to make safer alternatives to existing drugs. Our drug design technology is based upon an understanding of drug metabolism and how it can be modified to potentially enhance drug safety.

Unlike traditional drug discovery, our RetroMetabolic Drug Design is a three-step process that begins with a thorough understanding of the structure of an existing drug and leads to the creation of a new molecule through a series of unique steps.

Design and Synthesis of Ideal Metabolites. The first step in this process is the design and synthesis of a series of theoretical "ideal metabolites." These ideal metabolites are nontoxic, water-soluble, pharmacologically inactive compounds that are not metabolized by the CYP450 pathway. These ideal metabolites are novel chemical entities not created through the metabolism of the existing drug with safety problems and are covered in our patent portfolio.

Retrometabolic Engineering. As a second step, our scientists utilize these ideal metabolites to engineer a series of new pharmacologically active molecules that are designed to break down outside of the CYP450 enzyme system into our ideal metabolite. Successful product candidates mirror the pharmacology of the original drug. This is why we call our approach "retrometabolic." We begin with an engineered inactive metabolite and then create a limited number of product candidates rather than screening tens of thousands of active molecules as is done in traditional drug discovery.

Evaluation of Metabolism. As a third step, our scientists test the metabolism of the new product candidates in animal models. Successful product candidates are broken down by the esterase system into their "ideal metabolites." The esterase system, unlike CYP450, is widely available throughout the body. Once converted by the esterase system, our metabolized product candidates should be easily excreted from the body primarily through the liver and kidneys, avoiding competition from other drugs metabolized through the CYP450 pathway.

The product candidates engineered through our RetroMetabolic Drug Design technology are fully patentable new chemical entities. In our clinical trials to date, we have demonstrated that our approach

to drug discovery maintains the established pharmacological and, at least to date, clinical effect of the therapies we are mirroring and utilizes an alternative non-CYP450 metabolic pathway that should avoid the drug-drug interactions and, with certain candidates, the off-target pharmacology of the original drug.

Our Product Candidates

The following table summarizes our product candidates that are currently in development:

ARYx Product Candidate	Target Indications	Model Compound	Worldwide Commercialization Rights	Development Status
Tecarfarin	Anticoagulation	Warfarin	ARYx	Phase 2/3
Budiodarone	Atrial Fibrillation	Amiodarone	ARYx	Phase 2b
ATI-7505	Gastrointestinal Disorders	Cisapride	ARYx	Phase 2b
ATI-9242	Schizophrenia	Atypical Class	ARYx	Phase 1
ATI-20,000	Metabolic Disorders	Not Disclosed	ARYx	Discovery
ATI-24,000	Gastrointestinal Disorders	Not Disclosed	ARYx	Discovery

Tecarfarin—An Oral Anticoagulant Agent

Tecarfarin is an orally bioavailable new chemical entity being developed as an oral anticoagulant. It is intended to prevent the formation of blood clots associated with medical conditions such as atrial fibrillation, valvular heart disease and venous thromboembolism. Patents have been issued or allowed covering a broad range of intellectual property rights, including composition of matter, pharmaceutical formulations, and methods of use associated with tecarfarin. Tecarfarin is currently in Phase 2/3 clinical development.

Warfarin Background

Tecarfarin is structurally similar to the anticoagulant warfarin. Warfarin is a well-established and effective anticoagulant agent that is metabolized by CYP450 enzymes. For patients on warfarin therapy, the level of their anticoagulation is monitored using the standardized measurement of anticoagulation status known as the INR. The goal of warfarin therapy for most patients is to provide effective anticoagulation by maintaining INR within established therapeutic ranges of 2.0 to 3.0. Outside of this range, patients are at risk of bleeding (INR too high) or formation of blood clots (INR too low), both of which can have serious consequences. In order to maintain warfarin's therapeutic effect, INR must be kept in the target range. However, as reported in the published studies of previous clinical testing, warfarin treated patients are typically only maintained in the target INR range 50-68% of the time. The level of warfarin in patients' blood can be highly impacted by drug-drug interactions, or by the concomitant consumption of certain foods, due to warfarin's dependence on CYP450 enzymes as its only metabolic pathway. In turn, varying levels of warfarin in the blood can lead to undesirable and potentially dangerous INR levels. Therefore, patients on warfarin require regular monitoring of INR and dose adjustments.

Our Anticoagulant Agent

Tecarfarin is designed using our RetroMetabolic Drug Design technology to retain the proven therapeutically effective mechanism of action of warfarin and to produce a more predictable and stable pattern of anticoagulation when taken with other medications or coincidentally with food. Tecarfarin is cleared by a non-saturable esterase pathway, eliminating warfarin's CYP450-mediated drug-drug interactions and related instabilities in INR. We anticipate that patients utilizing tecarfarin may require monitoring of INR at less frequent intervals than patients on warfarin.

Tecarfarin is a selective inhibitor of the vitamin K epoxide reductase enzyme, or a VKOR inhibitor. The blood clotting process in the body is a complex and well-controlled cascade of events that involves

multiple clotting factors. Four of these factors are known to be controlled by the VKOR enzyme. Our product candidate, like warfarin, is a VKOR inhibitor and by inhibiting this enzyme acts as an anticoagulant. By this mode of action, tecarfarin should prevent the formation of blood clots in susceptible patients.

Potential Market and Commercialization Strategy

Like warfarin, tecarfarin has the potential for use in patients with atrial fibrillation, valvular heart disease or venous thromboembolism who are treated with anticoagulants to reduce their risk of clotting that can cause stroke. Because tecarfarin is a VKOR inhibitor with a long half-life, the onset and offset of its therapeutic activity is relatively slow and therefore the dose must be titrated to obtain the appropriate anticoagulation levels as measured by INR. However, once a target dose is achieved, we expect patients should have a stable level of anticoagulation. Given the need for titration, we expect that the commercial focus for tecarfarin will be the chronic segment of the oral anticoagulation market. We estimate that approximately 80% of the overall anticoagulant market would be considered to be for chronic use. There are three major indications where tecarfarin has the potential for use.

Atrial fibrillation is the most common form of cardiac arrhythmia, with approximately 2.4 million people in the United States diagnosed with this condition in 2006. Approximately 1.5 million of these patients are chronic users of oral anticoagulants. Atrial fibrillation is caused when the atria quiver instead of beat, causing the heart to beat erratically. Because the pumping function of the upper chambers of the heart are not working properly in atrial fibrillation patients, blood is not completely emptied from the heart's chambers, causing it to pool and sometimes clot. In patients with atrial fibrillation, clotted blood can dislodge from the atria and flow to the brain, causing a stroke. According to a 2005 article in the American Journal of Geriatric Cardiology, it is estimated that atrial fibrillation is responsible for more than 75,000 strokes per year in the United States alone.

Valvular heart disease is any disease that involves one or more of the heart's four valves. In more advanced forms of the disease, the diseased valves may be replaced with either tissue or mechanical valves. It is estimated that 72,000 patients in the United States had either a tissue or mechanical valve replacement in 2005. Patients with mechanical heart valves are at great risk of clotting and must have their level of anticoagulation managed with particular diligence for the remainder of their lives. According to the 2005 National Hospital Discharge Survey, there are an estimated 340,000 patients with mechanical heart valves in the United States and an estimated 34,000 mechanical valve replacements in 2005. Chronic oral anticoagulant therapy is almost always prescribed for patients with mechanical valves and is frequently prescribed for patients after tissue valve replacement surgery to reduce the risk of thromboembolic complications caused by the presence of the valve.

Venous thromboembolism is the formation of a blood clot, or thrombus, in the veins, that may travel to other parts of the body and block blood flow. This condition includes both deep vein thrombosis and pulmonary embolism. According to the 2005 Decision Resource Cardium Thromboembolism (Treatment) Forecast Tool report, there were approximately 510,000 patients being treated for venous thromboembolism in the United States in 2005, with approximately 130,000 estimated to be receiving chronic treatment. Chronic oral anticoagulant therapy, frequently with warfarin, is prescribed to both prevent and treat the formation of blood clots that cause venous thromboembolism.

Anticoagulants interfere either directly or indirectly with the clotting cascade and include warfarin, unfractionated heparin and injectable low molecular weight heparins. Of all the currently approved anticoagulants in the United States, only warfarin can be administered orally and thus remains positioned as the mainstay of routine chronic anticoagulation used for the prevention or treatment of thromboembolic events. According to the IMS Health Database, it is estimated that 33.6 million

prescriptions were written in the United States for warfarin in 2006 alone, translating into estimated warfarin sales of approximately $376 million in the United States during 2006.

We expect that new classes of oral anticoagulants (direct thrombin inhibitors and factor Xa inhibitors) may enter the market from 2009 to 2012. They have begun to be approved for acute indications (post surgical) outside the United States, and one has been recommended by an FDA advisory panel for approval in the United States. These new classes of agents will be formidable competitors and positioned as easy to use anticoagulants that do not require INR monitoring and that are as efficacious as warfarin. We anticipate the new entry of these agents will expand the oral anticoagulation market with a significant increase in promotional spend, higher pricing and particular appeal in the acute market due to their rapid on and off set of action and limited dose titration. According to the 2005 Decision Resource Cardium Thromboembolism (Treatment) Forecast Tool report, the market for oral anticoagulants is estimated to be approximately $6.5 billion by 2015.

There are two other classes of antithrombotic drugs that are not anticoagulants: antiplatelet agents and thrombolytics. Antiplatelet agents block the aggregation or clumping of platelets and include aspirin, ADP receptor blockers, such as Plavix, and glycoprotein IIb/IIIa blockers. Antiplatelet agents, which are generally used for the prevention of heart attacks and strokes that would result from atherosclerosis, or a build-up of fatty deposits in the arteries, are not indicated for prevention of clotting in atrial fibrillation and venous thromboembolism patients. Thrombolytics comprise agents that degrade fibrin clots and include tPA, streptokinase and urokinase. Although thrombolytics are used to treat thrombosis, their use is limited to short-term administration for treatment of acute myocardial infarction or acute ischemic stroke. Tecarfarin would not be used for these indications, and thus would not be in competition with these classes of antithrombotic drugs.

Tecarfarin is intended to offer superior and therefore safer anticoagulation control compared to warfarin as well as providing easier administration and with fewer drug-drug interactions. Based on our clinical results to date and assuming that the results from our on-going Phase 2/3 clinical trial are positive and confirmed in further clinical trials, tecarfarin will provide more dependable initial titration to target INR, fewer dose adjustments once the appropriate INR is attained and less need for monitoring in the long-term. Potential targeted patient segments include patients with mechanical valves, patients with a prior history of bleeding or thrombotic events, patients with metabolic impairment (renal and hepatic), patients taking multiple drugs, patients with poor compliance in taking anticoagulant therapies and patients with extreme bodyweight. In addition, we have demonstrated that unlike warfarin, tecarfarin does not have teratogenic effects that may be a key advantage in patients who are pregnant but where anticoagulant therapy is mandatory. We believe tecarfarin has an opportunity to effectively compete in the future oral anticoagulant market.

Clinical Development Status

We completed two successful Phase 2 clinical trials that assessed tecarfarin's safety and efficacy, and have initiated and fully enrolled a Phase 2/3 clinical trial involving 600 patients comparing the efficacy of tecarfarin head-to-head against warfarin. These trials are part of a development strategy intended to not only evaluate safety and efficacy but also to assess the potential for therapeutic superiority of tecarfarin over warfarin. If successful, we believe the clinical development of tecarfarin will establish its safety, ease of use and superior efficacy, making it preferable to warfarin as an anticoagulant. We intend to use the data from these clinical trials to enable collaboration with a pharmaceutical partner for the further development and commercialization of tecarfarin.

In preliminary discussions, the FDA indicated that measurements of anticoagulation using INR will likely be an acceptable surrogate and primary endpoint for tecarfarin's clinical development. Using target INR maintenance as a surrogate and primary endpoint should reduce both the size of and time

to complete our planned clinical trials for tecarfarin compared to clinical trials based on survival rates or other outcomes.

The goal of warfarin therapy is to maintain a patient's INR within a target therapeutic range between 2.0 and 3.0. There exists a group of patients for whom maintaining a therapeutic range of INR between 2.0 and 3.0 is particularly difficult. This group includes patients on warfarin therapy with an INR in the target range less than 45% of the time. It is estimated that this group is generally 25% of the overall anticoagulated patient population. It has been shown that increasing the time this patient population spends within the target range can substantially improve health outcomes. For every 10% increase in patients' time out of the target INR range of 2.0 to 3.0, the risk of mortality due to significant thrombotic or hemorrhagic events increases by 29%.

Phase 2/3 Anticoagulation Trial (CLN-505). Based upon the results of our first Phase 2 clinical trial (CLN-504) and a completed pilot trial (CLN-509), we have initiated and fully enrolled a Phase 2/3 randomized, double-blind, parallel group, active control clinical trial with over 600 patients randomized to either tecarfarin or warfarin. Since patients and study site investigators are blind to therapy and dose, a central dose control center comprised of individuals experienced in anticoagulation therapy receive individual patient INR information and adjust doses as appropriate. The primary outcome of the study will be the percentage of time patients are maintained within their target therapeutic INR range of 2.0 to 3.0 (higher for patients with mechanical valves) on either tecarfarin or warfarin over a period of at least six months. The safety of tecarfarin will also be evaluated. We have powered this study based on the results from the earlier Phase 2 study (CLN-504). The results of this Phase 2/3 study will be known by the end of the first half of 2009. Based upon discussions with the FDA, we believe this trial may qualify as a registration study.

Phase 2 Anticoagulation Pilot Clinical Trial (CLN-509). Our Phase 2/3 clinical trial (CLN-505) was designed such that it is blinded to both patient and study site so that an objective assessment could be made of the efficacy of tecarfarin in a head-to-head comparison with warfarin. We believe that the methodology required to maintain that blind, while also allowing for the dose adjustments required of a monitored anticoagulant, needed to be tested prior to the initiation of the larger Phase 2/3 study. This single-blind pilot Phase 2 study enrolled 50 patients at multiple sites and utilized a central dose adjustment center of individuals experienced in anticoagulation therapy to read the INR of patients and make any required dose adjustments. In this way, the blind as to dosing was maintained at the study sites. This pilot study validated the methodology to provide rapid dose adjustments for the patients, and is being utilized in the current Phase 2/3 clinical trial.

Even though the purpose of this pilot Phase 2 study was to test the design to be used in the larger Phase 2/3 study, the efficacy of tecarfarin was also analyzed. Patients were maintained within the target therapeutic INR range approximately 74% of the time in this pilot Phase 2 trial, a result virtually identical to our first Phase 2 study (CLN-504). This result occurred even as the mechanisms for maintaining the blind were being implemented and tested for the first time.

Unlike our earlier Phase 2 trial in which only patients with atrial fibrillation were enrolled, this pilot study included the patients requiring anticoagulation therapy for various reasons. This is the same patient population enrolled in the current 600-patient Phase 2/3 trial, and included patients with atrial fibrillation, venous thromboembolism, mechanical heart valves, myocardial infarction with cardiomyopathy and thrombophilia. Patients in this study also had the expected distribution of VKOR and CYP2C9 genotypes. This represents the patient population we believe will be treated with tecarfarin should it be approved by the FDA.

Phase 2 Anticoagulation Trial (CLN-504). This open-label single-arm Phase 2 trial enrolled 66 patients in twelve centers in the United States to test tecarfarin in patients with atrial fibrillation and who require anticoagulation. The key objective of this trial was to establish the optimal dosing regimen

and an INR monitoring schedule to maintain stable anticoagulation in patients, and to assess the safety and tolerability of tecarfarin. The time period to reach stable dosing was also evaluated.

The treatment period for patients in this trial was 12 weeks. Patients were closely monitored for the first three weeks to adjust the tecarfarin dose to achieve the target INR range of between 2.0 and 3.0. Upon reaching target INR, patients continued to be monitored weekly with dose adjustments as necessary. Historical data detailing the patient's INR values on warfarin for approximately one year prior to enrollment were collected. Patients were also titrated to a stable dose, defined as three consecutive weeks on the same dose with the weekly measured INR in the therapeutic range of 2.0 to 3.0.

The results from this trial showed that patients in CLN-504 achieved the target INR range 71.5% of the time after completing their initial three weeks of dose titration, as compared to these patients' historical experience on warfarin when they were within target INR only 59.3% of the time. This result represents the primary endpoint designated in the statistical analysis plan adopted while the open-label trial was underway. Statistical significance was achieved ($p=0.0009$) at the primary endpoint. A p-value of 0.05 or less generally represents a statistically significant difference in treatment, or between treatment and baseline. A lower p-value indicates greater confidence in the results. In calculating the time within the INR therapeutic range, we utilized the Rosendaal INR interpolated method, the most commonly applied method to determine the amount of time an individual patient spends within the therapeutic INR range. After one week of treatment with tecarfarin, 77% of the patients reached a therapeutic INR, and after two weeks of treatment, 95% of the patients had attained a therapeutic INR. Also, a stable maintenance dose on tecarfarin was achieved in approximately 81% of the patients within 12 weeks of treatment. Published data have shown that only 50% of warfarin patients reach a stable dose within 12 weeks of starting therapy. The average maintenance dose of tecarfarin was 16 mg per day, with a range of 6 mg to 29 mg per day. The most commonly reported drug related adverse effects were mild bleeding complications consistent with anticoagulation, such as bruising and nose bleeds. One patient suffered a severe hematoma on his elbow caused by the trauma from a fall.

When comparing tecarfarin INR interim results to patients' historical INR data on warfarin using the Rosendaal interpolated method, the percentage of patients maintaining INR values between 2.0 and 3.0 less than 45% of the time following the initial three weeks of dose titration dropped from 22.6% when historically on warfarin to 10.9% when on tecarfarin, a more than 50% reduction ($p=0.1435$). Patients with INR in range less than 45% of the time are considered to have poor control of anticoagulation and they have a higher stroke and severe hemorrhage rate compared to patients with good control of anticoagulation. Even more importantly, patients on tecarfarin were significantly out of range less than on warfarin. Patients treated with tecarfarin were below an INR of 1.5 only 1.2% of the time as compared to 3.9% of the time historically on warfarin ($p=0.0022$, interpolated method), and were above an INR of 4 only 1.2% of the time compared to 3.3% when they were on warfarin ($p=0.0727$, interpolated method). These data appear to demonstrate the potential of tecarfarin to significantly reduce the amount of time that patients are out of INR range. Published clinical literature suggests that if this observation is confirmed in future trials, there would also be a reduction in the risk of mortality due to significant thrombotic or hemorrhagic events compared to warfarin treatment.

These results in CLN-504 provide initial evidence of the ability of tecarfarin to reach a stable dose and to improve patients' ability to maintain a stable INR within the target therapeutic range. We believe these results indicate the potential for the drug's safety and efficacy superiority to warfarin. However, there can be no assurance that these results will be replicated in the head-to-head comparison against warfarin currently underway.

Phase 1 Clinical Trials. We have completed five Phase 1 clinical trials on 156 individuals testing the safety and tolerability of tecarfarin in healthy volunteers. In trials completed to date, tecarfarin has been well tolerated at all doses with no unexpected safety signals as measured by adverse events, vital signs, ECG and laboratory testing. There have been no frequent or consistent adverse events suggestive

of off-target toxicity. Mild adverse events reported included headache and gastrointestinal effects. Adverse events related to tecarfarin were also mild and included nose bleeds and bruising, which are consistent with anticoagulation. These studies have also demonstrated that coagulation factors II, VII and X were reduced as predicted in proportion to increases in INR consistent with the mode of action of warfarin. In addition, we demonstrated that we could reverse the effect of tecarfarin with vitamin K or fresh plasma. One drug-drug interaction clinical trial has been completed to assess whether blood levels of tecarfarin are affected by fluconazole, a known inhibitor of CYP450 that can decrease the metabolism of warfarin, potentially resulting in dangerous over anticoagulation. This study compared the effect on blood levels of tecarfarin as compared to warfarin when fluconazole was administered. Fluconazole did not affect the blood levels of tecarfarin while warfarin levels increased substantially when fluconazole was administered. As expected, we believe this is due to tecarfarin's clearance through the non-CYP metabolic pathway.

Preclinical Results. Tecarfarin is an orally active VKOR inhibitor with no known off-target pharmacological activity. *In vivo* anticoagulant effects of tecarfarin are associated with selective reductions in VKOR-dependent coagulation factors (II, VII, IX and X) whereas VKOR-independent coagulation factors are unaffected. Anticoagulant and antithrombotic effects of tecarfarin have been demonstrated by *in vivo* studies in multiple animal models. Tecarfarin undergoes non-oxidative metabolism to yield a single primary metabolite, ATI-5900. An *in vivo* preclinical study demonstrated tecarfarin anticoagulation was unaffected by treatment with the CYP450 inhibitor, amiodarone. In contrast, amiodarone treatment resulted in markedly elevated coagulation times in warfarin treated animals. Also, preclinical *in vivo* assays indicated that tecarfarin may provide a safety advantage over warfarin when needed during pregnancy since the well-known teratogenic effects of warfarin were not seen in reproductive toxicity studies on tecarfarin.

Budiodarone—Antiarrhythmic Agent for the Treatment of Atrial Fibrillation

Our second product candidate, budiodarone, is currently in development for the treatment of atrial fibrillation. We engineered budiodarone with the goal of developing a therapy equally effective as, but safer than, amiodarone. We hold a composition of matter patent on budiodarone and have filed for other use and manufacturing patent applications in the United States and other jurisdictions. We have completed a Phase 2b study that shows proof of concept of efficacy and safety in patients with paroxysmal atrial fibrillation.

Amiodarone Background

Atrial fibrillation is the most common form of cardiac arrhythmia, or abnormal heart rhythm, affecting greater than 6.4 million people in the United States, Europe and Japan. Atrial fibrillation is caused when the atria quiver instead of beat. During atrial fibrillation, the atria contract and relax erratically between 350 and 600 times per minute versus normal heart rhythm of 60 to 80 beats per minute. Patients with atrial fibrillation experience debilitating symptoms and suffer a compromised quality of life. Because the pumping function of the atria does not work properly in atrial fibrillation patients, blood is not completely emptied from the heart's chambers, causing it to pool and sometimes clot. In patients with atrial fibrillation, clotted blood can dislodge from the atria and flow to the brain, causing stroke. Atrial fibrillation also compromises the pumping function of the heart often, leading often to intolerable symptoms that need therapy.

Atrial fibrillation treatments focus on a reduction of symptoms and returning the heart to normal rhythm. Concerns surrounding available atrial fibrillation treatments include both safety and efficacy issues. The most common treatment for atrial fibrillation is drug therapy. Current pharmacological treatments for atrial fibrillation are limited in their use due to safety and efficacy issues, while non-pharmacological approaches such as implantable devices and surgery are currently less favored because of their costs and invasive nature.

Amiodarone is the current "gold standard" for the pharmacological treatment of atrial fibrillation. Amiodarone possesses a unique, balanced pharmacological effect on sodium, potassium and calcium channel inhibition as well as certain receptors in the heart that are responsible for its effectiveness. Clinical studies have shown that amiodarone is uniquely superior to other antiarrhythmic drug treatments. While amiodarone is not approved by the FDA for the treatment of atrial fibrillation, it is a commonly prescribed off-label treatment due to the lack of equally efficacious treatments. However, amiodarone has a slow onset of action and its use has been severely limited by life-threatening and toxic side effects that result from the accumulation of the drug in the liver, lungs, nerves, thyroid and other tissues.

Many of the adverse effects of amiodarone are believed to derive from its very slow elimination from the body due to its dependence on the CYP450 system for metabolism. In patients taking daily oral doses of amiodarone, the drug slowly accumulates in the body where it remains, avoiding metabolism by liver enzymes. This leads to the gradual development of organ specific toxicities. Similarly, when amiodarone is discontinued many weeks or months are required for the drug to be totally eliminated from the body. Due to this slow elimination, toxicity and side effects due to accumulation usually take months or weeks to reverse, if ever reversed. Since these side effects can be progressive, they can be fatal before all of the drug is eliminated from the body.

Our Antiarrhythmic Agent

We are developing budiodarone for the reduction of atrial fibrillation burden in patients who suffer from repeated episodes of atrial fibrillation, or paroxysmal atrial fibrillation, and prevention of recurrence of symptomatic atrial fibrillation in patients with or without structural heart disease who experience on-going, or persistent, atrial fibrillation. Paroxysmal atrial fibrillation is generally defined as episodes of atrial fibrillation that occur intermittently with patients moving between sinus rhythm (normal heart beat) and atrial fibrillation spontaneously, with the frequency and duration of the paroxysmal atrial fibrillation episodes defining its severity.

Budiodarone is designed using our RetroMetabolic Drug Design technology with the goal of retaining the efficacy of amiodarone but with better safety. Budiodarone's affinity for the major calcium, potassium and sodium ion channels, as well as certain receptors in the heart, very closely matches that of amiodarone. Budiodarone, like amiodarone, contains iodine which we intentionally retained since we believe it contributes to amiodarone's efficacy. We have engineered budiodarone not to be primarily dependent on CYP450 for its metabolism while matching amiodarone's balanced receptor profile. Both preclinical and clinical studies with budiodarone provide evidence that the drug preserves the efficacy of amiodarone but with more rapid metabolism and no tendency towards accumulation.

Potential Market and Commercialization Strategy

According to the 2007 Atrial Fibrillation Decision Resources Patientbase, approximately 2.4 million people in the United States have been diagnosed with atrial fibrillation. It is estimated that atrial fibrillation is responsible for more than 75,000 strokes per year in the United States alone. According to a 2005 article in The American Journal of Geriatric Cardiology, it is estimated that approximately two million patients in the United States were treated for their atrial fibrillation with a prescription drug in 2006. According to a 2005 Datamonitor Stakeholder Insight Atrial Fibrillation report, it is estimated that 45% of atrial fibrillation patients in the United States receive a therapeutic drug which is considered primarily to be arrhythmic therapy while the remainder are treated with a therapeutic drug primarily considered to be "rate therapy." Based on our own primary market research in 2007, we believe an estimated one-third, or approximately 600,000, of atrial fibrillation patients treated in the United States for their arrhythmia receive amiodarone. In addition, although a generic drug, and in

spite of its serious safety issues, amiodarone achieved annual sales in its six largest global markets, with the exception of the United States, of approximately $147.0 million.

Based on our own market research, we believe amiodarone is considered to be the "gold standard" antiarrhythmia medication for the prevention of atrial fibrillation recurrence. Budiodarone was designed to retain the efficacy of amiodarone, but with a better side effect profile. Amiodarone is believed to provide both rhythm and rate therapy, and budiodarone is intended to retain this effect.

Clinical Development Status

We have completed two Phase 2 clinical trials in patients who suffer from repeated episodes of atrial fibrillation, or paroxysmal atrial fibrillation. This is a patient population that is particularly difficult to treat.

We completed a proof-of-concept Phase 2b trial in December 2008 in patients who suffer from paroxysmal atrial fibrillation designed to characterize the safety, tolerability and efficacy of budiodarone. With these results, we are now seeking a large pharmaceutical company partner to continue to develop the product candidate through Phase 3 clinical trials and commercialization. We anticipate that the partner will be responsible for these late-stage development and commercialization costs.

Phase 2b Trial in Paroxysmal Atrial Fibrillation (CLN-205). We have recently completed this double blind, placebo-controlled, randomized Phase 2b trial studying the safety and efficacy of budiodarone in 72 patients with paroxysmal atrial fibrillation. The objective of our clinical study in this patient population was to measure the change in burden, defined as the percentage of time spent in atrial fibrillation, during treatment compared to baseline and placebo. Atrial fibrillation burden is an accepted method by which cardiologists and electrophysiologists monitor the effectiveness of treatment in patients with paroxysmal atrial fibrillation. The patients in this trial had implanted pacemakers with the capability of monitoring the duration and severity of the episodes of atrial fibrillation and recording these data. Patients were entered into a baseline screening period of up to 30 days during which their burden was measured to establish if they were eligible for the trial. Qualifying subjects were randomized to receive twice-a-day, or BID, oral doses of 200 mg, 400 mg, or 600 mg budiodarone, or placebo for a treatment period of 12 weeks. This treatment period was followed by a further 4-week observation period. During the 12-week treatment period, each patient's burden was measured and compared to their own baseline measurement. These results were then compared to the response in the placebo group.

The primary efficacy analysis was the percent change in the atrial fibrillation burden from baseline to the whole 12-week treatment period. The primary statistical efficacy analysis showed significance for budiodarone at the 400 mg ($p=0.015$) and 600 mg ($p=0.005$) doses. Analyses were by treatment group, and pair-wise comparisons between each budiodarone dose group and the Placebo group using the Wilcoxon rank sum test were produced. The atrial fibrillation burden in these two treatment groups was reduced from baseline by 54% and 75%, respectively. Although the 200 mg BID dose decreased atrial fibrillation burden by 10%, this did not reach statistical significance. The overall dose response effect was both robust and linear with a $p=0.0001$ (as measured by the Jonckheere-Terpstra test). Randomization was balanced across all four treatment groups.

The efficacy analysis also included a month-by-month assessment of the patients' burden. The reduction in atrial fibrillation burden was statistically significant in each of the 3 months of treatment in both the 400 mg BID group and the 600 mg BID group. The maximal effect of the drug was seen in the third month on 600 mg BID where the percentage reduction was 83% ($p=0.009$).

The safety and tolerability of budiodarone was also analyzed. Of particular importance was to determine whether budiodarone showed signs of tissue accumulation as would be seen with

amiodarone. Budiodarone was designed to avoid the tissue accumulation of amiodarone, thought to be the cause of many of the toxicities associated with the drug. For example, published studies indicate that 90% of patients treated with amiodarone would display corneal microdeposits after three months of treatment due to accumulation. These corneal microdeposits are identified through slit lamp exams. The patients treated with budiodarone in this Phase 2b study received slit lamp exams at the conclusion of the study and no corneal microdeposits were seen in any of the patients. This, coupled with the patients' return to essentially their pretreatment level of atrial fibrillation burden during the 30 days following cessation of treatment with budiodarone, supports our belief that budiodarone may avoid accumulation in tissues. Budiodarone was generally well-tolerated by the patients in the study.

The clinical characteristics of the patients enrolled in this Phase 2b trial were similar to those enrolled in other recent large scale trials, such as Canadian Trial of Atrial Fibrillation, or CTAF, ADONIS, ERUDIS and ATHENA, testing other antiarrythmic drugs designed to treat atrial fibrillation. As such, we believe the results of this Phase 2b study compare favorably with the results of these other studies. These characteristics are also broadly representative of the general population of patients with atrial fibrillation.

We believe these positive Phase 2b results, along with the results from our earlier trials, establishes the proof of concept for budiodarone, and may allow us to enter into collaboration with a significant pharmaceutical partner for further development, and eventual commercialization, of this product candidate.

Phase 2 Trial in Paroxysmal Atrial Fibrillation (CLN-208). We successfully completed this open-label dose-escalation design Phase 2 trial testing the safety and efficacy of budiodarone in the treatment of paroxysmal atrial fibrillation in six patients for an eight week period. The endpoint was to establish that the patients' atrial fibrillation burden would be significantly reduced compared to baseline. The patients in this trial had an implanted pacemaker with the capability of monitoring the duration and severity of the episodes of atrial fibrillation and logging the results. The patients' atrial fibrillation burden was measured at weekly intervals. The first two weeks served as the untreated baseline period. Following the baseline period, budiodarone was then administered twice a day, or BID, in ascending doses over the next eight weeks; 200 mg BID for two weeks, 400 mg BID for two weeks, 600 mg BID for two weeks, and 800 mg BID for two weeks. Treatment with budiodarone was then stopped and the final two weeks served as a washout period to measure the level of atrial fibrillation burden.

The results provide evidence of the efficacy of budiodarone in reducing the atrial fibrillation burden in all six patients, with a statistically significant reduction in atrial fibrillation burden apparent even at the lowest dose of 200 mg BID. At baseline, the patients had a mean atrial fibrillation burden of 20%. This was reduced to a mean of 1.5% of time spent in atrial fibrillation over a two-week period at the highest dose of 800 mg BID. As dosing increased, average atrial fibrillation burden was reduced by 71% at 200 mg BID compared to baseline ($p=0.03$), by 72% at 400 mg BID compared to baseline ($p=0.03$), by 80% at 600 mg BID compared to baseline ($p=0.06$) and by 87% at 800 mg BID compared to baseline ($p=0.06$). At the two highest doses, one patient decided to not complete the study due to gastrointestinal discomfort and statistical significance was not achieved. After the cessation of treatment, the atrial fibrillation burden gradually increased to pretreatment values by the second week.

The rapid onset and offset of antiarrhythmic activity of budiodarone are mirrored by the blood levels of the candidate drug that were measured at intervals throughout the trial. Plasma levels of budiodarone increased in proportion to the increase in dose, and after cessation of dosing, the concentration of budiodarone and its metabolites all decreased to almost zero within one week. This is an important advantage for budiodarone compared to amiodarone, which can take months to be completely eliminated from the body, giving rise to the serious side effects that budiodarone is designed to address. Budiodarone was generally well tolerated, with transient and expected changes in measures of thyroid function, as well as gastrointestinal complaints such as dyspepsia, lower abdominal pain,

loose stools and nausea being reported, especially at the highest dose. The more prevalent side effects coupled with considerations for the incremental improvement in response at the highest dose led us to not include the 800 mg BID dose in further clinical trials. These mild side effects are similar to those seen with amiodarone. There were no drug related serious adverse events.

Phase 1 Clinical Trials. We have successfully completed three Phase 1 clinical trials testing budiodarone in 83 healthy volunteers. The results of these Phase 1 clinical trials in healthy volunteers indicated that single doses up to 800 mg and repeat oral dose safety studies at doses up to 1600 mg/day in healthy volunteers did not show any clinically significant adverse events. Moreover, pharmacokinetic analysis in these subjects showed that budiodarone had a shorter half-life than amiodarone and did not display the tendency towards the accumulation associated with amiodarone. The results of a drug-drug interaction study indicated that at doses expected to be used in Phase 3 trials budiodarone was well tolerated when administered with the anticoagulant warfarin. Also at expected therapeutic doses, no cardiovascular adverse events were noted, and there was no effect on the surface electrocardiogram. An additional Phase 1 clinical trial was discontinued due to the inability to identify suitable subjects.

ATI-7505—A Prokinetic Agent for the Treatment of Gastrointestinal Disorders

Our third lead product candidate is ATI-7505, an orally bioavailable new chemical entity being developed for the treatment of various gastrointestinal disorders. We hold several composition of matter patents on ATI-7505 and have several other patent applications pending in the United States and other jurisdictions.

Cisapride Background

ATI-7505 is a new chemical entity designed to maintain the therapeutic efficacy of cisapride. Cisapride is an oral drug which was approved by the FDA only for the treatment of nocturnal heartburn associated with GERD. It had a track record of clinical success in alleviating gastrointestinal discomfort or pain that occurs in the upper gastrointestinal tract (esophagus and stomach). Launched in 1993, cisapride reached annual sales of approximately $1.0 billion by the year 2000 when it was withdrawn from the market because of serious safety issues. Serious cardiovascular side effects caused by heart rhythm abnormalities occurred when blood levels of the drug rose significantly because CYP450 clearance was blocked due to the presence of other drugs cleared by the same metabolic pathway. It was discovered that cisapride had an off-target effect on a potassium channel in the heart (hERG or IKr) when blood levels rose as a result of a drug-drug interaction, leading to potentially fatal cardiac side effects.

In spite of its withdrawal, cisapride was and still is considered by many to be the most effective agent for gastric motility. While it was only approved for nighttime heartburn, cisapride was also used extensively for GERD, gastroparesis and other motility disorders. Cisapride is a potent agonist of human serotonin type-4, or 5-HT_4, receptors which exist throughout the gastrointestinal tract and regulate gastric emptying and the motility of food through the intestines.

Since cisapride was withdrawn from the market, no other product has taken its place. Other existing therapies address certain disorders affecting the gastrointestinal tract, but there is still a need for better motility agents which can be used for long-term relief of upper gastrointestinal problems. An agent that promotes motility in the upper and lower gastrointestinal tracts without the cardiac liability of cisapride continues to be an important unmet need for patients suffering from various gastrointestinal disorders.

Our Prokinetic Agent

ATI-7505 is an orally bioavailable, small organic molecule that is structurally similar to cisapride. Like cisapride, ATI-7505 is a potent 5-HT_4 receptor agonist that has prokinetic effects. However, ATI-7505 is more selective than cisapride, with minimal activity on the hERG channel as well as minimal to no activity on the 5-HT_3 or other serotonergic receptors. This selectivity minimizes the potential for off-target pharmacological effects. The results of preclinical animal and clinical human testing to date suggest that ATI-7505 has similar pharmacologic activity to that described in the literature for cisapride but has a substantially different metabolic and cardiac safety profile.

ATI-7505 is designed to address the deficiencies of cisapride by maintaining its proven therapeutic benefit while eliminating its known cardiac side effects. ATI-7505 is designed to avoid CYP450 metabolism and the associated drug-drug interactions. We engineered ATI-7505 to undergo rapid esterase-mediated metabolism into a single major nontoxic metabolite, ATI-7500. During our preclinical studies neither ATI-7505 nor its metabolite ATI-7500 exhibited any interaction with CYP450. In nearly 1,000 people treated, the most frequently reported side effect considered to be off-target was headache and this was reported no more frequently in the ATI-7505 treated patients than in the placebo group. Data generated to date indicate that ATI-7505 has no significant activity at any potassium channel including the hERG channel or other key cardiac ion channels. This was confirmed in a standard Thorough QT (TQT) study that showed only minimal effects on the QT interval at both therapeutic and supratherapeutic doses. This is in contrast to the significant cardiac liability of cisapride and its CYP450 metabolite known as norcisapride.

ATI-7505 is designed to provide prokinetic activity in the gastrointestinal tract without cardiac safety problems at anticipated therapeutic doses.

Indications and Market Opportunity

ATI-7505 has the potential for use in various gastrointestinal disorders for which increased motility would be beneficial. There are five potential major indications that may be pursued:

Chronic constipation results from a lack of an adequate number of bowel movements (typically less than three per week) over an extended period of time (usually defined as greater than six months). When suffering from chronic constipation, patients often try laxatives and fiber supplements prior to physician prescribed therapy. Due to limitations in existing treatments, a significant need exists for a safe and effective chronic constipation therapy. Based on a 2004 article in Review of Gastrointestinal Disorders, it is estimated that between 36 and 57 million people in the United States have chronic constipation and that approximately 33% of them see a physician for this condition.

Functional dyspepsia is characterized by a number of symptoms associated with upper intestinal discomfort. In 2006, a specialist panel of clinicians issued a report entitled Rome III recommending that certain of these symptoms, including mid-to-upper abdominal discomfort characterized by postprandial fullness, early satiety or upper abdominal bloating, be classified as postprandial distress syndrome, or PDS. These symptoms are believed to be associated with deficiencies in motility of the upper gastrointestinal tract. ATI-7505 is being developed for the treatment of PDS. No currently marketed therapy is considered to be an optimal treatment for this condition. As indicated in a 2004 article in the Alimentary Pharmacology and Therapeutics journal, it is estimated that between 35 and 44 million people suffer from functional dyspepsia in the United States.

GERD is a digestive system disorder characterized by the frequent unwanted passage of stomach contents into the esophagus that results in such symptoms as heartburn and, in some cases, damage to the lining of the esophagus. According to a 2007 report in Med Ad News, approximately $17.0 billion is spent worldwide each year on GERD and heartburn medications. According to a 2006 article in the Digestion International Journal of Gastroenterology, approximately 10 percent of the population

experiences GERD symptoms daily. While most patients are treated with drugs that reduce the acid contents of the stomach, approximately 20 to 25 percent of patients (or 6.0 to 7.5 million people in the United States) do not obtain adequate relief from this type of treatment. This is the population that is targeted with ATI-7505.

Gastroparesis is a disorder of the stomach in which contents from the stomach do not move efficiently into the small intestine. The digestive system, including the stomach, uses muscular contractions to move its contents along the gastrointestinal tract. Gastroparesis results when there is some damage or malfunction to this process in the stomach, resulting in symptoms such as nausea and vomiting, severe abdominal pain, bacterial infections and weight loss. Diabetics are particularly susceptible to this condition. According to the Digestive Diseases Interagency Coordinating Committee 2004, it is estimated that approximately five million patients suffer from gastroparesis in the United States. No existing therapies adequately meet this patient need.

IBS is a set of chronic symptoms associated with the lower gastrointestinal tract, particularly the colon, and is usually experienced as abdominal pain, bloating and discomfort. This can include constipation with difficult or painful bowel movements or diarrhea due to excess fluid in the colon. While the causes of IBS are still in question, lack of colonic motility is thought to be a primary cause. As with chronic constipation, patients need an effective motility agent when other remedies, such as change in diet, reduction of stress or consumption of laxatives or fibers, do not relieve the IBS symptoms. ATI-7505 is targeted for use in the segment of IBS patients who also suffer from chronic constipation. According to a 2005 article in the Alimentary Pharmacology and Therapeutics journal, an estimated 5.5 million adults in the United States suffer from IBS with constipation and an estimated additional 28.0 million adults suffer from IBS with intermittent constipation.

Clinical Development Status

Procter & Gamble Pharmaceuticals, Inc., or P&G, our collaboration partner for the development of ATI-7505 from June 2006 until July 2008, completed a maximum tolerated dose study during which healthy subjects were treated with doses as high as 250 mg qid, a TQT study involving the investigation of ATI-7505 at both therapeutic doses as well as at four times the expected therapeutic dose to investigate its effect on cardiovascular functions, and a Phase 2 study in idiopathic chronic constipation involving three doses of ATI-7505 twice daily compared to placebo over a four-week period. We have also previously concluded three Phase 2 trials testing ATI-7505's potential as both a lower (large bowel) and upper (stomach and esophagus) gastrointestinal therapy. The safety and tolerability of the drug was also observed.

Phase 2 Chronic Idiopathic Constipation Trial (CLN-711). Conducted by P&G, this Phase 2b, randomized, placebo-controlled study of ATI-7505 in patients with chronic idiopathic constipation was designed to enroll 400 patients but was terminated early when P&G returned the product candidate to us. We did not have the resources to continue the clinical trial. At the time the trial was ended, 214 patients had been enrolled. Nonetheless, significant results were achieved with one dose group that, we believe, further demonstrates the potential efficacy of ATI-7505.

The Phase 2b clinical trial was conducted at 42 trial sites in five countries. Patients were treated for four weeks and the primary efficacy endpoint was the improvement in the total number of spontaneous bowel movements, or SBM, during the first seven days after randomization as compared to placebo. Patients were randomized to either placebo or doses of ATI-7505 of 20 mg BID, 40 mg BID, 80 mg BID, or 120 mg BID. Randomization was balanced amongst all treatment arms. SBM was defined as a bowel movement occurring without the need for a laxative or enema within the preceding 24 hours. Safety assessments were conducted on every patient enrolled.

Utilizing the original statistical analysis plan for the full study, statistical significance ($p=0.0031$) was achieved at the 80 mg BID dose with an increase of a mean of 3.32 SBMs in the first week

compared to baseline. In the placebo group, this increase was only 0.31 SBMs. A preliminary analysis of the overall responder rate indicates ATI-7505 maintained its positive effect over the full four-week treatment period. In addition, time-to-first SBM using a Kaplan-Meier analysis suggests that many patients on ATI-7505, unlike placebo, have their first SBM following the first dose of the drug and this effect was observed at all doses tested. The 80 mg BID dose was very well tolerated and there were no reports of diarrhea, nausea or vomiting.

Thorough QT Study Assessing Cardiac Safety (CLN-713). Conducted by P&G, this clinical study was conducted with healthy volunteers, under standard and established guidance from the FDA for the conduct of such cardiac safety studies, to assess whether electrocardiographic effects are seen at therapeutic and supra therapeutic doses of ATI-7505. The study design followed the FDA's ICH E14 guidance for measuring whether drugs have the potential for causing prolongation of the QT interval. The FDA requires a TQT study on most drugs in development because prolongation in QT interval (corrected for changes in heart rate, or QTc) may signify an increased risk of developing cardiac arrhythmias.

The study of 250 subjects was a single-center, randomized, double-blind, placebo-controlled, four-arm, parallel-group study of two doses of ATI-7505—a therapeutic dose of 40 mg every six hours and a supratherapeutic dose of 200 mg every six hours, in healthy male and female volunteer subjects. Subjects in one treatment arm received a single dose of 400 mg moxifloxacin to serve as a positive control to establish the sensitivity of the study to measure QT prolongation. The data collected was evaluated utilizing a standard, manual extraction process performed by eResearch Technology.

When the data from all study participants were analyzed, the placebo-corrected QTc mean change from baseline (using the individual correction method for heart rate, or QTcI) for the therapeutic and supratherapeutic doses of ATI-7505 were 1.5 and 3.1 milliseconds, respectively, an outcome that suggests little or no electrocardiographic effect. The upper confidence interval of 10 milliseconds was not crossed at any of the 15 time points, with either dose. Moxifloxacin demonstrated Mean QTc prolongation of 8.7 milliseconds and the upper confidence interval of 10 milliseconds was crossed at 13 of 15 time points after dosing. The moxifloxacin response is consistent with previous clinical experience and thus validates the outcome of the study. In addition to a lack of meaningful changes in the mean QTc interval, the percent of outliers exceeding 30 milliseconds from baseline was consistent across patients receiving placebo and active drug, as well as between genders, and no ATI-7505 subjects displayed a QTcI interval that exceeded 480 milliseconds at any time.

We received written confirmation from the FDA that based on their review of the results of this Thorough QT study, the FDA concurs that the study met the ICH E14 criteria for the design, conduct and analysis of a Thorough QT study, and they concur with our interpretation of the results that the findings were negative, meaning ATI-7505 does not significantly increase the QT interval at therapeutic and supratherapeutic doses.

We believe the results of this Thorough QT study, along with the data collected through intense cardiac safety monitoring of the other approximately 700 people administered ATI-7505, strongly support the cardiac safety profile we sought in the design of the product candidate.

Phase 2 Symptomatic GERD Safety and Efficacy Trial (CLN-709). This randomized double-blind, placebo controlled, multi-center Phase 2 trial was successfully completed, enrolling 404 patients diagnosed with symptomatic GERD, the majority of whom completed the full treatment period of four weeks. The severity of patients' symptoms in this trial was measured during a two-week run in period prior to randomization into either placebo or treatment drug groups of either 12 mg qid or 40 mg qid. We measured five symptoms associated with symptomatic GERD as well as seven symptoms associated with functional dyspepsia as secondary endpoints.

The primary endpoint measuring adequate symptomatic relief of GERD did not achieve statistical significance when the effect of active drug was compared to placebo. However, in the 40 mg qid group, the combined measurement of the improvement in the proportion of symptom-free days for the five GERD symptoms approached significance when compared to placebo (p=0.066). Statistical significance was achieved in two of these five symptoms, namely, nighttime acid regurgitation (p=0.0027) and nighttime heartburn (p=0.0037). No significant treatment effect was seen in the other secondary endpoints of GERD.

ATI-7505 at 40 mg qid also achieved statistical significance in the improvement of the proportion of symptom-free days in three out of seven individual dyspeptic symptoms compared to placebo, namely, pain in the upper abdomen (p=0.0288), discomfort in the upper abdomen (p=0.0241) and upper abdominal fullness (p=0.0099). A trend towards statistical significance was seen in a fourth dyspeptic symptom, bloating in the upper abdomen. While the overall effect of 40 mg qid on all dyspeptic symptoms was not significant, the exclusion of nausea and vomiting resulted in statistically significant effect for all other symptoms combined (p=0.01). There was no effect on nausea and vomiting symptoms, thought to be mediated in the central nervous system. We believe that ATI-7505 does not enter the brain and acts only outside the central nervous system. These effects on dyspeptic symptoms are further evidence that the drug's treatment effects are very similar to cisapride and that ATI-7505 behaves as one would expect of a prokinetic agent.

Safety data obtained in CLN-709 continued to support our belief that ATI-7505 is safe and generally well-tolerated. No serious effects were reported, and the only dose-related adverse effects were generally mild-to-moderate cases of diarrhea and loose stools observed consistently throughout the Phase 1 and Phase 2 clinical trials of ATI-7505. This would be expected of a prokinetic agent intended to enhance motility in both the upper and lower gastrointestinal tracts.

The cardiac safety data were similarly supportive of earlier results and the intended design of the drug. These cardiac safety data contained no clinically relevant changes in heart function nor were any patients outliers from the norm.

Phase 2 Erosive Esophagitis Safety and Efficacy Trial (CLN-708). This randomized, double-blind, placebo-controlled, multi- center Phase 2 trial was successfully completed enrolling 202 patients diagnosed with erosive esophagitis, or EE. This condition is evidenced by lesions on the esophageal lining which results from excess acid in the esophagus over an extended period of time. This excess acid is due to the reflux of the stomach's contents into the esophagus possibly because the circular band of muscle between the stomach and esophagus, called the lower esophageal sphincter, relaxes abnormally. In extreme cases, prolonged EE can lead to cancer of the esophagus. The primary endpoint of this trial was to determine the treatment effect of ATI-7505 versus placebo in reducing the severity of EE by at least one grade on a generally accepted four-point scale of measuring esophageal lesions. This scale is known as the Los Angeles Classification Scale, or the LA Scale. The doses of active drug used in the trial were 12 mg qid and 40 mg qid. The extent of a patient's lesion was measured by an endoscopic evaluation at the beginning and end of the treatment period of four weeks (28 days).

The primary endpoint in this trial was not met when ATI-7505 was compared to placebo. However, a dose related treatment effect was seen with both active doses although the effect was not significantly better than that seen with placebo. Patients in the 40 mg qid and 12 mg qid treatment groups achieved response rates of 38.9% and 33.3%, respectively, in the measurement of improvement by at least one grade on the LA Scale compared to a placebo response rate of 31.5%. In four weeks of treatment ATI-7505 achieved approximately the same degree of healing that cisapride was able to achieve only after 12 weeks of treatment as documented by published clinical studies. However, of note, patients treated with ATI-7505 with the least severe EE, or Grade A patients, displayed the highest percent complete healing rate of 57.1% at 40 mg qid and 41% at 12 mg qid as compared to a placebo rate of 33.3%. This suggests that the drug may be responsible for the improvement in EE score.

The adverse events during this trial were similar to prior trials, and were generally mild or moderate. The drug appeared to be safe and well tolerated. The side effect seen most often was mild diarrhea. Cardiac safety was also closely monitored and no clinically relevant changes in heart activity were observed.

Overall, the results of this Phase 2 trial confirmed earlier evidence that ATI-7505 acts in a similar way to cisapride without the cardiac safety concerns of that therapy.

Phase 2 Gastro Esophageal Reflux Disorder Trial (CLN-706). This double-blind, randomized, placebo-controlled, cross-over designed trial in 30 GERD patients was successfully completed using two doses of ATI-7505, 12 mg qid and 40 mg qid versus placebo. The purpose of the study was to evaluate ATI-7505's safety and its effectiveness in reducing acid exposure in the esophagus of patients with GERD. The study measured the length of time within 24-hour periods that the patient had a certain level of acid (pH<4) in the esophagus while on placebo, and compared that to the periods of time over 24 hours that a patient had that acid level (pH<4) while on the two doses of ATI-7505. The lower the pH level in the esophagus, the higher the acid exposure. It is known that the relationship between acid exposure in the esophagus and heartburn symptoms or even esophageal erosions represent one of the strongest correlations between the mechanism of an upper gastrointestinal therapy and clinical outcomes. We believe that if ATI-7505 can show effectiveness in reducing the amount of acid traveling from the stomach into the esophagus and/or the amount of time acid remains in the esophagus, it would clarify its potential as a therapy for upper gastrointestinal disorders. The study design also included the use of cardiovascular Holter monitors to further measure the cardiac safety of ATI-7505.

The study objective to demonstrate dose-related reduction in acid exposure in the esophagus was achieved. In terms of acid exposure, the results were approaching significance (p=0.0625 versus placebo) at 40 mg qid in measuring the time within a 24-hour period that the patients' esophageal acid level was pH<4. Statistical significance was achieved in a post hoc analysis when we evaluated whether the effect of ATI-7505 on acid reduction improved as the dose increased. This analysis compared ATI-7505 12 mg qid to 40 mg qid. The resulting p-value of 0.0014 indicates that the treatment effect improves as the dose increases.

The trial provided evidence of a statistically significant effect at 40 mg qid versus placebo in reducing the number of acid reflux episodes lasting more than five minutes (p=0.0007). It is believed that acid reflux episodes lasting longer than five minutes directly relate to esophageal erosions and severe symptoms of GERD. A statistically significant dose response relationship was also established with this endpoint (p=0.0049) when comparing 40 mg qid and 12 mg qid doses. A number of the other secondary endpoints in the trial did not demonstrate a consistent effect or reach statistical significance.

Taken together, these results provided important data suggesting that ATI-7505 acts similarly to cisapride in having an effect in the upper gastrointestinal tract. In addition, no drug-related serious adverse events occurred, with diarrhea and loose stools as the most commonly reported adverse effect. They were all mild or moderate in severity.

Holter monitoring provided further evidence about the cardiac safety profile of ATI-7505. There were no clinically relevant changes in the heart rate or prolongation of the Qt interval of the patients and there were no individual outliers in these findings. No clinically important or consistent effects on heart functions were observed.

Phase 1 Clinical Trials. We have successfully completed four Phase 1 clinical trials testing the safety, tolerability, pharmacokinetics and effect on motility of ATI-7505 in healthy volunteers. The drug candidate has been found to be generally well tolerated and similar to cisapride in its prokinetic effects. Most importantly, no clinically significant effects on cardiac safety were observed, providing initial clinical evidence that ATI-7505 avoids the cardiac liabilities inherent in cisapride. Our Phase 1 trials

were distinguished by the fact that intensive cardiovascular monitoring was conducted on all individuals, including one trial in which the subjects were fitted with 24-hour Holter monitors.

Our Phase 1 clinical trial program included a multi-dose study of ATI-7505, as compared to placebo, that measured the rate of gastric emptying. The results suggest that ATI-7505 accelerates gastric emptying and therefore may improve motility in the upper gastrointestinal tract, while also accelerating overall colonic, or lower gastrointestinal tract, transit. In addition, there appeared to be a dose relationship in the loosening of stools.

ATI-9242—An Agent for the Treatment of Schizophrenia

ATI-9242 is a next generation atypical antipsychotic therapy in a Phase 1 clinical trial and whose receptor selectivity has been modeled to replicate the efficacy of clozapine for the treatment of schizophrenia and other psychiatric disorders. In addition, ATI-9242 has been engineered to have an improved effect on the negative symptoms associated with schizophrenia and to enhance cognition. Designed to avoid drug-drug interactions by not depending upon CYP450 for metabolism, ATI-9242 has also been engineered to minimize the metabolic consequences of weight gain often resulting from the use of atypical antipsychotics. We will continue the clinical development of ATI-9242 as our resources allow.

Our Preclinical Development Programs

We are currently pursuing two late stage discovery programs, ATI-20,000 and ATI-24,000, which focus on metabolic and gastrointestinal disorders, respectively. We have identified potent pharmacologically active compounds in each of these programs. In addition to these two active discovery programs, we have a number of additional feasibility programs which we believe will continue to provide future research and development programs for us.

Competition

The pharmaceutical industry is highly competitive, with a number of established, large pharmaceutical companies, as well as smaller companies. Many of these companies have greater financial resources, marketing capabilities and experience in obtaining regulatory approvals for product candidates than we currently do. There are many pharmaceutical companies, biotechnology companies, public and private universities, government agencies and research organizations actively engaged in research and development of products which may target the same markets as our product candidates. We expect any future products we develop to compete on the basis of, among other things, product efficacy and safety, time to market, price, extent of adverse side effects experienced and convenience of administration and drug delivery. One or more of our competitors may develop products based upon the principles underlying our proprietary technologies earlier than us, obtain approvals for such products from the FDA more rapidly than us or develop alternative products or therapies that are safer, more effective and/or more cost effective than any future products developed by us. We also expect to face competition in our efforts to identity appropriate collaborators or partners to help commercialize our product candidates in our target commercial areas.

Competition for tecarfarin for use as an oral anticoagulant will continue to come from generic coumadin due to its pricing and the years of experience physicians and patients have with the drug. Other oral anticoagulants are in development throughout the pharmaceutical and biotechnology industry. Most of these development programs fall into either the factor Xa or direct thrombin inhibitor categories. We are aware that Johnson & Johnson in collaboration with Bayer AG has a factor Xa before the FDA for approval, and that Bristol-Myers Squibb Company in collaboration with Pfizer, Inc., and Portola Pharmaceuticals, Inc. each have factor Xa programs in Phase 2 or Phase 3 testing. We are aware of a direct thrombin inhibitor program at Boehringer-Ingelheim GmbH. The first

direct thrombin inhibitor presented to the FDA for approval, ximelagatran, previously marketed as Exanta by AstraZeneca plc, has not been recommended for approval due to idiosyncratic liver toxicity problems. Although we believe tecarfarin's mechanism of action (VKOR inhibition as with warfarin) and broadly available inexpensive monitoring methodology (INR) provide an advantage, these factor Xa and direct thrombin inhibitor programs will likely provide major competition in this market. In addition, there may be other compounds of which we are not aware that are at an earlier stage of development and may compete with our product candidates. If any of those compounds are successfully developed and approved, they could compete directly with our product candidates.

We believe generic amiodarone will continue to provide competition to budiodarone for the treatment of atrial fibrillation, even though it is not labeled for use in atrial fibrillation in the United States. Amiodarone will continue to be used off-label in spite of its safety problems because of its generic pricing. Other treatments for atrial fibrillation, such as sotalol, marketed by Bayer HealthCare Pharmaceuticals, Inc., flecainide marketed by 3M Company and propafenone, marketed by Reliant Pharmaceuticals, Inc., do not have equivalent efficacy to amiodarone, but will continue to compete in the atrial fibrillation marketplace. Sanofi-aventis has applied for commercial approval in the United States for its antiarrhythmic therapy Multaq® (dronedarone). We believe Multaq will be approved and will provide substantial competition to budiodarone in the treatment of atrial fibrillation. Cardiome Pharma Corp. is in Phase 2 testing with an oral product, vernakalant, for the treatment of atrial fibrillation which they hope will have efficacy equal to or better than flecainide or sotalol, but with reduced pro-arrhythmic effects. There are other companies developing devices or procedures to treat atrial fibrillation through ablation, including CryoCor, Inc. and CryoCath Technologies, Inc.

Competition for ATI-9242 will likely come from the five largest selling atypical antipsychotics: Risperdal by Janssen Pharmaceutica, Seroquel by AstraZeneca Pharmaceuticals LP, Zyprexa by Eli Lilly and Company, Abilify by Bristol-Myers Squibb/Otsuka America Pharmaceutical, Inc., and Geodon by Pfizer Inc., which sold a collective $15.7 billion in 2007. It is likely that virtually all of these would be sold as generic versions by the time ATI-9242 could come to market. Other antipsychotics are in development which may also be competitive to ATI-9242.

ATI-7505 has potential use in five indications: chronic constipation, functional dyspepsia, GERD, gastroparesis and IBS with constipation. Some of these indications may not be recognized by the FDA as sufficiently defined to enable regulatory approval of a drug for treatment. ATI-7505 is a prokinetic agent which has been shown to increase motility in the upper and lower gastrointestinal tract, including the ability to improve gastric emptying and colonic motility. Products which affect the gastrointestinal system's motility could be useful in the treatment of each of these disorders. Other prokinetics are on the market or in development which will also be competitive to ATI-7505, including tegaserod, marketed by Novartis Pharmaceuticals Corporation as Zelnorm, which was temporarily withdrawn from the market and recently re-introduced with restrictive use labeling, TD-5108 being developed by Theravance, and erythromycin. Many additional prokinetics are in development targeting these indications. We believe the most significant competition to ATI-7505 for the treatment of GERD is proton pump inhibitors and H2 blockers, which are currently on the market in both prescription formulations and strengths as well as in over-the-counter forms. Many major pharmaceutical companies currently market proton pump inhibitors and H2 blockers generating worldwide sales of over $17.0 billion in 2006. ATI-7505 is targeted at the approximately 20-25% of GERD patients who do not receive adequate relief from proton pump inhibitors, which reduce the creation of acid in the stomach. ATI-7505 will face competition from the prokinetics as well as many inexpensive over-the-counter indications for the treatment of these gastrointestinal disorders.

Patents and Intellectual Property

Our success will depend in large part on our ability to maintain a proprietary position for our products and product candidates through patents, trade secrets and FDA exclusivity. We rely upon

patents, trade secrets, know-how and continuing technological innovation to develop and maintain our competitive position. We will continue to aggressively protect, defend and extend our proprietary position. We will maintain sole ownership of our patents as a critical element of any development and commercialization partnership we may enter into.

As of December 31, 2008, we held 116 patents and 123 pending patent applications worldwide. 43 of the 116 patents have issued or been allowed in the United States, and 18 of the 123 pending patent applications were pending in the United States. Our composition of matter patent for tecarfarin, our product candidate for anticoagulation, was filed in April 2005, first published in Europe in October 2005, and was issued in the United States in August 2007. Composition of matter protection for tecarfarin in the United States will expire in 2025. We also hold two issued foreign patents and 14 pending foreign patent applications related to the tecarfarin composition of matter. The broader patent family related to the tecarfarin program also includes two issued patents and one pending application in the United States, 21 issued foreign patents and two pending foreign applications. Our composition of matter patent for budiodarone, our compound for the treatment of atrial fibrillation, was issued in 2002 and will expire in 2020. The patent family related to budiodarone includes an additional 47 patents and 40 pending patent applications issued in the United States and certain foreign jurisdictions. Our composition of matter patent applications for ATI-9242, our product candidate for the treatment of schizophrenia and other psychiatric disorders, are currently pending, one in the United States and two in foreign jurisdictions. The United States and foreign patent applications related to the composition of matter of our compound for the treatment of gastrointestinal disorders, ATI-7505, were filed in January 2005 and first published in Europe in July 2005. We hold four issued patents and six pending patent applications in the United States as well as four issued patents and 36 pending patent applications in certain foreign jurisdictions related to the ATI-7505 program. Composition of matter patent protection in the United States for ATI-7505 will expire in 2025.

For each of our product candidates, we may be entitled to an additional period of exclusivity in the United States for up to five years pursuant to the United States Drug Price Competition and Patent Term Restoration Act of 1984, more commonly known as the Hatch-Waxman Act. The Hatch-Waxman Act provides for up to five years to be added to a patent term in order to compensate the patentee for delays associated with seeking regulatory approval. If we gain such a five-year extension, we could have certain patent rights in the United States for ATI-7505 until 2030, for tecarfarin until 2030 and for budiodarone until 2025. The five year extension, however, is not guaranteed and may be subject to a reduction if we fail to act diligently in the regulatory lenient period or if the term restoration extends the commercial life of a product covered by the patent beyond 14 years. In Europe, similar legislative enactments may allow us to obtain five-year extensions of certain of the European patents (once obtained) covering our product candidates through the granting of Supplementary Protection Certificates.

We seek United States and international patent protection for a variety of products and technologies, including compositions of matter, formulations, methods of use, and processes for synthesis. Our commercial success will depend in part on obtaining this patent protection. In addition to patents, we rely upon unpatented trade secrets and know-how and continuing technological innovation to develop and maintain our competitive position. We seek to protect our proprietary information, in part, using confidentiality agreements with our commercial partners, collaborators, employees and consultants and invention assignment agreements with our employees. We also have confidentiality agreements or invention assignment agreements with some of our commercial partners and consultants. These agreements are designed to protect our proprietary information and, in the case of the invention assignment agreements, to grant us ownership of technologies that are developed in-house or through a relationship with a third party.

Manufacturing

We do not have, and do not intend to establish in the near term, any of our own manufacturing capability for our product candidates, or their active pharmaceutical ingredients, or the capability to package any products we may sell in the future. We rely on a number of third- party manufacturers and suppliers to produce and supply the active pharmaceutical ingredients and drug products we require to meet the preclinical and clinical requirements of our product candidates.

We currently do not have long-term supply contracts with any of our third-party manufacturers and suppliers, and they are not required to supply us with products for any specified periods, in any specified quantities or at any set price, except as may be specified in a particular purchase order. Our third- party manufacturers are subject to the FDA's current Good Manufacturing Practices, or cGMP, requirements and other rules and regulations prescribed by domestic and foreign regulatory authorities. We depend on our third-party suppliers and manufacturers for continued compliance with cGMP requirements and applicable foreign standards.

We believe that qualified suppliers and manufacturers for our marketed products will continue to be available in the future, at a reasonable cost to us, although there can be no assurance that this will be the case.

Government Regulation

FDA approval process

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

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

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

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

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

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

Clinical trials to support NDAs for marketing approval are typically conducted in three sequential phases, but the phases may overlap. In Phase 1, the initial introduction of the drug into healthy human subjects or patients, the drug is tested to assess metabolism, pharmacokinetics, pharmacological actions, side effects associated with increasing doses and, if possible, early evidence on effectiveness. Phase 2 usually involves trials in a limited patient population, to determine the effectiveness of the drug for a particular indication or indications, dosage tolerance and optimum dosage, and identify common adverse effects and safety risks. If a compound demonstrates evidence of effectiveness and an acceptable safety profile in Phase 2 evaluations, Phase 3 trials are undertaken to obtain the additional information about clinical efficacy and safety in a larger number of patients, typically at geographically dispersed clinical trial sites, to permit FDA to evaluate the overall benefit-risk relationship of the drug and to provide adequate information for the labeling of the drug.

After completion of the required clinical testing, an NDA is prepared and submitted to the FDA. FDA approval of the NDA is required before marketing of the product may begin in the United States. The NDA must include the results of all preclinical, clinical and other testing and a compilation of data relating to the product's pharmacology, chemistry, manufacture, and controls. The cost of preparing and submitting an NDA is substantial. Under federal law, the submission of most NDAs is additionally subject to a substantial application user fee, currently $1,247,200, and the manufacturer and/or sponsor under an approved new drug application are also subject to annual product and establishment user fees, currently $71,520 per product and $425,600 per establishment. These fees are typically increased annually.

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

After FDA evaluates the NDA and the manufacturing facilities, it issues an approval letter, an approvable letter or a not-approvable letter. Both approvable and not-approvable letters generally outline the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. If and when those deficiencies have been addressed to the FDA's satisfaction in a resubmission of the NDA, the FDA will issue an approval letter. The FDA has committed to reviewing such resubmissions in two or six months depending on the type of information included.

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

Pediatric Information

Under the Pediatric Research Equity Act, or PREA, NDAs or supplements to NDAs must contain data to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the drug is safe and effective. The FDA may grant deferrals for submission of data or full or partial waivers. Unless otherwise required by regulation, PREA does not apply to any drug for an indication for which orphan designation has been granted.

The Hatch-Waxman Act

In seeking approval for a drug through an NDA, applicants are required to list with the FDA each patent with claims that cover the applicant's product. Upon approval of a drug, each of the patents listed in the application for the drug is then published in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, commonly known as the Orange Book. Drugs listed in the Orange Book can, in turn, be cited by potential competitors in support of approval of an abbreviated new drug application, or ANDA. An ANDA provides for marketing of a drug product that has the same active ingredients in the same strengths and dosage form as the listed drug and has been shown through bioequivalence testing to be therapeutically equivalent to the listed drug. ANDA applicants are not required to conduct or submit results of pre-clinical or clinical tests to prove the safety or effectiveness of their drug product, other than the requirement for bioequivalence testing. Drugs approved in this way are commonly referred to as "generic equivalents" to the listed drug, and can often be substituted by pharmacists under prescriptions written for the original listed drug.

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

If the ANDA applicant has provided a Paragraph IV certification to the FDA, the applicant must also send notice of the Paragraph IV certification to the NDA and patent holders once the ANDA has been accepted for filing by the FDA. The NDA and patent holders may then initiate a patent infringement lawsuit in response to the notice of the Paragraph IV certification. The filing of a patent

infringement lawsuit within 45 days of the receipt of a Paragraph IV certification automatically prevents the FDA from approving the ANDA until the earlier of 30 months, expiration of the patent, settlement of the lawsuit or a decision in the infringement case that is favorable to the ANDA applicant.

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

Other Regulatory Requirements

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

Drugs may be marketed only for the approved indications and in accordance with the provisions of the approved labeling. Changes to some of the conditions established in an approved application, including changes in indications, labeling, or manufacturing processes or facilities, require submission and FDA approval of a new NDA or NDA supplement before the change can be implemented. An NDA supplement for a new indication typically requires clinical data similar to that in the original application, and the FDA uses the same procedures and actions in reviewing NDA supplements as it does in reviewing NDAs.

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

Anti-Kickback, False Claims Laws and The Prescription Drug Marketing Act

In addition to FDA restrictions on marketing of pharmaceutical products, several other types of state and federal laws have been applied to restrict certain marketing practices in the pharmaceutical industry in recent years. These laws include anti-kickback statutes and false claims statutes. The federal healthcare program anti-kickback statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce or in return for purchasing, leasing, ordering or arranging for the purchase, lease or order of any healthcare item or service reimbursable under

Medicare, Medicaid or other federally financed healthcare programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand, and prescribers, purchasers and formulary managers on the other. Violations of the anti-kickback statute are punishable by imprisonment, criminal fines, civil monetary penalties and exclusion from participation in federal healthcare programs. Although there are a number of statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution or other regulatory sanctions, the exemptions and safe harbors are drawn narrowly, and practices that involve remuneration intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exemption or safe harbor.

Federal false claims laws prohibit any person from knowingly presenting, or causing to be presented, a false claim for payment to the federal government, or knowingly making, or causing to be made, a false statement to have a false claim paid. Recently, several pharmaceutical and other healthcare companies have been prosecuted under these laws for allegedly inflating drug prices they reported to pricing services, which in turn were used by the government to set Medicare and Medicaid reimbursement rates, and for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. In addition, certain marketing practices, including off-label promotion, may also violate false claims laws. The majority of states also have statutes or regulations similar to the federal anti-kickback law and false claims laws, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payor.

Physician Drug Samples

As part of the sales and marketing process, pharmaceutical companies frequently provide samples of approved drugs to physicians. The Prescription Drug Marketing Act, or the PDMA, imposes requirements and limitations upon the provision of drug samples to physicians, as well as prohibits states from licensing distributors of prescription drugs unless the state licensing program meets certain federal guidelines that include minimum standards for storage, handling and record keeping. In addition, the PDMA sets forth civil and criminal penalties for violations.

Food and Drug Administration Amendments Act of 2007

On September 27, 2007, the Food and Drug Administration Amendments Act, or the FDAAA, was enacted into law, amending both the FDC Act and the Public Health Service Act. The FDAAA makes a number of substantive and incremental changes to the review and approval processes in ways that could make it more difficult or costly to obtain approval for new pharmaceutical products, or to produce, market and distribute existing pharmaceutical products. Most significantly, the law changes FDA's handling of postmarket drug product safety issues by giving FDA authority to require post approval studies or clinical trials, to request that safety information be provided in labeling, or to require an NDA applicant to submit and execute a Risk Evaluation and Mitigation Strategy, or REMS.

The FDAAA also reauthorized the authority of the FDA to collect user fees to fund FDA's review activities and made certain changes to the user fee provisions to permit the use of user fee revenue to fund FDA's drug safety activities and the review of Direct-to-Consumer ("DTC") advertisements.

The FDAAA also reauthorized and amended the Pediatric Research Equity Act, or PREA. The most significant changes to PREA are intended to improve FDA and applicant accountability for agreed upon pediatric assessments.

Research and Development

Conducting a significant amount of research and development has been central to our business model. Our research and development expenses were $40.1 million for the year ended December 31,

2008, $25.0 million for the year ended December 31, 2007, and $24.0 million for the year ended December 31, 2006.

Employees

As of December 31, 2008, we had 75 employees, 57 of whom were engaged in research and product development activities. Six of our employees hold medical degrees and 20 hold Ph.D.s. Our employees are not represented by a collective bargaining agreement. None of our employees are represented by a labor union and we believe our relations with our employees are good.

Executive Officers of the Registrant

Our executive officers, their ages and their positions as of February 27, 2009, are as follows:

Name	Age	Position(s)
Paul Goddard, Ph.D.	59	Chairman of the Board and Chief Executive Officer
Peter G. Milner, M.D.	53	President, Research and Development and Director
John Varian	49	Chief Operating Officer and Chief Financial Officer
Pascal Druzgala, Ph.D.	54	Vice President and Chief Scientific Officer
Daniel Canafax, Pharm.D.	56	Vice President and Chief Development Officer
David Nagler	56	Vice President, Corporate Affairs and Secretary

Paul Goddard, Ph.D. has served as the Chairman of our Board since August 2003 and was appointed our Chief Executive Officer in April 2005. From March 2000 to August 2005, Dr. Goddard served as chairman and part-time executive of several companies including A.P. Pharma, Inc., a pharmaceutical company, and XenoPort, Inc., a biopharmaceutical company. From October 1998 until March 2000, he was chief executive officer of Elan Pharmaceuticals, Inc., the largest division of Elan Corporation plc, a biotechnology company. He was chief executive officer of Neurex Corporation, a biotechnology company, from February 1991 until October 1998 when the company was acquired by Elan Corporation plc. Prior to 1991, Dr. Goddard held various senior management positions at SmithKline Beecham plc, a pharmaceutical company, including senior vice president strategic marketing and senior vice president Far East region. He obtained his doctorate degree from St. Mary's Hospital, London, in the area of etiology and pathophysiology of colon cancer. Dr. Goddard remains on the board of directors of A.P. Pharma, Inc., Adolor Corporation, a biopharmaceutical company, and Onyx Pharmaceuticals, Inc., a biopharmaceutical company.

Peter G. Milner, M.D. is our co-founder and has served as our President, Research and Development, since April 2005. From February 1997 until February 2005, Dr. Milner served as our Chief Executive Officer. Dr. Milner is a board certified physician and cardiologist, and serves as voluntary clinical faculty at Stanford Veterans' Hospital. In June 1992, Dr. Milner co-founded CV Therapeutics, Inc., a biopharmaceutical company. Prior to CV Therapeutics, Inc., Dr. Milner was an assistant professor of medicine at Washington University in St. Louis, Missouri. Dr. Milner has numerous patents in his name and is the author of several scientific articles published in peer-reviewed journals. Dr. Milner attended the University of Liverpool, England where he received a bachelor of sciences degree with honors in biochemistry and a degree in medicine. He completed his postgraduate training in medicine at Johns Hopkins Medical School, cardiology and pharmacology at University of Virginia and molecular biology at Washington University in St. Louis. Dr. Milner is a Fellow of the American College of Cardiology, serves on the board of directors of California Healthcare Institute and the Scientific Advisory Board of Novartis Institute of Biomedical Research in Cambridge, Massachusetts.

John Varian has served as our Chief Operating Officer since December 2003 and as our Chief Financial Officer since April 2006. He was formerly chief financial officer of Genset S.A., a

biotechnology company. He also participated as a key member of the negotiating team in the sale of the company to Serono of Switzerland. From October 1998 to April 2000, Mr. Varian served as senior vice president, finance and administration of Elan Pharmaceuticals, Inc. He was chief financial officer of Neurex Corporation from June 1997 until October 1998 when the company was acquired by Elan Corporation plc. Mr. Varian is a founding member of the Bay Area Bioscience Center and a former chairman of the Association of Bioscience Financial Officers International Conference. Mr. Varian received a B.B.A. degree from Western Michigan University.

Pascal Druzgala, Ph.D. is our co-founder and has served as our Senior Vice President and Chief Scientific Officer since June 2008, and prior to that as Vice President, Research and Chief Scientific Officer since our inception. Dr. Druzgala is responsible for all research related activities of our company. Prior to the founding of ARYx, Dr. Druzgala also co-founded Advanced Therapies, Inc., a biopharmaceutical company, in October 1994. Earlier in his career, Dr. Druzgala served as group leader at Xenon Vision, where the retrometabolic drug design concept was applied to four drugs for ocular delivery. One of these drugs, loteprednol etabonate (Alrex or Lotemax), is now marketed by Bausch & Lomb, Inc., an eye care company. Dr. Druzgala was a Ph.D. chemist at Pharmatec working on brain-delivery systems for antivirals and estrogens. Dr. Druzgala received a Pharm.D degree from the University of Montpellier, France, and then earned his *diplôme d'études approfondies* degree at the European Institute of Industrial Pharmaceutical Sciences in Montpellier, France. Dr. Druzgala later graduated from the University of Florida with a doctorate in medicinal chemistry. He completed his post doctorate work at the Center for Drug Design and Discovery at the University of Florida where he first experimented with various drug discovery programs utilizing retrometabolic techniques.

Daniel M. Canafax, Pharm.D. has served as our Vice President and Chief Development Officer since February 2007. Dr. Canafax has overall responsibility for the development of our pipeline of products from preclinical development through clinical trials. From July 2002 to February 2007, Dr. Canafax served as vice president of clinical development at XenoPort, Inc. From June 2001 to July 2002, Dr. Canafax acted as director and medical monitor at MedImmune, Inc., a pharmaceutical company. Dr. Canafax received his B. Pharm. degree from Washington State University and his Pharm.D. degree from the University of Kentucky.

David Nagler has served as our Vice President, Corporate Affairs, and Secretary since July 2003. From June 1995 to September 2002, Mr. Nagler served at Genentech, Inc., a biotechnology company, including as its vice president of human resources and its senior director of government affairs. Prior to joining Genentech, Mr. Nagler co-founded JLA Associates in Sacramento, a legislative consulting and association management company that he later sold to Nossaman Guthner Knox & Elliott LLP, a law firm. Mr. Nagler received a bachelor of arts degree in public policy and philosophy from the University of California, Berkeley. Mr. Nagler is a member of the board of directors of UC Davis CONNECT, a program designed to foster the success of new business ventures in the Sacramento region. Mr. Nagler also serves in the City of Pleasanton, California as an appointed member of the City Human Services Commission.

Available Information

We file electronically with the U.S. Securities and Exchange Commission our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934. We make available on our website at *http://www.aryx.com*, free of charge, copies of these reports as soon as reasonably practicable after we electronically file such material with, or furnish it to the SEC. Further copies of these reports are located at the SEC's Public Reference Room at 100 F Street, NE, Washington, D.C. 20549. Information on the operation of the Public Reference Room can be obtained by calling the SEC at 1800-SEC-0330. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding our filings, at *http://www.sec.gov.*

Item 1A. Risk Factors

We have identified the following risks and uncertainties that may have a material adverse effect on our business, financial condition or results of operations. Investors should carefully consider the risks described below before making an investment decision. The risks described below are not the only ones we face. Additional risks not presently known to us or that we currently believe are immaterial may also significantly impair our business operations. Our business could be harmed by any of these risks. The trading price of our common stock could decline due to any of these risks, and investors may lose all or part of their investment.

Risks Related to Our Business

We will need substantial additional funding and may be unable to raise capital when needed, which would force us to limit or cease our operations and related product development programs.

Our ability to continue operations is dependent upon our ability to obtain substantial additional capital. Our operations have consumed substantial amounts of cash since inception. We expect to continue to spend substantial amounts of cash to fund our operations, including research and development expenses and costs associated with the conduct of clinical trials for our product candidates. Net cash used in operating activities was $45.2 million and $27.7 million in the years ended December 31, 2008 and 2007, respectively. We expect that our net cash used in operations may increase significantly in each of the next several years in order to support our operations and complete the development and commercialization of our product candidates. It is our intention to enter into collaboration arrangements to commercialize our product candidates. Within those arrangements, we may retain the commercial right to co-promote our products to selected physicians through a specialty sales force. However, should the collaboration arrangements fail to provide sufficient revenue to fund our operations adequately, we will need to raise additional capital to fund our operations and complete development of our product candidates. If any of our product candidates receive regulatory approval for commercial sale, we may need to raise additional capital to fund our portion of the commercialization efforts. Our future funding requirements will depend on many factors, including:

- the scope, rate of progress, results and cost of our preclinical testing, clinical trials and other research and development activities;
- the terms and timing of any collaborative, licensing and other arrangements that we may establish;
- the cost, timing and outcomes of regulatory approvals;
- the number and characteristics of product candidates that we pursue;
- the cost and timing of establishing sales, marketing and distribution capabilities for our specialty sales force;
- the cost of establishing clinical and commercial supplies of our product candidates and any products that we may develop;
- the timing, receipt and amount of sales or royalties, if any, from our potential products;
- the cost of preparing, filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights; and
- the extent to which we acquire or invest in businesses, products or technologies, although we currently have no commitments or agreements relating to any of these types of transactions.

Until we can generate a sufficient amount of product revenue, if we ever do, we expect to finance future cash needs through corporate collaboration and licensing arrangements, public or private equity offerings, debt financings or through interest income earned on cash balances.

If we raise additional funds by issuing equity securities, our stockholders will experience dilution. Any debt financing or additional equity that we raise may contain terms that are not favorable to our stockholders or us. If we raise additional funds through collaboration and licensing arrangements with third parties, we may be required to relinquish some rights to our technologies or our product candidates, grant licenses on terms that are not favorable to us or enter into a collaboration arrangement for a product candidate at an earlier stage of development than we might otherwise choose.

We do not expect our existing capital resources to be sufficient to enable us to fund the completion of the development of any of our product candidates. Although we believe our current cash on hand is sufficient to fund our operations through the end of the first quarter of 2010, our operating plan may change, and we may need additional funds sooner than planned to meet operational needs and capital requirements for product development and commercialization. Additional funds may not be available when we need them on terms that are acceptable to us, or at all. If adequate funds are not available on a timely basis, we may:

- terminate or delay clinical trials for one or more of our product candidates;
- reduce our headcount and capital expenditures;
- delay our establishment of sales and marketing capabilities or other activities that may be necessary to commercialize our product candidates; or
- curtail significant drug research and development programs that are designed to identify new product candidates.

We have incurred significant operating losses since inception and expect to continue to incur substantial and increasing losses for the foreseeable future. We may never achieve or sustain profitability.

We have a limited operating history and have incurred significant losses since our inception. As of December 31, 2008, we had an accumulated deficit of approximately $153.9 million. We expect our research and development expenses to continue to increase as we continue to expand our development programs subject to adequate funding. Subject to regulatory approval for any of our product candidates, we expect to incur significant expenses associated with the potential establishment of a North American specialty sales force and increased manufacturing expenses. Although it is not expected to occur in the next several years, the cost of establishing a 100 person North American specialty sales force will be substantial. As a result, we expect to continue to incur substantial and increasing losses for the foreseeable future. These losses have had and will continue to have an adverse effect on our stockholders' equity and working capital.

Because of the numerous risks and uncertainties associated with drug development, we are unable to predict the timing or amount of increased expenses or when or if we will be able to achieve or sustain profitability. Currently, we have no products approved for commercial sale, and, to date, we have not generated any product revenue. We have financed our operations primarily through the sale of equity securities, capital lease and equipment financings, debt financings and a single corporate partnership with P&G that was terminated in July 2008. We have devoted substantially all of our efforts to research and development, including clinical trials. If we are unable to develop and commercialize any of our product candidates, if development is delayed, if sales revenue from any FDA-approved product candidate is insufficient or if we fail to enter into partnering arrangements for our product candidates on terms favorable to us, we may never become profitable. Even if we do become profitable, we may not be able to sustain or increase our profitability on a quarterly or annual basis.

Our success depends substantially on our most advanced product candidates, which are still under development. If we are unable to bring any or all of these product candidates to market, or experience significant delays in doing so, our ability to generate product revenue and our likelihood of success will be harmed.

Our most advanced product candidate, tecarfarin, entered Phase 2/3 clinical trials in June 2008. Two additional product candidates, budiodarone and ATI-7505, are in Phase 2 clinical trials and a fourth product candidate, ATI-9242, entered into Phase 1 clinical trial in April 2008. Our ability to generate product revenue in the future will depend heavily on the successful development and commercialization of these product candidates. Our other product candidates are in the discovery stage. Any of our product candidates could be unsuccessful for a variety of reasons, including that they:

- may not demonstrate acceptable safety and efficacy in preclinical studies or clinical trials or otherwise may not meet applicable regulatory standards for approval;
- may not offer therapeutic, safety or other improvements over existing or future drugs used to treat the same conditions;
- may not be capable of being produced in commercial quantities at acceptable costs; or
- may not be accepted in the medical community or by third-party payors.

We do not expect any of our current product candidates to be commercially available in the next several years, if at all. If we are unable to make our product candidates commercially available, we will not generate product revenues and we will not be successful. The results of our clinical trials to date do not provide assurance that acceptable efficacy or safety will be shown upon completion of Phase 3 clinical trials.

Global credit and financial market conditions could negatively impact the value of our current portfolio of cash equivalents or short-term investments.

Currently, there is turmoil in the U.S. economy due to a global credit crisis that has resulted in tightening credit markets and rising liquidity concerns across most industries, including the banking and investments sector. While as of the date of this filing, we are not aware of any material losses, or other significant deterioration in the fair value of our cash equivalents or investments in marketable securities since December 31, 2008, no assurance can be given that further deterioration in conditions of the global credit and financial markets would not negatively impact our current portfolio of cash equivalents or investments in marketable securities or our ability to meet our financing objectives to allow us to continue our operations.

In periods of worsening economic conditions, it may be difficult and costly for us to raise additional capital.

As a result of worsening market conditions, banks and other credit grantors have faced liquidity concerns and have tightened their lending standards, investors have become more risk adverse and economic growth has been negatively impacted. These factors are contributing to reduced credit availability and rising costs for issuers needing to raise additional capital. If these factors continue to affect the credit and equity markets, our ability to raise capital may be adversely affected, if not completely hindered.

We expect to depend on collaborative arrangements to complete the development and commercialization of each of our product candidates. Potential collaborative arrangements will likely place the development of our product candidates outside of our control and will likely require us to relinquish important rights or may otherwise be on terms unfavorable to us.

We plan to enter into collaborative arrangements with third parties to develop and commercialize each of our lead product candidates. Dependence on collaborative arrangements for development and commercialization of our product candidates will subject us to a number of risks, including:

- we may not complete a collaborative arrangement in time to avoid delays in clinical development, if at all, and if no collaborative arrangement is achieved, product development may be halted altogether;
- we may not be able to control the amount and timing of resources that our collaborators may devote to the development or commercialization of product candidates or to their marketing and distribution;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- we may have limited control over our clinical trial design;
- disputes may arise between us and our collaborators that result in the delay or termination of the research, development or commercialization of our product candidates or that result in costly litigation or arbitration that diverts management's attention and resources;
- our collaborators may experience financial difficulties;
- collaborators may not properly maintain or defend our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our proprietary information or expose us to potential litigation;
- business combinations or significant changes in a collaborator's business strategy may adversely affect a collaborator's willingness or ability to fulfill its obligations under any arrangement;
- a collaborator could independently move forward with a competing product candidate developed either independently or in collaboration with others, including our competitors; and
- any collaborative arrangement may be terminated or allowed to expire, which would delay the development and may increase the cost of developing our product candidates.

Collaborative arrangements do not currently exist for any of our product candidates. If we do not establish collaborations for each of our tecarfarin, budiodarone, ATI-9242 and ATI-7505 product candidates or future product candidates, we may have to alter our development and commercialization plans.

Our strategy includes selectively collaborating with leading pharmaceutical and biotechnology companies to assist us in furthering the development and potential commercialization of some of our product candidates, including tecarfarin, budiodarone, ATI-7505 and ATI-9242. We intend to seek partners because the commercialization of each of our first four product candidates involves a large, primary care market that must be served by large sales and marketing organizations and because we do not currently have the capabilities to perform Phase 3 clinical trials. We face significant competition in seeking appropriate collaborators, and these collaborations are complex and time-consuming to negotiate and document. We may not be able to negotiate collaborations on acceptable terms, if at all. We are unable to predict when, if ever, we will enter into any collaborations because of the numerous risks and uncertainties associated with establishing collaborations. If we are unable to negotiate an acceptable collaboration, we may have to curtail the development of a particular product candidate,

reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of our sales or marketing activities or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms, if at all. If we do not have sufficient funds, we will not be able to bring our product candidates to market and generate product revenues.

The commercial success of our potential collaborations will depend in part on the development and marketing efforts of our potential partners, over which we will have limited control. If our collaborations are unsuccessful, our ability to develop and commercialize and to generate future revenue from the sale of our products will be significantly reduced.

Our dependence on future collaboration arrangements will subject our company to a number of risks. Our ability to develop and commercialize each of our product candidates will depend on our and our potential collaboration partner(s)' ability to establish the safety and efficacy of each respective product candidate, obtain and maintain regulatory approvals and achieve market acceptance of the product candidate(s) once commercialized. Our potential collaboration partner(s) may elect to delay or terminate development of our product candidates, independently develop products that compete with ours, or fail to commit sufficient resources to the marketing and distribution of our product candidates. The termination of a collaboration agreement may cause us to incur additional and unanticipated costs that may be material to our operations.

Business combinations, significant changes in business strategy, litigation and/or financial difficulties may also adversely affect the willingness or ability of our potential collaboration partners to fulfill their obligations to us. If a partner fails to perform in the manner we expect, our potential to develop and commercialize the respective product candidate(s) through other collaborations and to generate future revenue from the sale of the product candidate(s) may be significantly reduced. If a conflict of interest arises between us and our collaboration partner(s), they may act in their own self-interest and not in the interest of our company or our stockholders. If a collaboration partner breaches or terminates their collaboration agreement with us or otherwise fails to perform their obligations thereunder in a timely manner, the clinical development or commercialization of the respective product candidate(s) could be delayed or terminated. For example, we experienced this when P&G terminated our collaboration agreement to develop and commercialize ATI-7505, and we may experience a similar result with potential collaboration partners in the future with respect to any of our product candidates.

If we are not able to obtain required regulatory approvals, we will not be able to commercialize our product candidates, our ability to generate revenue will be materially impaired and our business will not be successful.

Our product candidates and the activities associated with their development and commercialization are subject to comprehensive regulation by the FDA and other federal and state regulatory agencies in the United States and by comparable authorities in other countries. The inability to obtain FDA approval or approval from comparable authorities in other countries would prevent us and our collaborative partners from commercializing our product candidates in the United States or other countries. Future collaborative agreements will likely cause us to give up control of interactions and regulatory approval processes with the FDA and other regulatory bodies. We or our partners may never receive regulatory approval for the commercial sale of any of our product candidates. We have only limited experience in preparing and filing the applications necessary to gain regulatory approvals and have not received regulatory approval to market any of our product candidates in any jurisdiction. The process of applying for regulatory approval is expensive and time-consuming, and can vary substantially based upon the type, complexity and novelty of the product candidates involved.

Because our product candidates are modeled after drugs which are known to have safety problems, the FDA and other regulatory agencies may require additional safety testing which may delay our clinical progress, increase our expected costs or make further development unfeasible. For instance, because of known problems with the drug after which it was modeled, we were required to conduct significant monitoring for cardiac toxicity in our clinical studies of ATI-7505.

Changes in regulatory approval policies during the development period, changes in, or the enactment of, additional regulations or statutes or changes in the regulatory review team for each submitted product application may cause delays in the approval or rejection of an application. Even if the FDA or a foreign regulatory agency approves a product candidate, the approval may impose significant restrictions on the indicated uses, conditions for use, labeling, advertising, promotion, marketing and/or production of such product and may impose requirements for post-approval studies, including additional research and development and clinical trials. The FDA and other agencies also may impose various civil or criminal sanctions for failure to comply with regulatory requirements, including substantial monetary penalties and withdrawal of product approval.

The FDA has substantial discretion in the approval process and may refuse to accept any application or decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. For example, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent regulatory approval of a product candidate. Moreover, the FDA may not agree that certain target indications are approvable. For instance, the FDA has never approved a drug for postprandial distress syndrome, or PDS, and we cannot be certain that the FDA will recognize PDS as an indication for which ATI-7505 or other drugs can be approved. As another example, while we believe we have clear direction from the FDA as to the development path for our tecarfarin product candidate based on our initial discussions, the FDA may change their judgment on the appropriate development pathway for tecarfarin at any time. Similarly, the clinical trials to be required by the FDA for approval of new anti-arrythmic therapies may change as they consider the approval of similar therapies submitted by competing pharmaceutical companies.

We will need to obtain regulatory approval from authorities in foreign countries to market our product candidates in those countries. We have not yet initiated the regulatory process in any foreign jurisdictions. Approval by one regulatory authority does not ensure approval by regulatory authorities in other jurisdictions. If we fail to obtain approvals from foreign jurisdictions, the geographic market for our product candidates would be limited.

Safety issues relating to our product candidates or the original drugs upon which our product candidates have been modeled, or relating to approved products of third parties that are similar to our product candidates, could give rise to delays in the regulatory approval process.

Discovery of previously unknown problems with an approved product may result in restrictions on its permissible uses, including withdrawal of the medicine from the market. Each of the opportunities upon which we have chosen to focus is based upon our belief that our RetroMetabolic Drug Design technology can be used to create a new product based upon an existing product which is efficacious in treating a specific condition, but which has a known safety problem. Each of our four lead product candidates is modeled on drugs which have significant safety problems. Tecarfarin is modeled on warfarin which is known to have safety risks because of its potential for bleeding and for drug-drug interactions with numerous other drugs as listed on the package insert for the product. Budiodarone is modeled on amiodarone which is used, but not approved, for atrial fibrillation in spite of known safety problems due to its accumulation in the body and interaction with other drugs. Both amiodarone and budiodarone contain iodine which can accumulate in the thyroid and must be monitored for safety purposes. In addition, budiodarone is partially metabolized by CYP450 and, at certain levels has caused drug-drug interactions with warfarin, which increased INR and could increase the risk of hemorrhage complications. ATI-9242 is modeled to retain certain of the positive features of the class of atypical

antipsychotic drugs while lessening certain of the safety issues that vary but exist within the class. The receptor profile which yields the positive and avoids the negative features of this class of drugs is a matter of great debate. While we have designed ATI-9242 to have an appropriate balance across a very complex set of receptors, we may have targeted an inappropriate profile or the profile attained may result in an unanticipated lack of efficacy or safety problems. ATI-7505 is modeled on cisapride which was withdrawn from the market due to fatal cardiac problems. Although we have designed our drugs to largely address each of the original drugs' key safety problems, we will need to continue to demonstrate this through continued clinical testing. It is possible that the FDA may impose additional requirements on the development or approval of our products because of its concern about the original drug's safety problems. These potential additional barriers could delay, increase the cost of, or prevent the commercialization of our product candidates.

Our product candidates are engineered to be broken down by the body's natural metabolic processes in a manner we believe to be safer than that of the original drug. There can be no assurance that the products we develop will actually be metabolized as we expect. While we have designed the breakdown products to be safe, it is possible that there will be unexpected toxicity associated with these breakdown products that could cause our products to be poorly tolerated by, or toxic to, humans. Additionally, while we believe we have addressed the key safety problem of each of the original drugs, it is possible that our change to the chemical structure may result in new unforeseen safety issues. Any unexpected toxicity or suboptimal tolerance of our products would delay or prevent commercialization of these product candidates. Additionally, problems with approved products marketed by third parties that utilize the same therapeutic target as our product candidates could adversely affect the development of our product candidates. For example, the product withdrawals of Vioxx by Merck & Co., Inc. and Bextra by Pfizer because of safety issues caused other drugs that have the same therapeutic target, such as Celebrex from Pfizer, to receive additional scrutiny from regulatory authorities. Another prokinetic, tegaserod marketed by Novartis Pharmaceuticals Corporation as Zelnorm, was temporarily withdrawn from the market and then reintroduced in a very limited manner due to certain cardiac effects reportedly related to its off-target effects. It is possible that we or a future collaboration partner may be required by regulatory agencies to perform tests, in addition to those we have planned, in order to demonstrate that ATI-7505 does not have the safety problems associated with Zelnorm. Any failure or delay in commencing or completing clinical trials or obtaining regulatory approvals for our product candidates would delay commercialization of our product candidates and severely harm our business and financial condition.

Any failure or delay in commencing or completing clinical trials for our product candidates could severely harm our business.

To date, we have not completed the clinical trial program of any product candidate. The commencement and completion of clinical trials for our product candidates may be delayed or terminated as a result of many factors, including:

- our inability or the inability of our collaborators or licensees to manufacture or obtain from third parties materials sufficient for use in preclinical studies and clinical trials;
- delays in patient enrollment, which we previously experienced in certain trials, and variability in the number and types of patients available for clinical trials;
- difficulty in maintaining contact with patients after treatment, resulting in incomplete data;
- poor effectiveness of product candidates during clinical trials;
- poor patient compliance while participating in one of our clinical trials;
- unforeseen safety issues or side effects; and

- governmental or regulatory delays and changes in regulatory requirements, policies and guidelines.

Any delay in commencing or completing clinical trials for our product candidates would delay commercialization of our product candidates and severely harm our business and financial condition. It is also possible that none of our product candidates will complete clinical trials in any of the markets in which our collaborators or we intend to sell those product candidates. Accordingly, our collaborators or we would not receive the regulatory approvals needed to market our product candidates, which would severely harm our business and financial condition.

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

We do not have the ability to independently conduct clinical trials for our product candidates, and thus for each of our product candidates we must rely on third parties such as contract research organizations, medical institutions, clinical investigators and contract laboratories, to conduct our clinical trials. We have, in the ordinary course of business, entered into agreements with these third parties. To date, we have utilized numerous vendors to provide clinical trial management, data collection and analysis and laboratory and safety analysis services to us in the conduct of our clinical trials. In addition, to date we have conducted our clinical trials at numerous sites in North America and Europe. Nonetheless, we are responsible for confirming that each of our clinical trials is conducted in accordance with its general investigational plan and protocol. Moreover, the FDA requires us to comply with regulations and standards, commonly referred to as good clinical practices, for conducting and recording and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the trial participants are adequately protected. Our reliance on third parties that we do not control does not relieve us of these responsibilities and requirements. If these third parties do not successfully carry out their contractual duties or regulatory obligations or meet expected deadlines, if the third parties need to be replaced or if the quality or accuracy of the data they obtain is compromised owing to the failure to adhere to our clinical protocols or regulatory requirements or for other reasons, our clinical trials may be extended, delayed, suspended or terminated, and we may not be able to obtain regulatory approval for, or successfully commercialize, our product candidates.

If some or all of our patents expire, are invalidated or are unenforceable, or if some or all of our patent applications do not yield issued patents or yield patents with narrow claims, competitors may develop competing products using our intellectual property and our business will suffer.

Our success will depend in part on our ability to obtain and maintain patent and trade secret protection for our technologies and product candidates both in the United States and other countries. When referring to "our" patents and other intellectual property in this section, we are referring both to patents and other intellectual property that we own or license. We rely on composition of matter patents for the compounds we develop. We cannot guarantee that any patents will issue from any of our pending or future patent applications. Alternatively, a third party may successfully circumvent our patents. Our rights under any issued patents may not provide us with sufficient protection against competitive products or otherwise cover commercially valuable products or processes.

The degree of future protection for our proprietary technologies and product candidates is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. For example, as applied to both existing and future patents and other intellectual property:

- we might not have been the first to make the inventions covered by each of our pending patent applications and issued patents;

- we might not have been the first to file patent applications for the disclosed inventions;
- others may independently develop similar or alternative technologies or duplicate our technologies;
- it is possible that none of our pending patent applications will result in issued patents;
- any patents issued to us or our collaborators may not provide protection for commercially viable products or may be challenged by third parties;
- the patents of others may have an adverse effect on our ability to do business; or
- regulators or courts may retroactively diminish the value of our intellectual property.

Even if valid and enforceable patents cover our product candidates and technologies, the patents will provide protection only for a limited amount of time. As our patents are based on a parent drug where much research has been conducted, we may encounter many competitive patents from covered analogs of the parent drug. Our know-how and trade secrets may only provide a competitive advantage for a short amount of time. Furthermore, we cannot guarantee that our patents, present or future, will have scope sufficient to prevent competing products.

Our ability and our potential collaborators' ability to obtain and enforce patents is highly uncertain because of the complexity of the scientific and legal issues involved and the subjective nature of issues upon which reasonable minds may differ. Legislative, judicial, and administrative bodies, both foreign and domestic, may issue laws, decisions, and regulations, respectively, that (a) detrimentally affect our ability to obtain protection for our technologies, (b) increase our costs of obtaining and maintaining patents, (c) detrimentally affect our ability to enforce our existing patents, (d) narrow the scope of our patent protection, and/or (e) otherwise diminish the value of our intellectual property in any of the following ways: 1) U.S. Federal Courts and foreign judicial authorities may render decisions that alter the application of the patent laws and detrimentally affect our ability to enforce our patents and obtain patent protection for our technologies; 2) the U.S. Patent and Trademark Office, or USPTO, and foreign counterparts may change the nature of how patent applications are examined and issue regulations that detrimentally affect our ability to obtain patent protection for our technologies and/or increase the costs for obtaining and maintaining protection; and/or 3) Congress and other foreign legislative bodies may make changes to their respective patent laws that may make obtaining and enforcing patents more difficult and/or costly, and/or otherwise diminish the value of our intellectual property or narrow the scope of our patent protection.

Even if patents are issued regarding our product candidates or methods of using them, those patents can be challenged by our competitors who can argue such patents are invalid and/or unenforceable. Defending against such challenges could be costly, and the outcome is inherently uncertain and may result in the loss of some or all of our rights. Patents also may not protect our product candidates if competitors devise ways of making these or similar product candidates without legally infringing our patents. The Federal Food, Drug and Cosmetic Act and FDA regulations and policies provide incentives to manufacturers to challenge patent validity or create modified, noninfringing versions of a drug in order to facilitate the approval of generic substitutes. These same types of incentives encourage manufacturers to submit new drug applications that rely on literature and clinical data not prepared for or by the drug sponsor.

Similarly, we may choose to challenge the patents and other rights alleged or asserted by third parties. Such challenges, whether judicial or administrative in nature, could be costly and the outcome uncertain. A negative outcome could detrimentally effect our ability to do business.

In addition, we may enter into agreements to license technologies and patent rights. Should we fail to comply with the terms of those license agreements, including payment of any required maintenance

fees or royalties, or should the licensors fail to maintain their licensed interest in the licensed patents, we could lose the rights to those technologies and patents.

As of December 31, 2008, we held 43 issued or allowed U.S. patents and had 18 patent applications pending before the USPTO. For some of our inventions, corresponding foreign patent protection is pending. Of the 43 U.S. patents that we hold, 39 patents are compound- and composition-related, having expiration dates from 2013 to 2025. The composition of matter patent for tecarfarin, our compound for anticoagulation, issued in August 2007 and has an expiration date in 2025. Our composition of matter patent for budiodarone, our compound for the treatment of atrial fibrillation, issued in April 2002 and has an expiration date in 2020. Our composition of matter patent applications for ATI-9242, our product candidate for the treatment of schizophrenia and other psychiatric disorders, are currently pending, one in the United States and two in foreign jurisdictions. The composition of matter patent for ATI-7505, our compound for the treatment of gastrointestinal disorders, issued in February 2007 and has an expiration date in 2025. Although third parties may challenge our rights to, or the scope or validity of, our patents, to date we have not received any communications from third parties challenging our patents or patent applications covering our clinical candidates.

While tecarfarin, budiodarone and ATI-7505 are all covered in the United States by issued composition of matter patents, additional patent applications would be required to extend patent protection beyond 2025, 2020 and 2025, respectively (assuming the validity and enforceability of the current composition of matter patents). We cannot guarantee that any patents will be issued from our pending or future patent applications, and any patents that issue from such pending or future patent applications would be subject to the same risks described herein for currently issued patents.

Our research and development collaborators may have rights to publish data and other information in which we have rights. In addition, we sometimes engage individuals or entities to conduct research that may be relevant to our business. The ability of these individuals or entities to publish or otherwise publicly disclose data and other information generated during the course of their research is subject to certain contractual limitations. In most cases, these individuals or entities are at the least precluded from publicly disclosing our confidential information and are only allowed to disclose other data or information generated during the course of the research after we have been afforded an opportunity to consider whether patent and/or other proprietary protection should be sought. If we do not apply for patent protection prior to such publication or if we cannot otherwise maintain the confidentiality of our technology and other confidential information, then our ability to receive patent protection or protect our proprietary information may be jeopardized.

Failure to adequately protect our trade secrets and other intellectual property could substantially harm our business and results of operations.

We also rely on trade secrets to protect our technology, especially where we do not believe that patent protection is appropriate or obtainable. This is particularly true for our RetroMetabolic Drug Design technology. However, trade secrets are difficult to protect. Our employees, consultants, contractors, outside scientific collaborators and other advisors are required to sign confidential disclosure agreements but they may unintentionally or willfully disclose our confidential information to competitors. Enforcing a claim that a third party illegally obtained and is using our trade secrets is expensive and time-consuming, and the outcome is unpredictable. Failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

Third-party claims of intellectual property infringement would require us to spend significant time and money and could prevent us from developing or commercializing our products.

Our commercial success depends in part on not infringing the patents and proprietary rights of other parties and not breaching any licenses that we have entered into with regard to our technologies and products. Because others may have filed, and in the future are likely to file, patent applications

covering products or other technologies of interest to us that are similar or identical to ours, patent applications or issued patents of others may have priority over or dominate our patent applications or issued patents. There are numerous issued and applied for patents related to the original molecules and analogs of such from which our products are engineered. If the patents are determined to be valid and construed to cover our products, the development and commercialization of any or all could be affected. We do not believe that our activities infringe the patents of others or that the patents of others inhibit our freedom to operate, but we cannot guarantee that we have identified all United States and foreign patents and patent applications that pose a risk of infringement. We may be forced to litigate if an intellectual property dispute arises, and it is possible that others may choose to challenge our position and that a judge or jury will disagree with our conclusions. We could incur substantial costs in litigation if we are required to defend against patent suits brought by third parties. If we do not successfully defend an infringement action, are unable to have infringed patents declared invalid, and do not obtain a license to the patented technology, we may,

- incur substantial monetary damages;
- encounter significant delays in marketing our products; and
- be unable to conduct or participate in the manufacture, use or sale of our products or methods of treatment.

Similarly, if we initiate suits to defend our patents, such litigation could be costly and there is no assurance we would be successful in such processes. Any legal action against our collaborators or us claiming damages and seeking to enjoin commercial activities relating to the affected products and processes could, in addition to subjecting us to potential liability for damages, require our collaborators or us to obtain a license to continue to manufacture or market the affected products and processes. Licenses required under any of these patents may not be available on commercially acceptable terms, if at all. Failure to obtain such licenses could materially and adversely affect our ability to develop, commercialize and sell our product candidates. We believe that there may continue to be significant litigation in the biotechnology and pharmaceutical industry regarding patent and other intellectual property rights. If we become involved in litigation, it could consume a substantial portion of our management and financial resources and we may not prevail in any such litigation.

Furthermore, our commercial success will depend, in part, on our ability to continue to conduct research to identify additional product candidates in current indications of interest or opportunities in other indications. Some of these activities may involve the use of genes, gene products, screening technologies and other research tools that are covered by third-party patents. In some instances, we may be required to obtain licenses to such third-party patents to conduct our research and development activities, including activities that may have already occurred. It is not known whether any license required under any of these patents would be made available on commercially acceptable terms, if at all. Failure to obtain such licenses could materially and adversely affect our ability to maintain a pipeline of potential product candidates and to bring new products to market. If we are required to defend against patent suits brought by third parties relating to third-party patents that may be relevant to our research activities, or if we initiate such suits, we could incur substantial costs in litigation. Moreover, the results of any such litigation are uncertain, and an adverse result from any legal action in which we are involved could subject us to damages and/or prevent us from conducting some of our research and development activities.

If third parties do not manufacture our product candidates in sufficient quantities or at an acceptable cost, clinical development and commercialization of our product candidates would be delayed.

We presently do not have sufficient quantities of our product candidates to complete clinical trials of any of our lead product candidates. We do not currently own or operate manufacturing facilities, and we rely and expect to continue to rely on a small number of third-party manufacturers and active

pharmaceutical ingredient formulators for the production of clinical and commercial quantities of our product candidates. We do not have long-term agreements with any of these third parties, and our agreements with these parties are generally terminable at will by either party at any time. If for any reason, these third parties are unable or unwilling to perform under our agreements or enter into new agreements, we may not be able to locate alternative manufacturers or formulators or enter into favorable agreements with them. Any inability to acquire sufficient quantities of our product candidates in a timely manner from these third parties could delay clinical trials and prevent us from developing and commercializing our product candidates in a cost-effective manner or on a timely basis.

The starting materials for the production of tecarfarin are provided by Synquest Labs, Inc. and Chem Uetikon, GmbH. To date, the active pharmaceutical ingredient for tecarfarin has been produced by ChemShop BV of the Netherlands and Corum Inc. of Taiwan on an ongoing purchase order basis. Should ChemShop BV or Corum Inc. is unable or unwilling to serve as the supplier of tecarfarin, a delay in the development of tecarfarin could occur, impairing our ability to commercialize tecarfarin on our existing timeline. Tecarfarin's active pharmaceutical ingredient is processed into 1 milligram, 2 milligram, 5 milligram or 10 milligram tablets by QS Pharma.

The starting materials for the production of budiodarone are provided by the following vendors: SCI Pharmtech, Inc., Lexen Inc., Panchim, Julich GmbH and Weylchem Inc. To date, Ricerca, Biosciences, LLC, ScinoPharm Ltd. and SCI Pharmtech have produced all of budiodarone's active pharmaceutical ingredient. Historically, we have relied on Ricerca, ScinoPharm and SCI Pharmtech as single-source suppliers for budiodarone's active pharmaceutical ingredients. In the event that Ricerca, Biosciences, LLC, ScinoPharm Ltd. or SCI Pharmtech is unable or unwilling to serve as the supplier of budiodarone, we might not be able to manufacture budiodarone's active pharmaceutical ingredient. This could delay the development of, and impair our ability to, commercialize budiodarone. To produce budiodarone drug product, drug substance is processed into 50 milligram or 200 milligram capsule forms by Patheon Inc.

The starting materials for the production of ATI-9242 are provided by the following vendors: Corum Inc., Alfa Aesar, Apollo Scientific Ltd., and SKECHEM. To date, the active pharmaceutical ingredient for ATI-9242 has been produced exclusively by Corum Inc. in Taiwan. In the event that Corum Inc. is unable or unwilling to serve as the supplier of ATI-9242, we would not be able to manufacture ATI-9242's active pharmaceutical ingredient. This could delay the development of, and impair our ability to, commercialize ATI-9242. To produce ATI-9242 drug product, drug substance is processed into 20 milligram capsule form by Xcelience LLC.

The starting materials for the production of ATI-7505 are provided by the following vendors: SCI Pharmtech, Inc., Corum, Inc. and Lexen Inc. To produce ATI-7505 drug products, drug substance is processed into 20 milligram or 40 milligram tablet form by Pharmaceutics International, Inc. In the event that any of these vendors are unable or unwilling to produce sufficient quantities of material for the manufacture of ATI-7505, the development and/or commercialization of ATI-7505 could be delayed or impaired.

All of our current arrangements with third-party manufacturers and suppliers for the production of our product candidates are on a purchase order basis. We currently do not have long-term supply contracts with any of the third-party manufacturers and suppliers for our product candidates, and they are not required to supply us with products for any specified periods, in any specified quantities or at any set price, except as may be specified in a particular purchase order. We have no reason to believe that any of the current manufacturers and suppliers for our product candidates is the sole source for the materials they supply us. However, if we were to lose one of these vendors and were unable to obtain an alternative source on a timely basis or on terms acceptable to us, our clinical and production schedules could be delayed. In addition, to the extent that any of these vendors uses technology or

manufacturing processes that are proprietary, we may be unable to obtain comparable materials from alternative sources.

If we are required to obtain alternate third-party manufacturers, it could delay or prevent the clinical development and commercialization of our product candidates.

We may not be able to maintain or renew our existing or any other third-party manufacturing arrangements on acceptable terms, if at all. If we are unable to continue relationships with our current suppliers, or to do so at acceptable costs, or if these suppliers fail to meet our requirements for these product candidates for any reason, we would be required to obtain alternative suppliers. Any inability to obtain qualified alternative suppliers, including an inability to obtain or delay in obtaining approval of an alternative supplier from the FDA, would delay or prevent the clinical development and commercialization of these product candidates.

Changes in manufacturing site, process or scale can trigger additional regulatory requirements that could delay our ability to perform certain clinical trials or obtain product approval.

The manufacturing and formulation of each of our lead product candidates that have been tested in humans to date has been performed by entities other than those that will likely manufacture the products for future clinical trials or commercial use. There is a possibility that analysis of future clinical trials will show that the results from our earlier clinical trials have not been replicated. The failure to replicate these earlier clinical trials would delay our clinical development timelines. New impurity profiles that occur as a result of changing manufacturers may lead to delays in clinical trial testing and approvals.

Use of third-party manufacturers may increase the risk that we will not have adequate supplies of our product candidates.

Our current and anticipated future reliance on third-party manufacturers will expose us and our future collaborative partners to risks that could delay or prevent the initiation or completion of our clinical trials, the submission of applications for regulatory approvals, the approval of our product by the FDA or the commercialization of our products, and may result in higher costs or lost product revenues. In particular, our contract manufacturers could:

- encounter difficulties in achieving volume production, quality control and quality assurance or suffer shortages of qualified personnel, which could result in their inability to manufacture sufficient quantities of drugs to meet our clinical schedules or to commercialize our product candidates;
- terminate or choose not to renew manufacturing agreements, based on their own business priorities, at a time that is costly or inconvenient for us;
- fail to establish and follow FDA-mandated current good manufacturing practices, or cGMPs, which are required for FDA approval of our product candidates, or fail to document their adherence to cGMPs, either of which could lead to significant delays in the availability of material for clinical studies and delay or prevent marketing approval for our product candidates; and
- breach or fail to perform as agreed under manufacturing agreements.

If we are not able to obtain adequate supplies of our product candidates, it will be more difficult for us to develop our product candidates and compete effectively. Our product candidates and any products that we may develop may compete with other product candidates and products for access to manufacturing facilities.

In addition, Lexen, SCI Pharmtech, Scinopharm, Corum Inc. and ChemShop BV are located outside of the United States. This may give rise to difficulties in importing our product candidates or

their components into the United States as a result of, among other things, FDA import inspections, incomplete or inaccurate import documentation, or defective packaging.

If our preclinical studies do not produce successful results or our clinical trials do not demonstrate safety and efficacy in humans, we will not be able to commercialize our product candidates.

To obtain the requisite regulatory approvals to market and sell any of our product candidates, we must demonstrate, through extensive preclinical studies and clinical trials, that the product candidate is safe and effective in humans. To date, we have not completed all required clinical trials of any product candidate. Preclinical and clinical testing is expensive, can take many years and has an uncertain outcome. A failure of one or more of our clinical trials could occur at any stage of testing. In addition, success in preclinical testing and early clinical trials does not ensure that later clinical trials will be successful, and interim results of a clinical trial do not necessarily predict final results. We may experience numerous unforeseen events during, or as a result of, preclinical testing and the clinical trial process, which could delay or prevent our ability to commercialize our product candidates, including:

- regulators or institutional review boards may not authorize us to commence a clinical trial at a prospective trial site;
- our preclinical studies or clinical trials may produce negative or inconclusive results, which may require us to conduct additional preclinical or clinical testing or to abandon development projects;
- we may suspend or terminate our clinical trials if the participating patients are being exposed to unacceptable health risks;
- regulators or institutional review boards may suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements;
- the effects of our product candidates may not be the desired effects or may include undesirable side effects; and
- our preclinical studies or clinical trials may show that our product candidates are not superior to the original drugs on which our product candidates are modeled.

For instance, our preclinical studies and clinical trials may indicate that our product candidates cause unexpected drug-drug interactions and result in adverse events. As another example, additional clinical trials of tecarfarin will be necessary in order to demonstrate clinical superiority to warfarin. Even if we adequately demonstrate that tecarfarin is safe and effective and obtain FDA approval, we may not be permitted to market it as superior to warfarin. In addition, budiodarone's preclinical studies contain results that are currently being monitored in the clinic. Inhibition of testicular function was observed in one animal species as part of these studies. No such effect has been observed to date in the clinic and monitoring continues. In published studies, a similar effect is thought to be correlated with the accumulation of amiodarone in tissues. A possible renal effect was also observed at high doses in our rat and dog toxicology studies for budiodarone. While we will continue to monitor patients for these effects, there is no assurance these effects will not occur in patients as part of our ongoing and planned clinical trials for budiodarone, and have a resulting adverse effect on our ability to obtain requisite regulatory approval to market and sell budiodarone. Similarly, in the clinical testing of budiodarone in patients whose condition also required treatment with warfarin, dose adjustments of warfarin were sometimes required. As is common to most clinical trials, the potential for drug-drug interactions will be monitored. In a canine toxicology study of ATI-7505 performed by our former collaboration partner, P&G, six deaths occurred at doses that were 10 and 20 times greater than doses currently being used in clinical trials. Our clinical trials to date have indicated only mild to moderate side effects in humans. However, further observation is warranted.

Even when our product candidates do not cause any adverse effects, clinical studies of efficacy may show that our product candidates do not have significant effects on target symptoms or may be inconclusive. For example, ATI-7505 was tested in two Phase 2 clinical trials in which the primary endpoints were not met in comparison to placebo. Although these studies did support ATI-7505's efficacy against certain symptoms as secondary endpoints, if future studies show that ATI-7505 is not sufficiently efficacious to justify its use as a therapy, our business and prospects may be materially adversely affected. In addition, we may need to reformulate the ATI-9242 drug product should we find in our on-going Phase 1 testing that adequate blood levels are not achieved with our current formulation.

Unforeseen events could cause us to experience significant delays in, or the termination of, clinical trials. Any such events would increase our costs and could delay or prevent our ability to commercialize our product candidates, which would adversely impact our financial results.

We may not be successful in our efforts to identify or discover additional candidates using our RetroMetabolic Drug Design Technology.

An important element of our strategy is to continue to identify existing molecules which have demonstrated efficacy, but have safety problems that are amenable to our RetroMetabolic Drug Design technology. Other than tecarfarin, budiodarone, ATI-9242 and ATI-7505, all of our programs are in the preclinical or discovery stage. Research programs to identify new product candidates require substantial technical, financial and human resources. These programs may initially show promise in identifying potential product candidates, yet fail to yield product candidates for clinical development for a number of reasons, including:

- the research methodology used may not be successful in identifying potential product candidates; or
- potential product candidates may, on further study, be found not to retain the efficacy profile of the original molecule or be shown to retain harmful side effects or other characteristics suggesting that they are unlikely to be effective products. For instance, at high doses our budiodarone product candidate interacts with warfarin and causes prolonged INR which could increase the risk of hemorrhage complications.

If we are unable to develop suitable product candidates through internal research programs or otherwise, we may not be able to increase our revenues in future periods, which could result in significant harm to our financial position and adversely impact our stock price.

Our product candidates will remain subject to ongoing regulatory review even if they receive marketing approval. If we fail to comply with continuing regulations, we could lose these approvals and the sale of our products could be suspended.

Even if we receive regulatory approval to market a particular product candidate, the approval could be conditioned on our conducting additional costly post-approval studies, implementing a Risk Evaluation and Mitigation Strategy, or REMS, if the FDA determines that a REMS is necessary to ensure the benefits of the drug outweigh the risks, or could limit the indicated uses included in our labeling. Moreover, the product may later cause adverse effects that limit or prevent its widespread use, force us to withdraw it from the market or impede or delay our ability to obtain regulatory approvals in additional countries. In addition, the manufacturer of the product and its facilities will continue to be subject to FDA review and periodic inspections to ensure adherence to applicable GMPA regulations. After receiving marketing approval, the manufacturing, labeling, packaging, adverse event reporting, storage, advertising, promotion and record keeping related to the product will remain subject to extensive regulatory requirements.

If we fail to comply with the regulatory requirements of the FDA and other applicable U.S. and foreign regulatory authorities or previously unknown problems with our products, manufacturers or manufacturing processes are discovered, we could be subject to administrative or judicially imposed sanctions, including:

- restrictions on the products, manufacturers or manufacturing processes;
- warning letters;
- civil or criminal penalties or fines;
- injunctions;
- product seizures, detentions or import bans;
- voluntary or mandatory product recalls and publicity requirements which could vary in foreign jurisdictions;
- suspension or withdrawal of regulatory approvals;
- total or partial suspension of production; and
- refusal to approve pending applications for marketing approval of new drugs or supplements to approved applications.

Because we have a number of product candidates and are considering a variety of target indications, we may expend our limited resources to pursue a particular candidate or indication and fail to capitalize on candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we must focus on research programs and product candidates for the specific opportunities that we believe are the most amenable to our RetroMetabolic Drug Design and are the most commercially promising. As a result, we may forego or delay pursuit of opportunities with other product candidates or other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. In addition, we may spend valuable time and managerial and financial resources on research programs and product candidates for specific indications that ultimately do not yield any commercially viable products. If we do not accurately evaluate the technical feasibility and the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in situations where it would have been more advantageous for us to retain sole rights to development and commercialization.

The commercial success of any products that we may develop will depend upon the degree of market acceptance among physicians, patients, healthcare payors and the medical community.

Any products that we may develop may not gain market acceptance among physicians, patients, healthcare payors and the medical community. If these products do not achieve an adequate level of acceptance, we may not generate material product revenues and we may not become profitable. The degree of market acceptance of any of our product candidates, if approved for commercial sale, will depend on a number of factors, including:

- demonstration of efficacy and safety in clinical trials;
- demonstration that we have adequately addressed the specific safety problem of the original molecule;
- the prevalence and severity of any side effects;
- potential or perceived advantages over alternative treatments;

- perceptions about the relationship or similarity between our product candidates and the original drug upon which each RetroMetabolic Drug Design candidate was based;
- advantage over other drugs may not be sufficiently great enough to obtain premium pricing;
- the timing of market entry relative to competitive treatments;
- the ability to offer our product candidates for sale at competitive prices;
- relative convenience and ease of administration;
- the strength of marketing and distribution support;
- sufficient third-party coverage or reimbursement; and
- the product labeling or product insert required by the FDA or regulatory authorities in other countries.

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

We do not have a sales and marketing organization and have no experience in the sales, marketing and distribution of pharmaceutical products. It is our intention to use collaborative arrangements to gain access to large sales and marketing organizations in order to commercialize our product candidates. Additionally, in the event we enter into any collaboration arrangements for any of our product candidates, we may retain the right to co-promote the sales of any ultimate product(s) by establishing a small specialty sales force to market such product(s) to specific physician groups. There are risks involved with establishing our own sales and marketing capabilities and entering into arrangements with third parties to perform these services. Developing an internal sales force is expensive and time-consuming and could delay any product launch. On the other hand, if we enter into arrangements with third parties to perform sales, marketing and distribution services, our product revenues are likely to be lower than if we market and sell any products that we develop ourselves.

We may decide to establish our own specialty sales force and engage pharmaceutical or other healthcare companies with an existing sales and marketing organization and distribution system to sell, market and distribute our products. We may not be able to establish these sales and distribution relationships on acceptable terms, or at all. Factors that may inhibit our efforts to commercialize our products without collaborators or licensees include:

- our inability to convince future corporate partners to allow us to retain commercialization rights for specific physician groups;
- our inability to obtain financing to establish the specialty sales force;
- our inability to recruit and retain adequate numbers of effective sales and marketing personnel;
- the inability of sales personnel to obtain access to or persuade adequate numbers of physicians to prescribe our products;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

Because the establishment of sales and marketing capabilities depends on the progress toward commercialization of our product candidates and because of the numerous risks and uncertainties involved with establishing our own sales and marketing capabilities, we are unable to predict when we will establish our own sales and marketing capabilities. If we are not able to partner with a third party

and are not successful in recruiting sales and marketing personnel or in building a sales and marketing infrastructure, we will have difficulty commercializing our product candidates, which would adversely affect our business and financial condition.

Our ability to generate revenue from any products that we may develop will depend on reimbursement and drug pricing policies and regulations.

Many patients may be unable to pay for any products that we may develop. In the United States, many patients will rely on Medicare, Medicaid, private health insurers and other third-party payors to pay for their medical needs. Our ability to achieve acceptable levels of reimbursement for drug treatments by governmental authorities, private health insurers and other organizations will have an effect on our ability to successfully commercialize, and attract collaborative partners to invest in the development of, our product candidates. We cannot be sure that reimbursement in the United States, Europe or elsewhere will be available for any products that we may develop, and any reimbursement that may become available may be decreased or eliminated in the future. Third-party payors increasingly are challenging prices charged for medical products and services, and many third-party payors may refuse to provide reimbursement for particular drugs when an equivalent generic drug is available. Although we believe that the safety profile of any products that we may develop will be sufficiently different from the original drugs from which they are modeled to be considered unique and not subject to substitution by a generic of the original drug in the case of budiodarone and tecarfarin, it is possible that a third-party payor may consider our product candidate and the generic original drug as equivalents and only offer to reimburse patients for the generic drug. There are five atypical antipsychotics which currently dominate an estimated $16 billion market for such drugs. Most will be generic competitors of ATI-9242 if it ever reaches the marketplace. While we have designed ATI-9242 to have the improved efficacy and safety features over the existing atypical antipsychotics, these desired features may not be proven in clinical testing or payors may be unwilling to pay a higher price for improved features when generic alternatives are available. Even if we show improved safety with our product candidates, pricing of the existing original drug may limit the amount we will be able to charge for each of our product candidates. In the case of ATI-7505, the original molecule, cisapride, was withdrawn from the market and no generic version exists, but there are many competitive products which may limit the amount we can charge for this product candidate. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize our product candidates, and may not be able to obtain a satisfactory financial return on products that we may develop.

The trend toward managed healthcare in the United States and the changes in health insurance programs, as well as legislative proposals to reform healthcare or reduce government insurance programs, may result in lower prices for pharmaceutical products, including any products that may be offered by us. In addition, any future regulatory changes regarding the healthcare industry or third-party coverage and reimbursement may affect demand for any products that we may develop and could harm our sales and profitability.

If our competitors are able to develop and market products that are more effective, safer or less costly than any products that we may develop, our commercial opportunity will be reduced or eliminated.

We face competition from established pharmaceutical and biotechnology companies, as well as from academic institutions, government agencies and private and public research institutions. Our commercial opportunity will be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer side effects or are less expensive than any products that we may develop. In addition, significant delays in the development of our product candidates could allow our competitors to bring products to market before us and impair our ability to commercialize our product candidates.

Competition for tecarfarin for use as an oral anticoagulant will continue to come from generic coumadin owing to its pricing and the years of experience physicians and patients have with the drug. Other oral anticoagulants are in development throughout the pharmaceutical and biotechnology industry. Most of these development programs fall into either the factor Xa or direct thrombin inhibitor categories. We are aware that Johnson & Johnson in collaboration with Bayer AG has a factor Xa before the FDA for approval, and that Bristol-Myers Squibb Company in collaboration with Pfizer, Inc., Eli Lilly and Company and Portola Pharmaceuticals, Inc. each have factor Xa programs in Phase 2 or Phase 3 testing. We are aware of a direct thrombin inhibitor program at Boehringer-Ingelheim GmbH. The first direct thrombin inhibitor presented to the FDA for approval, ximelagatran, previously marketed as Exanta by AstraZeneca plc, has not been recommended for approval due to idiosyncratic liver toxicity problems. Although we believe tecarfarin's mechanism of action (VKOR inhibition as with warfarin) and broadly available inexpensive monitoring methodology (INR) provide an advantage, these factor Xa and direct thrombin inhibitor programs will likely present major competition in this market. In addition, there may be other compounds of which we are not aware that are at an earlier stage of development and may compete with our product candidates. If any of those compounds are successfully developed and approved, they could compete directly with our product candidates.

We believe generic amiodarone will continue to provide competition to budiodarone for the treatment of atrial fibrillation, even though it is not labeled for use in atrial fibrillation. Amiodarone will continue to be used off-label in spite of its safety problems because of its generic pricing. Other treatments for atrial fibrillation, such as sotalol, marketed by Bayer HealthCare Pharmaceuticals, Inc., flecainide, marketed by 3M Company, and propafenone, marketed by Reliant Pharmaceuticals, Inc., do not have equivalent efficacy to amiodarone, but will continue to compete in the atrial fibrillation marketplace. Cardiome Pharma Corp. is in Phase 2 testing with an oral product, vernakalant, for the treatment of atrial fibrillation which they hope will have efficacy equal to or better than flecainide or sotalol, but with reduced pro-arrhythmic effects. Sanofi-aventis has completed Phase 3 clinical trials on their oral product, dronedarone (Multaq®), for the treatment of atrial fibrillation. Sanofi-aventis has filed for regulatory approval from the FDA in the United States. This Phase 3 clinical trial data demonstrated improved outcomes for patients suffering from atrial fibrillation. The FDA may now require outcome studies for the approval of other treatments for atrial fibrillation, including budiodarone. Should this be required, the Phase 3 clinical trials necessary for budiodarone may be more expensive and time consuming than we currently anticipate. However, based upon a recent meeting of the FDA advisory panel considering the regulatory approval of dronedarone, it appears that long-term survival studies will not be required. There are other companies developing devices or procedures to treat atrial fibrillation through ablation, including CryoCor, Inc. and CryoCath Technologies, Inc.

Competition for ATI-9242 will likely come from the five largest selling atypical antipsychotics: Risperdal by Janssen Pharmaceutica, Seroquel by AstraZeneca Pharmaceuticals LP, Zyprexa by Eli Lilly and Company, Abilify by Bristol-Myers Squibb/Otsuka America Pharmaceutical, Inc. and Geodon by Pfizer Inc., which sold a collective $15.7 billion in 2007. It is likely that virtually all of these would be sold as generic versions by the time ATI-9242 could come to market. Other antipsychotics are in development which may also be competitive to ATI-9242.

ATI-7505 has potential use in five indications: chronic constipation, functional dyspepsia, GERD, gastroparesis and IBS with constipation. Some of these indications may not be recognized by the FDA as sufficiently defined to enable regulatory approval of a drug for treatment. ATI-7505 is a prokinetic which has been shown to increase motility in the upper and lower gastrointestinal tract, including the ability to improve gastric emptying and colonic motility. Products which affect the gastrointestinal system's motility could be useful in the treatment of each of these disorders. Other prokinetics are on the market or in development which will also compete with ATI-7505, including tegaserod, marketed by

Novartis Pharmaceuticals Corporation as Zelnorm, which was temporarily withdrawn from the market and recently re-introduced with restrictive use labeling, TD-5108, which is being developed by Theravance, and erythromycin. Many additional prokinetics are in development targeting these indications. We believe the most significant competition to ATI-7505 for the treatment of GERD is proton pump inhibitors and H2 blockers, which are currently on the market in both prescription formulations and strengths as well as in over-the-counter forms. Many major pharmaceutical companies currently market proton pump inhibitors and H2 blockers generating worldwide sales of over $17.0 billion in 2006. ATI-7505 is targeted, in part, at the approximately 20-25% of GERD patients who do not receive adequate relief from proton pump inhibitors, which reduce the creation of acid in the stomach. ATI-7505 will face competition from prokinetics as well as many inexpensive over-the-counter drug products for the treatment of these gastrointestinal disorders. Substantial competition also exists with products indicated to treat chronic idiopathic constipation, an indication for which ATI-7505 has demonstrated efficacy in a Phase 2b clinical trial.

Many of our competitors have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Established pharmaceutical companies may invest heavily to quickly discover and develop novel compounds that could make our product candidates obsolete. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. In addition, these companies compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies and technology licenses complementary to our programs or advantageous to our business. Accordingly, our competitors may succeed in obtaining patent protection, receiving FDA approval or discovering, developing and commercializing medicines before we do. We are also aware of other companies that may currently be engaged in the discovery of medicines that will compete with the product candidates that we are developing. In addition, in the markets that we are targeting, we expect to compete against current market-leading medicines. If we are not able to compete effectively against our current and future competitors, our business will not grow and our financial condition will suffer.

If we fail to attract and keep senior management and key scientific personnel, we may be unable to successfully develop or commercialize our product candidates.

Our success depends on our continued ability to attract, retain and motivate highly qualified management, clinical and scientific personnel and on our ability to develop and maintain important relationships with leading clinicians. If we are not able to retain Dr. Goddard, our Chairman and Chief Executive Officer, Dr. Milner, our President, Research and Development, Mr. Varian, our Chief Operating Officer and Chief Financial Officer, Dr. Canafax, our Vice President and Chief Development Officer, and Dr. Druzgala, our Senior Vice President and Chief Scientific Officer, we may not be able to successfully develop or commercialize our product candidates. Competition for experienced scientists may limit our ability to hire and retain highly qualified personnel on acceptable terms. In addition, none of our employees have employment commitments for any fixed period of time and could leave our employment at will. We carry "key person" insurance in the amount of $1 million for each of Drs. Milner and Druzgala, but do not carry "key person" insurance covering any other members of senior management or key scientific personnel. If we fail to identify, attract and retain qualified personnel, we may be unable to continue our development and commercialization activities.

We will need to hire additional employees in order to commercialize our product candidates. Any inability to manage future growth could harm our ability to commercialize our product candidates, increase our costs and adversely impact our ability to compete effectively.

In order to commercialize our product candidates, we will need to expand the number of our managerial, operational, financial and other employees. Because the projected time frame for hiring

these additional employees depends on the development status of our product candidates and because of the numerous risks and uncertainties associated with drug development and our existing capital resources, we are unable to project when we will hire these additional employees. While to date we have not experienced difficulties in recruiting, hiring and retaining qualified individuals, the competition for qualified personnel in the pharmaceutical and biotechnology field is intense.

Future growth will impose significant added responsibilities on members of management, including the need to identify, recruit, maintain and integrate additional employees. Our future financial performance and our ability to commercialize our product candidates and compete effectively will depend, in part, on our ability to manage any future growth effectively.

If product liability lawsuits are brought against us, we will incur substantial liabilities and may be required to limit commercialization of any products that we may develop.

We face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if we commercially sell any products that we may develop. If we cannot successfully defend ourselves against claims that our product candidates or products that we may develop caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or products that we may develop;
- injury to our reputation;
- withdrawal of clinical trial participants;
- costs to defend the related litigation;
- increased demands on management's attention in defending the related litigation;
- substantial monetary awards to clinical trial participants or patients;
- loss of revenue; and
- the inability to commercialize any products that we may develop.

We have product liability insurance that covers our clinical trials up to an aggregate $10.0 million annual limit. We intend to expand our insurance coverage to include the sale of commercial products if marketing approval is obtained for any products that we may develop. Insurance coverage is increasingly expensive, and we may not be able to maintain insurance coverage at a reasonable cost or obtain insurance coverage that will be adequate to satisfy any liability that may arise.

If we use biological and hazardous materials in a manner that causes contamination, injury or violates laws, we may be liable for damages.

Our research and development activities involve the use of potentially harmful biological materials as well as hazardous materials, chemicals and various radioactive compounds. We cannot completely eliminate the risk of accidental contamination or injury from the use, storage, handling or disposal of these materials. In the event of contamination or injury, we could be held liable for damages that result, and any liability could exceed our resources. We, the third parties that conduct clinical trials on our behalf and the third parties that manufacture our product candidates are subject to federal, state and local laws and regulations governing the use, storage, handling and disposal of these materials and waste products. The cost of compliance with these laws and regulations could be significant. The failure to comply with these laws and regulations could result in significant fines and work stoppages and may harm our business.

Our principal facility is located in California's Silicon Valley, in an area with a long history of industrial activity and use of hazardous substances, including chlorinated solvents. Certain

environmental laws, including the U.S. Comprehensive, Environmental Response, Compensation and Liability Act of 1980, impose strict, joint and several liabilities on current operators of real property for the cost of removal or remediation of hazardous substances. These laws often impose liability even if the owner or operator did not know of, or was not responsible for, the release of such hazardous substances. As a result, while we have not been notified of any claim against us, we are not aware of any such release, nor have we been held liable for costs to address contamination at the property beneath our facility in the past, we cannot rule out the possibility that this may occur in the future. We do not carry specific insurance against such a claim.

We will need to implement additional finance and accounting systems, procedures and controls in the future as we grow our business and organization and to satisfy new reporting requirements.

As a public reporting company, we need to comply with the Sarbanes-Oxley Act of 2002 and the related rules and regulations of the Securities and Exchange Commission, including expanded disclosures and accelerated reporting requirements and more complex accounting rules. Compliance with Section 404 of the Sarbanes-Oxley Act of 2002 and other requirements will increase our costs and require additional management resources. We are continuing to upgrade our finance and accounting systems, procedures and controls and may need to continue to implement additional finance and accounting systems, procedures and controls as we grow our business and organization and to satisfy new reporting requirements. Compliance with Section 404 will first apply to our annual report on Form 10-K for our year ending December 31, 2008, followed by a requirement for attestation by our independent auditors as to our compliance as of December 31, 2009. If we are unable to complete the required assessment as to the adequacy of our internal control over financial reporting as of December 31, 2008, or if our independent registered public accounting firm is unable to provide us with an unqualified report as to the effectiveness of our internal controls over financial reporting as of December 31, 2009, investors could lose confidence in the reliability of our internal controls over financial reporting, which could adversely affect our stock price and our ability to raise capital.

Our principal facility is located near known earthquake fault zones, and the occurrence of an earthquake, extremist attack or other catastrophic disaster could cause damage to our facilities and equipment, which could require us to cease or curtail operations.

Our principal facility is located in California's Silicon Valley near known earthquake fault zones and, therefore, is vulnerable to damage from earthquakes. In October 1989, a major earthquake struck this area and caused significant property damage and a number of fatalities. We are also vulnerable to damage from other types of disasters, including power loss, attacks from extremist organizations, fire, floods and similar events. If any disaster were to occur, our ability to operate our business could be seriously impaired. In addition, the unique nature of our research activities and of much of our equipment could make it difficult for us to recover from this type of disaster. We currently may not have adequate insurance to cover our losses resulting from disasters or other similar significant business interruptions, and we do not currently plan to purchase additional insurance to cover such losses because of the cost of obtaining such coverage. Any significant losses that are not recoverable under our insurance policies could seriously impair our business and financial condition. Our current insurance does not specifically cover property loss or business interruption due to earthquake damage.

Risks Related to Ownership of Our Common Stock

Our stock price may be extremely volatile, and your investment in our common stock could suffer a decline in value.

You should consider an investment in our common stock risky and invest only if you can withstand a significant loss and wide fluctuations in the market value of your investment. Investors who purchase our common stock may not be able to sell their shares at or above the purchase price. Security market prices for securities of biopharmaceutical companies have been highly volatile. In addition, the volatility

of biopharmaceutical company stocks often does not correlate to the operating performance of the companies represented by such stocks. Some of the factors that may cause the market price of our common stock to fluctuate include:

- adverse results or delays in our clinical trials;
- the timing or delay of achievement of our clinical, regulatory, partnering and other milestones, such as the commencement of clinical development, the completion of a clinical trial, the receipt of regulatory approval or the establishment or termination of a commercial partnership for one or more of our product candidates;
- announcement of FDA approval or nonapproval of our product candidates or delays in the FDA review process;
- actions taken by regulatory agencies with respect to our product candidates, our clinical trials or our sales and marketing activities;
- the commercial success of any product approved by the FDA or its foreign counterparts;
- regulatory developments in the United States and foreign countries;
- changes in the structure of healthcare payment systems;
- any intellectual property infringement lawsuit involving us;
- announcements of technological innovations or new products by us or our competitors;
- market conditions for the biotechnology or pharmaceutical industries in general;
- changes in financial estimates or recommendations by securities analysts;
- sales of large blocks of our common stock;
- sales of our common stock by our executive officers, directors and significant stockholders;
- restatements of our financial results and/or material weaknesses in our internal controls; and
- the loss of any of our key scientific or management personnel.

The stock markets in general, and the markets for biotechnology stocks in particular, have experienced extreme volatility and price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of particular companies. These broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance. In the past, class action litigation has often been instituted against companies whose securities have experienced periods of volatility in market price. Any such litigation brought against us could result in substantial costs, which would hurt our financial condition and results of operations, divert management's attention and resources, and possibly delay our clinical trials or commercialization efforts.

Fluctuations in our operating results could cause our stock price to decline.

The following factors are likely to result in fluctuations of our operating results from quarter to quarter and year to year:

- adverse results or delays in our clinical trials;
- the timing or delay of achievement of our clinical, regulatory, partnering and other milestones, such as the commencement of clinical development, the completion of a clinical trial, the receipt of regulatory approval or the establishment or termination of a commercial partnership for one or more of our product candidates;

- announcement of FDA approval or nonapproval of our product candidates or delays in the FDA review process;
- actions taken by regulatory agencies with respect to our product candidates, our clinical trials or our sales and marketing activities;
- the commercial success of any product approved by the FDA or its foreign counterparts;
- regulatory developments in the United States and foreign countries;
- changes in the structure of healthcare payment systems;
- any intellectual property infringement lawsuit involving us; and
- announcements of technological innovations or new products by us or our competitors.

Because of these potential fluctuations in our operating results, a period-to-period comparison of our results of operations may not be a good indication of our future performance. In any particular financial period the actual or anticipated fluctuations could be below the expectations of securities analysts or investors and our stock price could decline.

Because a small number of existing stockholders own a large percentage of our voting stock, they may be able to control our management and operations, acting in their best interests and not necessarily those of other stockholders.

Based on our outstanding shares as of December 31, 2008 (which excludes any shares of common stock issuable upon exercise of warrants and options outstanding on such date), our executive officers, directors and holders of 5.0% or more of our outstanding common stock beneficially own approximately 67% of our common stock. As a result, these stockholders, acting together, will be able to control all matters requiring approval by our stockholders, including the election of directors and the approval of mergers or other business combination transactions. The interests of this group of stockholders may not always coincide with our interests or the interests of other stockholders.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our certificate of incorporation and our bylaws may delay or prevent an acquisition of us, a change in our management or other changes that stockholders may consider favorable. These provisions include:

- a classified board of directors;
- a prohibition on actions by our stockholders by written consent;
- the ability of our board of directors to issue preferred stock without stockholder approval, which could be used to adopt a stockholders' rights plan that would make it difficult for a third party to acquire us;
- notice requirements for nominations for election to the board of directors; and
- limitations on the removal of directors.

Moreover, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

Future sales of our common stock in the public market could cause our stock price to drop substantially.

Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities.

As of December 31, 2008, we had 27,338,877 shares of common stock outstanding, which excludes any shares of common stock issuable upon exercise of warrants and options outstanding as of such date. The shares outstanding are freely tradable without restriction in the public market unless held by an affiliate of ours. Shares held by our affiliates are eligible for sale in the public market only in accordance with the volume limitations and manner of sale requirements under Rule 144. Any common stock that is either subject to outstanding options or warrants or reserved for future issuance under our 2001 Equity Incentive Plan, 2007 Equity Incentive Plan, 2007 Non-Employee Directors' Stock Option Plan and 2007 Employee Stock Purchase Plan could also become eligible for sale in the public market to the extent permitted by the provisions of various vesting agreements, and Rules 144 and 701 under the Securities Act of 1933, as amended. If these additional shares are sold, or if it is perceived that they will be sold, in the public market, the trading price of our common stock could decline.

Certain of our affiliates have rights with respect to registration of a significant number of our shares of common stock under the Securities Act of 1933, as amended. If such holders, by exercising their registration rights, cause a large number of securities to be sold in the public market, these sales could have an adverse effect on the market price for our common stock and may impair our ability to raise additional capital. In addition, as of December 31, 2008, we have filed two registration statements on Form S-8 under the Securities Act of 1933, as amended, to register up to an aggregate of 3,621,522 shares of our common stock for issuance under our stock option and employee stock purchase plans, and intend to file additional registration statements on Form S-8 to register the shares automatically added each year to the share reserves under these plans.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We lease approximately 44,000 square feet of office and laboratory space in one building in Fremont, California, where we conduct our operations. The lease expires in March 2013. We have the option to extend the lease for an additional term of five years. The 2008 annual base rental amount under this lease was $893,200, subject to periodic increases over the remaining lease term. While we believe that our Fremont facilities will be adequate for the foreseeable future, we may require additional space as our business expands.

Item 3. Legal Proceedings

From time to time we are involved in legal proceedings arising in the ordinary course of our business. We believe there is no litigation pending that could, individually or in the aggregate, have a material adverse effect on our results of operations or financial condition.

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

None.

PART II

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

Market For Our Common Stock

Our common stock has been traded on the NASDAQ Global Market under the symbol "ARYX" since November 7, 2007. The following table sets forth, for the periods indicated, the range of high and low closing sales prices of our common stock as quoted on the NASDAQ Global Market for the period since our initial public offering on November 7, 2007.

	High	Low
Calendar Quarter—2008		
First Quarter	$9.16	$6.40
Second Quarter	8.38	5.60
Third Quarter	7.55	4.53
Fourth Quarter	5.56	1.50
Calendar Quarter—2007		
Fourth Quarter (from November 7, 2007)	9.00	7.50

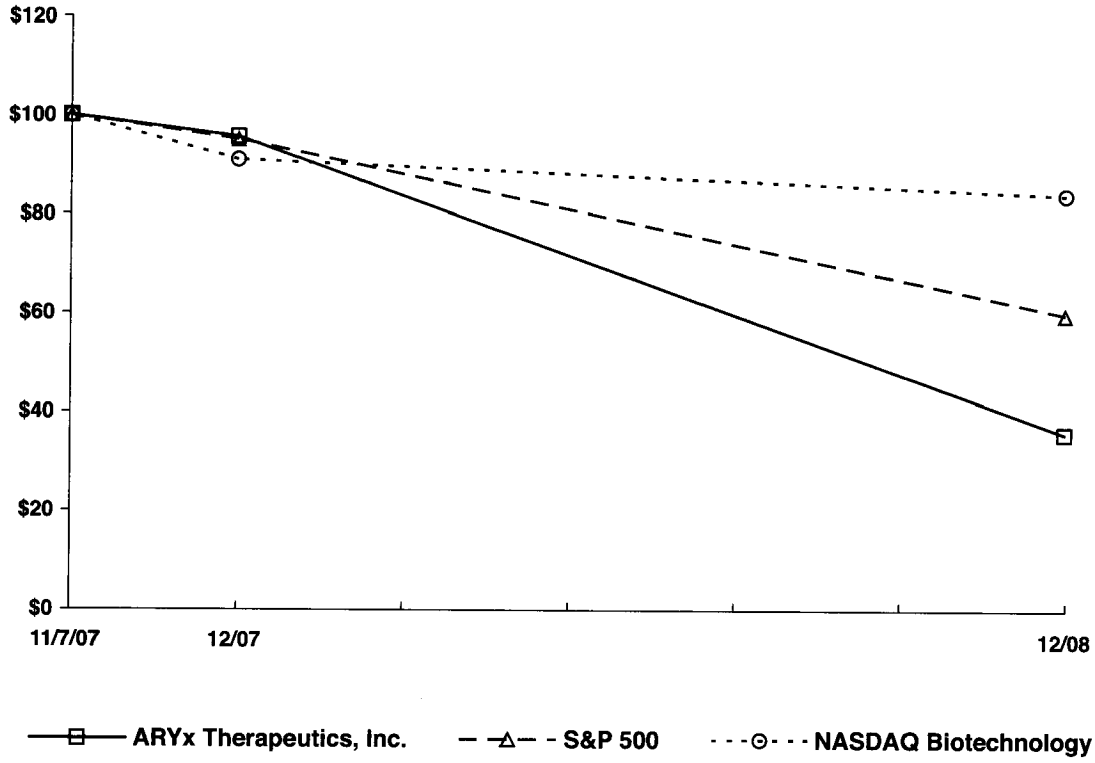
There were approximately 106 holders of record of our common stock as of February 27, 2009. In addition, we believe that a significant number of beneficial owners of our common stock hold their shares in street name.

The closing price for our common stock as reported by the NASDAQ Global Market on February 27, 2009 was $2.56 per share.

Performance Measurement Comparison(1)

The following performance graph shows the cumulative 13-month total return of an investment of $100 on November 7, 2007, the date we became a public company, through December 31, 2008 for our common stock in comparison to the cumulative return on the Standard & Poor's 500 Index and the NASDAQ Biotechnology Index. The stock price performance shown on the graph is not necessarily indicative of future price performance, and we do not make or endorse any predictions as to future stockholder returns.

COMPARISON OF 13-MONTH CUMULATIVE TOTAL RETURN
Among ARYx Therapeutics, Inc., the Standard & Poor's 500 Index and
The NASDAQ Biotechnology Index



(1) This section is not "soliciting material", is not deemed "filed" with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of ARYx Therapeutics, Inc., under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

Dividend Policy

We have never declared or paid cash dividends on any of our shares of capital stock. We currently intend to retain future earnings, if any, to finance the expansion and growth of our business, and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination to pay dividends will be at the discretion of our board of directors and will depend on our financial condition, results of operations, capital requirements and other factors that our board of directors deems relevant. In addition, we are prohibited from paying dividends, other than dividends payable solely in common stock, by covenants contained in our loan agreements with Lighthouse Capital Partners V, L.P. and General Electric Commercial Finance.

Recent Sales of Unregistered Securities

On November 11, 2008, we entered into a securities purchase agreement with certain institutional and other accredited investors pursuant to which we sold and issued, in a private placement, an aggregate of 9,649,545 shares of our common stock and warrants to purchase an aggregate of 2,894,864 shares of our common stock. Under the terms of the securities purchase agreement, the price for each share of common stock purchased was $2.20. The total number of shares of common stock underlying each purchaser's warrant was equal to 30% of the total number of shares purchased by such investor in the private placement with a purchase price per underlying share of common stock of $0.125. The combined purchase price of each share of common stock and each warrant to purchase 0.30 of a share of common stock issued in the private placement was $2.2375. The warrants are exercisable for a term of five years from November 14, 2008 and have an exercise price of $2.64 per share. The securities sold in the private placement were offered and sold without registration under the Securities Act of 1933, as amended, or state securities laws, in reliance on the exemptions provided by Section 4(2) of the Securities Act of 1933, as amended, and Regulation D promulgated thereunder and in reliance on similar exemptions under applicable state laws.

Pacific Growth Equities, LLC served as the placement agent for the private placement. Certain of our existing stockholders were investors in the private placement, including entities affiliated with MPM Capital and OrbiMed Advisors LLC, two of our principal stockholders. Upon closing of the private placement, we received gross proceeds of approximately $21.6 million. The net proceeds, after deducting placement agent fees and other expenses of approximately $1.2 million in the aggregate, were approximately $20.4 million. No expenses were paid directly or indirectly to our directors, officers or their associates, or to persons owning 10% or more of any of our equity securities.

Use of Proceeds from the Sale of Registered Securities

On November 7, 2007, our registration statement on Form S-1/A (File No. 333-145813) was declared effective by the Securities and Exchange Commission for our initial public offering. We registered 5,000,000 shares of our common stock for an aggregate offering price of $50.0 million, all of which were sold at $10.00 per share. Of this amount, $3.5 million was paid in underwriters' discounts and an additional $2.7 million of other expenses were incurred, all of which was incurred during the year ended December 31, 2007. Entities affiliated with MPM Capital and OrbiMed Advisors, LLC, two of our principal stockholders, purchased an aggregate of 600,000 shares of common stock in our initial public offering at the offering price of $10.00 per share. The underwriters of the offering were Morgan Stanley & Co. Incorporated, CIBC World Markets Corp., Jefferies and Company, Inc. and Leerink Swann LLC. No offering expenses were paid directly or indirectly to our directors, officers or their associates, or to persons owning 10% or more of any of our equity securities.

As of December 31, 2008, we have used approximately $25.9 million of the net proceeds from our initial public offering to fund our (i) external clinical trial activities, including funding manufacturing expenses related to the clinical development of our product candidates; (ii) research and development activities other than external clinical trial expenses; and (iii) general and administrative expenses, working capital needs and other general corporate purposes. We continually assess the specific uses and allocations for these funds. However, we do not expect our existing capital resources and the net proceeds from our initial public offering to be sufficient to enable us to fund the completion of the development of any of our product candidates without a future raise of additional capital. Pending use of the remaining net proceeds of this offering, we have invested the funds in interest bearing, investment grade, short-term securities.

Item 6. Selected Financial Data

The following selected financial data should be read together with our audited consolidated financial statements and accompanying notes and with Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations." The selected financial data in this section is not intended to replace our audited financial statements and the accompanying notes. Our historical results are not necessarily indicative of our future results.

	Year Ended December 31,				
	2008	2007	2006	2005	2004
	(in thousands, except per share amounts)				
Consolidated Statement of Operations Data:					
Revenue:					
Collaboration services	$ 232	$ 262	$ 2,116	$ —	$ —
Technology license fees	19,492	3,896	1,623	—	—
Contractual milestone payments	—	—	1,000	—	—
Total revenue	19,724	4,158	4,739	—	—
Costs and expenses:					
Cost of collaboration service revenue	232	262	2,116	—	—
Research and development	40,145	24,994	23,973	22,498	16,725
Selling, general and administrative	9,764	7,702	6,938	5,671	4,608
Total costs and expenses	50,141	32,958	33,027	28,169	21,333
Loss from operations	(30,417)	(28,800)	(28,288)	(28,169)	(21,333)
Interest and other income, net	1,127	2,591	2,294	876	542
Interest expense	(1,928)	(1,352)	(1,324)	(671)	(36)
Loss before cumulative effect of change in accounting principle	(31,218)	(27,561)	(27,318)	(27,964)	(20,827)
Cumulative effect of change in accounting principle	—	—	(10)	—	—
Net loss	(31,218)	(27,561)	(27,328)	(27,964)	(20,827)
Basic and diluted net loss per share(1)	$ (1.65)	$ (8.24)	$ (26.84)	$ (30.73)	$ (24.28)
Weighted average shares used to compute basic and diluted net loss per share	18,964	3,346	1,018	910	858

(1) See Note 1 to the notes to our consolidated financial statements for an explanation of the method used to calculate basic and diluted net loss per share.

	As of December 31,				
	2008	2007	2006	2005	2004
	(in thousands)				
Consolidated Balance Sheet Data:					
Cash, cash equivalents and marketable securities	$ 44,954	$ 63,116	$ 50,308	$ 26,341	$ 41,395
Total assets	51,148	69,625	56,764	33,312	44,195
Working capital	34,831	51,442	39,884	19,970	39,992
Deferred revenue	—	19,497	23,377	—	—
Notes payable, net of current portion	11,278	3,444	6,679	8,921	—
Preferred stock warrants liability	—	—	853	—	—
Convertible preferred stock	—	—	110,665	81,355	80,617
Total stockholders' equity (deficit)	27,415	35,347	(93,712)	(67,088)	(39,695)

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

The following discussion of our financial condition and the results of operations should be read in conjunction with the consolidated financial statements and notes to consolidated financial statements included elsewhere in this Annual Report on Form 10-K. This discussion contains forward looking statements that involve risks and uncertainties. When reviewing the discussion below, you should keep in mind the substantial risks and uncertainties that characterize our business. In particular, we encourage you to review the risks and uncertainties described in Part I—Item 1A. "Risk Factors" included elsewhere in this report. These risks and uncertainties could cause actual results to differ materially from those projected in forward-looking statements contained in this report or implied by past results and trends. Forward-looking statements are statements that attempt to forecast or anticipate future developments in our business; you can identify forward-looking statements by the following words: "may," "will," "could," "would," "should," "expect," "intend," "plan," "anticipate," "believe," "estimate," "predict," "project," "potential," "continue," "ongoing" or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. These statements, like all statements in this report, speak only as of their date (unless another date is indicated), and we undertake no obligation to update or revise these statements in light of future developments.

Overview

ARYx is a biopharmaceutical company focused on developing a portfolio of internally discovered product candidates designed to eliminate known safety issues associated with well-established, commercially successful drugs. We use our RetroMetabolic Drug Design technology to design structurally unique molecules that retain the efficacy of these original drugs but are metabolized through a potentially safer pathway to avoid specific adverse side effects associated with these compounds. Our product candidate portfolio includes an oral anticoagulant, tecarfarin (ATI-5923), designed to have the same therapeutic benefits as warfarin, currently in Phase 2/3; clinical development for the treatment of patients who are at risk for the formation of dangerous blood clots; an oral antiarrhythmic agent, budiodarone (ATI-2042), designed to have the efficacy of amiodarone in Phase 2 clinical development for the treatment of atrial fibrillation, a form of irregular heartbeat; an oral prokinetic agent, ATI-7505, designed to have the same therapeutic benefits as cisapride in Phase 2 clinical development for the treatment of chronic constipation, gastroparesis, functional dyspepsia, irritable bowel syndrome with constipation, and gastroesophageal reflux disease; and a novel, next-generation atypical antipsychotic agent, ATI-9242, currently in Phase 1 clinical development for the treatment of schizophrenia and other psychiatric disorders. Additionally, we have multiple product candidates in preclinical development. Each of our product candidates is an orally available, patentable new chemical entity designed to address similar indications as those of the original drug upon which each is based. Our product candidates target what we believe to be multi-billion dollar market opportunities. We operate in a single business segment with regard to the development of human pharmaceutical products.

We were incorporated in the State of California on February 28, 1997 and reincorporated in the State of Delaware on August 29, 2007. We maintain a wholly-owned subsidiary, ARYx Therapeutics Limited, with registered offices in the United Kingdom, which has had no operations since its inception in September 2004 and was established to serve only as a legal entity as required in support of our clinical trial activities conducted in Europe.

Since our inception, we have incurred significant net losses, and we expect to continue to incur net losses for the next several years as we develop our own product candidates, potentially acquire or in-license additional products or product candidates, conduct clinical trials, manufacture materials for use in nonclinical studies and clinical trials, expand our research and development activities, seek regulatory approvals and engage in commercialization preparation activities. It is very expensive to gain approval of and launch a pharmaceutical product. Many expenses are incurred before revenue is

received. We are unable to predict the extent of any future losses or when we will become profitable, if at all.

Revenue

In connection with our prior collaboration agreement with P&G, we received a $25.0 million nonrefundable upfront license fee in August 2006. The $25.0 million payment was recorded in our balance sheet as deferred revenue upon receipt and recognized in our consolidated statement of operations as revenue on a straight-line basis over the performance and service period. The collaboration agreement was terminated on July 2, 2008, at which time the performance and service period effectively ended. Pursuant to the terms of the collaboration agreement, we are under no obligation to return any portion of the upfront license fee to P&G. As a result, we have recognized as revenue all $25.0 million of the nonrefundable upfront license fee as of December 31, 2008.

In addition, we have recognized a cumulative total of $2.6 million as of December 31, 2008 as collaboration service revenue in connection with product formulation and manufacturing, patent filing and maintenance, and other development services related to the ATI-7505 program. Effective with P&G's notice of termination on July 2, 2008, we no longer provide these support services to P&G for the development of ATI-7505; therefore those services will no longer be a source of revenue for us.

Revenue generated from the P&G agreement was our only source of revenue. While we intend to seek partners for each of the four product candidates in our portfolio, there is no assurance that partnering arrangements will be available to us or on terms acceptable to us. See Part I—Item 1A. "Risk Factors" of this report for further discussion.

Cost of Collaboration Service Revenue

We incurred costs for certain services provided to P&G, including costs for pharmaceutical development, patent filing and maintenance and other activities related to the ATI-7505 program, which are related to the service revenue we generated in connection with our collaboration agreement with P&G. These expenses are reported separately in our income statement as cost of collaboration service revenue. As of December 31, 2008, we have recorded a cumulative total of $2.6 million of expense related to these activities since the commencement of our collaboration arrangement with P&G in June 2006.

Research and Development

Our research and development expense consists of expenses incurred in identifying, testing and developing our product candidates. These expenses consist primarily of fees paid to contract research organizations and other third parties to assist us in managing, monitoring and analyzing our clinical trials, clinical trial costs paid to sites and investigators' fees, costs of nonclinical studies including toxicity studies in animals, costs of contract manufacturing services, costs of materials used in clinical trials and nonclinical studies, laboratory related expenses, research and development support costs including certain regulatory, quality assurance, project management and administration, allocated expenses such as facilities and information technology that are used to support our research and development activities and related personnel expenses, including stock-based compensation. Research and development costs are expensed as incurred.

Clinical trial costs are a significant component of our research and development expense. Currently, we conduct our clinical trials primarily through coordination with contract research organizations and other third-party service providers. We recognize research and development expense for these activities based upon a variety of factors, including actual and estimated patient enrollment, clinical site initiation activities, direct pass-through costs and other activity-based factors.

The following table summarizes our research and development expense for the years ended December 31, 2008, 2007 and 2006:

	Year Ended December 31,		
	2008	2007	2006
	(in thousands)		
Direct research and development expense by product candidate:			
Tecarfarin	$18,051	$ 5,439	$ 4,216
Budiodarone	6,651	3,575	2,405
ATI-9242	1,272	2,715	671
ATI-7505	327	154	7,667
Other research programs	901	590	447
Total direct research and development expense	27,202	12,473	15,406
Personnel, administrative and other expense	12,982	12,714	10,639
Less: Research and development portion of the cost of collaboration service revenue	(39)	(193)	(2,072)
Total research and development expense	$40,145	$24,994	$23,973

From our inception through December 31, 2008, we estimate that approximately $32.8 million of expense was incurred for our tecarfarin product candidate, approximately $24.3 million was incurred for our budiodarone product candidate, approximately $5.1 million was incurred for our ATI-9242 product candidate, approximately $22.5 million was incurred for our ATI-7505 product candidate, and approximately $57.9 million was incurred for our personnel, administrative and other research and development program expense.

The expenditures summarized in the above table reflect costs directly attributable to each product candidate and to our other research programs. We do not allocate salaries, employee benefits, or other indirect costs to our product candidates or other research programs and have included those expenses in "personnel, administrative and other expense" in the above table. The portion of our research and development expense that is identified as cost of collaboration service revenue is included within a separate category of expense in our condensed consolidated financial statements and is subtracted from total expenses in the above table to derive total research and development expense as reported in our condensed consolidated financial statements.

At this time, due to the risks inherent in the clinical trial process and given the various stages of development of our product candidates, we are unable to estimate with any certainty the costs we will incur in the continued development of our product candidates. Clinical development timelines, the probability of success and development costs can differ materially from expectations. While we are currently focused on advancing each of our product candidates, our future research and development expense will depend on the clinical success of each product candidate, as well as ongoing assessments as to each product candidate's commercial potential. In addition, we cannot forecast with any degree of certainty which product candidates will be subject to future collaborations, when such arrangements will be secured, if at all, and to what degree such arrangements would affect our development plans and capital requirements.

The process of developing and obtaining FDA approval of products is costly and time consuming. Development activities and clinical trials can take years to complete, and failure can occur at any time during the development and clinical trial process. In addition, the results from early clinical trials may not be predictive of results obtained in subsequent and larger clinical trials, and product candidates in later stages of clinical trials may fail to show the desired safety and efficacy despite having progressed successfully through initial clinical testing. Although our approach to identifying and developing new product candidates is designed to mitigate risk, the successful development of our product candidates is highly uncertain. Further, even if our product candidates are approved for sale, they may not be successfully commercialized and therefore the future revenue we anticipate may not materialize.

If we fail to complete the development of any of our product candidates in a timely manner, it could have a material effect on our operations, financial position and liquidity. In addition, any failure by us or our partners to obtain, or any delay in obtaining, regulatory approvals for our product candidates could have a material adverse effect on our results of operations. A further discussion of the risks and uncertainties associated with completing our programs on schedule, or at all, and certain consequences of failing to do so are discussed in Part I—Item 1A. "Risk Factors" section of this report.

Selling, General and Administrative

Our selling, general and administrative expense consists primarily of salaries and related costs for personnel in executive, finance and accounting, human resources, business development, commercial operations, and other internal support functions. In addition, administrative expenses include insurance and professional fees for legal, consulting, tax, accounting and other services.

Interest and Other Income, Net

Interest and other income consist of interest income from our investments in marketable securities and benefits related to the reassessment of the fair value of our preferred stock warrant liability in 2007 and 2006, net of other expenses including losses on marketable securities, state franchise and other business taxes.

Interest Expense

Interest expense consists primarily of cash and non-cash interest costs related to our outstanding debt. Included in interest expense is the cost of warrants to purchase our common stock issued in connection with debt financing arrangements.

Income Taxes

As of December 31, 2008, we had net operating loss carryforwards for federal income tax purposes of approximately $147.9 million which expire between 2021 and 2028 if not utilized, and federal research and development tax credit carryforwards of approximately $3.5 million which expire beginning in 2018 if not utilized. In addition, we have net operating loss carryforwards for state income tax purposes of approximately $140.4 million which expire between 2013 and 2018 if not utilized, and state research and development tax credit carryforwards of approximately $3.2 million which do not expire. Section 382 of the Internal Revenue Code of 1986, as amended, provides for a limitation on the utilization of net operating losses and tax credit carryforwards in the event that there is a change in ownership as defined in this section. We concluded that we experienced such a change in ownership in June of 2002. As a result of this change in ownership, our ability to use the net operating losses and tax credits incurred prior to the ownership change will likely be limited in future periods.

Critical Accounting Policies and Significant Judgments and Estimates

We have prepared our consolidated financial statements in accordance with U.S. generally accepted accounting principles. Accordingly, we have had to make estimates, assumptions and judgments that affect the amounts reported in our consolidated financial statements. These estimates, assumptions and judgments about future events and their effects on our results cannot be determined with certainty, and are made based upon our historical experience and on other assumptions that are believed to be reasonable under the circumstances. These estimates may change as new events occur or additional information is obtained, and we may periodically be faced with uncertainties, the outcomes of which are not within our control and may not be known for a prolonged period of time.

We have identified the policies below as critical to our business operations and the understanding of our financial condition and results of operations. A critical accounting policy is one that is both material to the presentation of our consolidated financial statements and requires us to make difficult, subjective or complex judgments and assumptions that could have a material impact on our consolidated financial statements. Different estimates that we could have used, or changes in the estimates that are reasonably likely to occur, may have a material impact on our financial position or results of operations. We also refer you to our "Organization and Summary of Significant Accounting Policies" discussed in the accompanying notes to our consolidated financial statements included elsewhere in this report.

Fair Value Estimates of Auction Rate Securities

In September 2006, the Financial Accounting Standards Board, or FASB, issued Statements of Financial Accounting Standards No. 157, *Fair Value Measurements*, or SFAS 157. SFAS 157 defines fair value, establishes a framework for measuring fair value and expands fair value measurement disclosure. The measurement and disclosure requirements related to financial assets and financial liabilities became effective for us beginning in the first quarter of 2008. Accordingly, we began to measure the fair value of financial assets in our available-for-sale securities portfolio beginning in the first quarter of 2008 and began to value our auction rate securities using significant unobservable inputs.

In early 2008, market auctions for certain of the auction rate securities held in our portfolio began to fail causing those securities to become temporarily illiquid. Although we did experience liquidity in our auction rate securities portfolio during the first nine months of 2008, the illiquid auction rate market at large requires that our remaining auction rate holding be measured using significant unobservable inputs in accordance with guidance provided by SFAS 157. The fair value of our remaining auction rate security as of December 31, 2008, was determined using a discounted cash flow model that considers inputs such as expected cash flows from the auction rate instrument including expected interest payments, market yields for similarly rated instruments, our estimates of time to liquidity for the security, and a marketability discount. We revise our estimates for each input as of each financial statement reporting period based upon known and expected market conditions as well as specific information we have regarding the instrument. Different inputs to our valuation model that we could have used, or different subjective judgments or assumptions that we could have chosen, are not likely to have a material impact on our financial position or results of operations.

As of December 31, 2008, we held in our marketable securities portfolio one auction rate security with a par value of $500,000. We have determined that the fair value of the instrument was $367,000, net of an estimated $133,000 loss representing a 26.6% reduction in the carrying value for this instrument. Based on the lack of liquidity in the auction rate market and our expectations regarding near-term market conditions, we concluded that the impairment to the fair value of our auction rate holding as of December 31, 2008, is other-than-temporary in accordance with guidance provided by FSP FAS 115-1. The reduction in carrying value is reflected as a loss in our consolidated statement of operations as we expect that it is more likely than not that the instrument will remain illiquid in the

next 12 months. Accordingly, we classify this auction rate instrument as an other non-current asset on the balance sheet as of December 31, 2008.

Revenue Recognition

We follow the revenue recognition criteria outlined in the SEC Staff Accounting Bulletin, or SAB, No. 104, *Revenue Recognition in Financial Statements*, and Emerging Issues Task Force, or EITF, Issue 00-21, *Revenue Arrangements with Multiple Deliverables*. Revenue arrangements with multiple components are divided into separate units of accounting if certain criteria are met, including whether the delivered component has stand-alone value to the customer, and whether there is objective and reliable evidence of the fair value of the undelivered items. Consideration received is allocated among the separate units of accounting based on their respective fair values. Applicable revenue recognition criteria, such as persuasive evidence an arrangement exists, transfer of technology has been completed or services have been rendered, the fee is fixed or determinable, and collectibility is reasonably assured, are then applied to each of the units. Determination of whether persuasive evidence of an arrangement exists, what the period of involvement is, whether transfer of technology has been completed or services have been rendered during the period of involvement, and the ultimate collectibility of payments is based on management's judgments. Should changes in conditions cause management to determine these criteria are not met for certain future transactions, revenue recognized for any reporting period could be adversely affected.

For each source of revenue, we comply with the above revenue recognition criteria in the following manner:

- Nonrefundable upfront license fees received with separable stand-alone values are recognized when intangible property rights are transferred, provided that the transfer of rights is not dependent upon continued efforts by us with respect to the agreement. If the transferred rights do not have stand-alone value, or if objective and reliable evidence of the fair value of the undelivered elements does not exist, the amount of revenue allocable to the transferred rights and the undelivered elements is deferred and amortized over the related performance and service period in which the remaining undelivered elements are provided to our partner. With respect to our prior collaboration agreement with P&G, the $25.0 million nonrefundable upfront license fee was deferred upon receipt, as objective evidence of the fair value of the undelivered elements under the agreement could not be established. The collaboration agreement was terminated on July 2, 2008, at which time the performance and service period effectively ended. Pursuant to the terms of the collaboration agreement, we are under no obligation to return any portion of the upfront license fee to P&G. Accordingly, we recognized the remaining $17.5 million of deferred revenue in the third quarter of 2008 when the collaboration was terminated.

- Service revenue consists of reimbursement of services performed or costs incurred under contractual arrangements. Revenue from such services is based upon 1) negotiated rates for full time equivalent employees that are intended to approximate our anticipated costs, or 2) direct costs incurred. Certain of our costs incurred under the collaboration agreement with P&G were reimbursable, and such reimbursement of costs was recognized as revenue on a gross basis as costs were incurred in accordance with the provisions of EITF 99-19, *Reporting Revenue Gross Versus Net as an Agent*. We have recognized a cumulative total of $2.6 million as of December 31, 2008 as collaboration service revenue in connection with product formulation and manufacturing, patent filing and maintenance, and other development services related to the ATI-7505 program since the beginning of our collaboration with P&G. Effective with P&G's notice of termination of the collaboration agreement in July 2008, we no longer provide these support services to P&G for the development of ATI-7505 and therefore those services will no longer be a source of revenue for us.

- Payments associated with milestones, which are contingent upon future events for which there is reasonable uncertainty as to their achievement at the time the agreement was entered into, are recognized as revenue when these milestones, as defined in the contract, are achieved and provided that no further performance obligations are required of us. Milestone payments are typically triggered either by the progress or results of clinical trials or by external events, such as regulatory approval to market a product or the achievement of specified sales levels, all of which are substantially at risk at the inception of the respective collaboration agreement. In applying this policy, we ascertain certain factors that include: 1) whether or not each milestone is individually substantive, 2) the degree of risk associated with the likelihood of achieving each milestone, 3) whether or not the payment associated with each milestone is reasonably proportional to the substantive nature of the milestone, 4) the level of effort, if any, that is anticipated or actually involved in achieving each milestone and 5) the anticipated timing of the achievement of each milestone in relation to other milestones or revenue elements. Amounts received in advance, if any, are recorded as deferred revenue until the associated milestone is reached. A $1.0 million milestone payment earned for the delivery to P&G of the final trial data related to one of our Phase 2 clinical trials for our ATI-7505 product candidate was recognized as revenue in our consolidated statement of operations for the year ended December 31, 2006.

Expenses Accrued Under Contractual Arrangements with Third Parties

A substantial portion of our ongoing research and development activities are performed under contractual arrangements we enter into with external service providers, including contract research organizations and contract manufacturers. We accrue for costs incurred under these arrangements based on our estimates of services performed and costs incurred as of a particular balance sheet date. Our estimation of expenses incurred is based on facts and circumstances known to us and includes the consideration of factors such as the level of services performed, patient enrollment, administrative costs incurred, and other indicators of services completed. The majority of our service providers invoice us in arrears, and to the extent that amounts invoiced are less than our estimates of expenses incurred, we accrue for those additional costs. Further, based on amounts invoiced to us by our service providers, we may also record certain payments made to those providers as prepaid expenses that will be recognized as expense in future periods as services are rendered. We make these estimates as of each balance sheet date in our consolidated financial statements.

Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in us reporting expenses that are too high or too low. Any such differences may result in adjustments in future periods.

Stock-Based Compensation

On January 1, 2006, or the effective date, we began accounting for stock-based compensation in accordance with Statement of Financial Accounting Standards, or SFAS, No. 123(R), *Share-Based Payment*, or SFAS 123R. Under the provisions of SFAS 123R, compensation expense related to stock-based transactions, including employee and director stock-based awards, is estimated at the date of grant based on the stock award's fair value and is recognized as expense over the requisite service period.

We estimate the fair value of our share-based award to employees and directors using the Black-Scholes option valuation model. The Black-Scholes option valuation model requires the use of certain subjective assumptions. The most significant of these assumptions are our estimates of the expected volatility of the market price of our stock and the expected term of the award. Due to the fact that we are a newly public company, there is limited historical information available to support our estimate of expected volatility required to value our stock-based awards. Prior to September 30, 2008, we used an

average volatility estimate based on a group of companies in the biopharmaceutical industry that are similar in size, stage of life cycle and financial leverage. Beginning with the three months ended December 31, 2008, we began using a blended volatility estimate consisting of our own stock and the average volatility of similar companies in the biopharmaceutical industry. The expected term represents the period of time that stock-based awards are expected to be outstanding. As we have a history of stock option exercise experience for use in the calculation, expected terms are based on historical option exercise experience and employee turnover data. Groups of employees that have similar historical exercise behavior are stratified and considered separately in the calculation. Other assumptions used in the Black-Scholes option valuation model include the risk-free interest rate and expected dividend yield. The risk-free interest rate for periods pertaining to each vesting tranche over the expected term of each option is based on the U.S. Treasury strip yield of a similar duration in effect at the time of grant. We have never paid, and do not expect to pay, dividends in the foreseeable future. The fair value of our stock-based awards was estimated at the date of grant using the following assumptions:

	Year Ended December 31,		
	2008	2007	2006
Expected volatility	73% - 79%	73%	73%
Weighted-average expected term (in years)	5.7	4.0	4.1
Weighted-average risk-free interest rate	2.9%	4.4%	4.8%
Expected dividends	—%	—%	—%
Weighted-average grant date fair value per share	$4.57	$2.41	$1.80

SFAS 123R requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from estimates. Forfeitures are estimated based on our historical experience and separate groups of employees that have similar historical forfeiture behavior are separately considered for expense recognition.

In the absence of a public trading market for our common stock, the fair value of our common stock for the year ended December 31, 2006 was determined by our board of directors in good faith based upon consideration of a number of objective and subjective factors. In February 2006, we performed an in-depth contemporaneous valuation analysis to determine the fair value of our common stock. The approach we used was consistent with the methods outlined in the AICPA Practice Aid *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. Based on our assessment, we concluded that the fair value of our common stock was $3.00 per share as of February 2006. In July 2006, we performed a contemporaneous valuation analysis which resulted in an estimated fair market value per share at that date of $3.30, reflecting an increase in fair value due primarily to our signing of the collaboration agreement with P&G. In October 2006, our board of directors reaffirmed the fair value of our common stock at $3.30 per share. We performed a subsequent contemporaneous valuation analysis to determine the fair market value of our common stock as of July 2007, which resulted in an estimated fair market value per share at that date of $6.00. All equity awards to our employees, including executive officers, and to our directors were granted at no less than the fair market value of our common stock as determined in good faith by our board of directors on the date of grant.

We continue to account for stock options issued to non-employees in accordance with the recognition provisions of SFAS 123 and EITF Issue 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*, using a fair value approach. The compensation costs of these arrangements are subject to re-measurement over the vesting terms as earned. The fair value of non-employee options in the years ended December 31, 2008, 2007 and 2006 were estimated using the Black-Scholes option-pricing model with the following weighted-average assumptions: a dividend yield of zero, volatility of 73%, maximum contractual life of ten years and a risk-free interest rate of 2.9%, 4.4%, and 4.8%, respectively. Compensation expense related to non-employee option grants of $10,000, $13,000 and $20,000 was recorded for the years

ended December 31, 2008, 2007 and 2006, respectively. As of December 31, 2008, options to purchase 573 shares of our common stock remain subject to re-measurement accounting under EITF Issue 96-18.

Total compensation cost that has been recorded in the statement of operations, which includes stock-based compensation expense under SFAS 123R and the value of options issued to non-employees for services rendered, is allocated as follows:

	Year Ended December 31,		
	2008	2007	2006
	(in thousands)		
Research and development:			
Officer compensation	$ 306	$ 115	$ 54
Employee and consultant compensation	624	355	102
Selling, general and administrative:			
Director and officer compensation	958	669	431
Employee and consultant compensation	260	66	41
Total stock-based compensation	$2,148	$1,205	$628

The total compensation cost related to unvested stock option grants not yet recognized as of December 31, 2008 was $1.9 million, and the weighted-average period over which these grants are expected to vest is 1.29 years.

Results of Operations

Comparison of Years Ended December 31, 2008, 2007 and 2006

Revenue

	Year Ended December 31,			2007 to 2008 Change		2006 to 2007 Change	
	2008	2007	2006	$	%	$	%
	(in thousands, except percentages)						
Collaboration services	$ 232	$ 262	$2,116	(30)	(11)%	(1,854)	(88)%
Technology license fees	19,492	3,896	1,623	15,596	400%	2,273	140%
Contractual milestone payments	—	—	1,000	—	—	(1,000)	(100)%
Total revenue	$19,724	$4,158	$4,739	15,584	375%	$ (581)	(12)%

For the year ended December 31, 2008, we generated $19.7 million in revenue related to our collaboration agreement with P&G which was terminated in July 2008. Of the $19.7 million revenue recognized, $232,000 was related to reimbursements for certain pharmaceutical development costs and patent maintenance costs incurred by us on behalf of P&G and $19.5 million was related to the recognition of the deferred upfront license fee received in 2006. The $15.6 million increase in revenue for 2008 as compared to 2007 was primarily due to the recognition of the remaining deferred license fee revenue as a result of the termination of our collaboration agreement with P&G on July 2, 2008.

For the year ended December 31, 2007, we generated $4.2 million in revenue related to our collaboration agreement with P&G. Of the $4.2 million revenue recognized, $262,000 was related to reimbursements for certain pharmaceutical development costs and patent maintenance costs incurred by us on behalf of P&G and $3.9 million was related to recognition of a portion of the deferred upfront license fee received in 2006. The $581,000 decrease in revenue for 2007 as compared to 2006 was primarily due to the absence of milestone revenue in 2007 and the substantive completion of transitional services provided by us to P&G during 2006 resulting in a decrease in revenues related to those services in 2007, partially offset by the recognition of additional deferred license fee revenue in 2007.

Cost of Collaboration Services

	Year Ended December 31,			2007 to 2008 Change		2006 to 2007 Change	
	2008	2007	2006	$	%	$	%
	(in thousands, except percentages)						
Cost of collaboration services	$232	$262	$2,116	$(30)	(11)%	$(1,854)	(88)%

Cost of revenue in 2008, 2007 and 2006 was associated with our collaboration agreement with P&G. For the years ended December 31, 2008 and 2007, costs associated with our collaboration service revenue consisted of third party pass-through costs related to pharmaceutical development, costs of transitional services provided by us, and legal expense incurred for patent filings and maintenance. The $30,000 decrease in cost of revenue for 2008 as compared to 2007 was primarily due to the completion of certain pharmaceutical development activities conducted by third-party vendors. The $1.9 million decrease in cost of revenue for 2007 as compared to 2006 was primarily due to the completion of a majority of the transitional services pursuant to the terms of the P&G collaboration agreement.

Research and Development Expense

	Year Ended December 31,			2007 to 2008 Change		2006 to 2007 Change	
	2008	2007	2006	$	%	$	%
	(in thousands, except percentages)						
Research and development expense	$40,145	$24,994	$23,973	$15,151	61%	$1,021	4%

The $15.2 million increase in research and development expense for 2008 as compared to 2007 was primarily due to:

- a $12.1 million increase in clinical trial expenditures and an increase of $2.7 million in pharmaceutical manufacturing costs related to our ongoing Phase 2/3; clinical trial on tecarfarin, a $1.3 million increase in clinical trial expenditures related to a tecarfarin pilot study, offset by an aggregate $3.3 million reduction in tecarfarin expenditures due to the completion of a proof-of-concept and other studies in 2007,
- a $1.5 million increase in expenditures related to our budiodarone Phase 2b clinical study and a $1.8 million increase in budiodarone non-clinical study expenditures, and
- a $300,000 increase in expenditures related to our other research programs, partially offset by
- a $1.4 million reduction in expenditures related to our ATI-9242 program.

The $1.0 million increase in research and development expense for 2007 as compared to 2006 was primarily due to:

- a $2.2 million increase related to certain non-clinical development costs for our ATI-9242 program, and
- a $2.0 million increase in research and development administrative and other expenses as a result of headcount additions and higher personnel related costs, partially offset by
- a $3.4 million reduction in clinical development expenditures on our ATI-7505 product candidate due to the completion of ARYx funded clinical trial activities in 2006, partially offset by higher clinical development costs related to our tecarfarin and budiodarone programs.

Selling, General and Administrative Expense

	Year Ended December 31,			2007 to 2008 Change		2006 to 2007 Change	
	2008	2007	2006	$	%	$	%
	(in thousands, except percentages)						
Selling, general and administrative expense	$9,764	$7,702	$6,938	$2,062	27%	$764	11%

The increase in selling, general and administrative expense of $2.1 million in 2008 as compared to 2007 was primarily due to a $500,000 increase in stock-based compensation expense, an increase in our administrative staff, increased patent filing costs and fees related to the protection of our intellectual property rights and other costs in support of our expanded research and development and public company administration. The increase in selling, general and administrative expense of $764,000 in 2007 as compared to 2006 was primarily due to increases in personnel and personnel related costs, including stock compensation expense, in support of our expanded research and development and public company administration.

Interest and Other Income, Net

	Year Ended December 31,			2007 to 2008 Change		2006 to 2007 Change	
	2008	2007	2006	$	%	$	%
	(in thousands, except percentages)						
Interest and other income, net	$1,172	$2,591	$2,294	$(1,419)	(55)%	$297	13%

The $1.4 million decrease in interest and other income, net of other expenses, in 2008 as compared to 2007 was primarily due to a $1.2 million decrease in interest income on our investment portfolio as a result of significantly lower short-term interest rates in 2008 and a $133,000 loss on investment in the one auction rate security remaining in our marketable securities portfolio. The increase in interest income and other income, net of other expenses, in 2007 as compared to 2006 was primarily due to the benefit of $440,000 resulting from the reassessment of the estimated fair value of our preferred stock warrant liability, partially offset by lower interest income resulting from lower average cash, cash equivalent and marketable securities on-hand.

Interest Expense

	Year Ended December 31,			2007 to 2008 Change		2006 to 2007 Change	
	2008	2007	2006	$	%	$	%
	(in thousands, except percentages)						
Interest expense	$1,928	$1,352	$1,324	$573	42%	$28	2%

The $573,000 increase in interest expense in 2008 as compared to 2007 was primarily due to an increase in our outstanding debt resulting from a $9.0 million drawdown of our debt facility in February 2008 and an extension of our existing debt facility with Lighthouse Capital Partners V, L.P., or Lighthouse, in October 2008, combined with the amortization of the cost of warrants issued in connection with the drawdown and loan extension. The $28,000 increase in interest expense in 2007 as compared to 2006 was due to the amortization of warrant issuance cost for warrants issued to Lighthouse partially offset by reduced interest costs due to a lower outstanding loan principal balance in 2007.

Cumulative Effect of Change in Accounting Principle

There were no changes in accounting principles for the years ended December 31, 2008 and 2007. We adopted the Financial Accounting Standards Board Staff Position No. 150-5 (FSP 150-5), *Issuer's Accounting under Statement No. 150 for Freestanding Warrants and Other Similar Instruments on Shares*

that are Redeemable, and accounted for the cumulative effect of the change in accounting principle related to certain freestanding warrants to purchase our series convertible preferred stock as of January 1, 2006. For the year ended December 31, 2006, the total impact of the change in accounting principle was an increase to net loss of $5,000, consisting of $10,000 in expense for the cumulative effect upon adoption of FSP 150-5 as of January 1, 2006 reflecting the fair value of the warrants as of that date, partially offset by $5,000 in interest and other income, net, to reflect the decrease in fair value between January 1, 2006 and December 31, 2006.

Liquidity and Capital Resources

	Year Ended December 31,		
	2008	2007	2006
		(in thousands)	
Cash provided by (used in):			
Operating activities	$(45,218)	$(27,705)	$ (4,213)
Investing activities	(2,410)	23,368	(18,512)
Financing activities	28,151	41,153	28,930
Total cash provided (used)	$(19,477)	$ 36,816	$ 6,205

In November 2008, we entered into a securities purchase agreement with certain institutional and other accredited investors pursuant to which we sold and issued, in a private placement, an aggregate of 9,649,545 shares of our common stock, par value $0.001 per share, and warrants to purchase an aggregate of 2,894,864 shares of our common stock. Under the terms of the securities purchase agreement, the price for each share of common stock purchased was $2.20. The total number of shares of common stock underlying each purchaser's warrant was equal to 30% of the total number of shares purchased by such investor in the private placement with a purchase price per underlying share of common stock of $0.125. The combined purchase price of each share of common stock and each warrant to purchase 0.30 of a share of common stock issued in the private placement was $2.2375. The warrants are exercisable for a term of five years from November 14, 2008 and have an exercise price of $2.64 per share. Upon the closing of the private placement, we received gross proceeds of approximately $21.6 million. The net proceeds, after deducting the placement agent fees and other expenses of approximately $1.2 million, were approximately $20.4 million.

In November 2007, we completed our initial public offering of common stock and received aggregate net proceeds of approximately $43.8 million. Prior to our initial public offering, we financed our operations primarily through the private placement of equity securities, receiving aggregate net proceeds from such sales totaling $110.7 million. In August 2006, we received a $25.0 million nonrefundable upfront license fee in connection with our collaboration agreement with P&G.

As of December 31, 2008, we had $45.0 million in cash, cash equivalents and marketable securities. We believe that our cash, cash equivalents and marketable securities on hand as of December 31, 2008 will be sufficient to fund our operations through the end of the first quarter of 2010. However, since our inception, we have incurred significant net operating losses and, as of December 31, 2008, we had an accumulated deficit of $153.9 million. We have not achieved sustainable profitability and anticipate that we will continue to incur significant net losses for the next several years. Additionally, there can be no assurance that we will achieve positive cash flow in the foreseeable future or at all.

Due to adverse developments in global financial markets, we may experience reduced liquidity with respect to certain of our investments in cash equivalents and marketable securities. These investments are generally held to maturity, which is less than one year with the exception of our remaining holding in an auction rate instrument. If the need arose to liquidate such securities before maturity, we may experience realized losses upon liquidation. However, due to the short duration of all but one of the

securities in our portfolio, we believe that we have the ability to hold all but one of those securities to maturity when they will be redeemed at par value.

Net cash used in operating activities was $45.2 million, $27.7 million and $4.2 million in the years ended December 31, 2008, 2007 and 2006, respectively. Net cash used in each of these periods was primarily due to the funding of our operating costs and expenses in connection with the conduct of our research, development and administrative activities, partially offset by the receipt of a $25.0 million nonrefundable upfront license fee payment and other revenue from P&G in the year ended December 31, 2006.

Net cash used in investing activities was $2.4 million and $18.5 million in the years ended December 31, 2008 and 2006, respectively. Net cash provided by investing activities was $23.4 million in the year ended December 31, 2007. Investing activities consist primarily of purchases and sales of marketable securities and capital asset purchases. Purchases of property, equipment and leasehold improvements were $644,000, $499,000, and $1.0 million in the years ended December 31, 2008, 2007 and 2006, respectively.

Net cash provided by financing activities was $28.2 million, $41.2 million, and $28.9 million in the years ended December 31, 2008, 2007 and 2006, respectively. Proceeds from financing activities consist primarily of the net proceeds from the sale of our common and preferred stock as well as long-term debt financing arrangements, net of principal payments on outstanding debt. In November 2008, we completed a private placement of equity and received aggregate net proceeds of approximately $20.4 million pursuant to a securities purchase agreement with certain institutional and other accredited investors. Also in 2008, we utilized the $9.0 million loan facility extended to us by Lighthouse and secured a $1.0 million equipment financing arrangement with Oxford Finance Corporation. In 2007, we completed our initial public offering of equity securities and received aggregate net proceeds of approximately $43.8 million. In 2006, we received net proceeds from the issuance of preferred stock of $30.2 million.

On December 31, 2008, we entered into a master loan agreement with Oxford Finance Corporation, or Oxford, for a secured equipment line of credit equal to $1.5 million. The loan agreement provides for a 36 month repayment term from each date of funding. We currently have one promissory note outstanding under the agreement for $1.0 million at a fixed interest rate of 11.50%. The arrangement provides for monthly payments of principal and interest through January 2012. Under the agreement, events of default include non-payment of amounts owed, a non-permitted sale or transfer of collateral, misrepresentations under the agreement, a change in business, ownership and location, a merger or acquisition, bankruptcy and other standard provisions. The agreement contains no financial covenants. Funds borrowed under the agreement are secured by specific equipment assets and Oxford has a first priority security interest in those assets. Any mandatory or voluntary prepayment of the amount borrowed will trigger a prepayment penalty of 5% of the outstanding principal balance if prepayment is made before the 19th month from date of funding, 3% of the outstanding principal balance if prepayment is made between the 19th and 24th months from date of funding, and 2% of the outstanding principal balance if prepayment is made after the 24th month from the date of funding. As of December 31, 2008, a loan principal balance of $1.0 million remained outstanding with Oxford.

On March 28, 2005, we entered into a loan agreement with Lighthouse Capital Partners, or Lighthouse, that was amended on October 19, 2007 and on October 17, 2008. The original agreement provided for up to $10.0 million in debt financing. The agreement was amended in October 2007 to provide for up to $9.0 million of additional financing. The original loan agreement provided for a 42 month repayment term which began on April 1, 2006. The original outstanding promissory note provides for monthly cash payments of principal and interest at a stated interest rate of 9.75% per annum through September 2009 and a balloon interest payment of $1.2 million in September 2009. The agreement also allows for prepayment of principal with respect to the original promissory note

whereupon the $1.2 million balloon interest payment is accelerated and due at the time of prepayment of the outstanding loan balance. The October 2007 amended loan agreement provides that the additional $9.0 million borrowed under a separate promissory note is subject to an interest-only period expiring in September 2008 followed by 36 equal monthly payments of principal and interest at an interest rate to be fixed as of October 1, 2008. Pursuant to the October 2007 amended loan agreement, we are obligated to make a balloon interest payment of $675,000 at time of prepayment or at loan maturity. Any mandatory or voluntary prepayment of the $9.0 million borrowed will trigger a prepayment penalty equal to 3% of the outstanding principal balance being prepaid. The October 2008 loan amendment provides for an interest-only monthly repayment period through June 30, 2009 with respect to our outstanding loan obligation of $12.2 million with Lighthouse at a stated interest rate of 9.75% per annum. Thereafter, we are obligated to repay $3.2 million of the total loan obligation over a 12-month period commencing from July 1, 2009 on an amortized basis, consisting of monthly principal and interest payments, at a stated interest rate of 9.75% per annum through June 30, 2010, with the original balloon interest payment of $1.2 million payable in June 2010. In connection with the October 2008 loan amendment, we agreed to pay Lighthouse a restructure fee of $200,000 which is payable upon the earlier of a prepayment or maturity of the $3.2 million portion of our total outstanding loan obligation in June 2010. The remaining $9.0 million loan obligation is required to be repaid over 36 months commencing from July 1, 2009 on an amortized basis, consisting of monthly principal and interest payments, at a stated interest rate of 12.25% per annum through June 30, 2012, with a balloon interest payment of $675,000 payable in June 2012.

The loan agreement with Lighthouse contains no financial covenants and no material adverse change clause. Default terms under the loan agreement include borrower default upon nonpayment of amounts due, noncompliance with loan covenants, misrepresentations under the agreement, bankruptcy and other standard provisions. Under the terms of the loan agreement, as amended, Lighthouse has a first priority security interest in all of our tangible and intangible assets except for the following: (i) assets specifically identified and used as security for equipment loans, (ii) any first priority interest Comerica Bank may have in our operating bank accounts at Comerica Bank, (iii) any certificates of deposit that are used as security for letters of credit issued to third parties, (iv) any interest or claims our landlord may have in certain leasehold improvements and (v) our intellectual property assets. The loan agreement precludes us from incurring additional material debt amounts with the exception of up to an aggregate of $3.0 million in equipment financing and up to $500,000 in other indebtedness. As of December 31, 2008, we had fully utilized the total debt commitment available under the loan agreement, as amended, and had a total unpaid principal balance outstanding of $12.2 million.

Our debt financing with General Electric Capital Corporation, or GE, provides for a 42 month repayment term from each date of funding, a stated interest rate that is based on an average of the Federal Reserve's three-year and five-year Treasury Constant Maturities rate plus a spread of 766 basis points and standard default provisions. We currently have three promissory notes outstanding under the loan agreement with GE with stated interest rates ranging from 11.73% to 12.89%. Under the loan agreement with GE, events of default include nonpayment of amounts owed, a non-permitted sale or transfer of collateral, misrepresentations under the agreement, bankruptcy and other standard provisions. Funds borrowed under the loan agreement with GE are secured by specific equipment assets and GE has a first priority security interest in those assets. The loan agreement with GE contains no financial covenants and no warrants to purchase shares of our capital stock were issued to GE in connection with the debt financing. The loan agreement provides for monthly payments of principal and interest through July 2010. As of December 31, 2008, the total unpaid principal balance outstanding under our existing GE equipment loans was $351,000.

Our future funding requirements will depend upon many factors, including:

- the scope, rate of progress, results and cost of our preclinical testing, clinical trials and other research and development activities;

- the terms and timing of any collaborative, licensing and other arrangements that we may establish;
- the cost, timing and outcomes of regulatory approvals;
- the number and characteristics of product candidates that we pursue;
- the cost and timing of establishing sales, marketing and distribution capabilities;
- the cost of establishing clinical and commercial supplies of our product candidates and any products that we may develop;
- the timing, receipt and amount of sales or royalties generated, if any, from our product candidates; and
- the cost of preparing, filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights.

We will need to raise additional funds to support our operations, and such funding may not be available to us on acceptable terms, or at all. If we are unable to raise additional funds when needed, we may not be able to continue development of our product candidates or we could be required to delay, scale back or eliminate some or all of our research and development programs. We may seek to raise any necessary additional funds through public or private equity, debt financings, collaborative arrangements with corporate partners or other sources. If we raise additional funds through the issuance of debt securities, these securities could have rights that are senior to the holders of our common stock and could contain covenants that restrict our operations. If we raise additional funds by issuing equity securities, dilution to our existing stockholders may result. In addition, if we raise additional funds through the sale of equity securities, new investors could have rights superior to our existing stockholders. To the extent that we raise additional capital through licensing arrangements or arrangements with collaborative partners, we may be required to relinquish, on terms that are not favorable to us, rights to some of our technologies or product candidates that we would otherwise seek to develop or commercialize ourselves for a higher profit margin. The terms of future financings may restrict our ability to raise additional capital, which could delay or prevent the further development of our product candidates or commercialization of our products. Our failure to raise capital when needed may harm our business and operating results.

Contractual Obligations

Our contractual obligations at December 31, 2008 were as follows:

	Payments Due by Period				
Contractual Obligations	**Total**	**Less Than 1 Year**	**1-3 Years**	**3-5 Years**	**After 5 Years**
			(in thousands)		
Short and long-term debt (including interest)	$18,291	$4,737	$11,064	$2,490	$—
Operating lease obligations	4,125	961	1,998	1,166	—
Total contractual obligations	$22,416	$5,698	$13,062	$3,656	$—

The table above reflects only payment obligations that are fixed and determinable. Our contractual obligations as of December 31, 2008 include short and long-term debt obligations to Lighthouse, GE and Oxford, operating lease obligations for our facility in Fremont, California, obligations for certain leased equipment, and other obligations including minimum contractual obligations for research and development agreements containing specific cancellation terms.

Recent Accounting Pronouncements

In November 2008, the EITF reached a consensus-for-exposure on EITF Issue No. 08-1, *Revenue Arrangements with Multiple Deliverables*, or EITF 08-1, which was subsequently ratified by the FASB and is currently subject to a 60-day public comment period. The EITF discussed a model that would amend EITF 00-21 to require an entity to estimate the selling price of the undelivered element of accounting and allocate the arrangement consideration using the residual method when the entity does not have vendor-specific objective evidence or acceptable third-party evidence of the selling price for the undelivered element of accounting. If confirmed, EITF 08-1 will be effective prospectively for revenue arrangements entered into or modified in the fiscal years beginning after December 15, 2009. As we do not currently have any revenue arrangement with multiple deliverables, we will evaluate the impact of EITF 08-1 for revenue arrangement that we may enter into in the future.

In June 2008, the EITF reached a consensus on EITF Issue No. 07-5, *Determining Whether an Instrument (or Embedded Feature) is Indexed to an Entity's Own Stock*, or EITF 07-5. EITF 07-5 provides guidance on how to determine if certain instruments (or embedded features) are considered indexed to a company's own stock, including instruments similar to warrants to purchase the company's stock. EITF 07-5 requires companies to use a two-step approach to evaluate an instrument's contingent exercise provisions and settlement provisions in determining whether the instrument is considered to be indexed to its own stock and therefore exempt from the application of SFAS No. 133, *Accounting for Derivative Instruments and Hedging Activities*. Although EITF 07-5 is effective for fiscal years beginning after December 15, 2008, any outstanding instrument at the date of adoption will require a retrospective application of the accounting through a cumulative effect adjustment to retained earnings upon adoption. We do not expect the adoption of EITF 07-5 to have a material impact on either our consolidated financial position or results of operations.

In May 2008, the FASB issued SFAS No. 162, *The Hierarchy of Generally Accepted Accounting Principles*, or SFAS 162. SFAS 162 identifies the sources of accounting principles and the framework for selecting the principles to be used in the preparation of financial statements of nongovernmental entities that are presented in conformity with GAAP. SFAS 162 is effective 60 days following the Securities Exchange Commission's approval of the Public Company Accounting Oversight Board amendments to AU Section 411, *The Meaning of Present Fairly in Conformity with Generally Accepted Accounting Principles.* We do not expect the adoption of SFAS 162 to have a material impact on either our consolidated financial position or results of operations.

In December 2007, the FASB ratified EITF Issue No. 07-1, *Accounting for Collaborative Arrangements*, or EITF 07-1. EITF 07-1 defines collaborative arrangements and establishes reporting requirements for transactions between participants in a collaborative arrangement and between participants in the arrangement and third parties. EITF 07-1 also establishes the appropriate income statement presentation and classification for joint operating activities and payments between participants, as well as the sufficiency of the disclosures related to these arrangements. EITF 07-1 is effective for fiscal years beginning after December 15, 2008. We are currently evaluating the impact of EITF 07-1 on our consolidated financial position, results of operations and cash flows.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities—Including an amendment of FASB Statement No. 115*, or SFAS 159. SFAS 159 permits entities to make an irrevocable election to measure certain financial instruments and other assets and liabilities at fair value on an instrument-by-instrument basis. Unrealized gains and losses on items for which the fair value option is elected will be recognized in net earnings at each subsequent reporting date. The adoption of SFAS 159 did not have an impact on our consolidated financial statements in 2008 as we did not elect the fair value option.

Off-Balance Sheet Arrangements

Since inception, except for standard operating leases, we have not engaged in any off-balance sheet arrangements, including the use of structured finance, special purpose entities or variable interest entities.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Interest Rate and Market Risk

Our exposure to interest rate risk is related to our cash, cash equivalents and investments. We do not use derivative financial instruments in our investment portfolio. The goal of our investment policy is to preserve our capital to fund operations. We also seek to maximize income from such investments without assuming material risks. To achieve our goal, we maintain a marketable securities portfolio of investments in various debt instruments. As of December 31, 2008, we had cash, cash equivalents and marketable securities of $45.0 million individually having maturities or interest rate reset periods of less than one year. A decline in short-term interest rates over time would reduce our interest income from our short-term investments. A decrease in interest rates of 100 basis points would cause a corresponding decrease in our annual interest income of approximately $260,000. Due to the composition and expected duration of our short-term investment portfolio, we do not expect a 100 basis point change in short-term interest rates to have a material impact on the fair value of our short-term investments. Since our inception, unrealized and realized losses in our marketable securities portfolio arising from interest rate fluctuations have not been material. We actively monitor changes in the interest rate environment to assess its potential impact on our investment portfolio.

As of December 31, 2008, a single auction rate security with an estimated fair value of $367,000 remained in our marketable securities portfolio. As of December 31, 2008, the security had limited market liquidity. While we believe that the limited liquidity for this instrument is due to temporary market conditions, we have revalued our estimate of fair value for this instrument in light of current market conditions. Based on our revaluation, we recorded a $133,000 loss in our consolidated statement of operations as of December 31, 2008, representing a 26.6% discount to par value for the instrument.

As of December 31, 2007, our marketable securities portfolio included $4.7 million of auction rate securities. Subsequent to at least one successful auction with respect to each of these securities following December 31, 2007, we experienced failed auctions for $3.4 million of the auction rate securities held in our portfolio. All of the auction rate securities were, as of December 31, 2007, rated AAA by a reputable rating agency.

Foreign Currency Risk

In conducting our business, we occasionally enter into contractual arrangements with third-party research and development service providers having operations in locations outside of the United States. To the extent that payments for those services are contractually required to be made in currencies other than the U.S. dollar, we may be subject to exposure to fluctuations in foreign exchange rates. To date, the effect of our exposure to these fluctuations in foreign exchange rates has not been material, and we do not expect it to become material in the foreseeable future. We do not hedge our foreign currency exposures and have not used derivative financial instruments for speculation or trading purposes.

Item 8. Financial Statements and Supplementary Data

The financial statements required by this Item are set forth beginning at page F-1 of this report and are incorporated herein by reference.

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

None.

Item 9A(T). Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

As of December 31, 2008, an evaluation was performed by management, with the participation of our Chief Executive Officer and our Chief Financial Officer, of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15-d and 15(e) under the Securities Exchange Act of 1934, as amended, or the "Exchange Act). Disclosure controls and procedures are controls and procedures that are designed to ensure that information required to be disclosed in our reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms. Based on that evaluation, our CEO and CFO have concluded that, subject to the limitations described below, our disclosure controls and procedures were effective as of December 31, 2008.

Limitations on the Effectiveness of Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal controls will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, control may become inadequate because of changes in conditions, or deterioration of the degree of compliance with the policies or procedures. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Management's Report on Internal Control over Financial Reporting for 2008

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) to provide reasonable assurance regarding the reliability of our financial reporting and preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles.

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2008. Management based its assessment on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Management's assessment included evaluation of elements such as the design and operating effectiveness of key financial reporting controls, process documentation, accounting policies and our overall control environment.

Based on this assessment, management has concluded that our internal control over financial reporting was effective as of December 31, 2008 to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with U.S. generally accepted accounting principles.

This annual report does not include an attestation report of our independent registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our independent registered public accounting firm pursuant to temporary rules of the Securities and Exchange Commission that permit us to provide only management's report in this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

No change was made in our internal control over financial reporting during the quarter ended December 31, 2008 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item with respect to our executive officers may be found under the caption entitled "Executive Officers of the Registrant" in Item 1 of this Annual Report on Form 10-K. The information required by this item relating to our directors and nominees for director may be found under the section entitled "Proposal 1—Election of Directors" in the proxy statement for our 2009 annual meeting of stockholders, which will be filed with the Securities and Exchange Commission within 120 days of the end of our year ended December 31, 2008. Such information is incorporated herein by reference. The information required by this item relating to our audit committee, audit committee financial expert and procedures by which stockholders may recommend nominees to our board of directors, may be found under the section entitled "Corporate Governance and Board Matters" appearing in the proxy statement for our 2009 annual meeting of stockholders and is incorporated herein by reference. Information regarding compliance with Section 16(a) of the Securities Exchange Act may be found under the section entitled "Section 16(a) Beneficial Ownership Reporting Compliance" appearing in the proxy statement for our 2009 annual meeting of stockholders and is incorporated herein by reference.

In 2007, we adopted a code of conduct that applies to all employees, executive officers, directors and consultants, and incorporates guidelines designed to deter wrongdoing and to promote the honest and ethical conduct and compliance with applicable laws and regulations. In addition, the code of conduct incorporates our guidelines pertaining to topics such as conflicts of interest and workplace behavior. We have posted the text of our code of conduct on our website at *http://www.aryx.com* under the section entitled "Investor Relations/Corporate Governance". In addition, we intend to promptly disclose (1) the nature of any amendment to our code of conduct that applies to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions and (2) the nature of any waiver, including an implicit waiver, from a provision of our code of conduct that is granted to one of these specified officers, the name of such person who is granted the waiver and the date of the waiver on our website in the future.

Item 11. Executive Compensation

The information required by this Item is included in the proxy statement for our 2009 annual meeting of stockholders under the sections entitled "Executive Compensation," "Director Compensation," "Corporate Governance and Board Matters—Compensation Committee Interlocks and Insider Participation" and "Corporate Governance and Board Matters—Compensation Committee Report" and is incorporated herein by reference.

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

The information required by this Item relating to security ownership of certain of our beneficial owners and our management is included in the proxy statement for our 2009 annual meeting of stockholders under the section entitled "Security Ownership of Certain Beneficial Owners and Management" and is incorporated herein by reference.

The following table provides certain information with respect to all of our equity compensation plans in effect as of December 31, 2008:

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders:			
2001 Equity Incentive Plan(1)	1,607,123	$2.10	—
2007 Equity Incentive Plan(2)	672,992	7.15	683,154
2007 Non-Employee Directors' Stock Option Plan(3)	116,662	7.85	150,000
2007 Employee Stock Purchase Plan(4)	—	—	322,369
Equity compensation plans not approved by security holders:	—	—	—
Total:	2,396,777		1,155,523

(1) As of December 31, 2008, options to purchase 1,607,123 shares of common stock remained outstanding under the 2001 Equity Incentive Plan, or 2001 Plan. In addition, 68,333 shares subject to stock bonus awards and restricted stock awards have been granted under the 2001 Plan, of which 15,273 shares were subject to our right of repurchase as of December 31, 2008. Subsequent to the initial public offering of our common stock in November 2007, no further options will be granted under the 2001 Plan and all shares of common stock remaining and available for future issuance were cancelled; however, all outstanding options continue to be governed by their existing terms.

(2) As of December 31, 2008, an aggregate of 1,356,146 shares of common stock were reserved for issuance under the 2007 Equity Incentive Plan, or 2007 Plan, of which 683,154 remained available for future issuance. The number of shares reserved for issuance under the 2007 Plan automatically increases on each January 1st, from January 1, 2008 through and including January 1, 2017, by the lesser of (a) 4.0% of the total number of shares of our common stock outstanding on December 31st of the proceeding calendar year or (b) a lesser number of shares of common stock determined by our Board prior to the start of a calendar year for which an increase applies. On January 1, 2009, the number of shares reserved for issuance under the 2007 Plan increased by 1,093,555 shares pursuant to this automatic share increase provision.

(3) As of December 31, 2008, an aggregate of 266,662 shares of common stock were reserved for issuance under our 2007 Non-Employee Directors' Stock Option Plan, or the 2007 Directors' Plan, of which 150,000 remained available for future issuance. The number of shares reserved for issuance under the 2007 Directors' Plan automatically increases on each January 1st, from January 1, 2008 through and including January 1, 2017, by the excess of (a) the number of shares of common stock subject to options granted during the preceding calendar year under the 2007 Directors' Plan, over (b) the number of shares added back to the share reserve under the 2007 Directors' Plan during the preceding calendar year. On January 1, 2009, the number of shares reserved for issuance under the 2007 Directors' Plan increased by 16,666 shares pursuant to this automatic share increase provision.

(4) As of December 31, 2008, an aggregate of 322,369 shares of common stock were reserved for issuance under our 2007 Employee Stock Purchase Plan, or the ESPP, all of which remained available for future issuance. The number of shares reserved for issuance under the ESPP

automatically increases on each January 1st, from January 1, 2008 through and including January 1, 2017, by the lesser of (a) 1.0% of the total number of shares of our common stock outstanding on December 31st of the preceding calendar year or (b) a lesser number of shares of common stock determined by our Board prior to the start of a calendar year for which an increase applies. On January 1, 2009, the number of shares reserved for issuance under the ESPP increased by 273,389 shares pursuant to this automatic share increase provision. As of the date hereof, we have not commenced any offerings under the ESPP and, as a result, no shares of common stock have been purchased yet under such plan.

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

The information required by this Item is incorporated by reference to the section of the proxy statement for our 2009 annual meeting of stockholders under the sections entitled "Certain Relationships and Related Transactions" and "Corporate Governance and Board Matters—Independence of ARYx Therapeutics' Board of Directors" and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

The information required by this Item is incorporated by reference to the section of the proxy statement for our 2009 annual meeting of stockholders under the section entitled "Proposal 2—Ratification of Selection of Independent Registered Public Accounting Firm" and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this Form 10-K:

1. Financial Statements

2. Financial Statement Schedules

All other financial statement schedules are not required under the related instructions or are inapplicable or presented in the notes to the consolidated financial statements and therefore have been omitted.

3. Exhibits

Exhibit Number	Description of Document
3.1(9)	Amended and Restated Certificate of Incorporation of ARYx Therapeutics, Inc., or ARYx, as currently in effect.
3.2(1)	Bylaws of ARYx.
4.1	Reference is made to Exhibits 3.1 and 3.2 above.
4.2(2)	Specimen Common Stock Certificate.
4.3(3)	Form of Warrant to purchase shares of Series C preferred stock, issued September 3, 2003.
4.4(3)	Form of Warrant to purchase shares of Series C preferred stock, issued December 23, 2002.
4.5(3)	Form of Warrant to purchase shares of Series D preferred stock, issued March 28, 2005 to Lighthouse Capital Partners V, L.P. ("Lighthouse").
4.6(2)	Amended and Restated Investor Rights Agreement by and between ARYx and certain of its securityholders, dated October 22, 2007.
4.7(4)	Form of Warrant to purchase shares of Series E preferred stock, issued October 19, 2007 to Lighthouse.
4.8(6)	Form of Warrant to purchase shares of common stock, issued October 17, 2008 to Lighthouse.
4.9(7)	Registration Rights Agreement by and between ARYx and several investors, dated November 11, 2008.
4.10(7)	Form of Warrant to purchase shares of common stock, issued November 11, 2008 to several purchasers.
4.11	Form of Warrant to purchase shares of common stock, issued December 31, 2008 to Oxford Financial Corporation.

Exhibit Number	Description of Document
10.1(3)+	Form of Indemnity Agreement between ARYx and its executive officers and directors.
10.2(3)	Lease Agreement by and between ARYx and Trinet Essential Facilities X, Inc., dated November 16, 2004, as amended on June 17, 2005.
10.3(3)+	2001 Equity Incentive Plan.
10.4(3)+	Form of Option Agreement, Form of Option Grant Notice and Form of Exercise Notice under 2001 Equity Incentive Plan.
10.5(4)+	2007 Equity Incentive Plan.
10.6(4)+	Form of Option Agreement, Form of Option Grant Notice and Form of Exercise Notice under 2007 Equity Incentive Plan.
10.7(4)+	2007 Non-Employee Directors' Stock Option Plan.
10.8(4)+	Form of Option Agreement, Form of Option Grant Notice and Form of Exercise Notice under the 2007 Non-Employee Directors' Stock Option Plan.
10.9(4)+	2007 Employee Stock Purchase Plan.
10.10(3)+	Employment Agreement between ARYx and Paul Goddard, dated September 1, 2005.
10.11(3)+	Employment Agreement between ARYx and Peter G. Milner, dated September 30, 2005.
10.12(3)+	Employment Agreement between ARYx and John Varian, dated November 17, 2003.
10.13(3)+	Employment Agreement between ARYx and Pascal Druzgala, dated July 23, 2002.
10.14(3)+	Employment Agreement between ARYx and Daniel Canafax, dated January 31, 2007.
10.15(3)+	Employment Agreement between ARYx and David Nagler, dated July 15, 2003.
10.16(4)+	Non-Employee Director Compensation Arrangements.
10.17(2)#	License, Development and Commercialization Agreement between ARYx and Procter & Gamble Pharmaceuticals, Inc. ("P&G"), dated June 30, 2006 (the "P&G Agreement").
10.18(3)	Master Security Agreement by and between General Electric Capital Corporation and ARYx, dated August 24, 2005, as amended on August 31, 2005.
10.19(4)	Loan and Security Agreement No. 4521 by and between Lighthouse and ARYx, dated March 28, 2005, as amended on April 22, 2005, July 25, 2005, June 27, 2006, August 30, 2007 and October 19, 2007 (the "Lighthouse Agreement").
10.20(5)+	Compensation Information for Named Executive Officers.
10.21(9)	Amendment No. 6 to the Lighthouse Agreement by and between Lighthouse and ARYx, dated February 22, 2008.
10.22(8)	Amendment to the P&G Agreement by and between ARYx and P&G, dated February 29, 2008.
10.23(6)	Amendment No. 7 to the Lighthouse Agreement by and between Lighthouse and ARYx, dated October 17, 2008.
10.24(7)	Securities Purchase Agreement by and between ARYx and several purchasers, dated November 11, 2008.

Exhibit Number	Description of Document
10.25+	Amendment No. 1 to Employment Agreement between ARYx and Paul Goddard, dated December 19, 2008.
10.26+	Amendment No. 1 to Employment Agreement between ARYx and Peter G. Milner, dated December 19, 2008.
10.27+	Amendment No. 1 to Employment Agreement between ARYx and John Varian, dated December 19, 2008.
10.28+	Amendment No. 1 to Employment Agreement between ARYx and Pascal Druzgala, dated December 19, 2008.
10.29+	Amendment No. 1 to Employment Agreement between ARYx and Daniel Canafax, dated December 19, 2008.
10.30	Loan Agreement by and between ARYx and Oxford Financial Corporation, dated December 31, 2008.
21.1(3)	Subsidiaries of ARYx.
23.1	Consent of Independent Registered Public Accounting Firm.
24.1	Power of Attorney. Reference is made to the signature page.
31.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act, as amended.
31.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act, as amended.
32.1	Certification of the Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

+ Indicates management contract or compensatory plan.

Confidential treatment has been requested with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Securities and Exchange Commission (the "SEC").

(1) Previously filed as Exhibit 3.3 to our Registration Statement on Form S-1, as amended (File No. 333-145813), filed with the SEC on August 30, 2007 and incorporated herein by reference.

(2) Previously filed as the like-numbered exhibit to our Registration Statement on Form S-1/A, as amended (File No. 333-145813), filed with the SEC on November 5, 2007 and incorporated herein by reference.

(3) Previously filed as the like-numbered exhibit to our Registration Statement on Form S-1, as amended (File No. 333-145813), filed with the SEC on August 30, 2007 and incorporated herein by reference.

(4) Previously filed as the like-numbered exhibit to our Registration Statement on Form S-1/A, as amended (File No. 333-145813), filed with the SEC on October 23, 2007 and incorporated herein by reference.

(5) Previously filed as the like-numbered exhibit to our Current Report on Form 8-K (File No. 001-33782), filed with the SEC on February 24, 2009 and incorporated herein by reference.

(6) Previously filed as the like-numbered exhibit to our Current Report on Form 8-K (File No. 001-33782), filed with the SEC on October 23, 2008 and incorporated herein by reference.

(7) Previously filed as the like-numbered exhibit to our Current Report on Form 8-K (File No. 001-33782), filed with the SEC on November 12, 2008 and incorporated herein by reference.

(8) Previously filed as the like-numbered exhibit to our Quarterly Report on Form 10-Q (File No. 001-33782), filed with the SEC on May 13, 2008 and incorporated herein by reference.

(9) Previously filed as the like-numbered exhibit to our Annual Report on Form 10-K (File No. 001-33782), filed with the SEC on March 17, 2008 and incorporated herein by reference.

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.

ARYx Therapeutics, Inc.

By: /s/ PAUL GODDARD, PH.D.
Paul Goddard, Ph.D.
Chairman of the Board and Chief Executive Officer

Date: March 26, 2009

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Paul Goddard and John Varian, and each of them, as his or her true and lawful attorneys-in-fact and agents, each with the full power of substitution for him or her, and in his or her name and in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that each of said attorneys-in-fact and agents, and any of them or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

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:

Signatures	Title	Date
/s/ PAUL GODDARD, PH.D. Paul Goddard, Ph.D.	Chief Executive Officer, Chairman and Director *(Principal Executive Officer)*	March 26, 2009
/s/ JOHN VARIAN John Varian	Chief Operating Officer and Chief Financial Officer *(Principal Financial Officer)*	March 26, 2009
/s/ JASON BARKER Jason Barker	Senior Director of Finance *(Principal Accounting Officer)*	March 26, 2009
/s/ PETER G. MILNER, M.D. Peter G. Milner, M.D.	Director	March 26, 2009

Signatures	Title	Date
/s/ DAVID BEIER David Beier	Director	March 26, 2009
/s/ LARS EKMAN, M.D., PH.D. Lars Ekman, M.D., Ph.D.	Director	March 26, 2009
/s/ KEITH LEONARD Keith Leonard	Director	March 26, 2009
/s/ HERM ROSENMAN Herm Rosenman	Director	March 26, 2009
/s/ PAUL SEKHRI Paul Sekhri	Director	March 26, 2009
/s/ NICHOLAS SIMON Nicholas Simon	Director	March 26, 2009

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders
ARYx Therapeutics, Inc.

We have audited the accompanying consolidated balance sheets of ARYx Therapeutics, Inc. as of December 31, 2008 and 2007, and the related consolidated statements of operations, stockholders' equity (deficit), and cash flows for each of the three years in the period ended December 31, 2008. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. We were not engaged to perform an audit of the Company's internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of ARYx Therapeutics, Inc. at December 31, 2008 and 2007, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2008, in conformity with U.S. generally accepted accounting principles.

/s/ Ernst & Young LLP

Palo Alto, California
March 26, 2009

ARYX THERAPEUTICS, INC.

CONSOLIDATED BALANCE SHEETS

(in thousands, except share and per share amounts)

	December 31, 2008	December 31, 2007
ASSETS		
Current assets:		
Cash and cash equivalents	$ 35,999	$ 55,476
Marketable securities	8,588	7,640
Restricted cash—current	150	150
Prepaid research and development expenses	381	582
Other prepaid and current assets	732	1,051
Total current assets	45,850	64,899
Restricted cash	1,203	903
Property and equipment, net	3,198	3,655
Other assets	897	168
Total assets	$ 51,148	$ 69,625
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 2,454	$ 1,369
Accrued compensation	494	1,055
Accrued research and development expenses	3,832	2,510
Current portion of notes payable	3,404	3,536
Current portion of deferred lease credit	333	333
Current portion of deferred revenue	—	3,913
Other accrued liabilities	502	741
Total current liabilities	11,019	13,457
Deferred lease credit	1,436	1,793
Notes payable	11,278	3,444
Deferred revenue	—	15,584
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.001 par value; 10,000,000 shares authorized and none outstanding		
Common stock, $0.001 par value; 150,000,000 shares authorized; 27,338,877 and 17,653,648 shares issued and outstanding at December 31, 2008 and 2007, respectively	27	18
Additional paid-in capital	181,285	158,053
Accumulated other comprehensive loss	45	—
Accumulated deficit	(153,942)	(122,724)
Total stockholders' equity	27,415	35,347
Total liabilities and stockholders' equity	$ 51,148	$ 69,625

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

ARYX THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

(in thousands, except per share amounts)

	Year Ended December 31,		
	2008	2007	2006
Revenues:			
Collaboration services	$ 232	$ 262	$ 2,116
Technology license fees	19,492	3,896	1,623
Contractual milestone payments	—	—	1,000
Total revenues	19,724	4,158	4,739
Costs and expenses:			
Cost of collaboration service revenue	232	262	2,116
Research and development	40,145	24,994	23,973
Selling, general and administrative	9,764	7,702	6,938
Total costs and expenses	50,141	32,958	33,027
Loss from operations	(30,417)	(28,800)	(28,288)
Interest and other income, net	1,127	2,591	2,294
Interest expense	(1,928)	(1,352)	(1,324)
Loss before cumulative effect of change in accounting principle	(31,218)	(27,561)	(27,318)
Cumulative effect of change in accounting principle	—	—	(10)
Net loss	(31,218)	(27,561)	(27,328)
Basic and diluted net loss per share	$ (1.65)	$ (8.24)	$ (26.84)
Weighted average shares used to compute basic and diluted net loss per share	18,964	3,346	1,018

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

ARYX THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)

(in thousands, except share and per share amounts)

	Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Deferred Stock-Based Compensation	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amounts	Shares	Amounts					
Balances at December 31, 2005	**8,556,775**	**81,355**	**995,183**	**1**	**1,044**	**(280)**	**(18)**	**(67,835)**	**(67,088)**
Reclassification of Series C and D preferred stock warrants upon adoption of FASB Staff Position No. FAS 150-5	—	(848)	—	—	—	—	—	—	—
Issuance of Series E convertible preferred stock for cash at $10.80 per share in January 2006, net of issuance costs of $281	2,818,447	30,158	—	—	—	—	—	—	—
Issuance of common stock to consultants upon exercise of stock options for cash at $0.90 to $1.80 per share	—	—	11,532	—	13	—	—	—	13
Issuance of common stock to employees upon exercise of stock options for cash at $0.90 to $1.80 per share	—	—	24,696	—	46	—	—	—	46
Issuance of restricted common stock to an officer in exchange for services	—	—	25,000	—	72	—	—	—	72
Reversal of deferred stock-based compensation upon adoption of Statement of Financial Accounting Standards (SFAS) No. 123(R)	—	—	—	—	(280)	280	—	—	—
Stock-based compensation	—	—	—	—	556	—	—	—	556
Comprehensive loss:									
Unrealized gain on marketable securities							17	—	17
Net loss							—	(27,328)	(27,328)
Comprehensive loss							—	—	(27,311)
Balances at December 31, 2006	**11,375,222**	**$ 110,665**	**1,056,411**	**$ 1**	**$ 1,451**	**$ —**	**$ (1)**	**$ (95,163)**	**$(93,712)**
Net exercise of preferred stock warrants into Series C convertible preferred stock in July and October, 2007	2,982	33	—	—	—	—	—	—	—
Issuance of common stock for cash at $10.00 per share in connection with the initial public offering in November 2007, net of issuance costs of $6.2 million			5,000,000	5	43,833	—	—	—	43,838
Conversion of prefered stock to common stock in connection with the initial public offering	(11,378,204)	(110,698)	11,417,057	12	110,686	—	—	—	110,698
Conversion of preferred stock warrants to common stock warrants	—	—	—	—	667	—	—	—	667
Issuance of common stock to employees upon exercise of stock options for cash at $0.90 to $3.30 per share during 2007	—	—	136,847	—	211	—	—	—	211
Issuance of restricted common stock to an officer in exchange for services	—	—	43,333	—	75	—	—	—	75
Stock-based compensation	—	—	—	—	1,130	—	—	—	1,130
Comprehensive loss:									
Unrealized gain on marketable securities							1	—	1
Net loss							—	(27,561)	(27,561)
Comprehensive loss							—	—	(27,560)
Balances at December 31, 2007	**—**	**$ —**	**17,653,648**	**$18**	**$158,053**	**$ —**	**$ —**	**$(122,724)**	**$ 35,347**

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

ARYX THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT) (Continued)

(in thousands, except share and per share amounts)

	Common Stock		Additional Paid-in Capital	Deferred Stock-Based Compensation	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amounts					
Balances at December 31, 2007	17,653,648	$18	$158,053	$—	$—	$(122,724)	$ 35,347
Issuance of common stock for cash at $2.20 per share in connection with a PIPE financing in November 2008, net of issuance costs of $1.2 million	9,649,545	9	20,362	—	—	—	20,371
Issuance of common stock to employees upon exercise of stock options for cash at $0.90 to $3.30 per share	35,684	—	78	—	—	—	78
Fair value of warrants issued pursuant to various loan agreements	—	—	644	—	—	—	644
Stock-based compensation	—	—	2,148	—	—	—	2,148
Comprehensive loss:							
Unrealized gain on marketable securities					45	—	45
Net loss					—	(31,218)	(31,218)
Comprehensive loss					—	—	(31,173)
Balances at December 31, 2008	**27,338,877**	**$27**	**$181,285**	**$—**	**$45**	**$(153,942)**	**$ 27,415**

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

ARYX THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)

	Year Ended December 31,		
	2008	2007	2006
Cash flows from operating activities:			
Net loss	$(31,218)	$(27,561)	$(27,328)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	1,097	1,007	832
Amortization of premium (discount) on marketable securities	63	(8)	(6)
Amortization of warrants	303	239	94
Revaluation of warrants to fair value and warrant net exercise	—	(445)	5
Loss on marketable securities	133	—	—
Impairment and disposition of long-lived assets	—	14	105
Stock-based compensation	2,148	1,205	628
Change in assets and liabilities:			
Prepaid research and development expenses	201	(340)	306
Other prepaid and assets	298	(24)	(49)
Accounts payable and other accrued liabilities	850	964	93
Accrued compensation	(561)	294	238
Accrued research and development expenses	1,322	1,161	(2,233)
Deferred lease credit	(357)	(331)	(275)
Deferred revenue	(19,497)	(3,880)	23,377
Net cash used in operating activities	(45,218)	(27,705)	(4,213)
Cash flows from investing activities:			
Purchases of marketable securities	(16,706)	(21,207)	(69,385)
Proceeds from sales of marketable securities	3,500	13,090	17,975
Proceeds from maturities of marketable securities	11,740	32,134	33,670
(Increase) decrease in restricted cash	(300)	(150)	190
Purchases of fixed assets	(644)	(499)	(962)
Net cash (used in) provided by investing activities	(2,410)	23,368	(18,512)
Cash flows from financing activities:			
Net proceeds from issuance of convertible preferred stock	—	—	30,158
Proceeds from issuance of common stock in connection with initial public offering, net of offering cost	—	43,838	—
Proceeds from issuance of common stock in connection with PIPE financing, net of offering cost	20,371	—	—
Proceeds from exercise of stock options and issuance of common stock	78	211	59
Proceeds from issuance of notes payable	10,000	—	681
Principal payments on notes payable	(2,298)	(2,896)	(1,968)
Net cash provided by financing activities	28,151	41,153	28,930
Net (decrease) increase in cash and cash equivalents	(19,477)	36,816	6,205
Cash and cash equivalents at beginning of year	55,476	18,660	12,455
Cash and cash equivalents at end of year	$ 35,999	$ 55,476	$ 18,660
Supplemental disclosure of cash flow information:			
Interest paid	$ 1,182	$ 813	$ 941
Supplemental schedule of noncash transactions:			
Issuance and measurement of warrants	$ 4,538	$ (154)	$ 5
Deferred compensation related to stock options granted below re-assessed fair value and its reversal upon adoption of FAS 123(R)	$ —	$ —	$ (280)
Issuance of preferred stock upon net exercise of warrants for other than cash	$ —	$ (33)	$ —

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

In this report, "ARYx," "we," "us" and "our" refer to ARYx Therapeutics, Inc. "Common Stock" refers to ARYx's common stock, par value $0.001 per share. "Preferred Stock" refers to ARYx's convertible preferred stock, $0.001 par value per share.

1. Organization and Summary of Significant Accounting Policies

The Company

ARYx is a biopharmaceutical company focused on developing a portfolio of internally discovered product candidates designed to eliminate known safety issues associated with well-established, commercially successful drugs. We use our RetroMetabolic Drug Design technology to design structurally unique molecules that retain the efficacy of these original drugs but are metabolized through a potentially safer pathway to avoid specific adverse side effects associated with these compounds. Our product candidate portfolio includes an oral anticoagulant, tecarfarin (ATI-5923), designed to have the same therapeutic benefits as warfarin, currently in Phase 2/3 clinical development for the treatment of patients who are at risk for the formation of dangerous blood clots; an oral antiarrhythmic agent, budiodarone (ATI-2042), designed to have the efficacy of amiodarone in Phase 2 clinical development for the treatment of atrial fibrillation, a form of irregular heartbeat; an oral prokinetic agent, ATI-7505, designed to have the same therapeutic benefits as cisapride in Phase 2 clinical development for the treatment of chronic constipation, gastroparesis, functional dyspepsia, irritable bowel syndrome with constipation, and gastroesophageal reflux disease; and a novel, next-generation atypical antipsychotic agent, ATI-9242, currently in Phase 1 clinical development for the treatment of schizophrenia and other psychiatric disorders. Additionally, we have multiple product candidates in preclinical development.

We were incorporated in the State of California on February 28, 1997 and reincorporated in the State of Delaware on August 29, 2007. We maintain a wholly owned subsidiary, ARYx Therapeutics Limited, with registered offices in the United Kingdom, which has had no operations since its inception in September 2004 and was established only to serve as a legal entity as required in support of our clinical trial activities conducted in Europe. We currently are focused on the human drug development business and operate in a single business segment with regard to the development of human pharmaceutical products.

Basis of Presentation

Our consolidated financial statements include the accounts of our wholly owned subsidiary, ARYx Therapeutics, Ltd. All intercompany accounts and transactions have been eliminated.

Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make judgments, assumptions and estimates that affect the reported amounts in the consolidated financial statements and accompanying notes. On an ongoing basis, we evaluate our critical accounting policies and estimates, including those related to revenue recognition, clinical trial accruals, and stock-based compensation. Management bases its estimates on historical experience and on assumptions believed to be reasonable under the circumstances. Actual results could differ from those estimates.

1. Organization and Summary of Significant Accounting Policies (Continued)

Significant Risks and Uncertainties

As of December 31, 2008, we had $45.0 million in cash, cash equivalents and marketable securities. We believe that our cash, cash equivalents and marketable securities on hand as of December 31, 2008 will be sufficient to fund our operations through the end of the first quarter of 2010. However, since our inception, we have incurred significant net operating losses and, as of December 31, 2008, we had an accumulated deficit of $153.9 million. We have generated no revenue from product sales to date. We have funded our operations principally from the sale of our convertible preferred and common stock and collaboration agreements. We expect to incur substantial additional operating losses for the next several years and will need substantial additional funding in order to complete the clinical trials of our product candidates, launch and commercialize product candidates for which we receive regulatory approval, continue research and development programs and license or acquire additional product candidates. We will seek additional funds through financings, collaborations or public or private debt or equity financings, and may also seek to reduce expenses related to our operations. There can be no assurance that such financing will be available or will be at terms acceptable to us, or at all.

We have no products that have received regulatory approval. Any products we develop will require approval from the U.S. Food and Drug Administration or foreign regulatory agencies prior to commercial sales. There can be no assurance that our products will receive the necessary approvals. If we are denied such approvals or such approvals are delayed, it could have a material adverse effect to our operations. To achieve profitable operations, we must successfully develop, test, manufacture and market products. There can be no assurance that any such products can be developed successfully or manufactured at an acceptable cost and with appropriate performance characteristics, or that such products will be successfully marketed. These factors could have a material adverse effect on our future financial results.

Financial instruments that potentially subject us to a concentration of credit risk consist of cash, cash equivalents and marketable securities. We deposit excess cash and cash equivalents with multiple financial institutions in the United States. Deposits in these financial institutions may exceed the amount of insurance provided on such deposits. We have not experienced any losses on our deposits of cash and cash equivalents. We have experienced an other-than-temporary impairment on our remaining auction rate holding in our marketable securities portfolio as of December 31, 2008. There can be no assurance that further impairment will not occur, or that we will be able to recover any of our other-than-temporary impaired position in the future.

Fair Value of Financial Instruments

Our financial instruments consist principally of cash and cash equivalents, marketable securities, restricted cash, certain other assets such as long-term marketable securities and security deposits, accounts payable, accrued liabilities, current and non-current notes payable. The fair value of our financial instruments reflects the amounts that would be received to sell an asset or settled to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value estimates presented throughout this report reflect the information available to us or estimates we used as of December 31, 2008 and 2007.

Cash, cash equivalents and restricted cash are stated at cost, which approximates fair value. We consider all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents.

1. Organization and Summary of Significant Accounting Policies (Continued)

Marketable securities are classified as available-for-sale in accordance with Statement of Financial Accounting Standards, or SFAS, No. 115, *Accounting for Certain Investments in Debt and Equity Securities*, and are carried at their fair value at the balance sheet date. (See Note 2—Fair Value Measurement.) Realized gains and losses on sales as well as other-than-temporary impairment of all such securities are reported in earnings and computed using the specific identification method. Unrealized gains and losses are reported as a separate component of stockholders' equity until realized. The amortized cost of securities is adjusted for amortization of premiums and accretion of discounts from the date of purchase to maturity and is included in interest income. Accrued interest and dividends are included in interest income. Marketable securities include U.S. government obligations, government agency securities, corporate bonds, certificates of deposit, commercial paper and auction rate securities with original maturities beyond three months.

Accounts payable, accrued liabilities and current portion of notes payable are carried at cost and amortized cost, respectively, that approximate fair value due to their expected short maturities. Based on the borrowing rates available to us for loans with similar terms and average maturities, we employ a discounted cash flow model using our estimate of risk premiums and corresponding yields to maturity to determine the fair value of our non-current portion of notes payable. The fair value was estimated to be $9.3 million and $2.8 million as of December 31, 2008 and 2007, respectively, assuming transfer in an orderly market transaction. The carrying amount of our non-current portion of notes payable was stated on the face of our consolidated balance sheet at amortized cost for all periods presented.

Restricted Cash

Under a facilities operating lease agreement, $703,200 and $903,200 was restricted as of December 31, 2008 and 2007, respectively, for use as security for a standby letter of credit issued to our landlord. In January 2008, we entered into a pledge and security agreement with Comerica Bank whereby $500,000 was restricted for use as security to our payroll service provider. In May 2007, we entered into a pledge and security agreement with Comerica Bank whereby $150,000 was restricted for use as security for our corporate purchasing cards and was classified as a current asset as of December 31, 2008 as it was used to secure a revolving line of credit.

Property and Equipment

Property and equipment are stated at cost, less accumulated depreciation and amortization. Depreciation is computed using the straight-line method over the estimated useful lives of the respective assets, generally four to seven years. Leasehold improvements are amortized over their estimated useful lives or the remaining facility lease term, whichever is shorter.

Impairment of Long-Lived Assets

We evaluate our long-lived assets, including property and equipment, for impairment whenever events or changes in business circumstances indicate that the carrying amount of our assets may not be fully recoverable. If indicators of impairment exist, impairment loss would be recognized when estimated undiscounted future cash flows expected to result from the use of each asset and its eventual disposition are less than its carrying amount. The impairment charge is determined based upon the excess of the carrying value of the asset over its fair value, with fair value determined based upon an estimate of discounted future cash flows or on other appropriate measures of fair value. Impairment

1. Organization and Summary of Significant Accounting Policies (Continued)

and disposition losses on property and equipment of none, $14,000, and $105,000 were recorded as operating expense for the years ended December, 31, 2008, 2007 and 2006, respectively.

Stock-Based Compensation

On January 1, 2006, or the effective date, we began accounting for stock-based compensation in accordance with SFAS No. 123(R), *Share-Based Payment*, or SFAS 123R. Under the provisions of SFAS 123R, compensation expense related to stock-based transactions, including employee and director stock-based awards, is estimated at the date of grant based on the stock award's fair value and is recognized as expense over the requisite service period.

SFAS 123R allows for a choice between two attribution methods for allocating stock-based compensation costs: the "straight-line method" which allocates expense on a straight-line basis over the requisite service period of the last separately vesting portion of an award, or the "graded vesting attribution method" which allocates expense on a straight-line basis over the requisite service period for each separately vesting portion of the award as if the award was, in substance, multiple awards. We selected the latter method and amortize the fair value of each award on a straight-line basis over the requisite service period for each separately vesting portion of each award.

We continue to account for stock options issued to non-employees in accordance with the recognition provisions of SFAS No. 123 and Emerging Issues Task Force, or EITF, Issue No. 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*, or EITF 96-18, using a fair value approach. The value of stock options issued for consideration other than employee services is determined on the earlier of (i) the date on which there first exists a firm commitment for performance by the provider of goods or services or (ii) on the date performance is complete, using the Black-Scholes option valuation model. The compensation costs of these arrangements are subject to re-measurement over the vesting terms as earned.

Revenue Recognition

We recognize revenue in accordance with SAB No. 104, *Revenue Recognition in Financial Statements*, or SAB 104, and EITF Issue No. 00-21, *Revenue Arrangements with Multiple Deliverables*, or EITF 00-21. In June 2006, we entered into a collaboration agreement with P&G. Revenues from this collaboration agreement included a nonrefundable upfront license fee, reimbursement of services performed in connection with certain development efforts, milestone payments and royalties. When evaluating multiple element arrangements, we consider whether the components of each arrangement represent separate units of accounting as defined in EITF 00-21. Application of this standard requires subjective determinations and requires management to make judgments about the fair value of the individual elements and whether it is separable from the other aspects of the contractual relationship. Revenue arrangements with multiple components are divided into separate units of accounting if certain criteria are met, including whether the delivered component has stand-alone value to the customer, and whether there is objective and reliable evidence of the fair value of the undelivered items. Consideration received is allocated amongst the separate units of accounting based on their respective fair values. Applicable revenue recognition criteria are then applied to each of the units.

Revenue is recognized when the four basic criteria of revenue recognition are met: (1) persuasive evidence of an arrangement exists; (2) transfer of technology has been completed or services have been

1. Organization and Summary of Significant Accounting Policies (Continued)

rendered; (3) the fee is fixed or determinable and (4) collectibility is reasonably assured. For each source of revenue, we comply with the above revenue recognition criteria in the following manner:

- Nonrefundable upfront license fees received with separable stand-alone values are recognized when intangible property rights are transferred, provided that the transfer of rights is not dependent upon continued efforts by ARYx with respect to the agreement. If the transferred rights do not have stand-alone value, or if objective and reliable evidence of the fair value of the undelivered elements does not exist, the amount of revenue allocable to the transferred rights and the undelivered elements is deferred and amortized over the related involvement period in which the remaining undelivered elements are provided to our partner.
- Service revenue consists of reimbursement of services performed or costs incurred under contractual arrangements with third parties. Revenue from such services is based upon 1) negotiated rates for full time equivalent employees that are intended to approximate our anticipated costs or 2) other direct costs incurred. Service revenues are recognized when the services are performed. Costs associated with these services are included in cost of collaboration service revenue.
- Payments associated with milestones, which are contingent upon future events for which there is reasonable uncertainty as to their achievement at the time the agreement was entered into, are recognized as revenue when these milestones, as defined in the contract, are achieved and provided that no further performance obligations are required of us. Milestone payments are typically triggered either by the progress or results of clinical trials or by external events, such as regulatory approval to market a product or the achievement of specified sales levels, all of which are substantially at risk at the inception of the respective collaboration agreement. In applying this policy, we ascertain certain factors that include: 1) whether or not each milestone is individually substantive, 2) the degree of risk associated with the likelihood of achieving each milestone, 3) whether or not the payment associated with each milestone is reasonably proportional to the substantive nature of the milestone, 4) the level of effort, if any, that is anticipated or actually involved in achieving each milestone, and 5) the anticipated timing of the achievement of each milestone in relation to other milestones or revenue elements. Amounts received in advance, if any, are recorded as deferred revenue until the associated milestone is reached.
- Royalty revenue from sales of our licensed products will be recognized when earned and collectible.

Research and Development Costs

Research and development, or R&D, expenditures are expensed as incurred. Major components of R&D expenses consist of personnel costs, preclinical studies, clinical trials, materials and supplies and allocations of R&D and facilities related costs, as well as fees paid to consultants and other entities that conduct certain research and development activities on our behalf. Payments made to other entities are typically under agreements that are generally cancelable by us.

R&D activities are categorized as follows: research and nonclinical studies, clinical development and pharmaceutical manufacturing. Research and nonclinical expenditures consist primarily of research personnel and laboratory related costs as well as third party contract research. Clinical development

1. Organization and Summary of Significant Accounting Policies (Continued)

costs consist primarily of costs associated with Phase 1 and Phase 2 clinical trials. Pharmaceutical manufacturing costs include drug formulation, stability testing, contract manufacturing of drug substance and products and clinical trial material packaging.

Clinical trial costs are a significant component of our R&D expenses. Currently, we manage our clinical trials primarily through the use of contract research organizations. We recognize expenses for these contracted activities based upon a variety of factors, including actual and estimated patient enrollment rates, clinical site initiation activities, labor hours and other activity-based factors. We match the recording of expenses in our financial statements to the actual services received and efforts expended. Subject to the timing of payments to the service providers, we record prepaid expenses and accruals relating to clinical trials based on estimates of the degree of completion of the contracted work as specified in each clinical study agreement. We monitor each of these factors to the extent possible and adjust our estimates accordingly.

Costs to acquire technologies to be used in research and development that have not reached technological feasibility and have no alternative future use are expensed when incurred.

Net Loss per Share

Basic net loss per share is computed by dividing net loss by the weighted average number of fully vested common shares outstanding during the period. Diluted net loss per share is computed by giving effect to all potential dilutive common shares, including stock options, warrants and convertible preferred stock. For all periods presented in this report, stock options, warrants and convertible preferred stock were not included in the computation of diluted net loss per share because the inclusion would provide an antidilutive effect.

The following table presents the calculation of basic and diluted net loss per share:

	Year Ended December 31,		
	2008	2007(1)	2006
	(in thousands, except per share amounts)		
Numerator:			
Net loss	$(31,218)	$(27,561)	$(27,328)
Denominator:			
Weighted average common shares outstanding	18,986	3,376	1,028
Less: Weighted average unvested restricted common shares	(22)	(30)	(10)
Weighted average shares used in computing basic and diluted net loss per share	18,964	3,346	1,018
Basic and diluted net loss per share	$ (1.65)	$ (8.24)	$ (26.84)

(1) For the year ended December 31, 2007, shares and per share amounts reflect the conversion of all of our outstanding convertible preferred stock into common stock upon the closing of our initial public offering on November 13, 2007.

1. Organization and Summary of Significant Accounting Policies (Continued)

Comprehensive Loss

Comprehensive loss is comprised of net loss and other comprehensive income/loss. The only component of our other comprehensive income/loss is the unrealized gains and losses on our marketable securities. Comprehensive loss for the years ended December 31, 2008, 2007 and 2006 was $31.1 million, $27.6 million, and $27.3 million, respectively. Comprehensive loss has been disclosed in the consolidated statements of stockholders' equity for all periods presented.

Income Taxes

We use the asset and liability method of accounting for income taxes in accordance with SFAS No. 109, *Accounting for Income Taxes*. Deferred tax assets and liabilities are determined based on differences between financial reporting and the tax basis of assets and liabilities and are measured using enacted tax rates and laws that will be in effect when the differences are expected to reverse. A valuation allowance is provided when it is more likely than not that some portion or all of a deferred tax asset will not be realized. Effective January 1, 2007, we adopted the Financial Accounting Standards Board, or FASB, Interpretation No. 48, *Accounting for Uncertainty in Income Taxes, an interpretation of FASB Statement No. 109*, or FIN 48.

Freestanding Warrants and Cumulative Effect of Change in Accounting Principle

We adopted the FASB Staff Position No. 150-5, *Issuer's Accounting under Statement No. 150 for Freestanding Warrants and Other Similar Instruments on Shares that are Redeemable*, and accounted for the cumulative effect of the change in accounting principle related to certain freestanding warrants to purchase our series convertible preferred stock as of January 1, 2006. Upon adoption, $848,000 was reclassified from additional paid-in capital to preferred stock warrant liability on our consolidated balance sheet as of January 1, 2006. In November 2007, these warrants were automatically converted into warrants to purchase common stock upon the closing of our initial public offering. As a result of the conversion of the warrants' underlying securities and pursuant to EITF 00-19, our warrant liability was reclassified to stockholders' equity. The impact of the cumulative effect of change in accounting principle was $10,000 for the year ended December 31, 2006 and its effect on net loss per share was as follows:

	Year Ended December 31, 2006 (in thousands, except per share amounts)
Net loss per share, basic and diluted:	
Loss before cumulative effect of change in accounting principle	$(26.83)
Cumulative effect of change in accounting principle	(0.01)
Net loss	$(26.84)
Weighted average shares used to compute basic and diluted net loss per share	1,018

Recent Accounting Pronouncements

In November 2008, the EITF reached a consensus-for-exposure on EITF Issue No. 08-1, *Revenue Arrangements with Multiple Deliverables*, or EITF 08-1, which was subsequently ratified by the FASB

1. Organization and Summary of Significant Accounting Policies (Continued)

currently subject to a 60-day public comment period. The Task Force discussed a model that would amend EITF 00-21 to require an entity to estimate the selling price of the undelivered element of accounting and allocate the arrangement consideration using the residual method when the entity does not have vendor-specific objective evidence or acceptable third-party evidence of the selling price for the undelivered element of accounting. If confirmed, EITF 08-1 will be effective prospectively for revenue arrangements entered into or modified in the fiscal years beginning after December 15, 2009. As we do not currently have any revenue arrangement with multiple deliverables, we will evaluate the impact of EITF 08-1 for revenue arrangement that we may enter into in the future.

In June 2008, the EITF reached a consensus on EITF Issue No. 07-5, *Determining Whether an Instrument (or Embedded Feature) is Indexed to an Entity's Own Stock*, or EITF 07-5. EITF 07-5 provides guidance on how to determine if certain instruments (or embedded features) are considered indexed to a company's own stock, including instruments similar to warrants to purchase the company's stock. EITF 07-5 requires companies to use a two-step approach to evaluate an instrument's contingent exercise provisions and settlement provisions in determining whether the instrument is considered to be indexed to its own stock and therefore exempt from the application of SFAS No. 133, *Accounting for Derivative Instruments and Hedging Activities*. Although EITF 07-5 is effective for fiscal years beginning after December 15, 2008, any outstanding instrument at the date of adoption will require a retrospective application of the accounting through a cumulative effect adjustment to retained earnings upon adoption. We do not expect the adoption of EITF 07-5 to have a material impact on either our consolidated financial position or results of operations.

In May 2008, the FASB issued SFAS No. 162, *The Hierarchy of Generally Accepted Accounting Principles*, or SFAS 162. SFAS 162 identifies the sources of accounting principles and the framework for selecting the principles to be used in the preparation of financial statements of nongovernmental entities that are presented in conformity with GAAP. SFAS 162 is effective 60 days following the Securities Exchange Commission's approval of the Public Company Accounting Oversight Board amendments to AU Section 411, *The Meaning of Present Fairly in Conformity with Generally Accepted Accounting Principles*. We do not expect the adoption of SFAS 162 to have a material impact on either our consolidated financial position or results of operations.

In December 2007, the FASB ratified EITF Issue No. 07-1, *Accounting for Collaborative Arrangements*, or EITF 07-1. EITF 07-1 defines collaborative arrangements and establishes reporting requirements for transactions between participants in a collaborative arrangement and between participants in the arrangement and third parties. EITF 07-1 also establishes the appropriate income statement presentation and classification for joint operating activities and payments between participants, as well as the sufficiency of the disclosures related to these arrangements. EITF 07-1 is effective for fiscal years beginning after December 15, 2008. We are currently evaluating the impact of EITF 07-1 on our consolidated financial position, results of operations and cash flows.

In February 2007, the FASB issued SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities—Including an amendment of FASB Statement No. 115*, or SFAS 159. SFAS 159 permits entities to make an irrevocable election to measure certain financial instruments and other assets and liabilities at fair value on an instrument-by-instrument basis. Unrealized gains and losses on items for which the fair value option is elected will be recognized in net earnings at each subsequent reporting date. The adoption of SFAS 159 did not have an impact on our consolidated financial statements in 2008 as we did not elect the fair value option.

2. Fair Value Measurement

In September 2006, the FASB issued SFAS No. 157, *Fair Value Measurements*, or SFAS 157. SFAS 157 defines fair value, establishes a framework for measuring fair value and expands fair value measurement disclosure. In February 2008, the FASB issued Staff Position No. 157-1, or FSP 157-1, *Application of FASB Statement No. 157 to FASB Statement No. 13 and Other Accounting Pronouncements That Address Fair Value Measurements for Purposes of Lease Classification or Measurement under Statement 13,* and Staff Position No. 157-2, or FSP 157-2, *Effective Date of FASB Statement No. 157.* FSP 157-1 amends SFAS 157 to remove certain leasing transactions from its scope. FSP 157-2 delays the effective date of SFAS 157 for all non-financial assets and non-financial liabilities, except for items that are recognized or disclosed at fair value in the financial statements on a recurring basis (at least annually), until fiscal years beginning after November 15, 2008. In October 2008, the FASB issued Staff Position No. 157-3, or FSP 157-3, *Determining the Fair Value of a Financial Asset When the Market for That Asset is Not Active*, that clarifies the application of SFAS 157 in a market that is not active and provides an example to illustrate key considerations in determining the fair value of a financial asset when the market for that financial asset is not active. FSP 157-3 is applicable to the valuation of auction rate securities held by us for which there was no active market as of December 31, 2008. FSP 157-3 is effective upon issuance, including prior periods for which the financial statements have not been issued.

The measurement and disclosure requirements of SFAS 157 related to financial assets and financial liabilities became effective for us beginning in the first quarter of 2008. SFAS 157 does not require assets and liabilities that were previously recorded at cost to be recorded at fair value. For assets and liabilities that are already required to be disclosed at fair value, FAS 157 introduced a number of key concepts that form the foundation of the fair value measurement approach to be used for financial reporting purposes. SFAS 157 describes three levels of inputs that may be used to measure fair value, as follows:

- Level 1—quoted prices in active markets for identical assets or liabilities;
- Level 2—observable inputs other than Level 1 inputs, such as quoted prices for similar assets or liabilities; quoted prices for identical or similar assets or liabilities in markets that are not active; or other inputs that are observable or that can be corroborated by observable market data for substantially the full term of the asset or liability; and
- Level 3—unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the underlying asset or liability. Level 3 assets and liabilities include those whose fair value measurements are determined using pricing models, discounted cash flow methodologies or similar valuation techniques, as well as significant management judgment or estimation.

The following table summarizes the fair value of our financial assets as of December 31, 2008 and 2007 that were recorded at fair value on a recurring basis. According to SFAS 157, assets and liabilities

2. Fair Value Measurement (Continued)

are considered measured on a recurring basis if they are remeasured at least annually. We do not have any financial liabilities that are remeasured at least annually.

	December 31, 2008	December 31, 2007
	(in thousands)	
Balance Sheet Classification:		
Cash and cash equivalents	$35,999	$55,476
Marketable securities	8,588	7,640
Restricted cash	150	150
Total fair value of current financial assets	44,737	63,266
Restricted cash—non-current	1,203	903
Long-term marketable securities	367	—
Total fair value of financial assets	$46,307	$64,169

The following table summarizes the fair value of our financial assets, allocated into Level 1, Level 2, and Level 3 that were measured on a recurring basis, and provides a reconciliation of the fair value of our financial assets measured using Level 2 and Level 3 inputs:

	December 31, 2008			
	Total Fair Value	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	(in thousands)			
Financial Assets Held:				
Cash	$ 98	$ 98	$ —	$ —
Money market funds	34,654	34,654	—	—
Certificate of deposit	150	150	—	—
U.S. government agencies debt	6,041	—	6,041	—
Commercial paper	3,449	—	3,449	—
Corporate debt securities	1,548	—	1,548	—
Auction rate securities:				
Beginning balance as of January 1, 2008	4,740	—	4,740	—
Purchases	1,100	—	1,100	—
Sales and maturities	(5,340)	—	(4,340)	(1,000)
Transfers in (out) of Level 2 and Level 3	—	—	(1,500)	1,500
Loss on marketable securities	(133)	—	—	(133)
Ending balance as of December 31, 2008	367	—	—	367
Total	$46,307	$34,902	$11,038	$ 367

As of December 31, 2008, we held in our marketable securities portfolio certain money market funds, U.S. government agencies debt instruments, commercial paper, corporate debt securities and one auction rate security. We classified our holdings in U.S. government agencies debt instruments, commercial paper and corporate debt securities as Level 2 instruments as the fair value of these

2. Fair Value Measurement (Continued)

instruments was determined by our institutional portfolio managers whose evaluations were based upon market-corroborated inputs such as broker/dealer quotes, reported trades, bids and offers that we believe are reasonable. Beginning in early 2008, market auctions for certain of the auction rate securities held in our portfolio began to fail causing those securities to become temporarily illiquid. Although we did experience liquidity in our auction rate securities portfolio during the first nine months of 2008, the illiquid auction rate market at large requires that our auction rate holding be measured using Level 3 inputs in accordance with guidance provided by SFAS 157. The fair value of our remaining auction rate security as of December 31, 2008, was determined using a discounted cash flow model that considers inputs such as expected cash flows from the auction rate instrument including expected interest payments, market yields for similarly rated instruments, our estimates of time to liquidity for the security, and a marketability discount. We revise our estimates for each input as of each financial statement reporting date based upon known and expected market conditions as well as specific information we have regarding the instrument.

We have determined that as of December 31, 2008, the fair value of our remaining auction rate instrument was $367,000, net of an estimated $133,000 loss representing a 26.6% reduction in the carrying value for this instrument. Based on the recent lack of liquidity in the auction rate market and our expectations regarding near-term market conditions, we concluded that the impairment to the fair value of our auction rate holding as of December 31, 2008, is other-than-temporary in accordance with guidance provided by FSP FAS 115-1. The reduction in carrying value is reflected as a loss in our consolidated statement of operations as we expect that it is more likely than not that the instrument will remain illiquid in the next 12 months. Accordingly, we classified this auction rate instrument as an other non-current asset on the balance sheet as of December 31, 2008.

Marketable securities held at December 31, 2008 and 2007 are summarized below:

	December 31, 2008			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	(in thousands)			
Classified as:				
Marketable securities:				
U.S. government agencies debt	$6,010	$31	$—	$6,041
Commercial paper	997	2	—	999
Corporate debt securities	1,538	10	—	1,548
Auction rate securities	367	—	—	367
Total marketable securities	$8,912	$43	$—	$8,955
Available-for-sale securities maturing:				
Within 1 year	$7,007			$7,040
Between 1 and 2 years	1,538			1,548
Auction rate securities maturing beyond 1 year	367			367
	$8,912			$8,955

2. Fair Value Measurement (Continued)

	December 31, 2007			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
		(in thousands)		
Classified as:				
Marketable securities:				
Certificates of deposit	$1,600	$—	$—	$1,600
Corporate debt securities	1,300	—	—	1,300
Auction rate securities	4,740	—	—	4,740
Total marketable securities	$7,640	$—	$—	$7,640
Available-for-sale securities maturing:				
Within 1 year	$2,900			$2,900
Auction rate securities maturing beyond 1 year	4,740			4,740
	$7,640			$7,640

We review our investment portfolio to identify and evaluate investments that had indications of possible impairment. Factors considered in determining whether a loss is other than temporary include the length of time and extent to which fair value has been less than the cost basis, the financial condition and near-term prospects of the investee, credit quality and our ability to hold the securities for a period of time sufficient to allow for any anticipated recovery in market value. As of December 31, 2008 and 2007, no instruments in our portfolio have been in an unrealized loss position for more than 12 months.

There have been no realized gains or losses from the sale of marketable securities for the years ended December 31, 2008, 2007 and 2006, respectively.

3. Property and Equipment

Property and equipment consists of the following:

	December 31,	
	2008	2007
	(in thousands)	
Office and computer equipment	$ 859	$ 754
Furniture and fixtures	170	156
Laboratory equipment	2,672	2,194
Leasehold improvements	2,939	2,896
	6,640	6,000
Less: Accumulated depreciation and amortization	(3,442)	(2,345)
Property and equipment, net	$ 3,198	$ 3,655

Depreciation and leasehold improvements amortization expenses were $1.1 million, $1.0 million, and $832,000 for the years ended December 31, 2008, 2007 and 2006, respectively.

4. Collaboration with Procter & Gamble Pharmaceuticals

On June 30, 2006, we entered into a collaboration agreement with Procter & Gamble Pharmaceuticals, Inc., or P&G, pursuant to which P&G agreed to develop and commercialize ATI-7505, our product candidate for the treatment of chronic constipation, gastroparesis, functional dyspepsia, and gastroesophageal reflux disease. The collaboration agreement was terminated on July 2, 2008, at which time the performance and service period effectively ended. In connection with our prior collaboration agreement with P&G, we received a $25.0 million nonrefundable upfront license fee in August 2006. The $25.0 million payment was recorded in our balance sheet as deferred revenue upon receipt and recognized in our consolidated statement of operations as revenue on a straight-line basis over the performance and service period. Pursuant to the terms of the collaboration agreement, we are under no obligation to return any portion of the upfront license fee to P&G. As a result, we have recognized as revenue the remaining portion of the $25.0 million of the nonrefundable upfront license fee as of December 31, 2008.

In addition, we have recognized $232,000, $262,000, and $2.1 million as of December 31, 2008, 2007, and 2006, respectively, as collaboration service revenue in connection with product formulation and manufacturing, patent filing and maintenance, and other development services related to the ATI-7505 program since the beginning of our collaboration with P&G. Effective upon P&G's notice of termination on July 2, 2008, we no longer provide these support services to P&G for the development of ATI-7505 and therefore those services will no longer be a source of revenue for us.

5. Debt Financing

Lighthouse Capital Partners V, L.P.

On March 28, 2005, we entered into a loan agreement with Lighthouse Capital Partners V, L.P., or Lighthouse, that was amended on October 19, 2007 and October 17, 2008. The original agreement provided for up to $10.0 million in debt financing. The agreement was amended in October 2007 to provide for up to $9.0 million of additional financing. The original loan agreement provided for a 42 month repayment term which began on April 1, 2006. The original outstanding promissory note provides for monthly cash payments of principal and interest at a stated interest rate of 9.75% per annum through September 2009 and a balloon interest payment of $1.2 million in September 2009. The agreement also allows for prepayment of principal with respect to the original promissory note whereupon the $1.2 million balloon interest payment is accelerated and due at the time of prepayment of the outstanding loan balance.

The October 2007 amended loan agreement provided that the additional $9.0 million borrowed under a separate promissory note was subject to an interest-only period expiring in September 2008 followed by 36 equal monthly payments of principal and interest at an interest rate to be fixed as of October 1, 2008. Pursuant to the October 2007 amended loan agreement, we are obligated to make a balloon interest payment of $675,000 at time of prepayment or at loan maturity. Any mandatory or voluntary prepayment of the $9.0 million borrowed will trigger a prepayment penalty equal to 3% of the outstanding principal balance being prepaid.

The October 2008 loan amendment provides for an interest-only monthly repayment period through June 30, 2009 with respect to the entire outstanding loan obligation of $12.2 million at a stated interest rate of 9.75% per annum. Thereafter, we are obligated to repay $3.2 million of the total loan obligation over a 12-month period commencing from July 1, 2009 on an amortized basis, consisting of monthly principal and interest payments at a stated interest rate of 9.75% per annum through June 30,

5. Debt Financing (Continued)

2010, with a balloon interest payment of $1.2 million payable in June 2010. In connection with the October 2008 loan amendment, we agreed to pay Lighthouse a restructure fee of $200,000 which is payable upon the earlier of a prepayment or maturity of the $3.2 million portion of our total outstanding loan obligation in June 2010. The remaining $9.0 million loan obligation is required to be repaid over 36 months commencing from July 1, 2009 on an amortized basis, consisting of monthly principal and interest payments at a stated interest rate of 12.25% per annum through June 30, 2012, with a balloon interest payment of $675,000 payable in June 2012. We have evaluated the October 2008 loan modification pursuant to guidance under EITF Issue No. 96-19, *Debtor's Accounting for a Modification or Exchange of Debt Instruments,* and concluded that the fair value before and after the modification was not substantially different and therefore did not meet the criteria to be subject to debt extinguishment accounting.

As of December 31, 2008, the total principal amount borrowed under the Lighthouse agreements was $19.0 million and the total unpaid principal balance outstanding was $12.2 million. We recorded interest expense related to the loan agreement, including the amortization of expense related to the terminal payment and the warrant issued under the agreement, of $1.8 million, $1.2 million, and $1.2 million for the years ended December 31, 2008, 2007 and 2006, respectively.

The loan agreement with Lighthouse contains no financial covenants and no material adverse change clause. Default terms under the loan agreement include borrower default upon nonpayment of amounts due, noncompliance with loan covenants, misrepresentations under the agreement, bankruptcy and other standard provisions. Under the terms of the loan agreement, as amended, Lighthouse has a first priority security interest in all of our tangible and intangible assets except for the following: (i) assets specifically identified and used as security for equipment loans, (ii) any first priority interest Comerica Bank may have in our operating bank accounts at Comerica Bank, (iii) any certificates of deposit that are used as security for letters of credit issued to third parties, (iv) any interest or claims our landlord may have in certain leasehold improvements and (v) our intellectual property assets. The loan agreement precludes us from incurring additional material debt amounts with the exception of up to an aggregate of $3.0 million in equipment financing and up to $500,000 in other indebtedness.

Pursuant to the original loan agreement and the utilization of such, Lighthouse was granted a warrant to purchase 100,704 shares, as adjusted for the draw down, of our common stock at an exercise price of $9.93 per share. Pursuant to the October 2007 amended loan agreement and the utilization of such, Lighthouse was granted a second warrant to purchase 83,332 shares, as adjusted for the draw down, of our common stock at an exercise price of $10.80 per share. In connection with the October 2008 loan amendment, we issued Lighthouse an additional warrant to purchase up to 158,770 shares of our common stock at an exercise price of $3.98 per share. (See Note 8—Warrants for further discussion.)

General Electric Commercial Finance

On September 1, 2005, we entered into a loan agreement with General Electric Commercial Finance, or GE, for a secured equipment line of credit of up to $2.5 million. The loan agreement provides for a 42 month repayment term from each date of funding, a stated interest rate that is based on an average of the Federal Reserve's three- and five-year Treasury Constant Maturities rate plus a spread of 766 basis points and standard default provisions. We currently have three promissory notes outstanding under the agreement for a total of $1.9 million borrowed with stated interest rates ranging

5. Debt Financing (Continued)

from 11.73% to 12.89%. The arrangement provides for monthly payments of principal and interest through July 2010. Under the agreement, events of default include non-payment of amounts owed, a non-permitted sale or transfer of collateral, misrepresentations under the agreement, bankruptcy and other standard provisions. Funds borrowed under the agreement are secured by specific equipment assets and GE has a first priority security interest in those assets. The agreement contains no financial covenants and no warrants to purchase shares of our capital stock were issued to GE in connection with the debt financing. We recorded interest expense of $93,000, $144,000, and $132,000 for the years ended December 31, 2008, 2007, and 2006, respectively.

Oxford Finance Corporation

On December 31, 2008, we entered into a loan agreement with Oxford Finance Corporation, or Oxford, for a secured equipment line of credit equal to $1.5 million. The loan agreement provides for a 36 month repayment term from each date of funding. We currently have one promissory note outstanding under the agreement for $1.0 million at a fixed interest rate of 11.50%. The arrangement provides for monthly payments of principal and interest through January 2012. Under the agreement, events of default include non-payment of amounts owed, a non-permitted sale or transfer of collateral, misrepresentations under the agreement, change in business, ownership and location, merger or acquisition, bankruptcy and other standard provisions. The agreement contains no financial covenants. Funds borrowed under the agreement are secured by specific equipment assets and Oxford has a first priority security interest in those assets. Any mandatory or voluntary prepayment of the amount borrowed will trigger a prepayment penalty of 5% of the outstanding principal balance if prepayment is made before the 19th month from date of funding, 3% of the outstanding principal balance if prepayment is made between the 19th and 24th months from date of funding, and 2% of the outstanding principal balance if prepayment is made after the 24th month from date of funding. In connection with the financing, we issued a warrant to Oxford for the purchase of 8,547 shares of our common stock at an exercise price of $2.34 per share.

Security Priority

Lighthouse has a first priority security interest in all of our tangible and intangible assets except for the following: (i) assets specifically identified and used as security for GE and Oxford equipment loans, (ii) any first priority interest Comerica Bank, or Comerica, may have in our operating bank accounts at Comerica, (iii) any certificates of deposit that are used as security for letters of credit issued to third parties, (iv) any interest or claims our landlord may have in certain leasehold improvements and (v) our intellectual property assets.

5. Debt Financing (Continued)

As of December 31, 2008, future payments under the Lighthouse, GE, and Oxford loan agreements were as follows:

	Lighthouse	GE	Oxford	Total
2009	$ 2,848	$ 286	$ 270	$ 3,404
2010	4,454	65	329	4,848
2011	3,173	—	369	3,542
2012	1,737	—	32	1,769
Total principal payments	12,212	351	1,000	13,563
Less: Current portion of notes payable	(2,848)	(286)	(270)	(3,404)
Add: Accrued interest on terminal payment	1,119	—	—	1,119
Notes payable	$10,483	$ 65	$ 730	$11,278

6. Commitments and Contingencies

Operating Leases

In November 2004, we entered into a new lease agreement for a facility in Fremont, California. The term of the 96-month lease commenced in March 2005 upon occupying the facility. The master lease agreement includes scheduled rent increases over the lease term. Rent increases, net of the impact of a rent holiday from the landlord, are recognized as accrued liabilities and amortized on a straight-line basis over the term of the lease. In addition, our landlord contributed approximately $2.6 million towards facility improvements. The leasehold improvement allowance is recognized as a reduction of rent expense on a straight-line basis over the term of the lease. Both amounts are included in deferred lease credit on our balance sheets. In addition, we provided the landlord with a letter of credit which is collateralized by a certificate of deposit and the collateralized deposit is recorded as restricted cash on the balance sheet. Amounts of $703,200 and $903,200 were subject to the letter of credit as of December 31, 2008 and 2007, respectively. We also have operating leases on certain of our office equipment.

Rent expense under our operating leases was $751,000, $732,000 and $721,000 for the years ended December 31, 2008, 2007 and 2006, respectively. Future minimum cash payments under all non-cancelable operating leases at December 31, 2008 are as follows:

2009	$ 961
2010	984
2011	1,011
2012	1,002
2013 and thereafter	167
	$4,125

6. Commitments and Contingencies (Continued)

Indemnifications

FASB FIN No. 45, *Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others*, requires that upon issuance of a guarantee, the guarantor must recognize a liability for the fair value of the obligations it assumes under that guarantee.

As permitted under Delaware law and in accordance with our bylaws, we indemnify our officers and directors for certain events or occurrences, subject to certain limits, while the officer or director is or was serving at our request in such capacity. In August 2007, we entered into indemnification agreements with our officers and directors. The maximum amount of potential future indemnification is unlimited; however, we intend to obtain director and officer insurance that limits our exposure and may enable us to recover a portion of any future amounts paid. We believe the fair value for these indemnification obligations is minimal. Accordingly, we have not recognized any liabilities relating to these obligations as of December 31, 2008 and 2007.

We have certain agreements with licensors, licensees and collaborators that contain indemnification provisions. In such provisions, we typically agree to indemnify the licensor, licensee and collaborator against certain types of third-party claims. We accrue for known indemnification issues when a loss is probable and can be reasonably estimated. There were no accruals for expenses related to indemnification issues for any period presented.

7. Stockholders' Equity

On October 22, 2007, we effected a six-for-one reverse stock split of our convertible preferred stock and common stock. All share and per share amounts have been retroactively restated for the effect of this split for all periods presented.

Preferred Stock

Upon closing of our initial public offering in November 2007, all of the outstanding shares of our convertible preferred stock were automatically converted into 11,415,130 shares of common stock and all of our warrants to purchase preferred stock then outstanding were converted into warrants to purchase common stock. Our Certificate of Incorporation, as amended and restated, filed in October 2007, designates and authorizes 10,000,000 shares of $0.001 par value preferred stock, of which no shares are issued and outstanding as of December 31, 2008 and 2007. The rights, preferences and privileges of any preferred stock to be issued pursuant to our current Certificate of Incorporation, as amended and restated, have yet to be established. No dividends on preferred stock have been declared since inception through December 31, 2008.

Common Stock

As of December 31, 2008 and 2007, we were authorized to issue 150,000,000 shares of common stock. As of December 31, 2008 and 2007, we had 27,338,877 and 17,653,648 shares of common stock outstanding, respectively.

In November 2008, we entered into a securities purchase agreement with certain institutional and other accredited investors pursuant to which we sold and issued, in a private placement, an aggregate of 9,649,545 shares of our common stock, par value $0.001 per share, and warrants to purchase an aggregate of 2,894,864 shares of our common stock. Under the terms of the securities purchase

7. Stockholders' Equity (Continued)

agreement, the price for each share of common stock purchased was $2.20. The total number of shares of common stock underlying each purchaser's warrant was equal to 30% of the total number of shares purchased by such investor in the private placement with a purchase price per underlying share of common stock of $0.125. The combined purchase price of each share of common stock and each warrant to purchase 0.30 of a share of common stock issued in the private placement was $2.2375. The warrants are exercisable for a term of five years from November 14, 2008 and have an exercise price of $2.64 per share. Upon closing of the private placement, we received gross proceeds of approximately $21.6 million. The net proceeds, after deducting placement agent fees and other expenses of approximately $1.2 million, were approximately $20.4 million.

In November 2007, we completed our initial public offering in which we sold and issued 5,000,000 shares of common stock at an issue price of $10.00 per share. We raised a total of $50.0 million in gross proceeds from our initial public offering, or approximately $43.8 million in net proceeds after deducting underwriting discounts and commissions of $3.5 million and other offering costs of approximately $2.7 million. Entities affiliated with two of our principal stockholders purchased an aggregate of 600,000 shares of common stock in our initial public offering at the offering price of $10.00 per share.

We have never declared or paid cash dividends on any of our shares of capital stock. We are prohibited from paying dividends, other than dividends payable solely in common stock, by covenants contained in our loan agreements with Lighthouse, GE and Oxford.

Shares Reserved for Future Issuance

As of December 31, 2008, the following shares of our common stock were reserved for future issuances:

Warrants outstanding to purchase common stock	3,251,828
Stock options and awards available for grant	833,154
Stock options and awards outstanding	2,396,777
Shares reserved for purchase under employee stock purchase plan	322,369
	6,804,128

8. Warrants

We issue freestanding warrants from time to time pursuant to various contractual arrangements. As of December 31, 2008, the following warrants to purchase our common stock were issued and outstanding:

Warrant Holder	Issue Date	In Connection With	Warrant to Purchase	Shares	Exercise Price (per share)	Expire Date
ATEL	12/23/2002	Leasing arrangement	Common Stock	5,611	$ 8.91	11/13/2012
Lighthouse(1)	3/28/2005	Debt financing	Common Stock	100,704	$ 9.93	(1)
Lighthouse(2)	10/19/2007	Debt financing	Common Stock	83,332	$10.80	(2)
Lighthouse(3)	10/17/2008	Debt restructure	Common Stock	158,770	$3.975	(3)
Various investors(4)	(4)	Private placement of equity	Common Stock	2,894,864	$ 2.64	11/14/2013
Oxford(5)	12/31/2008	Equipment financing	Common Stock	8,547	$ 2.34	12/31/2013
				3,251,828		

(1) Exercisable, in whole or in part, anytime at the option of the holder or deemed to have been automatically exercised in full immediately prior to the expiration of the warrant; expires at the earlier of (i) November 7, 2009 or (ii) the effective date of a merger, as defined in the agreement.

(2) Exercisable, in whole or in part, at anytime at the option of the holder or deemed to have been automatically exercised in full immediately prior to the expiration of the warrant; expires at the earlier of (i) the close of business on October 19, 2014, or (ii) the effective date of a merger, as defined in the agreement.

(3) Exercisable, in whole or in part, at anytime at the option of the holder or deemed to have been automatically exercised in full immediately prior to the expiration of the warrant; expires at the earlier of (i) the close of business on October 17, 2013, or (ii) the effective date of a merger, as defined in the agreement.

(4) Warrants to purchase 2,446,928 shares of our common stock were issued on November 14, 2008 and warrants to purchase 447,936 shares of our common stock were issued on November 24, 2008; exercisable, in whole or in part, at anytime at the option of the holder.

(5) Exercisable, in whole or in part, at anytime at the option of the holder or deemed to have been automatically exercised in full immediately prior to the expiration of the warrant if the fair market value of one share of our common stock is greater than the exercise price of the warrant on such date.

We follow guidance under SFAS 150 to measure the fair value of these warrants on date of issuance. The fair value of the warrant issued to ATEL for $42,000 was capitalized as a prepayment on a lease and was amortized to interest expense over the 36 month lease term. The fair value of the first warrant issued to Lighthouse for $738,000 was capitalized in three separate tranches as debt issuance cost with the first tranche amortized to interest expense over the funding commitment period ended December 31, 2005. The remainder was amortized to interest expense over the duration of the interest-only period plus the term of the loan over 42 months. The fair value of the second warrant issued to Lighthouse for $523,000 was capitalized in two separate tranches as debt issuance cost with the first tranche amortized to interest expense over the funding commitment period ended March 1, 2008, and the remainder amortized to interest expense over the duration of the interest-only period plus the term of the loan over 36 months. The fair value of the third warrant issued to Lighthouse for $396,000 was capitalized as debt issuance cost and amortized to interest expense over the duration of the interest-only period plus the term of the restructured loan over 36 months. The fair value of the warrants issued in connection with the Oxford equipment loan for $17,000 was capitalized as debt issuance cost and will be amortized to interest expense over the duration of the loan over 36 months.

8. Warrants (Continued)

We follow the EITF discussion under EITF Issue No. 00-18, *Accounting Recognition for Certain Transactions Involving Equity Instruments Granted to Other Than Employees*, and considered the fair value of the warrants issued to investors participating in the November 2008 private placement of equity as cost of equity financing and accordingly, we recorded the fair value of the warrants to contra-equity. The aggregate fair value of the warrants issued to the investors was approximately $4.0 million determined using the Black-Scholes option valuation model with the following assumptions: risk-free interest rate of 2.44%, contractual life of five years according to the terms of the warrants, no dividend yield and volatility of 79%.

The fair value of our capitalized warrants issued in connection with the placement of our long-term debt was amortized to interest expense as follows:

	Year Ended December 31,		
	2008	2007	2006
	(in thousands)		
Lighthouse—Warrant 1	$ 84	$ 94	$94
Lighthouse—Warrant 2	196	145	—
Lighthouse—Warrant 3	23	—	—
	$303	$239	$94

All warrants may be exercised using the net exercise method. Under this method, the number of shares issued upon exercise is reduced by an amount equal to the product of the number of shares subject to the exercise and the exercise price per share, divided by the fair value of the underlying securities on the date of the exercise. The number of shares issued upon exercise of the warrants, and the exercise price per share, are adjustable in the event of stock splits, dividends and similar fundamental changes. In June 2007, Life Science Group, Inc. exercised their first warrant on a net exercise basis and resulted in the issuance of 1,055 shares of Series C convertible preferred stock. In October 2007, Life Science Group, Inc. exercised their second warrant on a net exercise basis and resulted in the issuance of 1,927 shares of Series C convertible preferred stock. Upon closing of the initial public offering in November 2007, all shares of our convertible preferred stock were automatically converted into shares of common stock and accordingly, an aggregate 2,982 shares of Series C convertible preferred shares issued in connection with warrants exercised in 2007 were converted into equal shares of common stock.

Before conversion of the convertible preferred stock warrants into common stock warrants, we followed guidance under SFAS 150 and re-measured the fair value of these warrants on January 1, 2006 (upon adoption of FSP 150-5) and on each subsequent balance sheet date until the date of conversion using the Black-Scholes option valuation model with the following assumptions: risk-free interest rate between 3.78% and 4.96%, contractual life according to the remaining terms of the arrangements, no dividend yield and volatility of 73%. Accordingly, we recorded other income of $445,000 and $5,000 to reflect the decrease in fair value of the then-preferred stock warrant liability for the year ended December 31, 2007 and 2006, respectively.

9. Stock-Based Compensation

2007 Equity Incentive Plan

Our board of directors adopted the 2007 Equity Incentive Plan, or the 2007 Plan, in July 2007 and our stockholders approved the 2007 Plan in October 2007. The 2007 Plan became effective immediately upon the signing of the underwriting agreement for our initial public offering. The 2007 Plan will terminate on July 17, 2017, unless terminated earlier by our board of directors. The 2007 Plan provides for the grant of incentive stock options, nonstatutory stock options, restricted stock awards, restricted stock unit awards, stock appreciation rights, performance stock awards, and other forms of equity compensation, or collectively, stock awards, which may be granted to employees, including officers, non-employee directors, and consultants.

As of December 31, 2008, an aggregate of 1,356,146 shares of common stock have been reserved for issuance under the 2007 Plan, of which 683,154 shares remained available for future grant as of such date. The number of shares of common stock reserved for issuance will automatically increase each year on January 1st, from January 1, 2008 through and including January 1, 2017, by the lesser of (a) 4.0% of the total number of shares of common stock outstanding on December 31st of the preceding calendar year or (b) a number of shares of common stock determined by our board of directors prior to the start of a calendar year for which an increase applies. The maximum number of shares that may be issued pursuant to the exercise of incentive stock options over the term of the 2007 Plan is 6,666,666 shares. As of December 31, 2008, options to purchase 672,992 shares of common stock at a weighted average exercise price per share of $7.15 were outstanding under the 2007 Plan.

Generally, the plan administrator, as designated by our board of directors, determines the exercise price for a stock option provided that the exercise price of an incentive stock option and nonstatutory stock option cannot be less than 100% of the fair market value of our common stock on the date of grant. Options granted under the 2007 Plan vest at the rate specified by the plan administrator. The plan administrator also determines the term of stock options granted under the 2007 Plan, up to a maximum of ten years (except in the case of certain incentive stock options, as described below). Unless the terms of an optionee's stock option agreement provide otherwise, if an optionee's relationship with us, or any of our affiliates, ceases for any reason other than disability or death, the optionee may exercise any vested options for a period of three months following the cessation of service. If an optionee's service relationship with us, or any of our affiliates, ceases due to disability or death (or an optionee dies within a certain period following cessation of service), the optionee or a beneficiary may exercise any vested options for a period of 12 months in the event of disability, and 18 months in the event of death.

No incentive stock option may be granted to any person who, at the time of the grant, owns or is deemed to own stock possessing more than 10% of our total combined voting power or that of any of our affiliates unless (a) the option exercise price is at least 110% of the fair market value of the stock subject to the option on the date of grant and (b) the term of the incentive stock option does not exceed five years from the date of grant.

2007 Non-Employee Director's Stock Option Plan

Our board of directors adopted the 2007 Non-Employee Directors' Stock Option Plan, or the 2007 Directors' Plan, in July 2007 and our stockholders approved the 2007 Directors' Plan in October 2007. The 2007 Directors' Plan became effective immediately upon the signing of the underwriting agreement for our initial public offering. The 2007 Directors' Plan provides for the automatic grant of

9. Stock-Based Compensation (Continued)

nonstatutory stock options to purchase shares of common stock to our non-employee directors over their period of service on our board.

As of December 31, 2008, an aggregate of 266,662 shares of common stock have been reserved for issuance under the 2007 Directors' Plan, of which 150,000 shares remained available for future grant as of such date. The number of shares of common stock reserved for issuance will automatically increase each year on January 1st, from January 1, 2008 through and including January 1, 2017, by the excess of (a) the number of shares of common stock subject to options granted during the preceding calendar year, over (b) the number of shares added back to the share reserve during the preceding calendar year. As of December 31, 2008, options to purchase 116,662 shares of common stock at a weighted average exercise price per share of $7.85 were outstanding under the 2007 Directors' Plan.

Pursuant to the terms of the 2007 Directors' Plan, each individual who becomes a non-employee director will automatically be granted an option to purchase 16,666 shares of common stock, or Initial Option, on the date of appointment to the board. The shares subject to each such Initial Option vest in a series of 36 successive equal monthly installments measured from the date of grant. Each individual who is serving as a non-employee director on the first trading day occurring on or after April 30th of each year, beginning in 2009, will automatically be granted an option to purchase 6,666 shares of common stock, or Annual Option, on that date. The shares subject to each such Annual Option vest in a series of 12 successive equal monthly installments measured from the date of grant. The exercise price of each option granted under the 2007 Directors' Plan will be equal to 100% of the fair market value of our common stock on the date of grant. The maximum term of options granted under the 2007 Directors' Plan is ten years.

2001 Equity Incentive Plan

Our 2001 Equity Incentive Plan, or the 2001 Plan, adopted by our board of directors in May 2001, provides for the granting of incentive and nonstatutory stock options, stock bonuses and restricted stock to our employees, directors and consultants at the discretion of the board of directors. As of December 31, 2008, options to purchase 1,607,123 shares of common stock at a weighted average exercise price per share of $2.10 remained outstanding under the 2001 Plan. In addition, 68,333 shares subject to stock bonus awards and restricted stock awards have been granted under the 2001 Plan. Subsequent to the initial public offering of our common stock in November 2007, no further options will be granted under the 2001 Plan. At the closing of the initial public offering in 2007, all shares remaining and available for future grant were cancelled.

The 2001 Plan allows for early exercise of certain stock options prior to vesting subject to the terms of the stock option agreement approved by the board of directors. As of December 31, 2008 and 2007, no unvested stock options were exercisable subject to the original early exercise provision contained in certain of our stock option agreements and all early exercised shares were vested and none were subject to repurchase by us.

9. Stock-Based Compensation (Continued)

A summary of activities under all of our stock option and incentive plans through December 31, 2008 is as follows:

	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (000's)
Outstanding at December 31, 2005	1,384,458	$1.58		
Granted	81,663	2.19		
Exercised/released	(61,228)	0.82		
Forfeited	(14,071)	1.72		
Outstanding at December 31, 2006	1,390,822	$1.65	7.79	$2,296
Vested and expected to vest at December 31, 2006	1,382,934	$1.65	7.79	$2,285
Exercisable at December 31, 2006	729,158	$1.47	7.38	$1,330
Granted	622,729	$4.23		
Exercised/released	(180,163)	1.96		
Forfeited	(55,811)	2.37		
Outstanding at December 31, 2007	1,777,577	$2.50	7.57	$9,375
Vested and expected to vest at December 31, 2007	1,766,459	$2.49	7.56	$9,326
Exercisable at December 31, 2007	1,063,125	$1.77	6.88	$6,358
Granted	691,529	$7.12		
Exercised/released	(35,684)	2.20		
Forfeited	(36,645)	4.97		
Outstanding at December 31, 2008	2,396,777	$3.80	7.19	$1,528
Vested and expected to vest at December 31, 2008	2,340,008	$3.75	7.14	$1,521
Exercisable at December 31, 2008	1,464,424	$2.53	6.30	$1,406

A summary of total outstanding stock options as of December 31, 2008 is as follows:

	Options Outstanding			Options Exercisable	
Range of Exercise Price	Number Outstanding	Weighted-Average Remaining Contractual Life (in years)	Weighted-Average Exercise Price	Number Exercisable	Weighted-Average Exercise Price
$0.90 - $0.90	264,308	3.99	$0.90	264,308	$0.90
$0.91 - $1.80	873,747	6.11	1.80	797,754	1.80
$1.81 - $3.30	495,319	8.16	3.18	239,557	3.27
$3.31 - $8.10	763,403	8.90	7.49	162,805	7.64
$0.90 - $8.10	2,396,777	7.19	3.80	1,464,424	2.53

9. Stock-Based Compensation (Continued)

2007 Employee Stock Purchase Plan

Our board of directors adopted our 2007 Employee Stock Purchase Plan, or the 2007 ESPP, in July 2007 and our stockholders approved the 2007 purchase plan in October 2007. The 2007 purchase plan became effective immediately upon the signing of the underwriting agreement for our initial public offering.

As of December 31, 2008, an aggregate of 322,369 shares of common stock have been reserved under the 2007 ESPP pursuant to purchase rights granted to our employees, all of which remain available for future issuance. The number of shares of common stock reserved for issuance will automatically increase on January 1st, from January 1, 2008 through and including January 1, 2017, by the lesser of (a) 1.0% of the total number of shares of common stock outstanding on December 31st of the preceding calendar year or (b) a lesser number of shares of common stock determined by our board of directors prior to the start of a year for which an increase applies. The maximum number of shares that may be issued pursuant to the exercise of purchase rights over the term of the 2007 ESPP is 1,666,666 shares. The 2007 ESPP is intended to qualify as an "employee stock purchase plan" within the meaning of Section 423 of the Internal Revenue Code. As of December 31, 2008, no shares of our common stock have been purchased under the 2007 ESPP as the initial offering period under the plan has not completed its term.

Our board of directors has delegated its authority to administer the 2007 ESPP to our compensation committee. The 2007 ESPP is implemented through a series of offerings of purchase rights to eligible employees. The initial offering began on August 15, 2008 and will end on May 14, 2009. After the initial offering, a new offering will begin on May 15th and November 15th each year beginning in 2009 over the term of the plan and will be approximately six months in duration. The last trading day of each offering period is the purchase date on which shares of common stock will be purchased for employees participating in the offering. Generally, all regular employees, including executive officers, employed by us may participate in the 2007 ESPP and may contribute, normally through payroll deductions, a percentage of their earnings, not to exceed 15%, for the purchase of common stock under the 2007 ESPP. Unless otherwise determined by our board of directors, common stock will be purchased for the accounts of employees participating in the 2007 ESPP at a price per share equal to the lower of (a) 85% of the fair market value of a share of our common stock on the first date of an offering or (b) 85% of the fair market value of a share of our common stock on the date of purchase.

Stock-Based Compensation

We estimate the fair value of our share-based award to employees and directors using the Black-Scholes option valuation model. The Black-Scholes option valuation model requires the use of certain subjective assumptions. The most significant of these assumptions are our estimates of the expected volatility of the market price of our stock and the expected term of the award. Due to the fact that we are a newly public company, there is limited historical information available to support our estimate of expected volatility required to value our stock-based awards. Prior to September 30, 2008, we used an average volatility estimate based on a group of companies in the biopharmaceutical industry that are similar in size, stage of life cycle and financial leverage. Beginning with the three months ended December 31, 2008, we began using a blended volatility estimate consisting of our own stock and the average volatility of similar companies in the biopharmaceutical industry. The expected term represents

9. Stock-Based Compensation (Continued)

the period of time that stock-based awards are expected to be outstanding. As we have a history of stock option exercise experience for use in the calculation, expected terms are based on historical option exercise experience and employee turnover data. Groups of employees that have similar historical exercise behavior are stratified and considered separately in the calculation. Other assumptions used in the Black-Scholes option valuation model include the risk-free interest rate and expected dividend yield. The risk-free interest rate for periods pertaining to each vesting tranche over the expected term of each option is based on the U.S. Treasury strip yield of a similar duration in effect at the time of grant. We have never paid, and do not expect to pay, dividends in the foreseeable future. The fair value of our stock-based awards was estimated at the date of grant using the following assumptions:

	Year Ended December 31,		
	2008	2007	2006
Expected volatility	73% - 79%	73%	73%
Weighted-average expected term (in years)	5.7	4.0	4.1
Weighted-average risk-free interest rate	2.9%	4.4%	4.8%
Expected dividends	—%	—%	—%
Weighted-average grant date fair value per share	$4.57	$2.41	$1.80

SFAS 123R requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from estimates. Forfeitures are estimated based on our historical experience and separate groups of employees that have similar historical forfeiture behavior are considered separately for expense recognition.

We estimate the fair value of the purchase rights issued to our employees participating in the 2007 ESPP using the Black-Scholes option valuation model. The fair value of the purchase rights was estimated at the first date of each offering period using the following assumptions:

	Year Ended December 31, 2008
Expected volatility	73%
Expected term (in years)	0.75
Weighted-average risk-free interest rate	2.1%
Expected dividends	—%
Weighted-average grant date fair value per share	$2.56

9. Stock-Based Compensation (Continued)

Total compensation cost that has been recorded in our consolidated statement of operations, which includes stock-based compensation expense under SFAS 123R and the value of options issued to non-employees for services rendered, is allocated as follows:

	Year Ended December 31,		
	2008	2007	2006
	(in thousands)		
Research and development:			
Officer compensation	$ 306	$ 115	$ 54
Employee and consultant compensation	624	355	102
Selling, general and administrative:			
Director and officer compensation	958	669	431
Employee and consultant compensation	260	66	41
	$2,148	$1,205	$628

In February 2007 and in connection with our annual employee performance reviews, employees received stock option grants with a service and performance condition that provides for partial acceleration of vesting upon the completion of ARYx's initial public offering. Upon the closing of our initial public offering in November 2007, vesting of 25% of the shares subject to the options granted was accelerated to the date of our initial public offering. The remaining 75% of the shares subject to the options granted was accelerated to vest in equal monthly installments over 36 months measured from the date of our initial public offering. In addition, an option granted to an officer in connection with an employment agreement was also accelerated pursuant to the terms of the option agreement. In accordance with provisions of SFAS 123R, we accounted for the effect of the vesting acceleration as a cumulative catch-up adjustment in the period when the performance condition was met and recognized related compensation cost in the 4th quarter of 2007.

In August 2006, we entered into a separation agreement with an employee whereby the vesting of certain stock options was accelerated. Acceleration of vesting represents a change to the terms of the original service vesting condition and is therefore subject to modification accounting under SFAS 123R. Accordingly, the originally measured and recognized compensation cost is reversed, and the fair value of the modified award on the modification date is recognized. As a result of this modification, we recognized additional compensation expense of $13,000 for the year ended December 31, 2006.

9. Stock-Based Compensation (Continued)

A summary of the status of our unvested stock options as of the respective balance sheet dates, and changes during years, is presented below:

	Number of Shares (#)	Weighted-Average Grant-Date Fair Value (per share)
Unvested shares at January 1, 2006	600,893	$1.44
Granted	56,666	1.80
Vested	(259,633)	1.26
Forfeited	(12,850)	1.50
Unvested shares at December 31, 2006	385,076	1.56
Granted	579,396	2.41
Vested	(296,870)	1.61
Forfeited	(54,485)	1.89
Unvested shares at December 31, 2007	613,117	2.31
Granted	691,529	4.57
Vested	(375,942)	2.99
Forfeited	(36,645)	3.06
Unvested shares at December 31, 2008	892,059	3.74

As of December 31, 2008 and 2007, there was $1.9 million and $1.3 million, respectively, of unrecognized compensation cost related to these unvested stock options and these costs are expected to be recognized over a weighted-average period of 1.29 years and 1.23 years, respectively. The total fair value of the shares vested during the years ended December 31, 2008, 2007 and 2006, was $1.1 million, $474,000, and $327,000, respectively. The total intrinsic value of options exercised during the years ended December 31, 2008, 2007 and 2006, was $158,000, $326,000 and $60,000, respectively.

No restricted stock was awarded in 2008. In February 2007, the compensation committee of our board of directors granted an officer a fully vested restricted stock award for 18,333 shares of our common stock and in April 2007, the compensation committee granted the same officer a restricted stock award for an additional 25,000 shares of our common stock. The April 2007 award shares are held in escrow and will be released to the holder upon satisfaction of the vesting provision over a period of four years, provided that the officer remains our chief executive officer. In January 2006, the compensation committee granted an officer a restricted stock award for 25,000 shares of our common stock. In September 2006, we signed and executed a stock bonus award agreement which clarified and modified certain terms of that award. In accordance with the provisions of SFAS 123R, we accounted for the modification as an exchange of the original award for a new award and accordingly, $72,000 of compensation cost was recognized during the year ended December 31, 2006 related to this award. The 2006 award shares are currently held in escrow and will be released to the holder upon satisfaction of the vesting provision over a period of three years.

9. Stock-Based Compensation (Continued)

A summary of the status of our unvested restricted stock awards as of the respective balance sheet dates, and changes during years, is presented below:

	Number of Shares (#)	Weighted-Average Grant-Date Fair Value (per share)
Unvested shares at January 1, 2006	—	—
Granted	25,000	$2.88
Vested	—	—
Forfeited	—	—
Unvested shares at December 31, 2006	25,000	2.88
Granted	43,333	3.30
Vested	(38,480)	3.13
Forfeited	—	—
Unvested shares at December 31, 2007	29,853	3.17
Granted	—	—
Vested	(14,580)	3.06
Forfeited	—	—
Unvested shares at December 31, 2008	15,273	3.28

Our employee stock options are structured to qualify as incentive stock options, or ISOs. Under current tax regulations, we do not receive a tax deduction for the issuance, exercise or disposition of ISOs if the employee meets certain holding requirements. If the employee does not meet the holding requirements, a disqualifying disposition occurs, at which time we will receive a tax deduction. We do not record tax benefits related to ISOs unless and until a disqualifying disposition occurs. In the event of a disqualifying disposition, the entire tax benefit is recorded as a reduction of income tax expense. We have not recognized any income tax benefit for the stock-based compensation arrangement due to the fact that we do not believe it is more likely than not that we will recognize any deferred tax assets from such compensation cost recognized in the current period. Total cash received from the exercise of stock options in 2008, 2007 and 2006 was $79,000, $211,000 and $59,000, respectively.

Stock Options Granted to Non-Employees

We continue to account for stock options issued to non-employees in accordance with the recognition provisions of SFAS 123R, and EITF Issue 96-18, *Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling, Goods or Services*, using a fair value approach. The compensation costs of these arrangements are subject to re-measurement over the vesting terms as earned. As of December 31, 2007, options to purchase 2,031 shares of our common stock remained subject to re-measurement under EITF Issue 96-18.

We did not grant any stock options to non-employees in 2008, 2007 and 2006. Compensation expense related to non-employee options granted prior to 2006 was $10,000, $13,000, and $20,000 for the year ended December 31, 2008, 2007 and 2006, respectively.

9. Stock-Based Compensation (Continued)

The fair value of non-employee options in 2008, 2007, and 2006 was estimated using the Black-Scholes model with the following weighted-average assumptions: a dividend yield of zero, volatility of 73% to 79%, maximum contractual life of ten years, and a risk-free interest rate of 2.9%, 4.4%, and 4.8%, respectively.

10. 401(k) Plan

Our employees, upon meeting certain requirements, are eligible to participate in our 401(k) plan. Our 401(k) plan provides that each participant may contribute a portion of his or her pre-tax compensation, up to a statutory limit, which for most employees is $16,500 in 2008. Participants that are 50 years or older can also make "catch-up" contributions, which in 2007 may be up to an additional $5,000 above the statutory limit. Employee contributions are held and invested by the plan's trustee. Our 401(k) plan also permits us to make discretionary matching contributions, and beginning in 2007, we have elected to match participant contributions up to 3.5% of a participant's annual compensation, subject to statutory limits. For the year ended December 31, 2008 and 2007, we contributed a total of $227,000 and $199,000, respectively, to the matching provision under our 401(k) Plan.

11. Income Taxes

There is no provision for income taxes because we have incurred operating losses since inception. A reconciliation between the U.S. statutory tax rate and our effective tax rate follows:

	2008	2007	2006
Tax benefits at federal statutory tax rate	(34.0)%	(34.0)%	(34.0)%
State income tax benefits, net of federal tax benefits	—	—	—
Research tax credits	(2.6)	(1.7)	(2.6)
Stock-based compensation	1.6	0.8	0.3
Effect of valuation allowance	35.0	35.5	36.6
Other	—	(0.6)	(0.3)
Effective tax rate	0.0%	0.0%	0.0%

11. Income Taxes (Continued)

Deferred tax assets and liabilities reflect the net tax effects of net operating loss, tax credit carryovers and temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of our deferred tax assets are as follows:

	December 31,	
	2008	2007
	(in thousands)	
Deferred tax assets (liabilities):		
Net operating loss carryforwards	$ 58,400	$ 39,400
Deferred revenue	—	7,800
Research tax credits	5,000	3,700
Deferred lease credit	900	1,000
Stock-based compensation	800	500
Depreciation related	(400)	(700)
Other, net	200	—
Total deferred tax assets	64,900	51,700
Valuation allowance	(64,900)	(51,700)
Net deferred tax assets	$ —	$ —

Realization of deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain. Based on known factors, our management cannot currently conclude that it will be more likely than not that the deferred tax assets will be realized. Accordingly, the deferred tax assets have been fully offset by a valuation allowance. For 2008, 2007 and 2006, the valuation allowance increased by $13.2 million, $11.7 million, and $11.8 million, respectively.

As of December 31, 2008, we had net operating loss carryforwards for federal income tax purposes of approximately $147.9 million which expire between 2021 and 2028 if not utilized, and federal research and development tax credit carryforwards of approximately $3.5 million which expire beginning in 2018 if not utilized. In addition, we have net operating loss carryforwards for state income tax purposes of approximately $140.4 million which expire between 2013 and 2018 if not utilized, and state research and development tax credit carryforwards of approximately $3.2 million which do not expire. Section 382 of the Internal Revenue Code of 1986, as amended, provides for a limitation on the utilization of net operating losses and tax credit carryforwards in the event that there is a change in ownership as defined in this section. We concluded that we experienced such a change in ownership in June of 2002. As a result of this change in ownership, our ability to use the net operating losses and tax credits incurred prior to the ownership change will likely be limited in future periods.

We adopted FIN 48 effective January 1, 2007. FIN 48 requires us to recognize the financial statement effects of a tax position when it is more likely than not, based on the technical merits, that the position will be sustained upon examination. No cumulative adjustment to our accumulated deficit was required upon our adoption of FIN 48. As permitted under the provisions of FIN 48, we will classify interest and penalties related to unrecognized tax benefits as part of our income tax provision, although there have been no such interest or penalties recognized to-date.

11. Income Taxes (Continued)

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

	(in thousands)
Balance as of January 1, 2007	$400
Additions based on tax positions related to the current year	100
Reduction resulting from lapse of applicable statue of limitations	—
Settlements	—
Balance as of December 31, 2007	500
Additions based on tax positions related to the current year	200
Reduction resulting from lapse of applicable statue of limitations	—
Settlements	—
Balance as of December 31, 2008	$700

As of December 31, 2008, there were no unrecognized tax benefits that, if recognized, would impact our effective tax rate. We currently have a full valuation allowance against our net deferred tax asset which would impact the timing of the effective tax rate benefit should any of these uncertain tax positions be favorably settled in the future. We do not anticipate that the amount of existing unrecognized tax benefits will significantly increase or decrease within the next 12 months. Because of our net operating loss carryforwards, substantially all of our tax years remain open to federal tax examination. We file income tax returns in the United States and in California, which typically have three and four tax years open, respectively, at any point in time.

12. Quarterly Financial Data (unaudited)

The following tables summarize the unaudited quarterly financial data for the last two fiscal years.

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(in thousands, except per share amount)			
2008				
Total revenue	$ 1,042	$ 1,138	$17,544	$ —
Operating costs and expenses	10,600	12,873	14,131	12,537
Net (loss) income	(9,503)	(11,896)	3,231	(13,050)
Basic (net loss) earnings per share	(0.54)	(0.67)	0.18	(0.57)
Diluted (net loss) earnings per share	(0.54)	(0.67)	0.17	(0.57)
2007				
Total revenue	$ 1,138	$ 996	$ 1,040	$ 984
Operating costs and expenses	6,571	8,255	8,554	9,578
Net loss	(5,136)	(7,020)	(7,301)	(8,104)
Basic and diluted net loss per share	(4.89)	(6.50)	(6.30)	(0.80)

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