INOVIO BIOMEDICAL CORP
Form S-4/A
April 02, 2009

As filed with the Securities and Exchange Commission on April 2, 2009

Registration Statement No. 333-156035

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Amendment No. 2
to

FORM S-4

REGISTRATION STATEMENT
Under
THE SECURITIES ACT OF 1933

INOVIO BIOMEDICAL CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	**3841**	**33-0969592**
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

11494 Sorrento Valley Road
San Diego, California 92121
(858) 597-6006

(Address and telephone number of registrant's principal executive offices)

Avtar Dhillon, M.D.
Chief Executive Officer and President
Inovio Biomedical Corporation
11494 Sorrento Valley Road
San Diego, California 92121
(858) 597-6006

(Name, address and telephone number, of agent for service)

Copies of all communications to be sent to:

Shoshannah D. Katz, Esq. **Thomas J. Poletti, Esq.**	**J. Joseph Kim, Ph.D.** **VGX Pharmaceuticals, Inc.**	**Kathleen M. Shay, Esq.** **John W. Kauffman, Esq.**

K&L Gates LLP
10100 Santa Monica Blvd.
Suite 700
Los Angeles, CA 90067
Tel.: (310) 552-5000
Fax: (310) 552-5001

450 Sentry Parkway
Blue Bell, PA 19422
Tel.: (267) 440-4200
Fax: (267) 440-4242

Duane Morris LLP
30 South 17th Street
Philadelphia, PA 19103
Tel.: (215) 979-1000
Fax: (215) 979-1020

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effectiveness of this registration statement and the satisfaction or waiver of all other terms and conditions to the merger described in the joint proxy statement/prospectus contained herein.

If the securities being registered on this Form are being offered in connection with the formation of a holding company and there is compliance with General Instruction G, check the following box. o

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. o

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.

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

If applicable, place an X in the box to designate the appropriate rule provision relied upon in conducting this transaction:

Exchange Act Rule 13e-4(i) (Cross-Border Issuer Tender Offer) o

Exchange Act Rule 14d-1(d) (Cross-Border Third-Party Tender Offer) o

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered(15)	Proposed Maximum Offering Price Per Unit	Proposed Maximum Aggregate Offering Price	Amount of Registration Fee(14)
Common Stock, par value $0.001 per share	41,686,549(1)	N/A	$1,390(2)	$1
Options to purchase Common Stock	9,142,388(3)	N/A	N/A	N/A(4)
Common Stock, par value $0.001 per share underlying Options	9,142,388(5)	N/A	$9,416,660(6)	$371
Warrants to purchase Common Stock	4,946,389(7)	N/A	N/A	N/A(4)
Common Stock, par value $0.001 per share underlying Warrants	4,946,389(8)	N/A	$5,441,028(9)	$215
Debt convertible into Common Stock	$4,400,000(10)	N/A	$1,466,667(11)	$57
Common Stock, par value $0.001 per share underlying Convertible Debt	4,788,100(12)	N/A	N/A	N/A(13)

(1) Represents the maximum number of shares of common stock, par value $0.001 per share ("Common Stock"), of the registrant, Inovio Biomedical Corporation, or "Inovio," to be issued upon completion of the merger of VGX Pharmaceuticals, Inc., or "VGX," with and into a wholly-owned subsidiary of Inovio, to be issued in exchange for all of the outstanding shares of the common stock of VGX, estimated based on the anticipated exchange ratio of 0.9857805 (the "Merger Exchange Ratio") based on the total capital stock, options and warrants of Inovio outstanding and the total capital stock, options and warrants outstanding of VGX as of March 31, 2009.

(2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(f)(2) under the Securities Act of 1933, as amended (the "Securities Act"). As VGX, the issuer of the securities to be acquired and cancelled in the proposed transaction, has an accumulated capital deficit of approximately $68.1 million as of December 31, 2008, the offering price shown is calculated based on one-third of the $0.0001 per share par value of VGX common stock.

(3) Represents the maximum number of options to purchase Inovio Common Stock to be issued upon assumption of VGX options, based upon the Merger Exchange Ratio.

(4) In accordance with Rule 457(g) under the Securities Act, because the shares of Inovio Common Stock underlying the options and warrants are registered hereby, no separate registration fee is required with respect to the options and warrants registered hereby.

(5) Represents the maximum number of shares of Inovio Common Stock to be issued upon exercise of the assumed VGX options, based upon the Merger Exchange Ratio.

(6) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(g) under the Securities Act, based on an anticipated weighted average exercise price of $1.03 per share (reflecting anticipated adjusted prices ranging from $0.03 to $2.29 per share), based upon the Merger

Exchange Ratio.

(7)

Represents the maximum number of Inovio warrants to purchase Inovio Common Stock to be issued upon assumption of VGX warrants, based upon the Merger Exchange Ratio.

(8)

Represents the maximum number of shares of Inovio Common Stock to be issued upon exercise of the assumed VGX warrants, based upon the Merger Exchange Ratio.

(9)

Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(g) under the Securities Act, based on an anticipated weighted average exercise price of $1.10 per share (reflecting anticipated adjusted prices ranging from $0.26 to $1.27 per share), based upon the Merger Exchange Ratio.

(10)

Represents the maximum principal amount of convertible debt to be assumed in connection with the Merger based on the amount of VGX convertible debt outstanding as of December 31, 2008. In addition, Inovio, on a consolidated basis via the Merger, shall assume the interest accrued or accruable on such principal amount, which may total up to an additional $627,500 upon maturity.

(11)

Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(f)(2) under the Securities Act. As VGX, the issuer of the convertible debt securities to be acquired and cancelled in the proposed transaction, has an accumulated capital deficit of approximately $68.1 million as of December 31, 2008, the offering price shown is calculated based on one-third of $4.4 million, the principal amount of such convertible debt securities.

(12)

Represents the maximum number of shares of Inovio Common Stock to be issued upon conversion of the assumed and adjusted VGX convertible debt on its negotiated terms at a conversion price of $1.05 per share, including the maximum number of shares issuable upon conversion of accrued interest, where allowable pursuant to the terms of such convertible debt.

(13)

In accordance with Rule 457(i) under the Securities Act, where convertible debt and the securities into which the debt is convertible are registered concurrently, the registration fee is to be calculated on the basis of the proposed offering price of the convertible securities alone and no separate registration fee is required for the underlying securities where no additional consideration is to be received by the issuer upon conversion.

(14)

A filing fee of $642 was paid with the filing of the registrant's Registration Statement on December 10, 2008. An additional filing fee of $2 is submitted herewith. The line item amounts shown reflect the initial registration fee due and paid, as adjusted for applicable increases in the proposed maximum offering price shown here.

(15)

In accordance with Rule 416, the registrant is also registering hereunder an indeterminate number of shares that may be issued and/or become issuable as a result of any stock splits or anti-dilution provisions of the securities registered hereby.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this joint proxy statement/prospectus shall thereafter become effective in accordance with section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said section 8(a), may determine.

The information in the accompanying joint proxy statement/prospectus is not complete and may be changed. Inovio Biomedical Corporation may not complete the offer and sell its securities until the registration statement filed with the U.S. Securities and Exchange Commission is effective. The accompanying joint proxy statement/prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED APRIL 2, 2009

PROPOSED MERGER YOUR VOTE IS VERY IMPORTANT

To the Stockholders of Inovio Biomedical Corporation and the Stockholders of VGX Pharmaceuticals, Inc.:

As previously announced, Inovio Biomedical Corporation, or Inovio, and VGX Pharmaceuticals, Inc., or VGX, have agreed to combine under the terms of an acquisition agreement. If the merger is consummated, among other things, based on an exchange ratio and on the terms and conditions of which are described in the accompanying joint proxy statement/prospectus:

all of the issued and outstanding shares of common stock of VGX shall be canceled and converted into the right to receive shares of common stock of Inovio,

all outstanding options to purchase shares of VGX common stock shall be assumed by Inovio and converted into options to purchase Inovio common stock,

all outstanding warrants to purchase shares of VGX common stock shall be assumed by Inovio and converted into warrants to purchase Inovio common stock, and

all outstanding convertible debt of VGX shall become debt convertible into Inovio common stock on existing terms.

If the merger is consummated, based on the fully-diluted share capital outstanding of each of Inovio and VGX as of the record date, current holders of Inovio capital stock will own approximately [ ]% and current holders of VGX common stock will own approximately [ ]% of the outstanding capital stock of the combined company, and current holders of Inovio securities will own approximately [ ]% and holders of VGX securities will own approximately [ ]% of the fully-diluted share capital of the combined company. Inovio's common stock is listed on the NYSE Amex under the trading symbol "INO."

Inovio and VGX cannot complete the proposed merger unless the stockholders of both Inovio and VGX approve proposals relating to the merger. After careful consideration, each of the boards of directors of Inovio and VGX have determined that the merger is fair and in the best interests of the stockholders of their respective companies and recommend that the stockholders of their respective companies vote **FOR** the proposals submitted to them in connection with the proposed merger. This joint proxy statement/prospectus provides you with detailed information about the merger and the other matters to be voted on at the respective stockholders' meetings.

Inovio is sending this joint proxy statement/prospectus and the enclosed proxy card to its stockholders because Inovio's board of directors is soliciting their proxy to vote on the Inovio matters set forth in the joint proxy statement/prospectus at the announced special meeting of Inovio's stockholders to be held [ ], 2009, which we refer to as the "Inovio special meeting." VGX is sending this joint proxy statement/prospectus and the enclosed proxy card to its stockholders because VGX's board of directors is soliciting their proxy to vote on the VGX matters set forth in the joint proxy statement/prospectus at the announced special meeting of VGX's stockholders to be held [ ], 2009, which we refer to as the "VGX special meeting." Before voting, whether you are an Inovio stockholder or a VGX stockholder, you should carefully review all the information contained in the attached joint proxy statement/prospectus, including its annexes and information incorporated by references. **IN PARTICULAR, YOU SHOULD CAREFULLY CONSIDER THE MATTERS DISCUSSED UNDER *"RISK FACTORS"* BEGINNING ON PAGE 26.**

In considering the recommendation of each company's board of directors, you should be aware that directors and officers of Inovio and VGX may have interests in the merger that are different from, or are in addition to, the interests of Inovio and VGX stockholders generally, and that these directors and officers may directly benefit if the merger is consummated. These interests and benefits are described in the joint proxy statement/prospectus. Whether or not you expect to attend the Inovio or VGX special meeting, the details of which are described on the respective Notices of Special Meeting of Stockholders enclosed, please complete, date, sign and promptly return the accompanying proxy in the enclosed envelope.

We strongly support the combination of Inovio and VGX and join our respective boards of directors in recommending that Inovio's stockholders and VGX's stockholders vote **FOR** the proposals presented for their approval at the Inovio special meeting and the VGX special meeting, respectively.

INOVIO BIOMEDICAL CORPORATION	VGX PHARMACEUTICALS, INC.
Avtar Dhillon, M.D.	J. Joseph Kim, Ph.D.
President and Chief Executive Officer	*President and Chief Executive Officer*

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the securities to be issued in connection with the transaction described in this joint proxy statement/prospectus or determined whether this joint proxy statement/prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

This joint proxy statement/prospectus is dated [ ], 2009 and is first being mailed to the Inovio stockholders and the VGX stockholders on or about [ ], 2009.

INOVIO BIOMEDICAL CORPORATION

11494 Sorrento Valley Road
San Diego, California 92121
(858) 597-6006

NOTICE OF SPECIAL MEETING OF STOCKHOLDERS
To Be Held on [ ], 2009

To the Stockholders of Inovio Biomedical Corporation:

You are cordially invited to attend a Special Meeting of Stockholders of Inovio Biomedical Corporation, a Delaware corporation ("Inovio"). The meeting will be held on [ ], 2009 at [ ] p.m., Pacific Daylight Time (local time), at Inovio's principal executive offices, located 11494 Sorrento Valley Road, San Diego, California 92121, for the following purposes:

1. To consider and vote upon a proposal to approve a business combination pursuant to an Amended and Restated Agreement and Plan of Merger dated December 5, 2008, as further amended on March 31, 2009, among Inovio, its wholly-owned subsidiary Inovio Acquisition, LLC and VGX Pharmaceuticals, Inc. ("VGX"), whereby Inovio will issue shares of its common stock to VGX stockholders in exchange for all outstanding shares of common stock of VGX and assume all outstanding VGX options, warrants and, on a consolidated basis, convertible debt, on the terms and conditions set forth in the joint proxy statement/prospectus accompanying this notice (the "Merger"). The Merger would result in holders of VGX common stock owning approximately 48.50% of Inovio's outstanding capital stock immediately after the closing and holders of VGX securities owning approximately 51.82% of Inovio on a fully-diluted basis immediately after the closing.

2. To approve amendment and restatement of the Inovio Amended 2000 Stock Option Plan to clarify the acceleration of vesting of options to purchase shares of Inovio common stock issued and outstanding thereunder and to remove the termination of unexercised options issued and outstanding thereunder at the effective time of the Merger.

3. To conduct any other business properly brought before the meeting.

These items of business are more fully described in the joint proxy statement/prospectus accompanying this notice. Inovio encourages you to read the joint proxy statement/prospectus in its entirety before voting.

The record date for the Inovio special meeting is [ ], 2009. Only Inovio stockholders of record at the close of business on that date may vote at the Inovio special meeting or any adjournments thereof.

All Inovio stockholders of record are cordially invited to attend the meeting in person. Whether or not you expect to attend the meeting, please complete, date, sign and return the enclosed proxy card as promptly as possible in order to ensure your representation at the meeting. A return envelope (with postage prepaid if mailed in the United States) is enclosed 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 meeting, you must obtain a proxy issued in your name from that record holder.

Your vote is important regardless of the number of shares you own. Inovio and VGX cannot complete the Merger described above unless holders of a majority of the shares of Inovio common stock entitled to vote at the Inovio special meeting are present, either in person or by proxy, and vote in favor of the proposals.

By Order of the Board of Directors,

Avtar Dhillon, M.D.
President and Chief Executive Officer

San Diego, California
[ ], 2009

VGX PHARMACEUTICALS, INC.

450 Sentry Parkway
Blue Bell, Pennsylvania 19422
(267) 440-4200

NOTICE OF SPECIAL MEETING OF STOCKHOLDERS
To Be Held on [ ], 2009

To the Stockholders of VGX Pharmaceuticals, Inc.:

You are cordially invited to attend a Special Meeting of Stockholders of VGX Pharmaceuticals, Inc., a Delaware corporation ("VGX"). The meeting will be held on [ ], 2009 at [ ] p.m., Eastern Daylight Time (local time), at VGX's principal executive offices, located 450 Sentry Parkway, Blue Bell, Pennsylvania 19422, for the following purposes:

1. To consider and vote upon a proposal to approve a business combination pursuant to an Amended and Restated Agreement and Plan of Merger dated December 5, 2008, as further amended on March 31, 2009, among VGX, Inovio Biomedical Corporation ("Inovio") and Inovio's wholly-owned subsidiary, Inovio Acquisition, LLC, whereby Inovio will issue shares of its common stock to VGX stockholders in exchange for all of the outstanding shares of common stock of VGX and assume all outstanding VGX options, warrants and, on a consolidated basis, convertible debt, on the terms and conditions set forth in the joint proxy statement/prospectus accompanying this notice (the "Merger"). The Merger would result in holders of VGX common stock owning approximately 48.50% of Inovio's outstanding capital stock immediately after the closing and holders of VGX securities owning approximately 51.82% of Inovio on a fully-diluted basis immediately after the closing.

2. To conduct any other business properly brought before the meeting.

The Merger is more fully described in the joint proxy statement/prospectus accompanying this notice. VGX encourages you to read the joint proxy statement/prospectus in its entirety before voting.

The record date for the VGX special meeting is [ ], 2009. Only VGX stockholders of record at the close of business on that date may vote at the VGX special meeting or any adjournments thereof.

All VGX stockholders of record are cordially invited to attend the meeting in person. Whether or not you expect to attend the meeting, please complete, date, sign and return the enclosed proxy card as promptly as possible in order to ensure your representation at the meeting. A return envelope (with postage prepaid if mailed in the United States) is enclosed 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 meeting, you must obtain a proxy issued in your name from that record holder.

Your vote is important regardless of the number of shares you own. Inovio and VGX cannot complete the Merger described above unless holders of a majority of the shares of VGX common stock entitled to vote at the VGX special meeting are present, either in person or by proxy, and vote in favor of the Merger proposal.

By Order of the Board of Directors,

J. Joseph Kim, Ph.D.
President and Chief Executive Officer

Blue Bell, Pennsylvania
[ ], 2009

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ADDITIONAL INFORMATION

This joint proxy statement/prospectus incorporates by reference certain business and financial information about Inovio Biomedical Corporation, or Inovio, that is not included in or delivered with this joint proxy statement/prospectus. Such information is included in documents filed by Inovio with the U.S. Securities and Exchange Commission, which we refer to as the "SEC," which are available to the stockholders of Inovio and VGX Pharmaceuticals, Inc., or VGX, without charge from the SEC's website at *www.sec.gov*, or upon written or oral request, excluding any exhibits to those documents, unless the exhibit is specifically incorporated by reference as an exhibit in this joint proxy statement/prospectus. You can obtain any of these documents by requesting them in writing or by telephone from:

Inovio Biomedical Corporation
11494 Sorrento Valley Road
San Diego, California 92121
(858) 597-6006

See "*Where You Can Find More Information About Inovio*" beginning on page 220 for a detailed description of the documents of Inovio incorporated by reference into this joint proxy statement/prospectus.

In order for you to receive timely delivery of the documents in advance of the Inovio or VGX special meetings, as applicable, you should make your request by no later than [ ].

Information contained on the Inovio and VGX websites is expressly not incorporated by reference into this joint proxy statement/prospectus.

All information in this joint proxy statement/prospectus concerning Inovio has been furnished by Inovio. All information in this document concerning VGX has been furnished by VGX. VGX has represented to Inovio, and Inovio has represented to VGX, that the information furnished by and concerning it is true and complete in all material respects.

ABOUT THIS JOINT PROXY STATEMENT/PROSPECTUS

This document, which forms part of a registration statement on Form S-4 filed with the SEC by Inovio (File No. 333-156035), constitutes a prospectus of Inovio under Section 5 of the Securities Act of 1933, as amended, which we refer to as the "Securities Act," with respect to the securities of Inovio to be issued to holders of VGX securities in the proposed merger pursuant to the acquisition agreement described in this joint proxy statement/prospectus. This document also constitutes a notice of meeting and a proxy statement under Section 14(a) of the Securities Exchange Act of 1934, as amended, which we refer to as the "Exchange Act," with respect to the Inovio special meeting, at which Inovio stockholders will be asked to consider and vote upon certain proposals, including a proposal to approve the issuance of Inovio securities to holders of VGX securities in the merger pursuant to the acquisition agreement. This joint proxy statement/prospectus will also be utilized by VGX as a notice of meeting and proxy statement with respect to the VGX special meeting, at which VGX stockholders will be asked to consider and vote upon a proposal to approve and adopt the acquisition agreement and approve the merger.

Throughout this joint proxy statement/prospectus, when we use the term "Inovio," we are referring to Inovio Biomedical Corporation, and when we use the term "VGX," we are referring to VGX Pharmaceuticals, Inc. When we use the term "combined company" or "combined group" we are referring to these entities as they will exist and operate if the proposed transaction closes, as described in this joint proxy statement/prospectus. When we use the term "Acquisition Agreement," we are referring to the Amended and Restated Agreement and Plan of Merger, dated December 5, 2008, as further amended on March 31, 2009, by and among Inovio, Inovio Acquisition, LLC, a Delaware limited liability company (which we refer to as "Submerger"), and VGX, which is attached to this joint

proxy statement/prospectus as *Annex A*, and publicly filed by Inovio with the SEC as Exhibit 2.1 to Inovio's Current Report on Form 8-K filed on December 8, 2008 and Exhibit 2.1 to Inovio's Current Report on Form 8-K filed on March , 2009, and is incorporated by reference into this joint proxy statement/prospectus. Unless expressly specified otherwise, all of the numbers of Inovio common stock and share ownership numbers of Inovio common stock and all of the numbers of VGX common stock and share ownership numbers of VGX common stock referred to in this joint proxy statement/prospectus are calculated without giving effect to any issuance of such common stock upon the exercise of any outstanding options or conversion of any outstanding warrants or convertible debt after the record date. Further all references to percentages of the post-Merger fully-diluted share capital do not take into account potential conversion of any accrued interest on the assumed VGX convertible debt; however, references to the maximum shares to be issued or become issuable in relation to the Merger, includes the maximum number of shares potentially issuable upon conversion of accrued interest through maturity of the assumed VGX convertible debt.

Additionally, sometimes when we use the terms "transaction" or the "transactions contemplated by the Acquisition Agreement," we are referring to:

- the business combination between Inovio and VGX, whereby VGX will merge with and into Submerger, and Inovio will issue shares of its common stock to VGX stockholders in exchange for all outstanding shares of common stock of VGX and assume all outstanding VGX options, warrants and convertible debt, on the terms and conditions set forth in this joint proxy statement/prospectus, which we refer to as the "Merger"; and

- an amendment and restatement of the Inovio Amended 2000 Stock Option Plan, or the "Inovio 2000 Plan," to (A) clarify the acceleration of vesting of options to purchase shares of Inovio common stock issued and outstanding thereunder at the effective time of the Merger, which we refer to as the "Effective Time," and (B) remove the termination of unexercised Inovio options issued and outstanding thereunder at the Effective Time, which we collectively refer to as the "2000 Plan Amendment."

QUESTIONS AND ANSWERS ABOUT THE TRANSACTION AND THE MEETINGS

Q: Why am I receiving this joint proxy statement/prospectus?

A: Inovio and VGX have agreed to a business combination pursuant to the terms of the Acquisition Agreement. In connection with the transaction, among other things, based on an exchange ratio and on the terms and conditions of which are described in this joint proxy statement/prospectus:

- all of the issued and outstanding shares of common stock of VGX shall be canceled and converted into the right to receive shares of common stock of Inovio,
- all outstanding options to purchase shares of VGX common stock shall be assumed by Inovio and converted into options to purchase Inovio common stock,
- all outstanding warrants to purchase shares of VGX common stock shall be assumed by Inovio and converted into warrants to purchase Inovio common stock, and
- all outstanding convertible debt of VGX shall become debt convertible into Inovio common stock on existing terms.

In order to complete the transaction, Inovio stockholders must vote to approve the Merger, including the issuance of shares of Inovio common stock and other securities in exchange for all of the outstanding securities of VGX and the 2000 Plan Amendment, and VGX stockholders must vote to approve the Merger. Inovio is sending this joint proxy statement/prospectus and the enclosed proxy card to its stockholders because Inovio's board of directors is soliciting their proxy to vote on these matters and various other matters set forth in this joint proxy statement/prospectus at the announced special meeting of Inovio's stockholders to be held [ ], 2009, which we refer to as the "Inovio special meeting."

VGX is sending this joint proxy statement/prospectus and the enclosed proxy card to its stockholders because VGX's board of directors is soliciting their proxy to vote on the VGX matters set forth in the joint proxy statement/prospectus at the announced special meeting of VGX's stockholders to be held [ ], 2009, which we refer to as the "VGX special meeting." This joint proxy statement/prospectus is also being sent to holders of VGX's outstanding options, warrants and convertible debt as a prospectus in relation to the assumption of such securities and the potential issuance of shares of Inovio common stock upon their respective exercise or conversion post-Merger, if the Merger is completed.

This joint proxy statement/prospectus contains important information about the transaction and the other proposals to be presented at the special meetings. Inovio stockholders and all holders of VGX securities should read this joint proxy statement/prospectus carefully.

Q: Why are Inovio and VGX proposing the transaction?

A: Inovio and VGX believe that the proposed transaction will provide substantial benefits to both companies and their stockholders, including:

- the potential for greater ability to mitigate overall development risk through creation of a broader, more balanced, fully-integrated biopharmaceutical company with a deep product development pipeline, which the parties believe will have significant market potential;
- complementary product pipelines addressing a broad spectrum of indications in large markets;
- a stronger technology platform, including electroporation assisted DNA vaccine delivery, cGMP manufacturing experience and capability in production, and the optimized SynCon sequencing technology with potential to generate new clinical product candidates on an ongoing basis, which the parties anticipate will reduce time to market of their programs;

a broader patent portfolio;

the potential for expanded access to third party funding and validation for the parties' programs;

an experienced and complete post-Merger management team; and

other expected potential synergies, efficiencies and cost savings that may be created in combining the research, development and technological strengths of Inovio and VGX.

For details of the reasons for the transaction, see the sections entitled *"Inovio's Reasons for the Transaction"* and *"VGX's Reasons for the Transaction"* on pages 66 and 68, respectively.

Q: What will happen in the transaction?

A: Upon the terms and subject to the conditions of the Acquisition Agreement and in accordance with the Delaware General Corporation Law, or the "DGCL," Inovio, Submerger and VGX will enter into a business combination pursuant to which VGX will be merged with and into Submerger. Upon consummation of the Merger, VGX will cease to exist and Submerger will continue as the surviving entity and as a wholly-owned subsidiary of Inovio and change its name to VGX Pharmaceuticals, LLC, referenced sometimes as the "Surviving Entity."

In consideration for the Merger, Inovio will issue and otherwise allocate for issuance under options and warrants to purchase common stock and debt convertible into common stock, a total of up to 59,965,805 shares of new Inovio common stock pursuant to the terms of the Acquisition Agreement.

Following the completion of the Merger, holders of VGX common stock will become holders of Inovio common stock, and holders of options, warrants and debt exercisable or convertible for shares of VGX common stock will become holders of options, warrants and debt exercisable or convertible for shares of Inovio common stock, respectively.

Q: What will VGX stockholders receive in the Merger?

A: If the Merger is consummated, outstanding shares of VGX common stock will be cancelled and holders of VGX common stock will receive in exchange a number of shares of Inovio common stock calculated using an exchange ratio determined based on the ratio of the number of shares of Inovio common stock outstanding and issuable pursuant to outstanding exercisable or convertible securities as of the closing date, to the number of shares of VGX common stock outstanding and issuable pursuant to outstanding exercisable or convertible securities, as of such date, excluding VGX convertible debt, or the "Merger Exchange Ratio." Based on the respective fully-diluted share capitals of Inovio and VGX as of March 31, 2009 and certain forward election VGX option exercises anticipated prior to closing, we anticipate that the Merger Exchange Ratio will be approximately 0.9857805, meaning that each share of VGX common stock will be exchanged for 0.9857805 shares of Inovio common stock upon closing of the Merger. If you are a holder of VGX securities, see "*Effect of Merger on VGX Securities"* on page 99 for a detailed explanation of what you will receive upon completion of the Merger.

Q: How will VGX's outstanding options, warrants and convertible debt be affected by the Merger?

A: As a result of the Merger, Inovio will assume all outstanding options and warrants to purchase shares of VGX common stock and convert such securities into options and warrants, respectively, to purchase Inovio common stock, with the number of shares issuable and the exercise price of such securities adjusted based on the Merger Exchange Ratio. Inovio will also assume, on a consolidated basis, all outstanding debt of VGX convertible into shares of VGX common stock, which will become debt convertible into Inovio common stock, with a conversion price of $1.05 based on existing terms providing for such assumption and conversion. See "*Effect of Merger on VGX Securities"* on page 99 for a detailed explanation of the assumption and adjustment of the VGX options, warrants and convertible debt.

Q: Will I be able to freely trade the shares of Inovio common stock issued or issuable upon exercise or conversion of Inovio securities issued upon closing of the Merger?

A: As Inovio has registered the shares of Inovio common stock to be issued upon closing of the Merger or subsequently issued upon exercise or conversion of the other securities assumed and converted at closing of the Merger, such shares should be freely tradable when issued, subject to the following restrictions:

- Persons who are or become affiliates of the combined group for purposes of Rule 144 under the Securities Act may only resell shares they receive in relation to the Merger in transactions permitted by Rule 144, or as otherwise permitted under the Securities Act. Persons who may be deemed to be affiliates of the combined group generally include individuals or entities that control, are controlled by, or are under common control with, the combined group and may include its officers and directors, as well as its principal stockholders.

- Certain shares issued upon closing of the Merger or upon exercise or conversion of other securities assumed and converted in conjunction with the Merger are subject to contractual lock-up restrictions as set forth in the Acquisition Agreement. See "*Restrictions on Ability to Sell Inovio Common Stock"* on page 84 for a detailed explanation of which securities are subject to such lock-up restrictions and for what duration.

- Five principal stockholders of VGX will deposit certain shares of Inovio common stock into a voting trust upon closing of the Merger, which will be transferable only in certain circumstances pursuant to the terms of the voting trust agreement. See *"Voting Trust Agreement*" on page 117 for a detailed explanation of the terms and conditions of the voting trust.

Inovio's shares of common stock are currently listed on the NYSE Amex under the trading symbol "INO."

Q: What are the material federal income tax consequences to holders of VGX common stock resulting from the Merger?

A: Inovio and VGX each expect the Merger to qualify as a reorganization for U.S. federal income tax purposes. Accordingly, the parties expect that the Merger will be tax-free to holders of VGX common stock for U.S. federal income tax purposes.

The tax consequences of the transaction are complex. VGX stockholders should consult with their own tax advisors as to the tax consequences to them of the Merger, as well as review the more detailed description of the tax consequences of the Merger in this joint proxy statement/prospectus entitled "*Certain Material U.S. Federal Income Tax Consequences*" beginning on page 95.

Q: How will outstanding Inovio securities be affected by the Merger?

A: The Merger will not affect the outstanding shares of Inovio common stock and Inovio's outstanding options and warrants to purchase shares of Inovio common stock, except:

- the closing of the Merger will constitute a "Change of Control" or "Change in Control," as such terms are used in the Inovio's equity incentive plans and related agreements, resulting in the acceleration of vesting for all options to purchase shares of Inovio common stock outstanding as of the Effective Time; and

- the current holders of Inovio securities will experience substantial dilution upon the issuance of the shares of Inovio common stock in exchange for the outstanding shares of VGX common stock and the assumption and conversion of the other VGX securities upon consummation of the Merger.

For more detailed information about the impact of the Merger on outstanding Inovio securities, see "*Effect of Merger on Inovio Securities"* on page 99 and "*Resulting Ownership of Inovio; Change of Control"* on page 72.

Q: Will there be changes to the Inovio board of directors if the Merger is consummated?

A: The Acquisition Agreement provides that post-Merger Inovio's board of directors will consist of five individuals, comprised of three directors from Inovio's prior board of directors and two directors from VGX's prior board of directors. The parties anticipate that Dr. Avtar Dhillon, Dr. J. Joseph Kim, Mr. Simon Benito, Dr. Morton Collins and [ ] will serve as directors of the post-Merger company. Dr. Avtar Dhillon, Inovio's current chief executive officer, will serve as chairman of the board of directors post-Merger. See "*Directors and Management of Inovio Following the Transaction*" on page 86 for biographies of the designated directors upon completion of the Merger.

Q: Who will be the executive officers of Inovio if the Merger is consummated?

A: The Acquisition Agreement also provides for an integrated management team, drawn from the senior management of Inovio and VGX, to lead the combined group upon completion of the Merger, including the following individuals:

Name	Position in the Combined Company	Current Position
Dr. J. Joseph Kim	Chief Executive Officer	President and Chief Executive Officer of VGX
Dr. Avtar Dhillon	President	President and Chief Executive Officer of Inovio
Peter Kies	Chief Financial Officer	Chief Financial Officer of Inovio
Dr. C. Jo White	Chief Medical Officer	Chief Medical Officer of VGX
Dr. Niranjan Sardesai	Senior Vice President, Research & Development	Senior Vice President, Research & Development of VGX
Kevin Rassas	Senior Vice President, Business Development	Senior Vice President, Business Development of VGX
Gene Kim	Vice President, Finance	Chief Financial Officer of VGX
Punit Dhillon	Vice President, Operations	Vice President, Finance & Operations of Inovio
Dr. Michael Fons	Vice President, Corporate Development	Vice President, Corporate Development of Inovio
Dr. Iacob Mathiesen	Vice President, Research & Development and Managing Director, Inovio AS	Managing Director, Inovio AS

Q: Does Inovio's board of directors recommend voting in favor of the Merger, including the issuance of Inovio securities to the holders of VGX securities pursuant to the terms of the Acquisition Agreement?

A: Yes. After careful consideration, Inovio's board of directors determined that the transaction is fair to, and in the best interests of, Inovio and its stockholders. Inovio's board of directors recommends that Inovio stockholders vote **FOR** the Merger, including the issuance of Inovio securities pursuant to the Acquisition Agreement.

For a description of the factors considered by Inovio's board of directors in making its determination, Inovio stockholders should read the section entitled "*Inovio's Reasons for the Transaction*" on page 66.

Q: Does Inovio's board of directors recommend voting in favor of the proposed amendment and restatement of the Inovio 2000 Plan?

A: Yes. Inovio's board of directors determined that an amendment and restatement of the Inovio 2000 Plan to clarify the acceleration of vesting of Inovio options issued and outstanding under the Inovio 2000 Plan at the Effective Time and to remove the termination of unexercised Inovio options issued and outstanding under the Inovio 2000 Plan at the Effective Time is vital to the success of the transaction. Inovio's board of directors recommends that Inovio stockholders vote **FOR** the proposed amendment and restatement of the Inovio 2000 Plan.

Q: Does VGX's board of directors recommend voting in favor of the Merger and the Acquisition Agreement?

A: Yes. After careful consideration, VGX's board of directors consider the terms of the Merger, including the Acquisition Agreement, to be fair and reasonable and to be in the best interests of VGX and its stockholders. VGX's board of directors unanimously recommends that VGX's stockholders vote **FOR** the Merger and the Acquisition Agreement.

For a description of the factors considered by VGX's board of directors in making its determination, see the section entitled *"VGX's Reasons for the Transaction"* on page 68.

Q: When do you expect to complete the Merger?

A: Inovio and VGX are working to complete the Merger as quickly as possible. Inovio and VGX hope to complete the Merger shortly after obtaining the requisite stockholder approvals at the Inovio special meeting and the VGX special meeting, and they believe the closing will occur within the second quarter of the 2009 fiscal year. However, Inovio and VGX cannot predict the exact timing of the completion of the Merger because the Merger is subject to several conditions. There may be a substantial period of time between the Inovio and VGX special meetings and the completion of the Merger, and Inovio and VGX may not complete the Merger within the second quarter of the 2009 fiscal year, if at all. For a detailed description of the conditions to the transaction, see the section entitled *"Conditions to the Transaction"* on page 112.

Q: What do I need to do now?

A: You should carefully read and consider the information contained in this joint proxy statement/prospectus, including the Annexes, and consider how the transaction will affect you as an Inovio stockholder or VGX stockholder. You also may want to review the documents referenced under the section entitled *"Where You Can Find More Information About Inovio"* on page 220.

If you are an Inovio or VGX stockholder, whether or not you intend to attend the Inovio or VGX special meeting, you should complete and return the enclosed proxy card as soon as possible in accordance with the instructions provided in this joint proxy statement/prospectus and on the enclosed proxy card.

Q: When and where are the Inovio and VGX special meetings?

A: The Inovio special meeting will be held on [ ], 2009 at [ ] p.m., Pacific Daylight Time (local time), at Inovio's principal executive offices, located 11494 Sorrento Valley Road, San Diego, California 92121. See "*Special Meeting of Inovio Stockholders*" beginning on page 206 for more information about the Inovio special meeting and the proposals to be presented for the approval of the Inovio stockholders.

The VGX meeting will be held on [ ], 2009 at [ ] p.m., Eastern Daylight Time (local time), at VGX's principal executive offices, located 450 Sentry Parkway, Blue Bell, Pennsylvania

19422. See "*Special Meeting of VGX Stockholders*" beginning on page 216 for more information about the VGX special meeting and the proposals to be presented for the approval of the VGX stockholders.

Q: Have any VGX stockholders committed to vote in favor of the Merger and the resulting change of control of VGX?

A: Yes. Subsequent to the execution of the Acquisition Agreement and consistent with the terms thereof, four VGX stockholders, who hold approximately 41% of the issued and outstanding VGX common stock as of the date of this joint proxy statement/prospectus, have each executed voting agreements with Inovio in which such stockholders agreed to vote their shares of VGX common stock for the adoption of the Acquisition Agreement and consummation of the Merger. The form of voting agreement is provided as an exhibit to the Acquisition Agreement included with this joint proxy statement/prospectus as *Annex A*; for further details of the vote required from the VGX stockholders and the voting agreement see *"VGX Support Stockholders' Voting Agreement"* beginning on page 116.

Q: As a VGX stockholder, do I have appraisal or dissenter's rights?

A: Under the DGCL, holders of VGX common stock who do not vote for the adoption of the Acquisition Agreement and the Merger have the right to seek appraisal and receive cash for the fair value of their shares as determined by the Delaware Court of Chancery if the Merger is completed, but only if they comply with all requirements of Delaware law, which are summarized in this joint proxy statement/prospectus. This appraisal amount could be more than, the same as, or less than the fair value of the Inovio common stock that a VGX stockholder would be entitled to receive under the terms of the Acquisition Agreement. Any holder of VGX common stock intending to exercise its appraisal rights, among other things, must submit a written demand for appraisal to VGX prior to the vote on the adoption of the Acquisition Agreement and must not vote or otherwise submit a proxy in favor of adoption of the Acquisition Agreement. Failure to follow exactly the procedures specified under Delaware law will result in the loss of appraisal rights. Because of the complexity of the Delaware law relating to appraisal rights, if you are considering exercising your appraisal right, we encourage you to seek the advice of your own legal counsel. For a full description of the appraisal rights, see "*Appraisal Rights*" beginning on page 80 of this joint proxy statement/prospectus.

Q: As an Inovio stockholder, how do I vote?

A: If you are an Inovio stockholder of record, you may vote in person at the Inovio special meeting or by submitting a proxy for the meeting. You can submit your proxy by completing, signing, dating and returning the enclosed proxy card in the accompanying pre-addressed postage paid envelope.

If you are an Inovio stockholder and you hold your shares in "street name," which means your shares are held of record by a broker, bank or nominee, you must provide the record holder of your shares with instructions on how to vote your shares with regard to the proposals described in this joint proxy statement/prospectus or obtain a proxy issued in your name from that record holder.

For a more complete description of voting shares of Inovio common stock, see "*Special Meeting of Inovio Stockholders"* on page 206.

Q: As a VGX stockholder, how do I vote?

A: If you are a VGX stockholder of record, you may vote in person at the VGX special meeting or by submitting a proxy for the meeting. You can submit your proxy by completing, signing, dating and returning the enclosed proxy card in the accompanying pre-addressed postage paid envelope.

For a more complete description of voting shares of VGX common stock, see "*Special Meeting of VGX Stockholders"* on page 216.

Q: As a VGX stockholder, should I send in my VGX share certificates now?

A: No. If the Merger is completed, we will send the former stockholders of VGX written instructions for exchanging their share certificates. Additional information on the anticipated procedures for exchanging certificates representing shares of VGX common stock for shares of Inovio common stock is set forth in "*Exchange of Securities*" beginning on page 101.

Q: As a holder of VGX options, warrants or convertible debt, what do I do?

A: Holders of other VGX securities do not need to take any action at this time. If the Merger is completed, any exercise or conversion of such securities will be completed on their existing terms and conditions, as adjusted according to the Merger Exchange Ratio as applicable, for shares of Inovio common stock. You will not be sent a replacement form of option, warrant or note, unless requested subsequent to the consummation of the Merger.

Q: Whom should I call with questions?

A: If you have any questions about the transaction or if you need additional copies of this joint proxy statement/prospectus or the enclosed proxy card, you should contact:

Inovio Stockholders:	**VGX Stockholders:**
Inovio Biomedical Corporation	VGX Pharmaceuticals, Inc.
114994 Sorrento Valley Road	450 Sentry Parkway
San Diego, California 92121	Blue Bell, Pennsylvania 19422
(858) 597-6006	(267) 440-4200
Attention: Investor Relations	Attention: Investor Relations

You may also obtain additional information about Inovio from documents filed with the U.S. Securities and Exchange Commission, which we refer to as the "SEC," by following the instructions in the section entitled *"Where You Can Find More Information About Inovio"* on page 220.

SUMMARY OF THE JOINT PROXY STATEMENT/PROSPECTUS

This summary highlights selected information from this joint proxy statement/prospectus and does not contain all of the information that is important to you. To better understand the proposed transaction and the proposals on which your vote is being solicited, you should read this entire document carefully, including the annexes, and in particular, the Acquisition Agreement attached as *Annex A*. The page references provided parenthetically in this summary indicate where you can find a more complete description of the topics presented in this summary.

The Companies

Inovio Biomedical Corporation
114994 Sorrento Valley Road
San Diego, California 92121
(858) 597-6006

Inovio Biomedical Corporation, a Delaware corporation, organized in 2001, is a San Diego-based biomedical company focused on the development of next-generation vaccines to prevent or treat cancers and chronic infectious diseases. Inovio is a leader in developing DNA delivery solutions based on electroporation, which uses brief, controlled electrical pulses to create temporary pores in cell membranes and enable increased cellular uptake of a useful biopharmaceutical. Inovio has licensing and collaborative arrangements for use of its patented technologies with research-driven biopharmaceutical companies and government and non-government agencies. Inovio licenses the use of its electroporation-based DNA delivery systems, and contracts to manufacture and supply such systems, for partners to use in conjunction with their proprietary DNA vaccines or DNA-based immunotherapies. These arrangements provide Inovio with some combination of upfront payments, development fees, milestone payments, royalties and a supply agreement, while the partners pursue development of proprietary agents or conduct research using Inovio's electroporation technology. Inovio has also been pursuing proprietary vaccine development or co-development, resulting in whole or partial ownership in promising vaccines to prevent or treat cancers and chronic infectious diseases. Inovio's technology is protected by an extensive patent portfolio covering in vivo electroporation, encompassing a range of apparatuses, methodologies, conditions and applications including oncology, gene delivery, vascular, and transdermal as well as ex vivo electroporation.

Inovio's common stock is currently traded on the NYSE Amex under the trading symbol "INO."

Inovio's website address is *www.inovio.com*; however, information on Inovio's website is not a part of, or incorporated by reference in, this joint proxy statement/prospectus, and should not be relied upon in evaluating the proposals set forth for approval by the Inovio or VGX stockholders.

Inovio Acquisition, LLC
114994 Sorrento Valley Road
San Diego, California 92121
(858) 597-6006

Inovio Acquisition, LLC, or Submerger, is a wholly-owned direct subsidiary of Inovio that was originally incorporated in Delaware as Inovio Acquisition Corporation in June 2008 and converted into a limited liability company in October 2008. Submerger does not engage in any operations and exists solely to facilitate the Merger.

VGX Pharmaceuticals, Inc.
450 Sentry Parkway
Blue Bell, Pennsylvania 19422
(267) 440-4200

VGX Pharmaceuticals, Inc., a Delaware corporation organized in December 2000, is a biopharmaceutical company with DNA Vaccines and small molecule product candidates for the treatment of infectious diseases, cancer and inflammatory diseases. VGX's clinical development programs include programs focused on HIV infection, inflammatory diseases and a DNA-based therapeutic for cervical cancer. In addition, VGX has filed investigational new drug, or IND, applications with the U.S. Food and Drug Administration, or FDA, for a novel DNA therapy that utilizes growth hormone releasing hormone, or GHRH, for the treatment of cancer cachexia and anemia and a DNA preventative vaccine for avian influenza. VGX has established a vertically-integrated DNA vaccines and therapies platform, which includes a patented DNA delivery system (CELLECTRA® electroporation), and access to advanced cGMP plasmid manufacturing capabilities through its affiliate, VGX International. VGX is also a majority shareholder of VGX Animal Health, whose lead product candidate, LifeTide SW 5, received regulatory approval in Australia in January 2008 and became the world's first approved DNA therapy for food animals. VGX's product candidates and technology programs are protected by the VGX's extensive intellectual property portfolio.

VGX's website address is *www.vgxp.com*; however, information on VGX's website is not part of, or incorporated by reference in, this joint proxy statement/prospectus, and should not be relied upon in evaluating the proposals set forth for approval by Inovio or VGX stockholders.

The Combined Group

Inovio and VGX both operate in the biotechnology industry, focused primarily on the development of DNA-based vaccines and therapies. The combined group intends to remain focused on this goal utilizing Inovio's proprietary electroporation technology to continue development of Inovio's pipeline of pre-clinical and clinical candidates and maintaining a substantial number of Inovio's ongoing collaborations and partnerships with pharmaceutical industry leaders and academic institutions, while adding existing VGX pre-clinical and clinical programs and VGX's ongoing collaborations with other pharmaceutical industry leaders and academic institutions. The combined group anticipates integrating and maintaining a balanced portfolio of programs drawn from Inovio's and VGX's current pre-clinical and clinical efforts that are most likely to benefit from and extend the strength of the combined group's intellectual property related to use of Inovio's electroporation technology for DNA delivery and VGX's DNA therapeutics platform. The combined group expects that its initial product pipeline will include DNA-based therapeutics for delivery via electroporation targeted to HIV, hepatitis C virus, human papilloma virus, and influenza. Management of the combined group will be primarily located in San Diego, California, with additional research and development facilities in Blue Bell, Pennsylvania, The Woodlands, Texas and Oslo, Norway.

Summary of the Transaction (see Page 61)

Upon the terms and subject to the conditions of the Acquisition Agreement and in accordance with the DGCL, Inovio, Submerger and VGX will enter into a business combination pursuant to which VGX will be merged with and into Submerger. Upon consummation of the Merger, VGX will cease to exist and Submerger will continue as the surviving entity and as a wholly-owned subsidiary of Inovio and change its name to VGX Pharmaceuticals, LLC. Thus, Inovio will remain the parent, publicly reporting and listed entity, retain its current subsidiaries, and hold VGX Pharmaceuticals, LLC and the current VGX subsidiaries as its direct and indirect subsidiaries upon completion of the transaction.

In consideration for the Merger, based on an exchange ratio and on the terms and conditions described in this joint proxy statement/prospectus:

- all of the issued and outstanding shares of common stock of VGX shall be canceled and converted into the right to receive shares of common stock of Inovio,
- all outstanding options to purchase shares of VGX common stock shall be assumed by Inovio and converted into options to purchase Inovio common stock,
- all outstanding warrants to purchase shares of VGX common stock shall be assumed by Inovio and converted into warrants to purchase Inovio common stock, and
- all outstanding convertible debt of VGX shall become debt convertible into Inovio common stock on existing terms.

As a result, Inovio will issue and otherwise allocate for issuance under options and warrants to purchase common stock and debt convertible into common stock, a total of up to 59,965,805 shares of new Inovio common stock pursuant to the terms of the Acquisition Agreement. Following the completion of the Merger, holders of VGX common stock will become holders of Inovio common stock, and holders of options, warrants and debt exercisable or convertible for shares of VGX common stock will become holders of options, warrants, and debt exercisable or convertible for shares of Inovio common stock, respectively. In addition, Inovio and VGX have agreed that any other contractual rights to receive shares of VGX common stock, other than the VGX options, warrants and convertible debt to be assumed and converted as described above, shall be converted into rights to receive shares of Inovio common stock in accordance with the terms and conditions of the contract(s) providing such rights.

In order to complete the transaction, Inovio stockholders must vote to approve the Merger, including the issuance of shares of Inovio common stock and other securities in exchange for all of the outstanding securities of VGX, and the 2000 Plan Amendment, and VGX stockholders must vote to approve the Merger. Pursuant to the Acquisition Agreement, upon the closing date, three members of Inovio's current board of directors and two members of the VGX board of directors will be appointed to the Inovio board of directors, and the senior management team of the combined group will be composed of executives from both Inovio and VGX will take over management of the Surviving Entity. Further terms, conditions and results of the transaction are described in the sections entitled *"The Transaction"* on page 61 and *"The Acquisition Agreement"* on page 98.

Conditions to the Transaction (see Page 112)

Inovio's obligation to consummate the Merger and issue its securities pursuant to the Acquisition Agreement, which we refer to as the "closing," will not take place until the parties satisfy, or waive where allowable, the conditions listed in the Acquisition Agreement. These closing conditions include, but are not limited to, the following:

- Inovio's registration statement, of which this joint proxy statement/prospectus is a part, shall have become effective under the Securities Act and shall not be the subject of any stop order or proceeding seeking a stop order.
- Inovio shall have obtained the approval of Inovio's stockholders of
  - the Acquisition Agreement, the Merger and the other transactions contemplated by the Acquisition Agreement; and
  - the amendment of the Inovio 2000 Plan to clarify the acceleration of vesting of Inovio options issued and outstanding at the Effective Time and to remove the termination of

unexercised Inovio options issued and outstanding under the Inovio 2000 Plan at the Effective Time.

VGX shall have obtained the approval of VGX's stockholders of the Acquisition Agreement, the Merger and the other transactions contemplated by the Acquisition Agreement.

The number of shares held by dissenting VGX stockholders shall not exceed 10% of the number of shares of outstanding VGX common stock.

No governmental entity, as defined in the Acquisition Agreement, shall have enacted, issued, promulgated, enforced or entered any statute, rule, regulation, executive order, decree, injunction or other order (whether temporary, preliminary or permanent) which is in effect and which has the effect of making the Merger illegal or otherwise prohibiting consummation of the Merger, the issuance of the Inovio's securities to VGX stockholders or the assumption of the VGX securities.

The directors and officers of VGX and Inovio in office immediately prior to the closing shall have resigned as directors and officers, unless they will be continuing in the same capacity with the combined group.

The waiting period, if any (and any extension thereof), applicable to the Merger under the Hart-Scott-Rodino Act, or "HSR Act," shall have been terminated or shall have expired.

Inovio shall have received an opinion of K&L Gates LLP, and VGX shall have received an opinion of Duane Morris LLP, each to the effect that the Merger will qualify as a "reorganization" within the meaning of Section 368(a) of the Internal Revenue Code of 1986, as amended, or the Code.

The representation and warranties by Inovio, VGX and Submerger contained in the Acquisition Agreement shall continue to be true and correct as of the closing.

No event having a material adverse effect with respect to Inovio or VGX shall have occurred.

Inovio, VGX and Submerger shall have performed or complied in all material respects with the agreements and covenants required by the Acquisition Agreement to be performed or complied with by them, and VGX and Inovio shall have received certificate from each other to such effect signed by a duly authorized officer.

Inovio and VGX shall have furnished the other party all consents, approvals and waivers set forth in the Acquisition Agreement.

Inovio's common stock shall continue to be listed on the NYSE Amex or listed or quoted on an alternate securities exchange or quotation system in accordance with the other terms and conditions of the Acquisition Agreement.

The shares issued pursuant to the Merger shall be authorized for listing on the NYSE Amex, or listed or quoted on an alternate securities exchange or quotation system in accordance with the other terms and conditions of the Acquisition Agreement.

VGX and Inovio shall have received customary legal opinions from each other's counsel reasonably acceptable and consistent with the opinions anticipated pursuant to the Acquisition Agreement.

VGX's auditor's opinion with respect to the VGX audited consolidated financial statements (including restatements thereof, if applicable) for the periods ended December 31, 2005, 2006 and 2007, shall remain in full force and effect and VGX shall not have received any written notice from its auditors that such opinions and related financial statements may no longer be

relied upon, nor that VGX's reviewed financial statements for each of the quarters ended subsequent to January 1, 2008 may no longer be relied upon.

VGX shall have paid in full, principal and interest accrued, all VGX debt, convertible and non-convertible, other than the $4.4 million of the VGX convertible debt identified in the Acquisition Agreement and have amended such remaining notes to provide for optional conversion at $1.05 per share after the Effective Time and to provide for mandatory conversion at such price should Inovio's common stock trade at or above $2.10 for five consecutive trading days after the Effective Time.

VGX shall have entered into a manufacturing agreement in conjunction with its prior asset sale to VGXI, Inc., and such agreement shall upon its terms be effective at the time of the closing and bear a term for at least 12 months post-closing.

VGX shall have received payment in full of all principal and interest owed on all loans to VGX's directors, officers and/or employees and there shall be no outstanding loans from VGX or any affiliate of VGX to any director, officer or employee of VGX or any of its subsidiaries, other than advances made in the ordinary course of business for business purposes.

The signatories to the voting trust agreement contemplated by the Acquisition Agreement shall have provided executed signature pages to the voting trust agreement, to be held in escrow pending the closing.

Termination of the Acquisition Agreement (see Page 114)

The Acquisition Agreement may be terminated prior to the date the registration statement, of which this joint proxy statement/prospectus is a part, becomes effective, or the subsequent closing of the Merger, under several circumstances, including:

by mutual written consent duly authorized by the boards of directors of Inovio and VGX;

by either Inovio or VGX, if, with certain exceptions, the closing shall not have occurred by June 30, 2009, with certain automatic extensions related to the status of the registration process and special meetings;

if a governmental entity shall have issued an order, decree or ruling or taken any other action (including the failure to take action), in any case having the effect of permanently restraining, enjoining or otherwise prohibiting the Merger, which order, decree or ruling is final and nonappealable;

by VGX, upon a breach of any representation, warranty, covenant or agreement on the part of Inovio set forth in the Acquisition Agreement, or if any representation or warranty of Inovio shall have become untrue, in either case such that the conditions set forth in the Acquisition Agreement would not be satisfied as of the time of such breach or as of the time such representation or warranty shall have become untrue, with certain cure period exceptions;

by Inovio, upon a breach of any representation, warranty, covenant or agreement on the part of Inovio set forth in the Acquisition Agreement, or if any representation or warranty of VGX shall have become untrue, in either case such that the conditions set forth in the Acquisition Agreement would not be satisfied as of the time of such breach or as of the time such representation or warranty shall have become untrue, with certain cure period exceptions;

by VGX, upon written notice to Inovio setting forth

the determination of VGX's board of directors that a competing proposal received constitutes a VGX superior offer, as defined by the Acquisition Agreement;

the determination of VGX's board of directors to withdraw its recommendation in favor of recommending the VGX superior offer to the VGX stockholders, in satisfaction of its fiduciary duties; and

VGX's representation of full and complete compliance with the terms of the Acquisition Agreement's no solicitation provisions prior to such termination, with certain limitations related to compliance with notice and document delivery requirements pursuant to the Acquisition Agreement; or

by Inovio, upon written notice to Inovio setting forth

the determination of Inovio's board of directors that a competing proposal received constitutes a Inovio superior offer, as defined by the Acquisition Agreement,

the determination of Inovio's board of directors to withdraw its recommendation in favor of recommending the Inovio superior offer to the Inovio stockholders, in satisfaction of its fiduciary duties, and

Inovio's representation of full and complete compliance with the terms of the Acquisition Agreement's no solicitation provisions prior to such termination, with certain limitations related to compliance with notice and document delivery requirements pursuant to the Acquisition Agreement.

In the event that the Acquisition Agreement is terminated by either Inovio or VGX pursuant to the provisions related to recommendation of a competing superior offer, the terminating party shall pay the other party a fee equal to $3,500,000 in immediately available funds and such payment shall be the sole and exclusive remedy relating to such termination.

No Solicitation (see Page 109)

The Acquisition Agreement contains detailed provisions prohibiting Inovio and VGX, as well as their respective officers, directors, employees, agents and representatives, from taking any action to solicit a competing acquisition proposal. Notwithstanding these restrictions, the Acquisition Agreement provides that under limited circumstances prior to the approval of the Acquisition Agreement by their respective stockholders, Inovio or VGX, upon receipt of an acquisition proposal from a third party, may furnish non-public information to that third party and/or enter into discussions or negotiations with that third party. We refer to an acquisition proposal from a third party which meets the specified criteria and is recognized as such by the relevant board of directors as a "superior offer." If either Inovio or VGX receives a superior offer, then the board of directors of the receiving party may change its recommendation relating to the transaction.

Vote of Stockholders Required (see Pages 211 and 219)

In order to transact business at the Inovio special meeting, holders of a majority of the shares of Inovio common stock entitled to vote as of the record date for the Inovio special meeting must be present, either in person or by proxy. The approval of a business combination between Inovio and VGX, whereby Inovio will issue shares of common stock to outstanding stockholders of VGX in the Merger and upon exercise of assumed VGX options and warrants and upon conversion of VGX convertible debt assumed by Inovio on a consolidated basis, on the terms and conditions set forth in the joint proxy statement/prospectus, requires the approval of the holders of a majority of the shares of Inovio common stock entitled to vote and present at the Inovio special meeting, either in person or by proxy duly authorized. The approval of the proposed changes to the Inovio 2000 Plan requires approval of the holders of a majority of the shares of Inovio common stock entitled to vote and present at the Inovio special meeting, either in person or by proxy duly authorized. As of the close of business on the record date for the Inovio special meeting, [ ], 2009, Inovio directors, executive officers and affiliates beneficially owned and were entitled to vote [ ] shares of Inovio common stock, which represented [ ]% of the [ ] shares of Inovio common stock outstanding and entitled to vote on that date.

In order to transact business at the VGX special meeting, holders of the majority of the shares of VGX common stock entitled to vote as of the record date for the VGX special meeting must be present, either in person or by proxy. The approval of the business combination between Inovio and VGX, whereby Inovio will issue shares of common stock to outstanding stockholders of VGX in the Merger and upon exercise of assumed VGX options and warrants and upon conversion of VGX convertible debt assumed by Inovio on a consolidated basis, on the terms and conditions set forth in the joint proxy statement/prospectus, requires the approval of the holders of a majority of the outstanding shares of VGX common stock entitled to vote at the VGX special meeting.

As of the close of business on the record date for the VGX special meeting, [ ], 2009, VGX directors, executive officers and affiliates beneficially owned and were entitled to vote [ ] shares of VGX common stock, which represented [ ]% of the [ ] shares of VGX common stock outstanding and entitled to vote on that date. Of such shares, shares representing % of the shares of VGX common stock outstanding and entitled to vote are already committed to voting in favor of the Merger pursuant to certain voting agreements, as described in *"Support Stockholders' Voting Agreements*" beginning on page 116.

Appraisal and Dissenters Rights (see Page 80)

If any VGX stockholder entitled to appraisal rights under DGCL with respect to the Merger has properly exercised and perfected such appraisal rights pursuant to and in accordance with Section 262 of the DGCL, and the Merger is consummated, such holder shall, to the extent allowed under applicable laws, be entitled to an appraisal by the Delaware Court of Chancery of the fair value of such shares of VGX common stock as provided in Section 262 of the DGCL, provided that such VGX stockholder acts in accordance with and meets all the requirements of Section 262 of the DGCL. Prior to the closing, Inovio, Submerger and VGX shall comply, and after the closing, Inovio and the Surviving Entity shall comply, with the information delivery and other requirements pursuant to Section 262 of the DGCL and applicable Delaware law. See *Annex E* for a copy of Section 262 of the DGCL.

Notwithstanding any other provision in the Acquisition Agreement to the contrary, shares of VGX common stock that have not consented to or been voted for approval of, as applicable, the Merger and with respect to which such VGX stockholders become entitled to, and do properly exercise dissenters' rights in accordance with Section 262 of DGCL, or the "dissenting shares," will not be converted into or represent a right to receive consideration in connection with the Merger, but will instead be converted into the right to receive such consideration as may be determined to be due with respect to such dissenting shares pursuant to the DGCL. If a holder of dissenting shares, or a "dissenting stockholder," withdraws such dissenting stockholder's demand for such payment and appraisal or becomes ineligible for such payment and appraisal, then, as of the Effective Time or the occurrence of such event of withdrawal or ineligibility, whichever last occurs, such dissenting stockholder's dissenting shares will cease to be dissenting shares and will be converted into the right to receive, and will be exchangeable for the merger consideration. However, if the number of dissenting shares exceeds 10% of the number of shares of outstanding VGX common stock outstanding just prior to closing, a condition to consummation of the Merger will not be satisfied and the Merger will not close unless Inovio waives the condition.

Directors and Management of Inovio Following the Transaction (see Page 86)

The Acquisition Agreement provides that Inovio's board of directors will take all actions necessary such that, on the closing date of the transaction, three directors who shall be acceptable to Inovio's board of directors shall be nominated and appointed to the Inovio board, including Dr. Avtar Dhillon, who shall serve as chairman of the board of the post-Merger board of directors. Further, the Acquisition Agreement provides that VGX's board of directors will take all actions necessary such that,

on the closing date of the transaction, two directors who shall be acceptable to VGX's board of directors shall be nominated and appointed to the Inovio board. The parties shall ensure that the composition of the Inovio board upon such appointments shall comply with the rules and regulations of the NYSE Amex, or other applicable securities exchange or quotation system, and the SEC. Consistent with these requirements, the parties have identified and anticipate that Dr. Avtar Dhillon, Dr. J. Joseph Kim, Mr. Simon Benito, [ ] and Dr. Morton Collins will serve on the post-Merger board of directors.

The post-Merger management team of the combined group shall consist of the following persons as of closing:

J. Joseph Kim shall be appointed Chief Executive Officer;

Avtar Dhillon shall be appointed President;

Peter Kies shall be appointed Chief Financial Officer;

C. Jo White shall be appointed Chief Medical Officer;

Niranjan Sardesai shall be appointed Senior Vice President, Research & Development;

Kevin Rassas shall be appointed Senior Vice President, Business Development;

Gene Kim shall be appointed Vice President, Finance;

Punit Dhillon shall be appointed Vice President, Operations;

Michael Fons shall be appointed Vice President, Corporate Development; and

Iacob Mathiesen, Vice President, Research & Development and Managing Director, Inovio AS.

Opinion of Inovio's Financial Advisor (see Page 73)

In connection with the Merger, Inovio's board of directors received a written opinion, dated July 2, 2008, of Inovio's financial advisor, Oppenheimer & Co. Inc., referred to as Oppenheimer, as to the fairness, from a financial point of view and as of the date of the opinion, to Inovio of the Merger Exchange Ratio provided for in the original agreement and plan of merger (prior to its amendment). Oppenheimer's opinion, dated July 2, 2008, relates only to the Merger Exchange Ratio provided for in the original merger agreement and does not take into account any events or developments after the date of such opinion, including any modification to the proposed Merger or the Merger Exchange Ratio provided for in the Acquisition Agreement, dated as of December 5, 2008, as further amended on March 31, 2009.

The full text of Oppenheimer's written opinion, dated July 2, 2008, which describes the assumptions made, procedures followed, matters considered and limitations on the review undertaken, is attached to this joint proxy statement/prospectus as *Annex B*. ***Oppenheimer's opinion was provided to Inovio's board of directors in connection with its evaluation of the Merger Exchange Ratio from a financial point of view to Inovio and does not address any other aspect of the Merger. Oppenheimer's opinion does not address the underlying business decision of Inovio to effect the Merger, the relative merits of the Merger as compared to any alternative business strategies that might exist for Inovio or the effect of any other transaction in which Inovio might engage and does not constitute a recommendation to any stockholder as to how such stockholder should vote or act with respect to any matters relating to the Merger.***

Interests of Directors, Officers and Affiliates (see Page 85)

In considering the recommendation of Inovio's board of directors that Inovio stockholders vote in favor of the issuance of Inovio's securities in conjunction with the Merger and the resulting change of control of Inovio, Inovio stockholders should be aware that some Inovio executive officers and directors

have interests in the transaction that may be different from, or in addition to, their interests as stockholders of Inovio. These interests include the execution of new employment agreements, to be effective upon closing of the Merger, between Inovio and its current executive officers, which provide for certain payments upon closing of the Merger and eligibility for future severance payments under certain terms and conditions.

Inovio's board of directors was aware of these interests and considered them, among other matters, in making its recommendation to Inovio's stockholders that they approve the transaction and other related proposals. In addition, subsequent to such recommendation, Dr. Avtar Dhillon, Mr. Simon Benito and [ ] were selected to continue service on the Inovio board as directors post-Merger, for which Mr. Benito and [ ] will continue to receive customary director compensation, and Dr. Dhillon will also serve as chairman of the board of directors and president of Inovio post-Merger.

In considering the recommendation of VGX's board of directors to VGX's stockholders that they approve the transaction, VGX stockholders should be aware that some officers and directors of VGX have interests in the transaction that are different from, or in addition to, the other VGX stockholders. These interests include:

Dr. J. Joseph Kim, Chief Executive Officer of VGX, will become the Chief Executive Officer of Inovio post-Merger; and

Dr. C. Jo White, Chief Medical Officer of VGX, will serve as the Chief Medical Officer of Inovio post-Merger.

As of December 31, 2008, all current directors and executive officers of VGX as a group beneficially owned approximately 33.2% of the shares of VGX common stock. Under the terms of the Acquisition Agreement, at the effective time of the Merger, each outstanding and unexercised option to purchase shares of VGX common stock, whether vested or unvested, will be assumed by Inovio and will become an option to acquire, on the same terms and conditions as were applicable under the stock option agreement by which such option is evidenced and the stock option plan under which such option was issued, an option to purchase shares of Inovio common stock. VGX's current executive officers and directors, as of December 31, 2008, own vested and unvested options and warrants to purchase an aggregate of 8,081,800 shares VGX common stock.

VGX's board of directors was aware of these interests and considered them, among other matters, in making its recommendation to VGX's stockholders that they approve the transaction. In addition, subsequent to such recommendation, Dr. J. Joseph Kim and Dr. Morton Collins were selected to serve as directors of Inovio post-Merger, for which Dr. Collins will receive customary director compensation.

Accounting Treatment of the Merger (see Page 83)

The Merger will be accounted for using the purchase method of accounting for business combinations under United States generally accepted accounting principles, which is referred to as GAAP. Although the parties view the business combination of Inovio and VGX as a "merger of equals," Inovio has been determined to be the acquirer for purposes of generally accepted accounting principles, in accordance with the provisions of Statement of Financial Accounting Standards No. 141R, Business Combinations (SFAS 141R). Accordingly, the historical consolidated financial statements of Inovio will be carried forward at their historical cost, the assets and liabilities of VGX will be recorded at their fair value and the results of operations of VGX will be included in the consolidated financial statements from the date of the closing of the Merger. In evaluating the appropriate accounting treatment under SFAS 141R, the parties and their accountants considered all relevant facts and circumstances, including, without limitation, the relative operational size and revenue production of the legacy entities, the relative voting rights of the legacy holders in the combined group, the composition

of the post-Merger company's board of directors and its committees, and the composition and relevant experience of senior management.

Certain Material U.S. Federal Income Tax Consequences of the Transaction (see Page 95)

The Merger is intended to qualify as a "reorganization" under Section 368(a) of the Code. It is a condition to the completion of the Merger that each of Inovio and VGX receives a legal opinion from their respective tax counsel to the effect that the Merger will be treated as a "reorganization" under the Code. Accordingly, VGX stockholders will generally not recognize any gain or loss for U.S. federal income tax purposes of their exchange of their VGX common stock for Inovio common stock in the Merger. The companies themselves will not recognize gain or loss for U.S. federal income tax purposes as a result of the Merger.

The U.S. federal income tax consequences described above may not apply to all holders of VGX common stock. Your tax consequences will depend on your individual situation. Accordingly, you should consult your own tax advisor concerning all federal, state, local, gift, and foreign tax consequences of the Merger that may apply to you.

Listing of Inovio Common Stock on the NYSE Amex (see Page 84)

Inovio has notified the NYSE Amex of the Acquisition Agreement, the anticipated Merger and the other transactions contemplated by the Acquisition Agreement, and has submitted an additional listing application for the shares of Inovio common stock to be issued or to become issuable pursuant to assume securities in the Merger. In the Acquisition Agreement, Inovio agrees to use all commercially reasonable efforts to cause the shares of Inovio common stock issuable in connection with the Acquisition Agreement to be approved for listing on the NYSE Amex or, if applicable under certain circumstances described in the Acquisition Agreement, to be approved for listing or quotation on another securities exchange or quotation system.

Risk Factors (see Page 26)

There are material risks to the transaction and to the parties' separate and proposed combined businesses, which may impact the parties' ability to complete the transaction and its results if consummated, the business prospects of the parties to the transaction and the anticipated operations and financial condition of the proposed combined group. In evaluating the Acquisition Agreement, the principal terms of the transaction or the issuance of Inovio securities in the transaction, you should carefully read this joint proxy statement/prospectus and especially consider the factors discussed in the section entitled *"Risk Factors"* beginning on page 26 as well as the risk factors listed in the annual report on Form 10-K of Inovio for the year ended December 31, 2008.

Comparative Market Price and Dividend Information (see Page 23)

Inovio common stock is currently listed on the NYSE Amex, the successor to the American Stock Exchange, under the trading symbol "INO." On July 7, 2008, the last full trading day prior to the initial public announcement of the transaction, Inovio common stock closed at $1.08 per share on the American Stock Exchange. On December 5, 2008, the last full trading day prior to the public announcement of the Acquisition Agreement, Inovio common stock closed at $0.39 per share on the NYSE Amex. On , 2009, the most recent practicable date prior to mailing of this joint proxy statement/prospectus, Inovio common stock closed at $ per share on the NYSE Amex.

Shares of VGX common stock are not currently listed on an exchange.

SELECTED SUMMARY HISTORICAL AND PRO FORMA COMBINED FINANCIAL DATA

The following tables present summary historical financial data, comparative per share historical and pro forma data as well as market price and dividend data of Inovio and VGX.

Financial Information

The extracts from the financial statements of, and other information about, Inovio and VGX appearing in this joint proxy statement/prospectus are presented in U.S. dollars ($) and have been prepared in accordance with U.S. GAAP.

Selected Summary Historical Financial Data of Inovio

The following table sets forth selected summary historical financial data of Inovio. The information presented below was derived from Inovio's audited annual consolidated financial statements as of December 31, 2008, and for the five years ended December 31, 2008. This information is only a summary. This information should be read together with Inovio's historical financial statements and accompanying notes and Inovio's "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" included elsewhere into this joint proxy statement/prospectus. Historical results are not necessarily indicative of future results.

	Year Ended December 31, 2008	Year Ended December 31, 2007	Year Ended December 31, 2006	Year Ended December 31, 2005	Year Ended December 31, 2004
Operations Data:					
License fee and milestone payments	$ 791,401	$ 2,793,478	$ 1,337,105	$ 2,563,283	$ 214,351
Revenue under collaborative research & development arrangements	1,077,967	1,854,303	962,207	1,492,145	945,591
Grants & miscellaneous revenue	228,264	159,948	1,168,866	1,411,825	7,157
Total revenue	2,097,632	4,807,729	3,468,178	5,467,253	1,167,099
Loss from continuing operations	(13,658,464)	(15,898,420)	(13,346,194)	(15,506,970)	(11,263,140)
Gain on disposal of assets					290,209
Interest & other income	692,842	4,693,977	1,002,252	210,118	247,555
Net loss	(12,965,622)	(11,204,443)	(12,343,942)	(15,296,852)	(10,972,931)
Imputed dividends common stock				(8,329,112)	
Imputed & declared dividends preferred stock		(23,335)	(2,005,664)	(2,736,658)	(732,405)
Net loss attributable to common stockholders	$ (12,965,622)	$ (11,227,778)	$ (14,349,606)	$ (26,362,622)	$ (11,705,336)
Per common share basic & diluted:					
Net loss	$ (0.30)	$ (0.27)	$ (0.40)	$ (0.81)	$ (0.62)
Imputed dividends common stock				(0.44)	
Imputed & declared dividends preferred stock			(0.06)	(0.14)	(0.04)
Net loss attributable to common stockholders	$ (0.30)	$ (0.27)	$ (0.46)	$ (1.39)	$ (0.66)
Balance Sheet Data:					
Cash and equivalents	$ 14,115,281	$ 10,250,929	$ 8,321,606	$ 17,166,567	$ 17,889,797
Short-term investments		16,999,600	14,700,000		
Long-term investments	9,169,471				
Total assets	38,987,028	39,775,021	35,949,615	28,978,954	20,951,502
Current liabilities	14,709,582	3,354,499	6,859,722	4,002,280	5,401,992
Accumulated deficit	(152,812,948)	(139,847,326)	(128,619,548)	(114,269,942)	(87,907,320)
Total stockholders equity	19,106,147	31,034,754	18,151,864	23,470,748	15,549,510

Selected Summary Historical Financial Data of VGX

The following table sets forth selected summary historical financial data of VGX. The information presented below was derived from VGX's audited annual consolidated financial statements as of December 31, 2008, and for the five years ended December 31, 2008. This information is only a summary. This information should be read together with VGX's historical financial statements and accompanying notes and VGX's "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" included elsewhere into this joint proxy statement/prospectus. Historical results are not necessarily indicative of future results.

	Years Ended December 31,				
Consolidated Statement of Operations Data	**2008**	**2007**	**2006**	**2005**	**2004**
Revenue:					
Revenue from Product Sales	$ 606,211	$ 723,411	$	$	$
Government Contract Revenue	1,990,411				
Government Grant Revenue	86,120	668,955	337,178	381,872	111,643
Revenue from Related Parties	376,072				
Other Operating Revenue, net	68,425	36,448			
Total Revenue	**3,127,239**	**1,428,814**	**337,178**	**381,872**	**111,643**
Operating Expenses					
Cost of Product Sales	2,237,238	2,204,254			
Research & Development	13,125,479	10,781,960	9,007,334	3,412,430	1,631,523
General & Administrative	7,808,636	5,082,119	8,679,153	7,878,765	2,291,785
TOTAL Operating Expenses	**23,171,353**	**18,068,333**	**17,686,487**	**11,291,195**	**3,923,308**
Loss from Operations	**(20,044,114)**	**(16,639,519)**	**(17,349,309)**	**(10,909,323)**	**(3,811,665)**
Other Income (Expense):					
Gain on Sale of Manufacturing Assets to Related Party, net of tax	6,653,153				
Losses from Equity Investment in Affiliated Entity	(1,632,812)	(990,338)	(700,451)	(325,080)	
Interest Income	423,312	919,026	846,219	89,455	4,382
Interest Expense	(712,242)	(1,128,713)	(957,153)	(190,201)	(966)
Other Income	218,557				
Minority Interest	267,634	43,503			
Total Other Income (Expense)	**5,217,602**	**(1,156,522)**	**(811,385)**	**(425,826)**	**3,416**
Net Loss	**$ (14,826,512)**	**$ (17,796,041)**	**$ (18,160,694)**	**$ (11,335,149)**	**$ (3,808,249)**
Amounts per common share basic and diluted:					
Net loss per share	**$ (0.34)**	**$ (0.41)**	**$ (0.45)**	**$ (0.34)**	**$ (0.14)**
Weighted average number of common shares outstanding basic and diluted	**43,392,406**	**43,915,950**	**40,535,848**	**33,795,625**	**26,314,113**

	December 31,				
Consolidated Balance Sheet Data	**2008**	**2007**	**2006**	**2005**	**2004**
Current Assets	$ 8,409,630	$ 19,434,539	$ 21,948,415	$ 4,763,882	$ 1,505,395
Noncurrent Assets	5,944,399	14,687,551	9,108,878	5,751,481	9,517
Current Liabilities	5,078,828	17,773,729	12,444,467	1,944,959	776,934
Noncurrent Liabilities	4,400,000	2,945,646	4,000,000	5,000,000	
Minority Interest	688,863	956,497			
Accumulated Deficit	(68,111,842)	(53,285,330)	(35,489,289)	(17,328,595)	(5,993,446)
Total Stockholders' Equity	4,186,338	12,446,218	14,612,826	3,570,404	737,978

Selected Comparison of Historical and Pro Forma Per Share

The following table sets forth selected historical per share information of Inovio and VGX and unaudited pro forma per share information after giving effect to the Merger between Inovio and VGX,

assuming that 0.9857805 shares of Inovio common stock are issued in exchange for each outstanding share of VGX common stock. You should read this information in conjunction with the selected historical financial information, the unaudited pro forma combined financial statements and the separate historical financial statements of Inovio and VGX and the notes thereto included elsewhere in this joint proxy statement/prospectus. The historical per share information is derived from the audited consolidated financial statements of Inovio and VGX as of the year ended December 31, 2008. The unaudited pro forma combined financial statements are not necessarily indicative of the operating results or financial position that would have been achieved had the Merger been consummated at the beginning of the period presented and should not be construed as representative of future operations.

	Year Ended December 31, 2008		
	Inovio Historical	**VGX Historical**	**Pro Forma Combined**
Basic and diluted net loss attributable to common stockholders per common share	$ (0.30)	$ (0.34)	$ (0.15)
Weighted average number of common shares basic and diluted	43,914,004	43,392,406	85,760,779

COMPARATIVE STOCK PRICE AND DIVIDEND INFORMATION

Inovio's common stock is currently listed, and principally traded, on the NYSE Amex under the symbol "INO." The following table sets forth the quarterly high and low per share closing prices of Inovio's common stock for the three years ending December 31, 2008 and the quarter ended March 31, 2009.

	US$	
	High	**Low**
Quarter ended March 31, 2009	0.56	0.28
Year ended December 31, 2008		
Quarter ended December 31, 2008	0.80	0.16
Quarter ended September 30, 2008	1.13	0.60
Quarter ended June 30, 2008	1.30	0.78
Quarter ended March 31, 2008	1.45	0.83
Year ended December 31, 2007		
Quarter ended December 31, 2007	1.51	0.85
Quarter ended September 30, 2007	2.94	1.16
Quarter ended June 30, 2007	4.17	2.20
Quarter ended March 31, 2007	3.46	2.82
Year ended December 31, 2006		
Quarter ended December 31, 2006	3.59	2.62
Quarter ended September 30, 2006	2.58	2.01
Quarter ended June 30, 2006	2.67	2.00
Quarter ended March 31, 2006	3.15	2.28

On July 7, 2008, the last full trading day prior to the initial public announcement date of the Merger, and on [ ], 2009, the most recent practicable date prior to the mailing of this joint proxy statement/prospectus, the last reported sales prices of Inovio's common stock as reported by the American Stock Exchange and NYSE Amex, respectively, were $1.08 and $[ ], respectively. You are encouraged to obtain current trading prices for Inovio's common stock in considering whether to vote to approve the Merger or engage in any other transaction involving Inovio's securities. As of the record date for the Inovio special meeting, there were approximately [ ] holders of record of Inovio's common stock.

No public market exists for VGX's common stock. As of the record date for the VGX special meeting, there were approximately [ ] holders of record of VGX's common stock

Neither Inovio nor VGX have historically paid dividends on its common stock and neither has any intention to do so in the foreseeable future, whether as separate entities or as a combined group if the Merger is consummated.

CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This joint proxy statement/prospectus and the documents that are incorporated into this joint proxy statement/prospectus by reference contain or incorporate by reference forward-looking statements, as defined by the Private Securities Litigation Reform Act of 1995, which are not purely historical. Forward-looking statements include, without limitation, statements regarding Inovio's, VGX's, the combined group's and the parties' management's expectations, hopes, beliefs, intentions or strategies regarding the future, including Inovio's and VGX's financial condition, results of operations, and the expected impact of the proposed transaction on the parties' financial performance, individually and as a combined group. In addition, any statements that refer to projections, forecasts or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. The words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "might," "plan," "possible," "potential," "predict," "project," "seek," "shall," "should," "would," "will be," "will continue," "will result" and similar expressions or the negatives of such terms may identify forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking. Forward-looking statements include information concerning possible or assumed future results of the combined group's operations, including statements about the following subjects:

- the benefits, effects or results of the proposed Merger;
- cost reductions, operating efficiencies or synergies resulting from the proposed Merger;
- operations and results after the proposed Merger;
- integration of the parties' operations;
- business strategies;
- growth opportunities;
- competitive position;
- market outlook;
- plans and objectives of management;
- tax treatment of the proposed Merger;
- accounting treatment of the proposed Merger;
- costs in connection with the proposed Merger; and
- any other statements regarding future growth, future cash needs, future operations, business plans and future financial results, and any other statements that are not historical facts;

These forward-looking statements are based on current expectations and beliefs concerning future developments and the potential effects on the parties and the transaction. There can be no assurance that future developments actually affecting Inovio, VGX and the proposed combined group will be those anticipated. These forward-looking statements involve a number of risks, uncertainties (some of which are beyond the parties' control) or other assumptions that may cause actual results or performance to be materially different from those expressed or implied by

these forward-looking statements. In addition to the risk factors described in this joint proxy statement/prospectus under the heading "*Risk Factors*," beginning on page 26, as well as the risk factors described in the other documents Inovio files with the SEC and incorporate by reference in this joint proxy statement/prospectus, those factors include:

Inovio's ability to obtain stockholder approval of the Merger and the related amendment to the Inovio 2000 Plan;

VGX's ability to obtain stockholder approval of the Merger;

Stockholder litigation, if any, and/or regulatory scrutiny related to the Merger;

the parties' ability to close the Merger in a timely manner;

the ability of the management team to effect a smooth transition to leadership of the combined group;

changes in U.S. and foreign governmental safety, health, environmental and other regulations, which could require Inovio and/or VGX to make significant expenditures;

employment workforce factors, including the loss of key employees;

uncertainties relating to Inovio's and/or VGX's technology;

the combined group's ability to implement certain business objectives;

liability related to the use of the combined group's products;

uncertainties related to clinical trials;

U.S. and foreign government regulation and uncertainty of obtaining regulatory approval;

dependence on research collaborators and scientific advisors; and

other risks and uncertainties detailed from time to time in Inovio's filings with the SEC.

Should one or more of these risks or uncertainties materialize, or should any of the parties' assumptions prove incorrect, actual results may vary in material respects from those projected in these forward-looking statements. Inovio and VGX undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

The risks included in this joint proxy statement/prospectus are not exhaustive. Other sections of this joint proxy statement/prospectus may include additional factors that could adversely impact the parties' businesses and financial performance. Moreover, new risk factors emerge from time to time and neither Inovio nor VGX can predict all such risk factors, nor can either company assess the impact of all such risk factors on its current business or the combined group's anticipated business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward looking statements. Given these risks and uncertainties, you should not place undue reliance on forward-looking statements as a prediction of actual results. You should also be aware that while Inovio does, and the combined group will, from time to time, communicate with securities analysts, Inovio does not, and the combined group does not, intend to disclose any material non-public information or other confidential commercial information to them. Accordingly, you should not assume that Inovio, VGX or the resulting combined group agrees with any statement or report issued by any analyst, regardless of the content of the analyst's report. Thus, to the extent that reports issued by securities analysts contain any projections, forecasts or opinions, such reports are not Inovio's, VGX's or the combined group's responsibility.

All forward-looking statements attributable to Inovio or VGX or any person acting on their behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section.

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RISK FACTORS

Inovio stockholders should carefully consider the following factors in evaluating whether to approve the proposals to be voted on at the Inovio special meeting. VGX stockholders should carefully consider the following factors in evaluating whether to approve the proposals to be voted on at the VGX special meeting. Holders of VGX options, warrants and convertible debt should carefully consider the following factors in evaluating whether to exercise or convert such securities for Inovio common stock post-Merger. These factors should be considered in conjunction with the other information included in or incorporated by referenced into this proxy statement/ prospectus, including the risks discussed in Inovio's Form 10-K for the year ended December 31, 2008.

Risks Relating to the Transaction

The issuance of Inovio securities to VGX stockholders in the transaction will substantially reduce the percentage interests of Inovio stockholders.

If the transaction is completed, Inovio will issue, or otherwise allocate for issuance under options, warrants and convertible debt to acquire Inovio common stock, a total of up to 59,965,805 shares of Inovio common stock pursuant to the terms of the Acquisition Agreement. The issuance and allocation of this substantial number of new shares of Inovio common stock, will cause a significant reduction in the relative percentage interests of current Inovio stockholders. Following the completion of the transaction and upon issuance of the new shares, subject to the approval of the Acquisition Agreement, Merger and the other transactions contemplated thereby, current VGX stockholders will own approximately 48.50% of Inovio's outstanding capital stock, and current Inovio stockholders will own approximately 51.50% of Inovio's outstanding capital stock. If the Merger is completed on the terms described in this joint proxy statement/prospectus, former holders of VGX securities will own approximately 51.82% of Inovio's share capital on a fully-diluted basis and current holders of Inovio securities will own approximately 48.18% of Inovio's common stock on a fully diluted basis.

The percentage ownership of Inovio's fully-diluted share capital post-Merger is not necessarily reflective of the anticipated voting power of the legacy Inovio and VGX stockholders post-Merger.

The Acquisition Agreement anticipates the calculation of the Merger Exchange Ratio such that the legacy holders of Inovio's securities and VGX's securities will respectively hold 50 percent of the fully diluted share capital upon closing of the Merger, excluding the VGX convertible debt assumed in the Merger. Taking into account potential conversion of the assumed VGX convertible debt, the anticipated split in potential voting power between the legacy holders of the securities of Inovio and those of VGX, on a fully-diluted basis, would be 48.18% to 51.82%. However, under the terms of a voting trust agreement to be signed and become effective concurrent with the closing of the Merger, five significant stockholders of VGX will place 8,000,000 shares into a trust to be administered by an independent committee of the board of directors of Inovio post-Merger. The trustees would vote the shares in accordance with the percentage of votes cast by all stockholders on any particular matter. The trust will have a term of ten years and would terminate upon a change in control of the combined group. The effect of the voting trust reduces the voting power of the legacy holders of VGX securities on a fully-diluted basis to 44.91%, with the legacy holders of the Inovio's securities holding 48.18% voting power on a fully-diluted basis for the duration of the voting trust; the effect of the voting trust reduces the voting power of the legacy holders of VGX common stock to 39.19% and maintains the legacy holders of Inovio common stock at 51.50% based on the anticipated shares of Inovio common stock outstanding upon closing. The remaining voting power held in trust will reflect the pro rata vote of the stockholders overall. Thus, in the initial post-Merger period Inovio's legacy investors may control stockholder actions, presuming participation by all eligible common stockholders, until shares are transferred out of the voting trust pursuant to its terms or the voting trust is otherwise terminated.

The Merger Exchange Ratio is not based on stock price or book value and the terms of the Merger will not be adjusted to reflect any increase or decrease in Inovio's stock price or either company's book value prior to the Effective Time.

As noted above, the Acquisition Agreement anticipates the calculation of the Merger Exchange Ratio such that the legacy holders of Inovio's securities and VGX's securities will respectively hold 50 percent of the fully-diluted share capital of Inovio upon closing of the Merger, excluding any of the VGX convertible debt assumed in the Merger, an approach meant to reflect the parties' shared view of their integration as a "merger of equals." Although the Acquisition Agreement limits both parties' ability to issue additional securities in the interim period prior to closing, thereby limiting the amount of fluctuation possible in the Merger Exchange Ratio, the Acquisition Agreement does not provide for any value-based adjustment. Thus, any changes, whether an increase or decrease, in the perceived or actual value of Inovio or VGX will not be reflected in the Merger Exchange Ratio or in the final consideration received by the holders of VGX securities upon closing of the Merger.

Sales of substantial amounts of Inovio shares, or even the availability of Inovio shares for sale, in the open market could cause the market price of Inovio shares to decline.

Under Inovio's "shelf registration statement" that the SEC declared effective on May 25, 2006, Inovio registered an aggregate of $75.0 million of Inovio's equity securities that it may issue from time to time, in one or more offerings at prices and on terms that it determines at the time of each offering. Under that registration statement, Inovio has registered multiple kinds of its equity securities, including common stock, preferred stock, warrants and a combination of these securities, or units.

Through December 31, 2008, Inovio has "taken-down" from the shelf registration statement, and issued and sold, an aggregate of 9,035,378 shares of Inovio common stock valued at $26.9 million upon issuance and warrants to purchase up to 1,575,919 shares of Inovio common stock valued at $3.9 million upon issuance and, if those warrants are fully exercised, Inovio will have issued an additional 1,575,919 shares of Inovio common stock under that shelf registration statement. In other words, the shares of common stock sold in offerings from the shelf registration statement as of the date of this joint proxy statement/prospectus represent approximately 36% of the value of the aggregate equity securities from the shelf registration statement (41% if the warrants sold from the shelf registration statement are fully exercised). While that amount is only approximately 24% of Inovio's outstanding shares of common stock as of December 31, 2008, future issuances and sales of common stock or securities exercisable for or convertible into Inovio's common stock pursuant to the existing shelf registration statement, if in substantial numbers, and even the availability for issuance of the securities registered under the shelf registration statement, could adversely affect the market price of Inovio shares.

In addition to the shares and warrants Inovio has issued under the shelf registration statement, during 2007 it also issued 2,201,644 shares of Inovio common stock and warrants to purchase up to 938,475 shares of Inovio common stock in other recent offerings, as well as other restricted shares pursuant to consulting arrangements and other registered securities pursuant to its stock incentive plan in 2007 and 2008. Further, effective February 15, 2008, the SEC revised Rule 144, which provides a safe harbor for the resale of restricted securities, shortening applicable holding periods and easing other restrictions and requirements for resales by Inovio's non-affiliates, thereby enabling an increased number of Inovio's outstanding restricted securities to be resold sooner in the public market.

Further, in conjunction with the Merger, if completed, Inovio will issue a significant number of registered shares that will be freely tradable for non-affiliates of VGX or the combined group, limited only by the lock-up arrangements applicable to certain insiders and affiliates of VGX. Thus, approximately 32.95% of the shares issued or issuable in conjunction with the Merger, representing

approximately 17.02% of Inovio's post-Merger share capital on a fully-diluted basis, will be freely tradable immediately post-closing.

Sales of substantial amounts of shares of Inovio common stock at any one time or from time to time by the investors to whom Inovio has issued such shares, or even the availability of these shares for sale, could cause the market price of Inovio's common stock to decline. The significant amount of shares of Inovio common stock available for immediate sale pursuant to registration or Rule 144 could also serve to artificially limit the ability of Inovio's market price to increase in response to growth and improved financial condition of the combined group, if any.

Failure to complete the Merger could negatively impact the stock prices and the future business and financial results of Inovio and VGX because of, among other things, the disruption that would occur as a result of uncertainties relating to a failure to complete the Merger.

The stockholders of Inovio and VGX may not approve the Merger. If the Merger is not completed for any reason, Inovio and VGX could be subject to several risks, including the following:

- being required to pay the other company a termination fee of $3.5 million in certain circumstances, as described under "*The Acquisition Agreement Termination of the Acquisition Agreement*" beginning on page 114 of this joint proxy statement/prospectus, and "*The Acquisition Agreement Termination Payment*" beginning on page 115 of this joint proxy statement/prospectus;

- having had the focus of management of each of the companies directed toward the Merger and integration planning instead of on each company's core business and other opportunities that could have been beneficial to the companies; and

- incurring substantial transaction costs related to the Merger.

In addition, Inovio and VGX would not realize any of the potential benefits of having completed the Merger.

If the Merger is not completed, the price of Inovio common stock may decline to the extent that the current market price of that stock reflects a market assumption that the Merger will be completed and that the related benefits and synergies will be realized, or as a result of the market's perceptions that the Merger was not consummated due to an adverse change in Inovio's or VGX's business. In addition, each company's business may be harmed, to the extent that customers, suppliers and others believe that such company cannot compete in the marketplace as effectively without the Merger or otherwise remain uncertain about each company's future prospects in the absence of the Merger. Similarly, current and prospective employees of Inovio or VGX may experience uncertainty about their future roles with the combined group and choose to pursue other opportunities, which could adversely affect Inovio or VGX, as applicable, if the Merger is not completed. The realization of any of these risks may materially adversely affect the business, financial results, financial condition and stock price of each company.

Inovio and VGX will incur substantial costs whether or not the transaction is completed, and even if consummated, the costs associated with the transaction, being difficult to estimate, may be higher than expected and may harm the financial results of the post-Merger company.

Inovio and VGX will incur substantial costs related to the transaction whether or not the transaction is completed. These costs include fees for attorneys, accountants and financial advisors, filing fees and financial printing costs. Inovio and VGX estimate that they will incur, in aggregate, direct transaction costs of approximately $3.3 million associated with the transaction prior to closing (approximately $1.8 million by Inovio and $1.5 million by VGX), and additional costs associated with the consolidation and integration of operations, which cannot be estimated accurately at this time. If

the total costs of the transaction exceed the parties' estimates or the benefits of the Merger do not exceed the total costs of the Merger, the financial results of the combined company could be adversely affected. Unless the Acquisition Agreement is terminated under specific circumstances discussed below, the parties' will not recoup any of these costs if the Merger does not close, and will have diverted funds from other operational purposes, potentially to the detriment of each company's financial condition and ability to maintain or grow its respective operations.

In addition, if the Acquisition Agreement is terminated by Inovio upon written notice to VGX setting forth (i) the Inovio board of directors' determination that an Inovio Acquisition Proposal (as defined in the Acquisition Agreement) constitutes an Inovio superior offer (as defined in the Acquisition Agreement), (ii) the Inovio board of directors' determination to withdraw its recommendation in favor of the adoption and approval of the Acquisition Agreement or the approval of the Merger in favor of recommending the Inovio superior offer to the Inovio stockholders, and (iii) Inovio's full and complete compliance with the terms of certain provisions in the Acquisition Agreement prior to such termination, Inovio will be required to pay VGX a termination fee equal to $3.5 million. On the other hand, if the Acquisition Agreement is terminated by VGX upon written to Inovio setting forth (i) the VGX board of directors' determination that a VGX Acquisition Proposal (as defined in the Acquisition Agreement) constitutes a VGX superior offer (as defined in the Acquisition Agreement), (ii) the VGX board of directors' determination to withdraw its recommendation in favor of the adoption and approval of the Acquisition Agreement or the approval of the Merger in favor of recommending the VGX superior offer to the VGX stockholders, and (iii) VGX's full and complete compliance with the terms of certain provisions in the Acquisition Agreement prior to such termination, VGX will be required to pay Inovio a termination fee equal to $3.5 million. See "*The Acquisition Agreement No Solicitation*" beginning on page 109 of this joint proxy statement/prospectus, "*The Acquisition Agreement Termination of the Acquisition Agreement*" beginning on page 114 of this joint proxy statement/prospectus, and "*The Acquisition Agreement Termination Payment*" beginning on page 115 of this joint proxy statement/prospectus.

The Acquisition Agreement limits Inovio's and VGX's ability to pursue alternatives to the Merger.

The Acquisition Agreement contains provisions that make it more difficult for Inovio and VGX to pursue alternative business combination transactions with a third party. These provisions include the general prohibition on both Inovio and VGX from soliciting any acquisition proposal or offer for a competing transaction except under limited circumstances and the requirement that the terminating party pay a termination fee of $3.5 million if the Acquisition Agreement is terminated under specified circumstances. Moreover, approximately 41% of the outstanding shares of VGX common stock as of the record date are subject to voting agreements pursuant to which such VGX stockholders agree to vote in favor of the Merger. See "*The Acquisition Agreement No Solicitation*" beginning on page 109 of this joint proxy statement/prospectus, "*The Acquisition Agreement Termination of the Acquisition Agreement*" beginning on page 114 of this joint proxy statement/prospectus, "*The Acquisition Agreement Termination Payment*" beginning on page 115 of this joint proxy statement/prospectus, and "*Other Agreements Related to the Transaction VGX Support Stockholders Voting Agreement*" beginning on page 116 of this joint proxy statement/prospectus.

These provisions might discourage a third party that may have an interest in acquiring all of or a significant part of either Inovio or VGX from considering or proposing an acquisition, even if that party were prepared to pay consideration with a higher per share market price than the current proposed merger consideration. Furthermore, the termination fee may result in a potential competing acquirer proposing to pay a lower per share price to acquire Inovio or VGX than it might otherwise have proposed to pay. The payment of the termination fee could also have an adverse effect on the terminating company's financial condition and the ability of that company to fund its operations after the termination of the Acquisition Agreement.

Inovio and VGX may not realize the benefits they expect from the transaction and if the benefits of the transaction, if any, do not exceed the costs of integrating the businesses of Inovio and VGX, the combined group's financial results may be adversely affected.

Inovio and VGX have entered into the Acquisition Agreement with the expectation that the transaction will result in substantial benefits such as a potentially greater ability to mitigate overall development risk through creation of a broader, more balanced fully-integrated biopharmaceutical company with a deep product development pipeline, with anticipated significant market potential, synergies and efficiencies from the combination of experienced management and research and development teams, and a broader patent portfolio. The combination of Inovio and VGX will be complex, time consuming and expensive, and could disrupt Inovio's and VGX's businesses. The combined group will need to overcome significant integration and allocation of resources challenges in a timely and efficient manner in order to realize any benefits from the transaction and have a successful integration of the operations and personnel. In addition to the costs incurred thus far by each party in negotiating the Acquisition Agreement, planning for the special meetings and managing the pre-Merger process, the combined group will incur costs, which are not reasonably estimable, in the quarter in which the transaction is completed or following quarters, associated with integrating the two companies' operations and management. The combined group may incur additional material charges in subsequent quarters to reflect additional costs associated with the transaction. If the financial benefits of the transaction, if any, do not exceed the costs of planning for and completing the Merger and integrating the businesses of Inovio and VGX, the combined group's financial results may be adversely affected.

Management of the combined group will include numerous individuals that may not possess experience in a publicly traded corporate environment and may be unfamiliar with the reporting and compliance requirements applicable to publicly traded companies.

The management of the combined group post-Merger, if completed, will draw from the current Inovio and VGX management. As VGX is a privately-held company, many of the legacy VGX members of the combined group's management may not possess experience in a publicly traded corporate environment and may be unfamiliar with the reporting and compliance requirements of a publicly traded company in general or of the post-Merger Inovio specifically. As a result, these individuals may have to rely on the legacy Inovio members of the combined group's management to gain the historical perspective with respect to Inovio that may be necessary to properly analyze the performance of the combined group for reporting purposes and to provide critical disclosures to the public. As a result, the combined group may be unable to fully or timely comply with applicable Exchange Act reporting requirements, or may incur greater costs in doing so due to inefficiencies in the reporting process and the need to provide relevant educational support regarding public company responsibilities and reporting requirements. Any noncompliance with the applicable reporting requirements could trigger, among other things, an investigation by the SEC, a stockholder lawsuit, an inability to utilize certain streamlined forms or processes or to rely on certain safe harbors under the federal securities laws, which may result in an unfavorable impact on the market price of the public company's stock post-Merger.

If Inovio and VGX lose key personnel prior to completion of the Merger, or the combined group loses key personnel shortly after the Merger, and are unable to attract and retain additional, highly skilled personnel required to develop products or obtain new collaborations, the business of Inovio, VGX and/or the combined group may suffer.

Inovio and VGX depend, to a significant extent, on the efforts of their key employees, including senior management and senior scientific, clinical, regulatory and other personnel. The development of new therapeutic products requires expertise from a number of different disciplines, some of which is

not widely available. Both companies depend upon scientific staff to discover new product candidates and to develop and conduct pre-clinical studies of those new potential products, and rely on clinical and regulatory staff for the design and execution of clinical trials in accordance with FDA and foreign regulatory requirements and for the advancement of product candidates toward FDA and foreign regulatory approval. The clinical and regulatory staff is responsible for the design and execution of clinical trials in accordance with FDA requirements and for the advancement of our product candidates toward FDA approval. The manufacturing staffs are responsible for designing and conducting each company's manufacturing processes in accordance with the FDA's Quality System Regulations. The quality and reputation of the companies' scientific, clinical, regulatory and manufacturing staff, especially the senior staff, and their success in performing their responsibilities, have been and remain significant factors in attracting potential funding sources and collaborators. In addition, each company's executive officers are involved in a broad range of critical activities, including providing strategic and operational guidance. It is vital to each of Inovio and VGX to maintain its current management and senior staff in support of ongoing operations in case the Merger is not completed, and important to the combined group to retain such individuals so that they can be integrated post-Merger and provide the combined group the anticipated, continued benefit of their significant prior experience and their reputations for quality performance. Inovio and VGX each face, and the combined group will face, intense competition for personnel from other companies, universities, public and private research institutions, government entities and other organizations. The loss of these individuals, or an inability to retain or recruit other key management and scientific, clinical, regulatory, manufacturing and other personnel, may delay or prevent either company from achieving its current business objectives and, if the Merger is completed, could also substantially delay the integration process, undermine partner and investor confidence in the combined group and hamper the combined group's ability to complete in-process programs, all of which could adversely affect each of the companies' financial condition, operations and stock price. The combined group also faces intense competition for personnel from other companies, universities, public and private research institutions, government entities and other organizations.

Certain partners or collaborators of Inovio and VGX may have the right to terminate their existing license or collaboration agreements in conjunction with the Merger; such termination may have an adverse effect on the financial condition and operations of Inovio, VGX and/or, if the Merger is consummated, the combined group.

Some of Inovio's and VGX's sponsored research, license and/or collaborative arrangements contain "Change of Control" or other protective provisions that may be triggered by the proposed transaction, if completed, which may enable premature termination of such arrangements or otherwise may impact the status of such arrangements for the combined group. For example, Inovio's agreement with Wyeth requires Inovio to provide Wyeth with certain notifications of a pending qualifying transaction and enables Wyeth to terminate the arrangement if such notice and certain other written assurances regarding the priority and commitment to the arrangement are not timely provided to Wyeth by Inovio prior to consummation of such transaction. Similarly, Inovio's arrangement with Merck requires certain notice of a Change of Control transaction and also enables termination under limited circumstances as a result. Other of Inovio's and VGX's arrangements, including certain of their patent licenses, require that the company seek and obtain prior written consent from the collaborative party ahead of the consummation of any Change of Control transaction. Although Inovio and VGX intend to comply with applicable notice and other documentation requirements, and to provide assurances and seek consent from the collaborator, pursuant to such "Change of Control" provisions in these and other collaborative arrangements, Inovio and VGX cannot assure you that, to the extent such rights exist, their partners will not seek to terminate or alter their arrangements with them in relation to the closing of the proposed transaction. If any of these arrangements are terminated and such arrangements, individually or in the aggregate, are material to Inovio, VGX and/or the combined group, such termination may have an adverse effect on the ability of the company/combined group to continue to conduct certain aspects of its business or fund its operations at historical levels or generate revenues, and thus may also adversely affect the company's and/or combined group's financial condition and Inovio's stock price.

The holders of Inovio's Series C preferred stock and a limited number of Inovio's warrants may seek redemption of their shares or warrants for cash, which could result in litigation and if applicable to such securities, could impair the combined group's cash position.

Inovio has reviewed the rights of the holders of its outstanding securities in conjunction with the Merger, which have a variety of provisions prescribing certain consequences upon a merger transaction, contingent upon the existence of specified shifts of ownership of Inovio's securities or voting power of Inovio stockholders. Although the holders of Inovio's equity securities prior to the closing of the Merger will hold less than 50% of the outstanding equity securities after closing of the Merger, the holders of outstanding Inovio capital stock prior to closing of the Merger will retain a majority of the voting power upon consummation of the Merger. As a result, the Merger does not appear to constitute a change of control or qualifying triggering event for shares of Inovio's Series C preferred stock and certain Inovio's warrants, which in the event of a change of control or qualifying triggering event as defined for such securities, would provide the holders of such securities the right to redeem such shares or warrants for cash. Although such redemption would not be mandatory, if triggered and sought by all holders of such Inovio securities, the costs of redemption would total approximately $853,000 in cash for the shares of Series C preferred stock and various warrants, which could impair the cash position of the combined group post-closing, and result in the combined group not having sufficient funds to support its operations initial post-combination. Although Inovio believes the Merger does not satisfy the applicable definitions of a change of control or qualifying triggering event applicable to the shares of Series C preferred stock and the certain warrants containing redemption rights, and thus the Merger does not trigger the redemption rights, if the holders of these securities believe otherwise, such holders could take legal action against Inovio, resulting in increased legal fees, which could also impair the cash position of the combined group post-closing.

If Inovio's due diligence investigation of VGX was inadequate, or VGX's due diligence of Inovio was inadequate, then stockholders of the combined group following the Merger could lose some or all of their investment. Additionally, if the representations and warranties made by Inovio and VGX in the Acquisition Agreement are inaccurate or breached, neither entity will be indemnified for any losses or damages incurred as a result of such breach.

Even though Inovio conducted a due diligence investigation of VGX, and VGX conducted a due diligence investigation of Inovio, neither can be sure that this diligence surfaced all material issues that may be present inside either company's business, or that it would be possible to uncover all material issues through a customary amount of due diligence, or that factors outside of VGX, Inovio and their respective businesses and outside of their control will not later arise. Even if each party's due diligence successfully identified certain risks, unexpected risks may arise and previously known risks may materialize in a manner not consistent with the other party's preliminary risk analysis.

In addition, Inovio and VGX are relying upon the representations and warranties made by the other party in the Acquisition Agreement, however the Acquisition Agreement does not include indemnification provisions allowing for clear procedures for recoupment of losses resulting from a breach of such representations or warranties. If either party breaches a representation or warranty made by such party and the other party suffers losses or damages as a result of such breach, the other party will not be indemnified for such loss or damage and would have to rely on potentially costly litigation to pursue and potentially recoup such costs.

Inovio and VGX may be unable to obtain the regulatory or exchange approvals required to complete the Merger.

Inovio and VGX do not believe that the Merger is subject to review by any other governmental authorities under the antitrust laws of the other jurisdictions where Inovio and VGX conduct business. However, Inovio and VGX are continuing to review such requirements and there remains the

possibility that the parties would be subject to a pre-Merger statutory filing under the HSR Act if the implied value of the transaction would change substantially prior to the consummation of the Merger. Also, even after completion of the Merger, U.S. or foreign governmental authorities could challenge or seek to block the Merger under the antitrust laws, as they deem necessary or desirable in the public interest. Moreover, in some jurisdictions, a competitor, customer or other third party could initiate a private action under the antitrust laws challenging or seeking to enjoin the Merger, before or after it is completed. Inovio and VGX cannot be sure that a challenge to the Merger will not be made or that, if a challenge is made, Inovio and VGX will prevail. For a full description of the regulatory clearances, consents and approvals required for the Merger, see "*The Acquisition Agreement Regulatory Matters*" beginning on page 109 of this joint proxy statement/prospectus.

The Acquisition Agreement conditions the closing of the Merger on the registration statement, of which this joint proxy statement/prospectus is a part, being declared effective by the SEC and the NYSE Amex, or an alternate securities exchange or quotation system under certain circumstances, approving the Inovio common stock to be issued or to become issuable in the Merger for listing (or quotation, if applicable). While Inovio and VGX expect to obtain the required regulatory clearances, consents and approvals, Inovio and VGX cannot be certain that any required approvals will be obtained, nor can they be certain that the approvals will be obtained within the time contemplated by the Acquisition Agreement. A delay in obtaining any required clearances, consents and approvals might delay and may possibly prevent the completion of the Merger.

The NYSE Amex may delist Inovio's securities from quotation on its exchange in the interim period of the pending Merger if Inovio is unable to maintain the required stock price, and if so, Inovio may be unable to relist its securities on the NYSE Amex or another national securities exchange due to the level of the perceived market value of shares of its common stock.

Inovio's securities are currently listed on the NYSE Amex, a national securities exchange, and in recent months have experienced a significant drop in market price. The NYSE Amex may seek to delist Inovio's securities from trading on its exchange if the NYSE Amex determines that the market price of Inovio's common stock has been persistently too low or if Inovio fails to maintain compliance with other requirements of continued listing on the NYSE Amex. If NYSE Amex finds that Inovio is non-compliant, it will issue a warning letter, which will require Inovio to respond regarding potential actions it intends to take to support the market price. If such actions are not found sufficient by the NYSE Amex, if Inovio cannot get any required approvals for such actions from its stockholders, or Inovio otherwise cannot or does not complete such actions in a timely manner, the NYSE Amex will initiate the delisting process. If the NYSE Amex delists Inovio's securities from trading on its exchange and Inovio is unable to relist its securities on the NYSE Amex or to list its securities or another securities exchange or to have its securities quoted on a quotation system due to the level of the perceived market price of shares of its common stock, Inovio could face significant material adverse consequences, including:

- an inability to fulfill the closing conditions for the Merger under the Acquisition Agreement;
- a limited availability of market quotations for its securities;
- a determination that its common stock is a "penny stock" which will require brokers trading in its common stock to adhere to more stringent rules, possibly resulting in a reduced level of trading activity in the trading market for Inovio common stock;
- a limited amount of news and analyst coverage for its company;
- a decreased ability to issue additional securities or obtain additional financing in the future; and
- if prior to the VGX special meeting, a lack of support among VGX stockholders for the Merger.

Further, although the NYSE Amex has determined that the transaction does not constitute a "Reverse Merger" under Section 341 of the exchange's Company Guide, or "Section 341," such determination could change if facts material to such determination were to change, whether prior to or after closing of the Merger. If the transaction is ultimately determined to constitute a "Reverse Merger," Inovio would be required to file an initial listing application and satisfy the initial listing requirements in order to remain listed on the NYSE Amex and obtain listing approval for the shares issued and issuable in relation to the Merger. If Inovio is not able to qualify for initial listing on the NYSE Amex at such time, the Inovio common stock may transition to listing on an alternate securities exchange or quotation on a quotation system consistent with the terms of the Acquisition Agreement, which also could result in the significant material adverse consequences noted above.

The proposal to amend the Inovio 2000 Plan, the approval of which is a condition to the Merger pursuant to the Acquisition Agreement, may not receive the required stockholder approval.

Pursuant to the Acquisition Agreement, the Merger is contingent upon, among other things, an amendment to the Inovio 2000 Plan. If the 2000 Plan Amendment is not approved by the stockholders of Inovio, and the parties do not waive the related closing condition in the Acquisition Agreement, the pending transaction may be delayed or terminated altogether, adversely affecting the financial condition of the parties. If the parties were to waive the related closing condition and consummate the Merger in absence of the 2000 Plan Amendment, legacy holders of Inovio securities will hold a smaller proportion of Inovio's fully-diluted share capital post-Merger.

VGX stockholders may exercise their dissenters' rights in connection with the Merger, which may impact the closing of the Merger and the availability of cash post-closing.

VGX stockholders who exercise their dissenters' rights in connection with the Merger, including satisfying all statutory requirements for exercising such rights, will be entitled to cash payment for the fair value of their shares which will be determined in accordance with the DGCL. As the Acquisition Agreement includes a 10% cap on the percentage of VGX holders exercising such rights as a closing condition to the Merger, if the number of shares of VGX common stock held by dissenting stockholders exceeds this cap, the Merger may not close. Additionally, even if the Merger is consummated, the availability of cash to the company after the Merger may be significantly reduced and may adversely affect the financial condition and operations of the combined group.

If the taxation consequences of the transaction on the companies themselves and/or any participating VGX stockholders are significantly different than those anticipated by the parties and described in this joint proxy statement/prospectus, VGX and Inovio may be subject to expensive stockholder litigation, which could negatively impact the financial condition of the combined group.

This joint proxy statement/prospectus contains a discussion of certain material U.S. federal income tax consequences to a VGX stockholder of the exchange of VGX common stock for Inovio common stock in the contemplated transaction. This discussion is based on current provisions of the Code, Treasury regulations promulgated under the Code, Internal Revenue Service, or IRS, rulings and pronouncements, and judicial decisions now in effect, all of which are subject to change at any time by legislative, judicial or administrative action. Any such changes may be applied retroactively. In addition, this discussion does not consider the effects of any applicable foreign, state, local or other tax laws, or estate or gift tax considerations, or the alternative minimum tax.

Neither Inovio nor VGX has sought, and nor will either party seek, any rulings from the IRS with respect to the U.S. federal income tax consequences discussed in this joint proxy statement/prospectus. The provided discussion does not in any way bind the IRS or the courts or in any way constitute an assurance that the presentation of U.S. federal income tax consequences will be accepted by the IRS or the courts. Thus, there is a risk that the tax consequences described in this joint proxy

statement/prospectus for Inovio stockholders and/or VGX stockholders may be incorrect. The provided discussion of tax consequences is not tax advice, and it is clearly stated that each holder of Inovio and VGX securities should consult his, her or its own tax advisor as to particular tax consequences to it of such events, including the applicability of any state, local or foreign tax laws and any proposed changes in applicable law.

As discussed, the parties intend that the proposed transaction and the exchange of Inovio common stock for VGX common stock, be tax-free to the entities' stockholders and tax-free to the entities themselves. However, should the tax consequences resulting from the issuance of common stock be different than as discussed in this joint proxy statement/prospectus, the combined group may face claims from individuals in connection with any unanticipated tax burden related to the transaction, which will result in increased legal costs to the combined group and negatively impact the combined group's financial condition.

The consummation of the Merger may limit the ability of Inovio and VGX to utilize existing net operating losses and certain other tax attributes.

As disclosed in Inovio's annual report on Form 10-K for the 2008 fiscal year, as of December 31, 2008, Inovio had net operating losses, or "NOLs", of approximately $59.4 million for federal income tax purposes and approximately $58 million for state income tax purposes, plus federal research tax credit carry-forwards of approximately $1.2 million as of December 31, 2008. As disclosed in VGX's audited financial statements for the year ended December 31, 2008, VGX had NOL carry-forwards of approximately $36.3 million for federal income tax purposes and approximately $30.1 million for state income tax purposes.

Utilization of the NOLs and tax credit carryforwards may be subject to a substantial annual limitation under Section 382 of the Code, and similar state provisions due to ownership change limitations that have occurred previously or that could occur in the future. These ownership changes may limit the amount of NOL and tax credit carryforwards and other deferred tax assets that can be utilized to offset future taxable income and tax, respectively. In general, an ownership change, as defined by Section 382, results from transactions increasing ownership of certain stockholders or public groups in the stock of the corporation by more than 50 percentage points over a three-year period. Inovio previously performed an analysis of ownership activity through December 31, 2008, which indicated that multiple ownership changes have occurred in previous years which created annual limitations on Inovio's ability to utilize NOL and tax credit carryovers prior to the Merger, including approximately $12.7 million of tax benefits related to NOL and tax credit carryforwards that would expire unused. VGX has not performed a detailed Section 382 analysis to determine whether there are any limitations with respect to the utilization of its NOLs.

Inovio, VGX and their tax advisors are continuing to analyze the impact of the Merger, if consummated, on the parties' tax benefits related to NOL and tax credit carryforwards. Any limitation on the combined group's net operating loss carryforwards that could be used to offset post-ownership change in taxable income would adversely affect the combined group's liquidity and cash flow, if the combined group were to become profitable.

Some of Inovio's and VGX's officers and directors have conflicts of interest that may influence them to support or approve the Merger.

Certain officers and directors of Inovio and VGX may participate in arrangements arising from the Merger that provide them with interests in the Merger that are different from those of other stockholders of Inovio and stockholders of VGX, including new employment agreements, closing payments due at the Effective Time and continuing indemnification pursuant to the terms of the Acquisition Agreement. These interests, among others, may influence the officers and directors of

Inovio and VGX to support or approve the transaction. Inovio and VGX stockholders are encouraged to review the more detailed discussion entitled "*Interests of Directors, Officers and Affiliates*" on page 85, to evaluate the interests of such individuals and to weigh the impact such interests may have had on the support or recommendations of such individuals for the Merger.

Inovio and VGX may be subject to the risks of litigation relating to the Merger.

Any significant transaction generates some degree of litigation risk, and both Inovio and VGX may be subject to claims and actions incidental to the pending merger transaction, potentially from partners or collaborators of the parties' current programs, stockholders or other third parties who seek to disrupt the transaction to serve their own interests, or by each other if the parties' fail to consummate the transaction. Inovio and VGX are not currently aware of, nor do they presently anticipate, any such litigation, however the transaction may result in litigation prior to or upon closing of the transaction, if completed. If such litigation arises, the outcome of these proceedings cannot be predicted. If a plaintiff were successful in a claim against either or both companies, either or both of the companies, or the combined group if the Merger is closed, could be burdened with the required payment of a material sum of money. If this were to occur, it could have an adverse effect on either or both companies' financial condition and the financial condition of the combined group if the Merger is consummated.

The combined group may be required to file time-consuming and potentially costly subsequent registration statements or post-effective amendments to the registration statement, of which this joint proxy statement/prospectus is a part, related to the options, warrants and convertible debt assumed pursuant to the Merger.

Pursuant to the Acquisition Agreement, Inovio is required to maintain a current prospectus covering the shares of common stock issuable upon the exercise or conversion of the warrants, options and convertible debt assumed from VGX by Inovio. Consequently, Inovio may be required to file subsequent registration statements or amend the registration statement of which this joint proxy statement/prospectus is a part in order to update and maintain the prospectus for the issuance of the shares underlying the options, warrants and convertible debt assumed in the Merger from VGX, until all such shares have been issued or such instruments have expired. The preparation and filing of such registration statements can be time-consuming and costly, and may divert management's attention from the combined group's business.

Risks Relating to the Business of the Combined Group

For purposes of the following risk factors, the terms "we," "our," "our company" and "us" refer to the projected combined group, consisting of Inovio, VGX and their respective subsidiaries, unless otherwise explicitly stated.

The integration of the operations of Inovio and VGX may be difficult and may lead to adverse effects.

The success of the Merger will depend, in part, on the ability of our company to realize the anticipated synergies, cost savings and growth opportunities from integrating VGX's business with our business. Our success in realizing these benefits and the timing of this realization depend upon the successful integration of the operations of VGX with those of Inovio. The integration of previously independent businesses is a complex, costly and time-consuming process, which requires coordination of different development, regulatory, manufacturing and business teams, and involves the integration of systems, applications, policies, procedures, business processes and operations. The difficulties of combining the operations of the businesses include, among others:

- coordinating and, where appropriate, consolidating research and development operations;

- preserving important licensing, research and development, manufacturing and supply, distribution, marketing, customer and other relationships of Inovio and VGX;

establishing or expanding manufacturing, sales, distribution and marketing functions in order to accommodate newly acquired programs and product lines or rationalizing these functions to take advantage of synergies;

integrating the newly acquired entities and personnel into a uniform financial reporting system, including ensuring internal controls and procedures are expanded to include all necessary reporting pathways;

minimizing the diversion of management's attention from ongoing business concerns and facilitating the development of senior management's ability to work as a single administrative team; and

coordinating and consolidating geographically separate organizations.

The combined group may not accomplish this integration smoothly or successfully. If cultural conflicts and different opinions on scientific and regulatory matters arise, the integration could become more difficult and unpredictable. The combined group may not succeed in addressing these risks and challenges, or any other problems encountered in connection with the transaction, which could have a material adverse effect on the combined group and its ability to realize any of the expected benefits of the Merger, which as a result may harm the market price of Inovio common stock.

Integrating Inovio and VGX may divert management's attention away from other operations.

Successful integration of the operations, products and personnel may place a significant burden on the combined group's management and internal resources. The diversion of the attention of management from current programs to the integration effort and any difficulties encountered in combining operations could result in delays in the companies' clinical trial programs and could prevent the combined group from realizing the full benefits anticipated to result from the Merger, thus adversely affecting our business. In addition, the combined group may not be able to retain its senior management and other employees for the duration of the integration process or beyond. The failure to retain employees could result in higher operating expenses, disrupt the management of the combined group and have a materially adverse effect on the combined group's financial condition, results of operations and cash flow.

Inovio and VGX expect to incur significant costs integrating the companies into a single business.

Inovio and VGX expect to incur significant costs integrating our operations, products and personnel. These costs may include costs for:

employee redeployment, relocation or severance;

conversion of information systems;

combining development, regulatory, manufacturing and commercial teams and processes;

reorganization of facilities; and

relocation or disposition of excess equipment.

Additionally, other costs associated with the integration of the combined group can be substantial. To the extent that the combined group incurs integration costs that were not anticipated, these unexpected costs could adversely impact the combined group's liquidity or force it to borrow or raise additional funds, further diverting management's attention from operations of the combined group and potentially further diluting the stockholders of the combined group.

The combined group will have a need for significant funds in the future and there is no guarantee that we will be able to obtain the funds needed timely or at all.

Developing new medical devices and therapies and conducting clinical trials is expensive. The combined group's product development efforts may not lead to commercial products, either because our product candidates fail to be found safe or effective in clinical trials or because we lack the necessary financial or other resources or relationships to pursue its programs through advanced phases of clinical trials to commercialization. Our capital and future revenue may not be sufficient to support the expenses of our operations, the development of a commercial infrastructure and the conduct of our pre-clinical research and clinical trials, although based upon Inovio's and VGX's current budgeting and projected cash flow models, we believe that the combined group may be able to support its integrated operations for 12 months post-closing of the Merger.

Our plans for conducting research, furthering development, continuing and integrating current and launching future pre-clinical and clinical trials and, eventually, marketing our human-use equipment and associated therapies will involve substantial costs. The extent of such costs will depend on many factors, including some of the following:

The speed and degree of success of our efforts to integrate existing pre-clinical and clinical programs from Inovio and VGX and timely make decisions regarding the future of such programs;

The progress and breadth of pre-clinical testing and the size or complexity of our clinical trials and drug delivery programs, all of which directly influence cost;

The possible failure of one or more of our clinical trials, necessitating redirection or abandonment of certain programs or a change in focus to other product candidates or other medical indications;

Higher than expected costs involved in complying with the regulatory process to get our human-use products approved, including the number, size, and timing of necessary clinical trials and costs associated with the current assembly and review of existing clinical and pre-clinical information;

Higher than expected costs involved in patenting our technologies and defending them and pursuing our overall intellectual property strategy;

Unexpected costs associated with obtaining rights to any third-party intellectual property asserted or believed to be blocking our freedom to operate under any of our own intellectual property necessary or desirable to product development and commercialization;

Changes in our existing research and development relationships and our ability to efficiently negotiate and enter into new agreements;

Changes in or terminations of our existing collaboration and licensing arrangements;

Faster or slower than expected rate of progress and changes in the scope and the cost of our research and development and clinical trial activities;

An increase or decrease in the amount and timing of milestone payments we receive from collaborators;

Higher than expected costs of preparing an applications for FDA and counterpart foreign regulatory approval of our product development programs;

Higher than expected costs of developing the processes and systems to support FDA approval of our product development programs;

An increase in our timetable and costs for the development of marketing operations and other activities related to the commercialization of our product development programs;

Costs associated with compliance with increasingly stringent laws, regulations and industry guidelines with respect to the sales, marketing, and advertising of our human-use products;

Higher than expected costs to develop and scale up our manufacturing capability of our human-use equipment and associated therapies or obtain manufacturing services from third-parties; and

Competition for our products and our ability, and that of our partners, to commercialize our products.

We plan to fund operations by several means. We will attempt to enter into contracts with partners that will fund either general operating expenses or specific programs or projects. Some funding also may be received through government grants. However, we may not be able to enter into any such contracts or may not receive such grants or, if we do, our partners and the grants may not provide enough funding to meet our needs.

In the past, Inovio and VGX have both raised funds through the sale of their capital stock or issuing debt convertible into stock, and the combined group is likely to do this in the future. However, due to the significant fluctuations in the market price of our common stock as a result of the extreme fluctuations in the global financial markets recently, there may not be sufficient investor interest in such sales at such time as we seek to raise additional funds, or if there is interest, it may not be at a price or on terms favorable to us. Further, sale of our stock to new investors post-Merger would result in dilution of the ownership interests of our existing stockholders, including the current Inovio stockholders and the former VGX stockholders. The greater the number of shares sold, the greater the dilution. A high degree of dilution, especially soon after completion of a highly dilutive event like the Merger, can make it difficult for the price of our stock to increase, among other things. Dilution also weakens existing stockholders' voting power; to the extent a planned issuance of shares of capital stock would require stockholder approval, there can be no assurance that our stockholders will support such an issuance, and thus we may not be able to raise funds in sufficient amounts or in a timely manner if such approvals would be needed.

We cannot assure you that we will be able to raise additional capital or secure alternate financing to fund operations, or that we will be able to raise additional capital under terms that are favorable to us. Further, we cannot assure you that the Merger, if completed, will in any way negate or mitigate each of Inovio's and VGX's current need for future capital.

Negative conditions in the global credit markets may impair the liquidity of a portion of Inovio's investment portfolio and the combined group's ability to maintain overall liquidity, negatively impacting the combined group's operations and financial condition.

The capital and credit markets have been experiencing extreme volatility and disruption for more than twelve months and the volatility and disruption have reached unprecedented levels. In some cases, the markets have exerted downward pressure on availability of liquidity and credit capacity for certain issuers. We need liquidity to pay our operating expenses, make timely principal and interest payments on our debt and replace certain maturing liabilities.

Inovio's investment securities consist of high-grade (AAA rated) auction rate securities, or ARS, issued primarily by municipalities, with a par value of approximately $13.6 million. The recent negative conditions in the global credit markets have prevented some investors from liquidating their holdings, including their holdings of ARS. In early March 2008, Inovio was informed that there was insufficient demand at auction for all six of its high-grade ARS. As a result, these affected securities are currently not liquid, and Inovio could be required to hold them until they are redeemed by the issuer or to

maturity. In the event Inovio needs to access the funds that are in an illiquid state, Inovio will not be able to do so without a loss of principal, until a future auction on these investments is successful, the securities are redeemed by the issuer or they mature.

In December 2008, Inovio, via its wholly-owned subsidiary Genetronics, Inc., or "Genetronics," which holds the ARS, accepted an offer of ARS rights from UBS. The ARS rights permit Inovio to require UBS to purchase Inovio's ARS at par value at any time during the period of June 30, 2010 through July 2, 2012. If we do not exercise our ARS rights, the ARS will continue to accrue interest as determined by the auction process or the terms of the ARS if the auction fails. If the ARS rights are not exercised before July 2, 2012 they will expire and UBS will have no further obligation to buy our ARS. UBS has the discretion to purchase or sell our ARS at any time without prior notice so long as we receive a payment at par upon any sale or disposition. UBS will only exercise its discretion to purchase or sell our ARS for the purpose of restructurings, dispositions or other solutions that will provide us with par value for our ARS. As a condition to accepting the offer of ARS rights, we released UBS from all claims except claims for consequential damages relating to its marketing and sales of ARS. We also agreed not to serve as a class representative or receive benefits under any class action settlement or investor fund.

In conjunction with the acceptance of the rights offering, Genetronics also amended its existing loan agreement with UBS Bank USA, increasing the existing credit line up to $12.1 million, with the ARS pledged as collateral. Genetronics fully drew down on the line of credit in December 2008. Although Inovio has been able to regain limited liquidity through this line of credit secured by the ARS and expects redemption of the ARS pursuant to the rights obtained, the line of credit may not provide sufficient liquidity for Inovio's current operational needs, nor provide the necessary liquidity to complete the integration process and maintain desired programs after the Merger with VGX, if completed.

Without sufficient liquidity, Inovio, and upon completion of the Merger, the combined group, will be forced to curtail its operations, and its business will suffer. In the event current resources, including Inovio's ARS and the related line of credit, do not satisfy the combined group's needs, it may have to seek additional financing. The availability of additional financing will depend on a variety of factors such as market conditions, the general availability of credit, the volume of trading activities, the overall availability of credit to the financial services industry, our credit ratings and credit capacity, as well as the possibility that customers or lenders could develop a negative perception of our long- or short-term financial prospects if Inovio, or subsequently the combined group, incurs large investment losses or if the level of business activity decreases due to a downturn in available funding, partnership opportunities and other fluctuations. The crisis in the global financial markets currently places significant limitations on the general availability of credit and the number and level of interest of investors. Similarly, access to funds may be impaired if regulatory authorities take negative actions against the combined group. Further, even if financing becomes available, the cost to the combined group may be significantly higher than in the past. The combined group's results of operations, financial condition, and cash flows position could be materially adversely affected by these disruptions in the financial markets, including the resulting lack of liquidity in Inovio's current investments and availability of financing for future liquidity.

If the combined group does not have enough capital to fund operations, then we will have to cut costs or raise funds.

If we are unable to raise additional funds under terms acceptable to us and in the interests of our stockholders post-Merger, then we will have to take measures to cut costs or obtain funds using alternative methods, such as:

- Delay, scale back or discontinue one or more of our pre-clinical or clinical programs or other aspects of operations, including laying off personnel or stopping or delaying planned preclinical research and the initiation or continuation of clinical trials;
- Sell or license some of our technologies that we would not otherwise sell or license if we were in a stronger financial position;
- Sell or license some of our technologies under terms that are less favorable than they otherwise might have been if we were in a stronger financial position; and
- Consider further business combination transactions with other companies or positioning ourselves to be acquired by another company.

If it became necessary to take one or more of the above-listed actions, then our perceived valuation may be lower, which could impact the market price of our stock price. Further, the effects on our operations, financial performance and stock price may be significant if we do not or cannot take one or more of the above-listed actions in a timely manner and when needed, and our ability to do so may be limited significantly due to the instability of the global financial markets and the resulting limitations on available financing to us and to potential licensees, buyers and investors.

The market for Inovio's common stock is volatile, and the combined group anticipates that such volatility will continue indefinitely, which could adversely affect an investment in our stock.

Historically, Inovio's share price and trading volume have been highly volatile, and such volatility has been exacerbated by the crisis in the global financial markets which has resulted in extreme fluctuations in market performance overall throughout the recent weeks. Such volatility is not unusual for biomedical companies of Inovio's size, age and with a discrete market niche and is likely to continue even if the global markets stabilize. Inovio and VGX do not believe that the integration of the companies into the combined group will alter these factors significantly enough to lessen such volatility. It also is common for the trading volume and price of biotechnology stocks to be unrelated to a company's operations, i.e. to increase or decrease on positive or no news. Inovio's stock has exhibited this type of behavior in the past and will likely exhibit it in the future. The historically low trading volume of Inovio's stock, in relation to many other biomedical companies of its current size, and the anticipated size as the combined group, makes it more likely that a severe fluctuation in volume, either up or down, will affect the stock price.

Some factors that we would expect to depress the price of our stock include:

- Adverse clinical trial results;
- Adverse research and development results;
- Our inability to obtain additional capital;
- Announcement that the FDA denied our request to approve our human-use product for commercialization in the U.S., or similar denial by other regulatory bodies which make independent decisions outside the U.S.;

Announcement of legal actions brought against us with respect to any alleged failure by us or our marketers or distributors to sell, market, and advertise our human-use products in compliance with applicable laws, regulations, and industry guidelines;

Announcement of legal actions brought by or filed against us for patent or other matters, especially if we receive negative rulings or outcomes in such actions;

Announcement of an investigation of or an action against us by the SEC, NYSE Amex, or other state or federal regulatory authorities related to corporate governance or securities issues, including any prolonged comment letter response process, especially if such circumstances result in negative outcomes such as a significant restatement of our prior financial results;

Inability to satisfy continued listing requirements of the NYSE Amex and subsequent transition to an alternate securities exchange or quotation system;

Cancellation of corporate or academic partnerships which include Merck, Wyeth, University of Pennsylvania, as well as other material agreements;

Public concern as to the safety or efficacy of our human-use products including public perceptions regarding gene therapy in general;

Potential negative market reaction to the terms or volume of any issuances of shares of our stock to new investors or service providers;

Stockholders' decisions, for whatever reasons, to sell large amounts of our stock;

Declining working capital to fund operations, or other signs of apparent financial uncertainty;

Significant advances made by competitors that adversely affect our potential market position; and

The loss of key personnel and the inability to attract and retain additional highly-skilled personnel.

These factors, as well as the other factors described in this joint proxy statement/prospectus, could significantly affect the price of our stock. Historically Inovio has held that quarter-to-quarter or annual comparisons of its operating results are not a good indicator of its future performance, and the companies believe that such comparisons will also be poor indicators of performance post-Merger, at least until the combined group has operated on an integrated basis for a substantial period of time, if not longer. Further, the inability to accurately compare periodic performance due to the Merger and any other fluctuations may cause Inovio's stock to perform below the expectations of public market analysts and investors post-Merger. If this happens, the price of Inovio's common stock would likely decline.

Our operating results may vary significantly from period-to-period, which may result in a decrease in the price of our common stock.

Our future revenues and operating results may vary significantly from period-to-period due to a number of factors, many of which are outside of our control. These factors include:

the uncertainties inherent in the integration and consolidation process of combining Inovio and VGX, including the significant number of one-time costs likely to be incurred in the initial periods post-Merger;

the introduction of new products and services by us or our competitors;

costs and expenses associated with delays or changes and regulatory requirements for pre-clinical testing and clinical trials;

the timing of regulatory approvals;

sales and marketing expenses, including costs of training and compliance; and

the amount and timing of operating costs and capital expenditures relating to the expansion or consolidation of our business operations and facilities.

Although we acknowledge that our operating results will vary significantly from period-to-period and past periodic performance should not be relied upon as an indicator of future periodic performance, it is possible that in one or more future periods our operating results may be below the expectations of analysts and/or investors. If this happens, the price of our common stock may decrease, even if there has not been a significant adverse change in our financial condition or our operations.

Both Inovio and VGX have a history of losses, we expect to continue to incur losses and we may not achieve or maintain profitability.

As of December 31, 2008, Inovio had an accumulated deficit of approximately $152.8 million and VGX had an accumulated deficit of approximately $68.1 million. Inovio and VGX have each operated at a loss since their respective inceptions, and the combined group anticipates such losses to continue for some time. The combined group expects its consolidated, accumulated deficit will continue to increase, as it will be expensive to continue research, development and clinical efforts, especially while integrating such efforts. If these activities are successful and if we receive approval from the FDA to market equipment and/or a therapy, then even more funding will be required to market and sell such product. The outcome of these matters cannot be predicted at this time. We anticipate maintaining current partnerships and collaborations, and expect to evaluate additional potential partnerships and collaborative agreements as a way to further fund operations, but there is no assurance we will be able to secure partnerships or other arrangements that will provide the required funding, if at all. We will seek to continue to rely on outside sources of financing to meet our capital needs for the initial 12 months post-Merger. In the past, we have raised funds through the public and private sale of our stock, and we are likely to seek to do this in the future. However, due to the significant fluctuations in the market price of our common stock as a result of the extreme fluctuations in the global financial markets recently, there may not be sufficient investor interest in such sales at such time as we seek to raise additional funds, or if there is interest, it may not be at a price or on terms favorable to us.

Further, there can be no assurance, assuming we successfully raise additional funds, that we will achieve positive cash flow. If we are unable to raise additional funds under terms acceptable to us and in the interests of our stockholders, then we will have to take measures to cut costs, such as delaying, scaling back or discontinuing one or more of our gene delivery programs or other aspects of operations, including laying off personnel or stopping or delaying planned preclinical research and the initiation or continuation of clinical trials.

VGX has a large amount of outstanding receivables from, VGXI, Inc., a wholly owned subsidiary of VGX International, which if not repaid timely could have negative cash flow impacts on VGX or the combined group.

As a result of the sale of VGX's DNA plasmid manufacturing assets to VGXI, Inc. in June 2008, VGX has accounts receivable from VGXI, Inc totaling $3,000,000 as of December 31, 2008, which is due on March 31, 2009. This payment is to be received by VGX no later than April 6th. If VGXI, Inc. fails to pay these amounts to VGX, VGX or the combined group may suffer negative cash flow because a portion of the funds are intended to be used to repay the VGX debt and a portion of the outstanding VGX convertible debt prior to or upon closing of the Merger. Although as of February, 2009 VGX owns, and upon consummation of the Merger, if approved, the combined group will own, 25.04% of VGX International, Inc., the parent company of VGXI, Inc., VGX is not able to compel payment of the amounts owed on a timely basis, or at all, on account of this ownership interest.

Our dependence upon non-marketed products, our limited experience in manufacturing, our lack of experience marketing human-use products, and our continuing deficit may result in even further fluctuations in our trading volume and share price.

Even if we were to achieve successful clinical results in our programs, successful approval, marketing, and sales of our human-use equipment are critical to the financial future of our company. Our human-use products are not yet approved for sale in the U.S. and other jurisdictions and we may never obtain these approvals regardless of whether we achieve successful clinical trial results utilizing such human-use products. Even if we do obtain approvals to sell our human-use products in the U.S., these sales may not be as large or as timely as we expect. These uncertainties may cause our operating results to fluctuate dramatically in the next several years.

If we are unable to develop commercially successful products in various markets for multiple indications, our business will be harmed and we may be forced to curtail or cease operations.

We cannot assure you that we will successfully develop any products, or if we do, that they will be commercially successful. If we fail to develop or successfully commercialize any products, we may be forced to refocus, curtail or cease operations. Our ability to achieve and sustain operating profitability depends on our ability, directly or with strategic partners, to successfully commercialize our products in Europe, Asia and in the US. This will depend in large part on our ability to commence, execute and complete clinical programs and obtain regulatory approvals for our products. Clinical trials are still necessary before we can seek regulatory approval to sell our products or therapies. We cannot assure you that we will receive approval for our products in the U.S. or in other countries or, if approved, that we or a partner will achieve a significant level of sales. If we fail to partner or commercialize our products, we may be forced to curtail or cease operations.

We are also in the pre-clinical stages of research and development with other new product candidates using electroporation technology. These new indications and product candidates will require significant costs to advance through the development stages. Even if such product candidates are advanced through clinical trials, the results of such trials may not gain FDA or foreign regulatory approval. Even if approved, our products may not be commercially successful.

Pre-clinical and clinical trials of human-use equipment are unpredictable, and if we experience unsuccessful trial results, our business will suffer.

Before any of our human-use equipment can be sold, the FDA or applicable foreign regulatory authorities must determine that the equipment meets specified criteria for use in the indications for which approval is requested, including obtaining appropriate regulatory approvals. Satisfaction of regulatory requirements typically takes many years, and involves compliance with requirements covering research and development, testing, manufacturing, quality control, labeling and promotion of therapies for human use. To obtain regulatory approvals, we must, among other requirements, complete pre-clinical research and clinical trials demonstrating that our product candidates are safe and effective for a particular cancer type or disease. Regulatory approval of a new treatment is never guaranteed. The FDA and each applicable foreign regulatory authority will make this determination independently, based on the results from our pre-clinical testing and clinical trials and has substantial discretion in the approval process. Despite the time and experience exerted, failure can occur at any stage, and we could encounter problems causing us to abandon pre-clinical research and clinical trials.

In addition, any of our clinical trials for treatment using our therapies may be delayed or halted at any time for various other reasons, including:

- The electroporation-mediated delivery of drugs, gene-based therapeutics or other agents may be found to be ineffective or be considered to cause harmful side effects, including death;
- Our clinical trials may take longer than anticipated for any of a number of reasons, including a scarcity of subjects that meet the physiological or pathological criteria for entry into the study and a scarcity of subjects that are willing to participate through the end of the trial, or follow-up visits;
- The reported clinical data may change over time as a result of the continuing evaluation of patients or the current assembly and review of existing clinical and pre-clinical information;
- Data from various sites participating in the clinical trials may be incomplete or unreliable, which could result in the need to repeat the trial or abandon the project; and
- Pre-clinical and clinical data can be interpreted in many different ways, and the FDA and other regulatory authorities may interpret our data differently than we do, which could halt or delay our clinical trials or prevent regulatory approval.

If any of the above events arise during our pre-clinical research, clinical trials or data review, we would expect this to have a serious negative impact on our company. Any termination of ongoing enrollment or other delay or change in the conduct of our clinical trials may not always be understood or accepted by the capital markets and announcements of such scientific results and related actions may adversely affect the market price of our common stock. We have experienced such problems in the past when we stopped further patient enrollment in two Phase III pivotal studies for squamous cell head and neck cancer in 2007.

Any delays or difficulties Inovio or VGX has encountered or the combined group will encounter in its pre-clinical research and clinical trials may delay or preclude regulatory approval. Our product development costs will increase if we experience delays in testing or regulatory approvals or if we need to perform more extensive or larger clinical trials than planned, or if we need to redirect the focus of our trials to other product candidates or medical indications. Any such events could also delay or preclude the commercialization of our therapy or any other product candidates.

Clinical trials are unpredictable, especially human-use trials. Results achieved in early stage clinical trials may not be repeated in later stage trials, or in trials with more patients. When early positive results were not repeated in later stage trials, pharmaceutical and biotechnology companies have suffered significant setbacks. Not only are commercialization timelines pushed back, but some companies, particularly smaller biotechnology companies with limited cash reserves, have discontinued business after releasing news of unsuccessful clinical trial results. Neither Inovio nor VGX can be certain the results it has observed in its pre-clinical testing will be confirmed in clinical trials or the results of any of its or the combined group's clinical trials will support FDA or foreign regulatory approval. If we experience unexpected, inconsistent or disappointing results in connection with a clinical or pre-clinical trial our business will suffer.

A delay in our clinical trials, for whatever reason, will probably require us to spend additional funds to keep our product(s) moving through the regulatory process. If we do not have or cannot raise additional funds, then the testing of our human-use products could be discontinued. In the event our clinical trials are not successful, we will have to determine whether to continue to fund our programs to address the deficiencies, or whether to abandon our clinical development programs for our products in tested indications. Loss of our human-use product line would be a significant setback for our company.

Because there are so many variables inherent in clinical trials, we cannot predict whether any of our future regulatory applications to conduct clinical trials will be approved by the FDA or other

regulatory authorities, whether our clinical trials will commence or proceed as planned, and whether the trials will ultimately be deemed to be successful. Historically, the experience of both Inovio and VGX has been that submission and approval of clinical protocols has taken longer than desired or expected.

Our business is highly dependent on receiving approvals from various regulatory authorities and will be dramatically affected if approval to manufacture and sell our human-use equipment and/or gene-based therapies is not granted or is not granted in a timely manner.

The production and marketing of our human-use equipment and related gene-based therapies, our ongoing research, development, pre-clinical testing, and clinical trial activities are subject to extensive regulation. Numerous governmental agencies in the U.S. and internationally, including the FDA, must review our applications and decide whether to grant regulatory approval. All of our human-use equipment and the therapies to be used in conjunction with such equipment must go through one or more approval processes, in some instances for each indication for which we want to label the equipment for use (such as use for transfer of a certain gene to a certain tissue). These regulatory processes are extensive and involve substantial costs and time.

We have limited experience in, and limited resources available, for such regulatory activities. Failure to comply with applicable regulations can, among other things, result in non-approval, suspensions of regulatory approvals, fines, product seizures and recalls, operating restrictions, injunctions and criminal prosecution.

Any of the following events can occur and, if any did occur, any one could have a material adverse effect on our business, financial conditions and results of operations:

- As mentioned earlier, clinical trials may not yield sufficiently conclusive results for regulatory agencies to approve the use of our products;
- There can be delays, sometimes long, in obtaining approval for our human-use devices, and indeed, Inovio has experienced such delays in obtaining FDA approval of its clinical protocols;
- The rules and regulations governing human-use equipment such as ours can change during the review process, which can result in the need to spend time and money for further testing or review;
- If approval for commercialization is granted, it is possible the authorized use will be more limited than we believe is necessary for commercial success, or that approval may be conditioned on completion of further clinical trials or other activities; and
- Once granted, approval can be withdrawn, or limited, if previously unknown problems arise with our human-use product or data arising from its use.

We cannot predict the safety profile of the use of our electroporation system when used in combination with other therapies.

Inovio's current clinical trials involve the use of its electroporation system in combination with certain DNA vaccines. While the data Inovio has evaluated to date suggest the use of electroporation does not alone have significant adverse effects nor increase the adverse effects of other therapies, we cannot predict if this outcome will continue to be true or whether possible adverse side effects directly attributable to the vaccines provided by our partners and collaborators or developed internally will compromise the safety profile of the electroporation-based DNA delivery system when used in certain combination therapies. In some instances, clinical results may not clearly indicate whether possible adverse effects are related to our technology versus other study related factors. Even in cases where adverse effects can be shown to be attributable to other study-related factors, not to our technology,

the capital markets may not always understand or accept this distinction, and announcements of such adverse events may cause a drop in the market price of our common stock.

We could be substantially damaged if the third parties we rely on to perform our clinical trials do not adhere to protocols defined in clinical trial agreements or meet expected deadlines.

Like many companies our size, we do not have the ability to conduct preclinical or clinical studies for our product candidates without the assistance of third parties who conduct the studies on our behalf. VGX historically has worked with toxicology facilities, and Inovio and VGX have historically worked with clinical research organizations, or "CROs," that have significant resources and experience in the conduct of pre-clinical and clinical studies. The toxicology facilities conduct the pre-clinical safety studies as well as all associated tasks connected with these studies. The CROs typically perform patient recruitment, project management, data management, statistical analysis and other reporting functions. In addition, Inovio historically has worked with a number of hospitals to perform clinical trials, primarily in the field of oncology.

The combined group anticipates working with such toxicology facilities, CROs and hospitals to perform clinical trials related to its gene-based therapy programs. We will depend on these third parties to recruit patients for our trials, to perform the trials according to our protocols, and to report the results in a thorough, accurate and consistent manner. Our reliance on these third parties for development activities reduces our control over these activities. Although we anticipate having agreements with these entities which should govern what each party is to do with respect to each protocol, patient safety and informed consent, and avoidance of conflict of interest, the risks remain that the terms of the contracts will not be followed, such as the following:

Possible Deviations from Protocol. The entities or the physicians and staff working at them may not perform the trials correctly. It is also possible that the occurrence of serious adverse events during a trial may require physicians and staff, in their medical judgment, to deviate from protocol in response to medical emergencies. In either case, deviations from our protocol may make the clinical data not useful and the trial could become essentially worthless.

Potential for Conflict of Interest. Physicians working on protocols may have an improper economic interest in our company, or other conflict of interest. When a physician has a personal stake in the success of the trial, such as when a physician owns stock, or rights to purchase stock of the trial sponsor, it can create suspicion that the trial results were improperly influenced by the physician's interest in economic gain. Not only can this put the clinical trial results at risk, but it can also cause serious damage to a company's reputation.

Patient Safety and Consent Issues. Physicians and hospitals may fail to secure formal written consent as instructed or report adverse effects that arise during the trial in the proper manner, which could put patients at unnecessary risk. Physicians and hospital staff may fail to observe proper safety measures such as the mishandling of used medical needles, which may result in the transmission of infectious and deadly diseases, such as HIV. This increases our liability, affects the data, and can damage our reputation.

Compliance with Regulations Governing Use of Human Subjects in Research. The use of human subjects in research is a heavily regulated area. Physicians, staff, and the Institutional Review Boards overseeing their use of human subjects may fail to comply with such regulations, potentially putting patients at risk, increasing our liability, affecting the validity of the data, and damaging our reputation.

If these third parties do not successfully carry out their contractual duties or regulatory obligations or meet expected deadlines, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or for other reasons, our clinical trials may be extended, delayed or terminated. If these third parties do not successfully carry out their contractual

duties or meet expected deadlines, we may be required to replace them. Although we believe there are a number of third-party contractors we could engage to continue these activities, replacing a third-party contractor may result in a delay of a particular trial. If any of these events were to occur, then it could have a material adverse effect on our ability to receive regulatory authorization to sell our products, and on our reputation. Negative events that arise in the performance of clinical trials sponsored by biotechnology companies of our size and with limited cash reserves have resulted in companies going out of business. While these risks are always present, to date, Inovio's and VGX's contracted physicians and clinics have been successful in collecting significant data regarding the clinical protocols under which they have operated, and neither Inovio nor VGX is aware of any conflicts of interest or improprieties regarding its protocols.

Even if our products are approved by regulatory authorities, if we fail to comply with on-going regulatory requirements, or if we experience unanticipated problems with our products, these products could be subject to restrictions or withdrawal from the market.

Any product for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data and promotional activities for such product, will be subject to continual review and periodic inspections by the FDA and other regulatory bodies. Even if regulatory approval of a product is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to certain requirements resulting in costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. Later discovery of previously unknown problems with our products, including unanticipated adverse events of unanticipated severity or frequency regarding manufacturer or manufacturing processes or failing to comply with regulatory requirements, may result in restrictions on such products or manufacturing processes, withdrawal of the products from the market, voluntary or mandatory recall, fines, suspension of regulatory approvals, product seizures or detention, injunctions or the imposition of civil or criminal penalties.

Failure to comply with foreign regulatory requirements governing human clinical trials and marketing approval for our human-use equipment could prevent us from selling our products in foreign markets, which may adversely affect our operating results and financial conditions.

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

Our ability to achieve significant revenues from sales or leases of human-use products will depend on establishing effective sales, marketing and distribution capabilities or relationships and we currently lack substantial experience in these areas.

To market our products, we will need to develop sales, marketing and distribution capabilities. In order to develop or otherwise obtain these capabilities, we may have to enter into marketing, distribution or other similar arrangements with third parties in order to sell, market and distribute our products successfully. To the extent that we enter into any such arrangements with third parties, our product revenue is likely to be lower than if we marketed and sold our products directly, and our revenues will depend upon the efforts of these third parties.

We have limited experience in sales, marketing and distribution of clinical and human-use products and we currently have no sales, marketing or distribution capability. If we decide to market and sell our human-use products directly, we must develop a marketing and sales capability. This would involve substantial costs, training and time. We may be unable to develop sufficient sales, marketing and distribution capabilities to commercialize our products successfully. Because the laws, regulations, and industry guidelines with respect to sales, marketing and distribution of clinical and human-use products are becoming increasingly stringent, our lack of experience may cause us to fail to comply or fail to cause contracting third parties to comply, exposing us to liability. Regardless of whether we elect to use third parties or seek to develop our own marketing capability, we may not be able to successfully commercialize any product.

Delays in the approval of LifeTide SW5 in other countries may affect our financial results.

VGX has been, and the combined group will continue, actively seeking to leverage the approval of its product, LifeTide SW5, in Australia to attain approval in neighboring countries such as New Zealand, Philippines and Indonesia. We have limited experience in, and limited resources available for overseeing the approval of our drug in these countries and will have to rely on third-party consultants to assist us in attaining approval. Delays in attaining regulatory approval in these countries will adversely affect future revenues.

Changes in the market conditions in the global porcine market may affect our future results.

Our GHRH DNA therapy for porcine application, LifeTide SW5, is sold through veterinarians to farmers in Australia. The demand for our product is highly correlated with the price of swine in the marketplace. As such, our expected revenue from the sale of LifeTide SW5 is subject to the commodity price risk of the porcine market. We do not hedge the commodity price risk using derivatives. As the porcine market fluctuates, so will our expected revenues from this product.

We rely on collaborative and licensing relationships to fund a portion of our research and development expenses. If we are unable to maintain or expand existing relationships, or initiate new relationships, we will have to defer or curtail research and development activities in one or more areas.

Our partners and collaborators fund a portion of our research and development expenses and assist us in the research and development of our human-use equipment and therapies. These collaborations and partnerships help pay the salaries and other overhead expenses related to research. In the past, Inovio has encountered operational difficulties after the termination of an agreement by a former partner. Because this partnership was terminated, Inovio did not receive significant milestone payments which it had expected and was forced to delay some clinical trials as well as some product development. We may experience such operational difficulties or termination of such relationships without anticipated payment again in the future.

We also rely on scientific collaborators at companies and universities to further expand our research and to test our equipment. In most cases, we lend our equipment to a collaborator, teach him or her how to use it, and together design experiments to test the equipment in one of the collaborator's fields of expertise. We aim to secure agreements that restrict collaborators' rights to use the equipment outside of the agreed upon research, and outline the rights each of the parties will have in any results or inventions arising from the work.

Nevertheless, there is always potential that:

Our equipment or therapies may be used in ways we did not authorize, which can lead to liability and unwanted competition;

We may determine that technology has been improperly assigned to us or a collaborator may claim rights to certain of our technology, which may require us to pay license fees or milestone payments and, if commercial sales of the underlying product are achieved, royalties;

We may lose rights to inventions made by our collaborators in the field of our business, which can lead to expensive litigation and unwanted competition;

Our collaborators may not keep our confidential information to themselves, which can lead to loss of our right to seek patent protection and loss of trade secrets, and expensive litigation; and

Collaborative associations can damage a company's reputation if they fail and thus, by association or otherwise, the scientific or medical community may develop a negative view of us.

The results from these collaborations may not be successful. We may not be able to continue to collaborate with individuals and institutions that will further develop our products, and we may not be able to do so under terms that are not overly restrictive. If we are not able to maintain or develop new collaborative relationships, it is likely that our research pace will slow down and that it will take longer to identify and commercialize new products, or new indications for our existing products.

A small number of licensing partners and government contracts account for a substantial portion of our revenue in each period and our results of operations and financial condition could suffer if we lose these licensing partners or fail to add additional licensing partners in the future.

We derive a significant portion of our revenue from a limited number of licensing partners and government grants and contracts in each period. Accordingly, if we fail to sign additional future contracts with major licensing partners and the government, if a contract is delayed or deferred, or if an existing contract expires or is cancelled and we fail to replace the contract with new business, our revenue would be adversely affected.

Until commercialization of our Medpulser® Electroporation System or our gene-based therapies, we expect that a limited number of licensing partners will continue to account for a substantial portion of our revenue in each quarter in the foreseeable future. During the years ended December 31, 2008 and 2007, one licensing partner, Merck, accounted for approximately 30% and 68%, respectively, of Inovio's consolidated revenue. During the years ended December 31, 2008 and 2007 another licensing partner, Wyeth, accounted for 40% and 23%, respectively, of Inovio's consolidated revenue. We expect revenues from Wyeth and Merck to be significantly lower in 2009, as Wyeth evaluates internal strategic options prior to initiating further development of electroporation-based infectious disease programs and development activities for Merck will be limited for the foreseeable future. Further, Wyeth has recently agreed to be acquired by Pfizer Inc. and Merck has recently agreed to acquire Schering-Plough Corporation. Development and funding priorities may change as a result of these transactions, which may lead to the suspension or termination of our relationships with Wyeth or Merck. Any such suspension or termination would likely adversely effect our business.

VGX to date has relied on government grants and contracts for a substantial portion of its revenues. During the years ended December 31, 2008 and 2007, government grants and contracts accounted for 66% and 47%, respectively, of VGX's consolidated revenue.

If we cannot maintain our existing corporate and academic arrangements and enter into new arrangements, we may be unable to develop products effectively, or at all.

Our strategy for the research, development and commercialization of our product candidates may result in our entering into contractual arrangements with corporate collaborators, academic institutions and others. We have entered into sponsored research, license and/or collaborative arrangements with several entities, including Merck, Wyeth, Dow Global Technologies, Vical, Valentis, the U.S. Navy, Chiron, the University of Pennsylvania, Baylor University, and the University of South Florida, as well

as numerous other institutions that conduct clinical trials or perform pre-clinical research for us. Our success depends upon our collaborative partners performing their responsibilities under these arrangements and complying with the regulations and requirements governing clinical trials. We cannot control the amount and timing of resources our collaborative partners devote to our research and testing programs or product candidates, or their compliance with regulatory requirements which can vary because of factors unrelated to such programs or product candidates. These relationships may in some cases be terminated at the discretion of our collaborative partners with only limited notice to us.

Merck can terminate its May 2004 license and collaboration agreement with us at any time in its sole discretion, without cause, by giving ninety days' advance notice to us. If this agreement is terminated by Merck at any time during the first two years of the collaboration term, then Merck shall continue, for a six-month period beginning on the date of such termination, to make payments previously approved by the project's joint collaboration committee in relation to scientists and outside contractors engaged by us in connection with the agreement. During the years ended December 31, 2008 and 2007, Merck accounted for approximately 30% and 68%, respectively, of Inovio's consolidated revenue, and 12%, on a pro forma basis for the year ended December 31, 2008 when combined with VGX. In addition, some of Inovio's sponsored research, license and/or collaborative arrangements contain "Change of Control" or other protective provisions that may be triggered by the Merger, which may enable pre-mature termination of such arrangements or otherwise may impact the status of such arrangements for the combined group. For example, our agreement with Wyeth requires that we provide Wyeth with certain notifications of a pending qualifying transaction and enables Wyeth to terminate our arrangement if such notice and certain other written assurances regarding the priority and commitment to the arrangement are not timely provided to Wyeth by the Inovio and/or the other Change of Control transaction party prior to consummation of such transaction. Similarly, our arrangement with Merck requires certain notice of a Change of Control transaction and also enables termination under limited circumstances as a result. Other arrangements require that we seek and obtain prior written consent from the collaborative party ahead of the consummation of any Change of Control transaction. Although we intend to comply with applicable notice and other documentation requirements pursuant to such "Change of Control" provisions in these and other collaborative arrangements, we cannot assure you that, to the extent such rights exist, our partners will not seek to terminate or alter their arrangements with us in relation to the closing of the Merger.

The combined group may not be able to maintain Inovio's and VGX's existing arrangements, enter into new arrangements or negotiate current or new arrangements on acceptable terms, if at all. Some of our collaborative partners may also be researching competing technologies independently from us to treat the diseases targeted by our collaborative programs.

We may be subject to stockholder litigation, which would harm our business and financial condition.

We may have actions brought against us by stockholders realting to the Merger, past transactions, changes in our stock price or other matters. Any such actions could give rise to substantial damages, and thereby have a material adverse effect on our consolidated financial position, liquidity, or results of operations. Even if an action is not resolved against us, the uncertainty and expense associated with stockholder actions could harm our business, financial condition and reputation. Litigation can be costly, time-consuming and disruptive to business operations. The defense of lawsuits could also result in diversion of our management's time and attention away from business operations, which could harm our business.

We rely heavily on our patents and proprietary rights to attract partnerships and maintain market position.

The strength of our patent portfolio is an important factor that will influence our success. Patents give the patent holder the right to prevent others from using its patented technology. When someone infringes upon the patented material of a patent holder, the patent holder has the right to initiate legal

proceedings against that person to protect its patented material. These proceedings, however, can be lengthy and costly. Inovio and VGX historically performed, and we will perform, an ongoing review of our patent portfolio to confirm that our key technologies are adequately protected. If we determine that any of our patents require either additional disclosures or revisions to existing information, we may ask that such patents be reexamined or reissued, as applicable, by the U.S. Patent and Trademark Office.

The patenting process, enforcement of issued patents, and defense against claims of infringement are inherently risky. Because we rely heavily on patent protection, we face the following significant risks:

Possibility of Inadequate Patent Protection for Product. The U.S. Patent and Trademark Office or foreign patent offices may not grant patents of meaningful scope based on the applications we have already filed and those we intend to file. If we do not have patents that adequately protect our human-use equipment and indications for its use and other therapies, then we will not be competitive.

Potential That Important Patents Will Be Judged Invalid. Some of the issued patents we now own or license may be determined to be invalid. If we have to defend the validity of any of our patents, the costs of such defense could be substantial, and there is no guarantee of a successful outcome. In the event an important patent related to our drug delivery technology is found to be invalid, we may lose competitive position and may not be able to receive royalties for products covered in part or whole by that patent under license agreements.

Danger of Being Charged With Infringement. Although neither Inovio nor VGX is currently aware of any basis for an infringement claim or any parties intending to pursue infringement claims against it, there is the possibility that the combined group may use a patented technology owned by another person and/or be charged with infringement. Defending or indemnifying a third party against a charge of infringement can involve lengthy and costly legal actions, and there can be no guarantee of a successful outcome. Biotechnology companies comparable to us in size and financial position have discontinued business after losing infringement battles. If we or our partners were prevented from using or selling our human-use equipment, then our business would be materially adversely affected.

Freedom to Operate Issues. Inovio and VGX are aware that patents related to electrically-assisted drug delivery have been granted to, and patent applications have been filed by, our potential competitors. Each of Inovio and VGX or its partners have received licenses to operate under some of these patents, and the combined group will consider procuring additional licenses in the future. Nevertheless, the competitive nature of our field of business and the fact that others have sought patent protection for technologies similar to ours make these potential issues significant.

In addition, as a result of the sale of VGX's DNA plasmid manufacturing assets to VGXI, Inc. in June 2008, VGX does not have control of certain patents relating to the current manufacturing technology for products used in VGX's pre-clinical and clinical studies and anticipated pre-clinical and clinical studies of the combined group. The rights under these patents could be lost, either by loss of rights by VGXI, Inc., for example, through abandonment of one or more patents, or by any decision of VGXI, Inc. to manufacture for other clients. If VGXI, Inc. were to lose those rights, VGX, and upon completion of the Merger, if approved, the combined group would need to expend resources to find another manufacturer and another manufacturing technology for these products.

In addition to patents, we also rely on trade secrets and proprietary know-how. We try to protect this information with appropriate confidentiality and inventions agreements with our employees, scientific advisors, consultants, and collaborators. We cannot be sure that these agreements will not be breached, that we will be able to protect ourselves if they are breached, or that our trade secrets will not otherwise become known or be independently discovered by competitors. We also cannot be sure that academic and research institutions with which we have research arrangements may not create or

improve upon our intellectual property and use that intellectual property in future research to which our competitors might have access. If any of these events occur, then we face the potential of losing control over valuable company information, which could negatively affect our competitive position.

The rights our company relies upon to protect the intellectual property underlying our products may not be adequate, which could enable third parties to use our technology and would reduce our ability to compete in the market.

The combined group's success will depend in part on its ability to develop or acquire commercially valuable patent rights and to protect its intellectual property. Our patent position is generally uncertain and involves complex legal and factual questions. The degree of present and future protection of our proprietary rights is uncertain.

The risks and uncertainties that our company faces with respect to our patents and other proprietary rights include the following:

- the pending patent applications we have filed or to which we have acquired rights may not result in issued patents or may take longer than we expect to result in issued patents;
- the claims of any patents which are issued may not provide meaningful protection;
- we may not be able to develop additional proprietary technologies that are patentable;
- the patents licensed or issued to us or our customers may not provide a competitive advantage;
- in our collaborations with academic and research institutions, our ability to obtain exclusive rights to new inventions arising from research we have funded or the intellectual property we have provided may be limited by institutional policy, government march-in rights (if government funds have supported the research), and/or third party rights (if third party funds have supported the research);
- other parties may challenge patents or patent applications licensed or issued to us or our customers;
- patents issued to other companies may harm our ability to do business; and
- other companies may design around technologies we have patented, licensed or developed.

In addition to patents, our company relies on a combination of trade secrets, nondisclosure agreements and other contractual provisions and technical measures to protect our intellectual property rights. Nevertheless, these customary measures may not be adequate to safeguard the technology underlying our products. If these measures do not protect our rights, third parties could use our technology and our ability to compete in the market would be reduced. In addition, employees, consultants and others who participate in the development of our products may breach their agreements with us regarding our intellectual property, and we may not have adequate remedies for the breach. We also may not be able to effectively protect our intellectual property rights in some foreign countries. For a variety of reasons, our company may decide not to file for patent, copyright or trademark protection or prosecute potential infringers of our patents. Our trade secrets may also become known through other means not currently foreseen by us. Despite our efforts to protect our intellectual property, our competitors or customers may independently develop similar or alternative technologies or products that are equal or superior to our technology and products without infringing on any of our intellectual property rights or design around our proprietary technologies.

Claims by others that our products infringe on their proprietary rights could adversely affect our ability to sell our products and could increase our costs.

Substantial litigation over intellectual property rights exists in our industry. Our company expects that its products could be increasingly subject to third-party infringement claims as the number of competitors in our industry grows and the functionality of products and technology in different industry

segments overlaps. Third parties may currently have, or may eventually be issued, patents which our products or technology may be alleged to infringe. Any of these third parties might make a claim of infringement against our company. Any litigation could result in the expenditure of significant financial resources and the diversion of management's time and resources. In addition, litigation in which our company is accused of infringement may cause negative publicity, have an impact on prospective customers, cause product shipment delays or require our company to develop non-infringing technology, make substantial payments to third parties, or enter into royalty or license agreements, which may not be available on acceptable terms, or at all. If a successful claim of infringement were made against our company and our company could not develop non-infringing technology or license the infringed or similar technology on a timely and cost-effective basis, our company's revenue may decrease and we could be exposed to legal actions by our customers.

If we are not successful in developing our current products, our business model may change as our priorities and opportunities change and our business may never develop to be profitable or sustainable.

Inovio and VGX both have historically managed numerous programs and actively sought to develop product and program pipelines. As a result, there are many products and programs that seem promising to us which we could pursue, and a significant part of the parties' integration process, if the Merger is completed, will be to continue to focus our efforts and allocate our available resources to particular programs and products. However, with limited resources, we may decide to change priorities and shift programs away from those that Inovio and VGX have been pursuing for the purpose of exploiting the combined company's joint strengths of its core electroporation technology and development capabilities for gene-based therapeutics. The choices we make will be dependent upon numerous contemporaneous factors, some of which we cannot predict. We cannot be sure that our business model, as initially integrated or as it may evolve, will enable us to become profitable or to sustain operations.

Serious and unexpected side effects attributable to gene therapy may result in governmental authorities imposing additional regulatory requirements or a negative public perception of our products.

The gene therapy or DNA vaccine product candidates under development could be broadly described as gene therapies. A number of clinical trials are being conducted by other pharmaceutical companies involving gene therapy, including compounds similar to, or competitive with, our product candidates. The announcement of adverse results from these clinical trials, such as serious unwanted and unexpected side effects attributable to treatment, or any response by the FDA or foreign regulatory agencies to such clinical trials, may impede the progress of our clinical trials, delay or prevent us from obtaining regulatory approval, or negatively influence public perception of our product candidates, which could harm our business and results of operations and reduce the value of our stock.

The U.S. Senate has held hearings concerning the adequacy of regulatory oversight of gene therapy clinical trials, as well as the adequacy of research subject education and protection in clinical research in general, and to determine whether additional legislation is required to protect volunteers and patients who participate in such clinical trials. The Recombinant DNA Advisory Committee, or RAC, which acts as an advisory body to the National Institutes of Health, has expanded its public role in evaluating important public and ethical issues in gene therapy clinical trials. Implementation of any additional review and reporting procedures or other additional regulatory measures could increase the costs of or prolong our product development efforts or clinical trials.

As of December 31, 2008, to our knowledge, there have not been any serious adverse events in any gene therapy clinical trials in which our technology was used. In the future, if one or a series of serious adverse events were to occur during a gene therapy clinical trial in which our technology was used, we would report all such events to the FDA and other regulatory agencies as required by law. Such serious adverse events, whether treatment-related or not, could result in negative public perception of our treatments and require additional regulatory review or other measures, which could increase the cost of or prolong our gene therapy clinical trials or require us to halt our clinical trials altogether.

The commercial success of our products will depend in part on public acceptance of the use of gene therapy products or gene-induced products, which are a new type of disease treatment for the prevention or treatment of human diseases. Public attitudes may be influenced by claims that gene therapy products or gene-induced products are unsafe, and these treatment methodologies may not gain the acceptance of the public or the medical community. Negative public reaction to gene therapy products or gene-induced products could also result in greater government regulation and stricter clinical trial oversight.

No gene therapy products have been approved by the FDA to date and we cannot assure you that gene therapy products will ever receive approval for commercialization; this lack of precedent may undermine consumer and investor confidence in our therapies, which may depress the market price for our common stock or limit our ability to partner to advance our technologies.

The FDA has not yet approved any human gene therapy product for sale, and the FDA deems current gene therapy efforts "experimental" on its website. There have been deaths and significant adverse effects in gene therapy clinical trials previously, and in January 2003, the FDA placed a temporary halt on all gene therapy trials using retroviral vectors in blood stem cells. Although such ban has been subsequently eased, gene therapy clinical trials still face strict standards and remain subject to potential future bans or additional oversight if there are further high-profile adverse effects in ongoing gene therapy clinical trials. As a result, investors may be hesitant to invest in or maintain a position in our common stock, creating low trading volumes and stagnant demand for our shares of common stock and limiting our ability to raise funds through equity financing on favorable terms, if at all. Further, the lack of commercial precedent may minimize the number of potential collaborators willing to partner with us long-term, limiting our other sources of operational funding and our ability to advance our gene therapy-technologies as quickly or at all.

We have the potential for product liability issues with our equipment and products.

The testing, marketing and sale of human-use products expose us to significant and unpredictable risks of equipment product liability claims. These claims may arise from patients, clinical trial volunteers, consumers, physicians, hospitals, companies, institutions, researchers or others using, selling, or buying our equipment. Product liability risks are inherent in our business and will exist even after the products are approved for sale. If and when our human-use equipment is commercialized, we run the risk that use (or misuse) of the equipment will result in personal injury. The chance of such an occurrence will increase after a product type is on the market.

The testing, marketing and sale of animal-use products expose us to significant and unpredictable risks of potential product liability claims. These claims may arise from farmers, veterinarians, consumers, and anyone coming in contact with our GHRH DNA therapy. We may not be successful in our attempts to manage these inherent product liability risks by using myriad of approaches including, insurance programs, quality control measures and proper training.

Inovio and VGX have historically maintained, and we will continue to maintain, liability insurance in connection with our ongoing business and products, and we may purchase additional policies if such policies are determined by management to be necessary. However, our existing insurance and the insurance we purchase may not provide adequate coverage in the event a claim is made and we may be required to pay claims directly. If we did have to make payment against a claim, it would adversely impact our financial ability to perform the research, development, and sales activities that we have planned.

If and when our human-use equipment is commercialized, there is always the risk of product defects. Product defects can lead to loss of future sales, decrease in market acceptance, damage to our brand or reputation, product returns and warranty costs, and even product withdrawal from the market.

These events can occur whether the defect resides in a component we purchased from a third party or whether it was due to our design and/or manufacture. We expect that our sales agreements will contain provisions designed to limit our exposure to product liability claims. However, we do not know whether these limitations will be enforceable in the countries in which the sale is made. Any product liability or other claim brought against us, if successful and of sufficient magnitude, could negatively impact our financial results and condition.

We cannot be certain that we will be able to manufacture our human-use equipment in sufficient volumes at commercially reasonable costs.

Our manufacturing facilities for human-use products will be subject to quality systems regulations, international quality standards and other regulatory requirements, including pre-approval inspection for our human-use equipment and periodic post-approval inspections for all human-use products. While Inovio has previously undergone and passed a quality systems audit from an international body, we have never undergone a quality systems inspection by the FDA. We may not be able to pass an FDA inspection when and if it occurs. If our facilities are found not to be compliant with FDA standards in sufficient time, prior to a launch of our product in the U.S., then it will result in a delay or termination of our ability to produce our human-use equipment in our facility. Any delay in production will have a negative effect on our business. While there are no target dates set forth for launch of our products in the U.S., we plan on launching each product once we successfully perform a Phase III clinical study involving a particular use of our technology, obtain the requisite regulatory approval, and engage a partner who has the financial resources and marketing capacity to bring our products to market.

Our products must be manufactured in sufficient commercial quantities, in compliance with regulatory requirements, and at an acceptable cost to be attractive to purchasers. We rely on third parties to manufacture and assemble most aspects of our equipment, and thus cannot directly control the quality, timing or quantities of equipment manufactured or assembled at any given time.

Disruption of the manufacture of our products, for whatever reason, could delay or interrupt our ability to manufacture or deliver our products to customers in a timely basis. This would be expected to affect revenue and may affect our long-term reputation, as well. In the event we provide product of inferior quality, we run the risk of product liability claims and warranty obligations, which will negatively affect our financial performance.

There is a possibility that our technology will become obsolete or lose its competitive advantage.

The vaccine development and delivery business is very competitive, fast moving and intense, and expected to be increasingly so in the future. Other companies and research institutions are developing drug delivery systems and gene-based therapies that, if not similar in type to our systems and therapies, are designed to address the same patient or subject population. Therefore, we cannot promise that our products will be the best, the safest, the first to market, or the most economical to manufacture and use. If competitors' products are better than ours, for whatever reason, then we could become less profitable from product sales and our products could become obsolete.

There are many reasons why a competitor might be more successful than us, including:

Financial Resources. Some competitors have greater financial resources and can afford more technical and developmental setbacks than we can.

Greater Experience. Some competitors have been in the biomedical business longer than we have. They have greater experience than us in critical areas like clinical testing, obtaining regulatory approval and sales and marketing. This experience or their name recognition may give them a competitive advantage over us. In certain international markets, local companies may be given preferential treatment by local physicians and hospitals.

Superior Patent Position. Some competitors may have better patent protection over their technology than we have or will have in order to protect our technology. If we cannot use our patents to prevent others from copying our technology or developing similar technology, or if we cannot obtain a critical license to another's patent that we need to manufacture and use our equipment, then we would expect our competitive position to weaken.

Faster to Market. Some companies with competitive technologies may move through stages of development, approval, and marketing faster than us. If a competitor receives FDA approval, or regulatory approval in another major market outside the U.S., before us, then it will be authorized to sell its products before we can sell ours. Because the first company "to market" often has a significant advantage over others, a second place position could result in less than anticipated sales.

Reimbursement Allowed. In the U.S., third party payers, such as Medicare, may reimburse physicians and hospitals for competitors' products but not for our own human-use products. This would significantly affect our ability to sell our human-use products in the U.S. and would have a negative impact on revenue and our business as a whole. Outside of the U.S., reimbursement and funding policies vary widely.

The restructuring and repricing of certain VGX options and warrants may not have remedied certain issues arising under federal tax law and could expose VGX or the combined group to certain risks.

Prior to August 2006, VGX issued options and warrants to employees and consultants that did not comply with the provisions Section 409A of the Code. In September 2008, the VGX board of directors approved two methods to bring these noncompliant options and warrants into compliance with section 409A of the Code. Each holder of non-compliant options and warrants was given the choice of either agreeing to reset the exercise price at a value that was no less than the fair market value of VGX common stock on the date of the repricing, as determined by the VGX board of directors, which considered in part preliminary work performed by an independent valuation firm, or making a forward election in which the holder was given the option to choose a date after December 31, 2008 on or after which to exercise the option or warrant. VGX cannot assure stockholders that these steps were sufficient to cure any non-compliance by VGX with respect to 409A of the Code and, if these steps are deemed insufficient, VGX, or the combined group upon closing of the Merger, could face potential tax liability under the Code.

Any acquisition we might make may be costly and difficult to integrate, may divert management resources or dilute stockholder value.

Both Inovio and VGX have considered and made strategic acquisitions in the past, and in the future the combined group may acquire or invest in complementary companies, products or technologies. As part of our business strategy, we may acquire assets or businesses principally relating to or complementary to the combined group's integrated operations. Any acquisitions we undertake will be accompanied by issues commonly encountered in business acquisitions, which could adversely affect us, including:

Potential exposure to unknown liabilities of acquired companies;

The difficulty and expense of assimilating the operations and personnel of acquired businesses;

Diversion of management time and attention and other resources;

Loss of key employees and customers as a result of changes in management;

Increased legal, accounting and other administrative costs associated with negotiation, documentation and reporting any such acquisition;

Possible dilution to our stockholders; and

Possible acceleration of financing needs.

In addition, geography and/or language barriers may make the integration of businesses more difficult. We may not be successful in overcoming these risks or any other problems encountered in connection with any of our acquisitions, and we cannot assure you that the results of any acquisition, if completed, will meet the expectations of the parties and their stockholders.

Some of VGX's officers have positions with subsidiaries and affiliates of VGX, which may have interests that could conflict with those of the combined group.

Certain officers and directors of VGX hold officer or director positions with non-wholly owned affiliates or subsidiaries of VGX with which VGX transacts business. For example, J. Joseph Kim, VGX's chief executive officer, is a director and officer of VGX Animal Health, Inc., an 88% owned subsidiary and of VGX International, Inc., a 25% owned affiliate, each as of the record date. Dr. Kim intends to resign from his officer position with VGX International, Inc. on or before the closing of the Merger, but expects to continue as a director of that entity. Transactions and other business activities of these two entities may conflict with the interests of VGX and the combined group after the merger, and, as officers or directors of these other entities, these persons may have conflicting fiduciary duties.

We may not meet environmental guidelines and as a result could be subject to civil and criminal penalties.

Like all companies in the biomedical industry, we are subject to a variety of governmental regulations relating to the use, storage, discharge and disposal of hazardous substances. Our safety procedures for handling, storage and disposal of such materials are designed to comply with applicable laws and regulations. While both Inovio and VGX believe they are currently in compliance with all material applicable environmental regulations, if either party or the combined group is subsequently found to not comply with environmental regulations, or is involved with contamination or injury from these materials, then we may be subject to civil and criminal penalties. This would have a negative impact on our reputation and finances, and could result in a slowdown or even complete cessation of our business.

Changes in foreign exchange rates may affect our future operating results.

Inovio and VGX both maintain investments in foreign subsidiaries. During the years ended December 31, 2008 and 2007, Inovio AS, Inovio's wholly-owned Norwegian subsidiary, contributed approximately $135,000 and $159,000 to Inovio's revenue, respectively, which amounted to approximately 6% and 3% of Inovio's total revenue. Inovio AS conducts its operations primarily in foreign currencies, including the Euro, Norwegian Kroner and Swedish Krona. In September 2006, Inovio established Inovio Asia Pte. Ltd., a wholly-owned company incorporated in the Republic of Singapore, which conducts its operations primarily in Singaporean dollars. As of December 31, 2008, VGX held 30% of and currently holds 25% of the outstanding shares of VGX International, a publicly-traded company on the Korean Stock Exchange whose functional currency is the Korean Won. VGX Animal Health markets its LifeTide SW5 GHRH DNA therapy to the porcine market in Australia. As such, all revenues from marketing of LifeTide SW5, and payments made to any vendors in Australia, will be in Australian Dollars. Fluctuation in the values of these foreign currencies relative to the U.S. dollar will affect our financial results which are reported in U.S. dollars and will cause U.S. dollar translation of such currencies to vary from one period to another. We cannot predict the scope of any fluctuations in the values of these foreign currencies relative to the U.S. dollar nor the effect of exchange rate fluctuations upon our future operating results.

Inovio's restructuring of its Norwegian subsidiary, Inovio AS, may not realize the efficiencies anticipated and could result in additional, unanticipated liabilities, which would have a negative effect on our financial condition.

On December 31, 2007, Inovio's wholly-owned Norwegian subsidiary Inovio AS transferred certain patent and other intellectual property rights to Inovio's wholly-owned U.S. subsidiary, Genetronics. The value assigned to these rights was $1.9 million, which was determined by and was the responsibility of management of Inovio, who considered in part preliminary work performed by an independent valuation specialist in Norway. All Norwegian tax gains associated with this transfer of the patents and other intellectual property rights was offset by prior year tax loss carry forwards. Subsequent to year-end, Inovio changed the name of Inovio AS to Inovio Tec AS. Simultaneously, Inovio incorporated a new Norwegian wholly-owned subsidiary under the name Inovio AS, for the purpose of organizing a research effort directed towards the development of specific cancer vaccine candidates. In January 2008, all employees, employee agreements, lease agreements and fixed assets were transferred from Inovio Tec AS to Inovio AS. In December 2008, the parties entered into a Master Cross-Licensing Agreement, providing for a non-exclusive license to Inovio AS of certain Inovio intellectual property rights, relating to gene delivery for cancer treatment, as well as a non-exclusive license to Inovio of all intellectual property rights developed by Inovio AS, subject only to certain exclusive product development, manufacturing and commercialization rights retained by Inovio AS. Further, although Inovio and its board of directors retain ultimate control over and responsibility for Inovio AS, Inovio AS now has a distinct board of directors, consisting of two members of Inovio's board of directors Dr. Avtar Dhillon and Simon Benito and two Norwegian personnel, intended to allow more efficient balancing of U.S. legal and regulatory concerns with Norwegian legal and regulatory concerns in the course of decision-making.

This restructuring of Inovio's Norwegian operations was intended to better focus the research and development efforts conducted in Norway on Inovio's strategic programs and ease access to previously developed intellectual property rights for Inovio and its other subsidiaries, through a Master Research Agreement among Inovio and its other subsidiaries and VGX. We expect funding for this program to be about $5.0 million over the next several years. Although designed to be tax-neutral to the parties, we cannot assure you that the tax authorities in Norway or the U.S. will agree with the valuation of the transferred assets or the procedures through which the transfers were made. If such disagreements were to arise, we may face unanticipated tax liabilities in Norway or the U.S. arising from the asset transfer. Further, as there will be an ongoing licensing relationship between the parties post-transfer, it is possible that such arrangements will receive heightened scrutiny for potential transfer pricing issues, which could result in additional liability to us. We believe that the new Inovio AS is now appropriately organized and staffed, and has the necessary resources and commitments for future resources to conduct its research and development efforts in support of our business strategy. However, we cannot assure stockholders that Inovio AS will not require further staff or financing beyond these initial commitments, or that we will be able to provide such resources if and when requested. To the extent Inovio AS or we face additional tax or transfer pricing issues, our operating results and overall financial condition may be adversely affected. In particular, if we are unable to provide additional support for Inovio AS when requested, Inovio AS may not be able to reach previously specified targets and milestones in a timely manner, undermining its financial stability and the commercial potential for its prostate cancer vaccine program.

Some of our facilities are located near known earthquake fault and wildfire zones, and the occurrence of an earthquake, significant wildfire or other catastrophic disaster could cause damage to our facilities and equipment.

Our San Diego facility is located near known earthquake fault zones and areas prone to severe seasonal wildfires and is vulnerable to damage from earthquakes and wildfires. All of our facilities are

also vulnerable to damage from other types of disasters, including fire, floods, power loss, communications failures and similar events. If any disaster were to occur, our ability to operate our business at our facilities would be seriously impaired. In addition, the unique nature of our research activities could cause significant delays in our programs and make it difficult for us to recover from a disaster. The insurance we maintain may not be adequate to cover our losses resulting from disasters or other business interruptions. Accordingly, an earthquake, wildfire or other disaster could materially and adversely harm our ability to conduct business.

THE TRANSACTION

The discussion in this joint proxy statement/prospectus of the Merger and the principal terms of the Acquisition Agreement are subject to, and are qualified in their entirety by reference to, the Acquisition Agreement, a copy of which is attached to this joint proxy statement/prospectus as Annex A and incorporated into this joint proxy statement/prospectus by reference.

General Description of the Merger

Inovio, its wholly-owned acquisition subsidiary referenced in this joint proxy statement/prospectus as Submerger, and VGX have agreed to a business combination pursuant to the terms of the Acquisition Agreement and in accordance with the DGCL. Upon consummation of the Merger, VGX will be merged with and into Submerger, VGX will cease to exist and Submerger will continue as the surviving entity and as a wholly-owned subsidiary of Inovio and change its name to "VGX Pharmaceuticals, LLC." The ongoing public entity will be known as Inovio Biomedical Corporation, which shall hold, as directly wholly-owned subsidiaries, VGX Pharmaceuticals, LLC and Inovio's current direct subsidiaries, including Genetronics, and the combined group shall integrate the historical operations of Inovio and VGX.

In consideration for the Merger, Inovio will issue and otherwise allocate for issuance under options and warrants to purchase common stock and debt convertible into common stock, a total of up to 59,965,805 shares of new Inovio common stock pursuant to the terms of the Acquisition Agreement. Specifically, upon closing of the Merger, based on an exchange ratio and on the terms and conditions of which are described in this joint proxy statement/prospectus:

- all of the issued and outstanding shares of common stock of VGX will be canceled and converted into the right to receive shares of common stock of Inovio,
- all outstanding options to purchase shares of VGX common stock will be assumed by Inovio and converted into options to purchase Inovio common stock,
- all outstanding warrants to purchase shares of VGX common stock will be assumed by Inovio and converted into warrants to purchase Inovio common stock, and
- all outstanding convertible debt of VGX will become debt convertible into Inovio common stock on existing terms.

Based on the respective fully-diluted share capitals of Inovio and VGX as of the record date and certain VGX option exercises anticipated prior to closing, the parties anticipate that the Merger Exchange Ratio will be approximately 0.9857805, meaning that each share of VGX common stock will be exchanged for 0.9857805 shares of Inovio common stock upon closing of the Merger.

Other than the significant dilution resulting from the issuance of Inovio securities in conjunction with the Merger, the outstanding shares of Inovio common stock prior to the Merger will not be impacted by the Merger. Similarly, the Merger will not affect any of Inovio's other outstanding securities, other than accelerating the vesting rights of Inovio's outstanding options to purchase shares of Inovio common stock (presuming the related 2000 Plan Amendment, as discussed elsewhere in this joint proxy statement/prospectus, receives Inovio stockholder approval).

The parties anticipate that the Merger, if completed, will result in a full integration of the existing Inovio and VGX organizations, including appointment of an integrated board of directors and management team consistent with the terms of the Acquisition Agreement, and the combination of significant administrative functions at Inovio's San Diego, California headquarters.

Background to the Transaction

Both Inovio and VGX regularly evaluated various strategies for improving their respective competitive positions and enhancing stockholder value. As part of these evaluations, the parties have, from time to time, considered strategic initiatives in the pursuit of their business plans, including acquisitions, divestitures and possible business combinations. Inovio's management and board of directors regularly discussed the position and prospects of Inovio within various segments of the biopharmaceutical industry, and VGX's leadership similarly evaluated its position and prospects. The parties' boards of directors regularly reviewed short and long-term business strategies, as well as market trends in the biopharmaceutical industry and the challenges confronting each company in achieving its business objectives.

Inovio's long-term strategic plan includes diversifying its product pipeline through acquisitions, collaborations, alliances or joint ventures. Inovio's management developed criteria for identifying public and private companies that might fit its strategic plan. The criteria emphasized vaccine and immunotherapy based infectious disease and cancer companies with synergistic clinical development programs which use electroporation or a technology complimentary to electroporation assisted delivery. Starting in late 2005 through May 2008, Inovio conducted a targeted process to identify appropriate acquisition candidates, during which Inovio contacted numerous companies to assess their potential interest in engaging in an acquisition, collaboration, alliance or joint venture arrangements. As a result of these efforts, Inovio's management team met with seven of these companies to explore whether the opportunity existed for a transaction that fit the Inovio strategic plan and would potentially enhance perceived stockholder value. Inovio conducted substantive scientific due diligence on several of these companies during this period, and Inovio's management kept its board of directors informed of these discussions both informally and through reports at board meetings.

Inovio also reviewed a larger list other non-electroporation based delivery companies, but felt it would be difficult to pursue a deal unless these companies where not able meet a significant milestone with their competing technology. Some of the additional considerations that influenced the gradual elimination of certain companies from being final candidates were the following:

- level of cash position to pursue significant clinical milestones prior to next funding event;
- synergies in management expertise to execute a combined business plan; and
- timeline gains for Inovio to reach its milestones with its technology platform.

Like Inovio, VGX's long-term strategic plans for growth have included diversification through acquisitions and collaborations. The VGX management team has explored several different approaches toward growth, including:

- a potential merger with a company in the vaccine and immunotherapy space that complemented VGX's own pipeline; and
- an initial public offering of securities with subsequent leveraging the resulting access to capital markets to acquire companies with technologies and intellectual property portfolios to strengthen VGX's position in the DNA vaccines arena.

In 2007, the VGX board of directors made the decision to accelerate this strategy by engaging Needham and Company, LLC, or "Needham," to act as its investment advisor. Together with Needham, VGX began a systematic process of identifying and contacting those companies that potentially met its criteria for a merger or an acquisition. Merger candidates were ranked based on multiple criteria, the most important of which was the candidate's technology and its strategic fit with VGX's long-term goals. Other key criteria were the candidate's management capability, strength of its balance sheet, and its status as a public or a private company. After an extensive search and analysis, which included meetings with several companies, VGX's management and board of directors reached

the conclusion that, given its long-term goal of becoming a dominant player in the DNA vaccines market, Inovio was the ideal candidate with whom VGX should pursue its strategy. In December 2007, the VGX board of directors and management decided to initiate inquiries to Inovio to gauge its interest in potential "merger of equals" of the two companies.

In January 2008, representatives from VGX contacted Inovio to inquire about its interest in exploring a potential business combination transaction. Both companies' management expressed interest in exploring the feasibility of such a transaction. Shortly thereafter, the parties executed customary confidentiality agreements on January 28, 2008, allowing them to initiate due diligence. On February 11, 2008, representatives of VGX's and Inovio's management teams met at Inovio's offices in San Diego to discuss their respective businesses, programs and technology platforms, and to explore the feasibility of a business combination between VGX and Inovio. Following these general discussions, VGX and Inovio agreed that more in-depth discussions were warranted and the exchange of business information continued.

At its regular meeting on February 15, 2008, Inovio management briefed its board of directors on the ongoing process to identify possible acquisition candidates and on management's current assessment of the degree of strategic fit for each of the active prospects. Management also presented a detailed review of the drug pipeline and potential synergies of seven possible business combination candidates viewed as the best strategic fit of the parties reviewed to date, which included VGX. After discussing these presentations, the board of directors authorized management to approach each of these companies with preliminary indications of interest for a strategic acquisition, while continuing efforts to identify other potential acquisition candidates. Subsequent to that meeting, Inovio's management conducted initial scientific diligence and engaged in detailed discussions with each of these seven candidates to assess the feasibility of a transaction that met Inovio's strategic objectives, and ultimately Inovio's management believed that VGX presented the best opportunity for Inovio and its stockholders.

On February 20, 2008, Inovio's chief executive officer, Dr. Avtar Dhillon, met with VGX's chief executive officer, Dr. J. Joseph Kim, to advance discussions regarding a potential business combination. The chief executive officers met a number of times thereafter to discuss potential terms and conditions for a draft letter of intent for a proposed business combination to be presented to their respective boards of directors.

On March 14, 2008, Inovio received a preliminary, non-binding indication of interest, or indicative proposal, from VGX and its financial advisor, Needham. The Inovio board of directors met later that day, during which Inovio's management reported on its meetings with VGX and the indicative proposal received from VGX and Needham regarding the proposed transaction was presented for board of directors for approval. The Inovio board of directors authorized management to continue discussions with VGX, while preparing a final summary report and presentation of initial due diligence and conclusions regarding all potential merger and acquisition candidates previously identified for presentation at the next regular meeting of the board of directors on May 5, 2008. The Inovio board of directors also asked management to contact potential consultants to assist management with operational due diligence and to contact several investment banks to assist the Inovio board in evaluating the fairness, from a financial point of view, to Inovio of the consideration payable by Inovio in connection with a potential transaction with VGX. Inovio subsequently engaged the consulting firm PRTM Management Consultants, Inc., or "PRTM," and the investment bank Oppenheimer & Co. Inc., or "Oppenheimer," for these respective purposes.

On April 1, 2008, representatives of VGX and Inovio held a kick-off meeting regarding the proposed transaction between Inovio and VGX, including a general discussion of structure, terms and timeline. During April 2008, Inovio and VGX conducted in-person business and financial due diligence at each other's offices in San Diego, CA, Blue Bell, PA, and The Woodlands, TX, which consisted of

in-depth evaluation of the businesses, assets and liabilities, including meetings between the parties' management teams and ongoing access to each party's separate online data room. Concurrently, PRTM was assisting management with the due diligence review of VGX. During April 2008, the management teams also met telephonically several times and reviewed in detail the profiles of the respective companies and the companies' respective scientific programs and related assets. Beginning in April 2008, the companies' counsel also drafted and negotiated a proposed form of agreement and plan of merger and ancillary documentation.

At a regular scheduled meeting of the Inovio board of directors on May 5, 2008, Inovio's management provided the board with a detailed update of potential business combination candidates previously discussed and a report on discussions with such prospective candidates, including a detailed update on the due diligence review of such potential acquisition candidates and an assessment of the strategic fit of the active prospects. Management reported to the board that discussions with three of the prospective business combination candidates had been previously terminated in early March 2008 due to difficulties in reaching mutually beneficial economic terms, while discussions with a fourth potential candidate, which had expressed little interest in pursuing a transaction that met Inovio's strategic objectives, had been terminated in early January 2008 once it was clear that a basis for a mutually beneficial transaction did not exist. Inovio had maintained discussions with two additional companies, although neither company was interested in a business combination, as such entities remained interested in pursuing a transaction that meets Inovio's other strategic objectives. After extensive discussion, Inovio's board of directors determined that it should pursue further negotiations with VGX concerning a business combination transaction on an exclusive basis. Inovio's management and PRTM also presented the results of the preliminary diligence performed on VGX to the Inovio board of directors, including a presentation by a representative of PRTM summarizing the operational due diligence completed in support of a potential business combination transaction with VGX. Based on the scientific and business due diligence conducted by the management and PRTM, and the report of counsel on the status of negotiations for an agreement and plan of merger with VGX, Inovio's management and board of directors recommended continuing the proposed transaction with VGX.

On June 5, 2008, Inovio's board of directors held a special meeting at which management reviewed with the board in detail the status of negotiations with VGX and the status of material open points. The board reviewed the terms of the proposed agreement and plan of merger with VGX and the company's counsel detailed the proposed structure of the transaction. Subsequently, via telephone, Oppenheimer discussed with the board the status of its financial review and the types of financial analyses it expected preliminarily to review with the Inovio board in connection with its opinion. Representatives from management then presented an assessment of the projected combined group's financial condition. The directors then further discussed the terms of the proposed merger, and agreed to postpone formal approvals of such matters until a future date due to the materiality of the unsettled items related to the merger. After such discussion, the Inovio board of directors unanimously resolved that it was in the best interests of Inovio and its stockholders to continue the negotiation, documentation and other efforts in support of the proposed merger with VGX, including the formation of Inovio Acquisition Corporation.

On July 2, 2008, at a special telephonic meeting of the Inovio board of directors, the directors reviewed with counsel the terms of the pending agreement and plan of merger with VGX and related ancillary agreements, including all revisions made to the proposed agreements since the directors last reviewed them on June 5, 2008, and the board's fiduciary duties in evaluating the proposed transaction. Inovio's board of directors discussed at length the proposed transaction structure, the manner of calculation of the proposed consideration for the merger, the treatment of both parties' outstanding securities, and the other topics discussed under *"Inovio's Reasons for the Transaction"* on page 66. The Inovio board also discussed the course of negotiations with VGX and the perceived benefits that Inovio's stockholders would potentially derive as a result of the proposed transaction. Also at this

meeting, Oppenheimer reviewed with Inovio's board of directors its financial analysis of the Merger Exchange Ratio and rendered to Inovio's board of directors an oral opinion, which was confirmed by delivery of a written opinion dated July 2, 2008, to the effect that, as of that date and based on and subject to the matters described in the opinion, the Merger Exchange Ratio provided for in the original agreement and plan of merger (prior to its amendment) was fair, from a financial point of view, to Inovio.

After further discussion and for the reasons set forth in *"Inovio's Reasons for the Transaction"* on page 66, the Inovio board concluded that the proposed transaction with VGX was advisable and fair to the company and its stockholders and authorized and approved the agreement and plan of merger and the transactions contemplated thereby, and resolved to recommend that the Inovio stockholders approve the transactions contemplated by the agreement and plan of merger.

On July 2, 2008, the VGX board of directors held a special meeting at its corporate headquarters in Blue Bell, Pennsylvania, in which the directors reviewed the terms of the pending definitive merger agreement between VGX and Inovio. A representative from Needham was also present to provide Needham's insights on the market condition and on the deal between VGX and Inovio. The evolution of the key terms of the deal and the impact the terms would have on VGX and its stockholders were discussed with the board by VGX's management, along with the prospects of the combined company and management's expectations for the combined group's contributions in the field of DNA vaccines. Management also reviewed the expected technological and financial synergies of the combined company resulting from the Merger. After further discussion, and for the reasons set forth in "*VGX's Reasons for the Transaction*" on page 68, the VGX board of directors unanimously concluded that the proposed transaction with Inovio was advisable and fair to VGX and its stockholders and authorized and approved the agreement and plan of merger and the transactions contemplated thereby, and resolved to recommend that the VGX stockholders approve the transactions contemplated by the agreement and plan of merger.

The parties executed an agreement and plan of merger on July 7, 2008, which the parties announced via a joint press release, followed by a joint conference call to answer initial questions from investors and analysts.

Subsequent to announcement of the transaction, the parties continued to analyze the potential accounting treatment of the Merger, the potential treatment of the Merger by the NYSE Amex, the tax treatment of the Merger and the proposed combined group's operational goals. As a result, the parties negotiated an amended and restated agreement and plan of merger, adjusting the structure of the planned transaction, providing for certain shares to be issued in the Merger to be deposited into a voting trust, adjusting the combined group's proposed management and board structure and implementing other changes clarifying the terms of the Merger. The amendments did not impact the type of consideration to be issued in the Merger or the methodology for calculation of the Merger Exchange Ratio. The Inovio board of directors met on December 5, 2008, during which the directors approved the Acquisition Agreement and confirmed their recommendation to the Inovio stockholders to approve the Merger. The VGX board of directors met on December 5, 2008, during which the directors approved the Acquisition Agreement and confirmed their recommendation to the VGX stockholders to approve the Merger. The parties executed the Acquisition Agreement on December 5, 2008 and announced the Acquisition Agreement on December 8, 2008. On [ ], 2009, the parties executed an amendment to the Acquisition Agreement which solely amends Section 7.1(b) of the Acquisition Agreement, extending the End Date, as defined in the section, from March 31, 2009 to June 30, 2009.

Inovio's Reasons for the Transaction

In reaching its decision to approve the Merger and related agreements and proceed with the transaction with VGX, Inovio's board of directors consulted with Inovio's management regarding the strategic, operational and financial aspects of the transaction. These consultations included, among other things, extensive discussions regarding:

- strategic alternatives to the proposed transaction, including extensive discussions of other potential business combination candidates and of continuing to operate the Inovio's business without entering into a business combination transaction,
- the business and strategic plans and financial position of the proposed combined group and of an independent Inovio,
- the risks associated with executing the business and strategic plans of the combined group and of an independent Inovio,
- the historical trading prices of Inovio's common stock, and
- the terms and conditions of the proposed agreement and plan of merger, and subsequently the Acquisition Agreement.

In evaluating the Merger, Inovio's board of directors considered both Inovio's short-term and long-term interests, as well as those of its stockholders, consulted with management and legal counsel and considered the following factors, which in the aggregate it deemed favorable in reaching its decision to approve the Merger, the original agreement and plan of merger and the other transactions contemplated by the original merger agreement, and to recommend approval of the Merger to the Inovio stockholders, as well as to approve the Acquisition Agreement and reaffirm its recommendation of approval of the transaction:

- the assessment of Inovio's management regarding, the business, operations, properties and assets, financial condition, business strategy, the estimated net asset value of VGX's assets and prospects of VGX, as well as the risks involved in achieving those prospects, the nature of the industry in which VGX competes, industry trends and economic and market conditions, both on an historical and on a prospective basis;
- the results of Inovio's due diligence reviews of VGX, including the operational due diligence report received from PRTM;
- the scope of VGX's clinical development programs, the depth of VGX's product lines and the number of potential near-term development milestones;
- the perceived value and potential of VGX's intellectual property portfolio;
- the potential markets for VGX's drug candidates and various other market analyses;
- the experience of VGX's management and scientific teams;
- the current and historical market prices of Inovio's common stock, including recent trading in Inovio's common stock near or below $1 per share;
- the potential enhancement of stockholder value via business combination as compared to Inovio's current business strategy, derived from the perceived ability of the proposed combined group to better address the risks and uncertainties of changes in the pharmaceuticals, biotechnology and vaccines market, changes in general economic conditions and changes in the degree of patent protection afforded Inovio's products;

the comparative potential stockholder value that could be expected to be generated from the various strategic alternatives available to Inovio, including (1) the alternative of remaining

independent, (2) restructuring alternatives involving the sale of certain assets and subsidiaries and (3) other measures to create value and the risks associated with executing such strategic alternatives and achieving such potential values, and the board of directors' resulting belief that the transaction was more favorable to Inovio stockholders than other strategic alternatives reasonably available to Inovio and its stockholders;

the perceived high probability that the transaction could and would be completed;

the terms and conditions of the Merger-related agreements, which were reviewed by Inovio's board of directors with Inovio's outside legal counsel, and in particular the fact that such terms were the product of arm's-length negotiations between the parties;

Oppenheimer's opinion, and its financial presentation, dated July 2, 2008, to Inovio's board of directors as to the fairness, from a financial point of view and as of the date of the opinion, to Inovio of the Merger Exchange Ratio provided for in the original agreement and plan of merger (prior to its amendment), as more fully described below under the caption "*Opinion of Inovio's Financial Advisor*;"

Inovio's ability, under terms of the original agreement and plan of merger and as amended and restated, under certain circumstances, to consider and respond to an unsolicited written acquisition proposal, and if, after consultation with Inovio's legal advisors, the board of directors determines in good faith that such acquisition proposal is a superior proposal and determines in good faith, after consultation with legal counsel, that failure to take such action would be inconsistent with the board's duties to Inovio's stockholders under applicable law, Inovio's ability to terminate the such agreement upon the payment of a termination fee of $3,500,000;

the fact that Inovio's management team recommended the Merger to Inovio's board of directors;

the fact that the closing of the Merger is subject to the approval of Inovio's stockholders;

the scope of the representations and warranties of VGX provided in the original agreement and plan of merger and confirmed in the Acquisition Agreement; and

the absence from another party or group of parties of a potential merger, business combination or similar transaction with Inovio that is more desirable than the proposed Merger.

In its review of the proposed transaction, Inovio's board of directors considered the potential adverse impact of other factors, including:

the risk that the Merger might not be completed;

the substantial time and effort of management required to consummate the Merger and related disruptions to the operation of Inovio's current business;

the substantial expenses to be incurred in connection with the transaction, and the impact of those expenses if the transaction is not completed;

the restrictions on the conduct of Inovio's business prior to the completion of the Merger, as set forth in the original agreement and plan of merger and in the Acquisition Agreement, which could delay or prevent Inovio from undertaking business opportunities that may arise pending completion of the Merger;

the risk that the pending Merger or failure to complete the Merger may cause substantial harm to relationships with Inovio's employees and may divert management and employee attention away from the day to day operation of Inovio's current business;

the risk that pursuing the Merger could disrupt the listing of Inovio's common stock on the NYSE Amex, if the Merger is deemed a "Reverse Merger" under Company Guide Section 341, which would require Inovio to re-apply for initial listing of its common stock;

the concern that Inovio's inability to solicit competing acquisition proposals, and the possibility that the $3,500,000 termination fee payable by Inovio upon the termination of the original agreement and plan of merger and the Acquisition Agreement under certain circumstances could discourage other potential bidders from making a competing bid to acquire Inovio; and

the other risks described under the section of this joint proxy statement/prospectus entitled *"Risk Factors"* beginning on page 26, including that the combined group may not be able to raise sufficient capital to grow the group's business and maintain and/or increase the value of Inovio's common stock.

The above discussion of the material factors is not intended to be exhaustive, but does set forth the principal factors considered by Inovio's board of directors. After due consideration, Inovio's board of directors concluded that the potential benefits of the transaction outweighed the risks associated with the transaction. In view of the wide variety of factors considered by Inovio's board of directors in connection with the evaluation of the transaction and the complexity of these matters, Inovio's board of directors did not consider it practical to quantify, rank or otherwise assign relative weights to the foregoing factors, and it did not attempt to do so. Rather, Inovio's board of directors made its recommendation based on the totality of the information presented to it, and the investigation conducted by it. Inovio's board of directors considered all these factors and determined that these factors, as a whole, supported the conclusions and recommendations described below.

This summary of the reasoning of Inovio's board of directors, as well as certain information presented in this section, is forward-looking in nature. This information should be read in light of the factors discussed under the section entitled *"Cautionary Note Regarding Forward Looking Statements"* on page 24. Inovio cannot assure you that the potential benefits or opportunities considered by Inovio's board of directors will be achieved through completion of the transaction. See the section entitled *"Risk Factors"* beginning on page 26.

Recommendation of Inovio's Board of Directors

After careful consideration, Inovio's board of directors determined that the proposed transaction is fair to, and in the best interests of, Inovio and its stockholders. **Inovio's board of directors recommends that Inovio stockholders vote FOR the Merger, including the issuance of Inovio securities in the transaction, as well as the related 2000 Plan Amendment.** Each of the individual proposals, as recommended by the Inovio board of directors, is described in greater detail, beginning on page 206 of this joint proxy statement/prospectus.

In considering the recommendation of Inovio's board of directors with respect to the issuance of securities pursuant to the transaction and the change of control resulting from such issuance, Inovio stockholders should be aware that certain directors and officers of Inovio have interests in the transaction that are different from, or are in addition to, the interests of Inovio's stockholders generally. See the section entitled *"Interests of Directors, Officers and Affiliates"* on page 85.

VGX's Reasons for the Transaction

In reaching its decision to approve the Merger, including the original agreement and plan of merger and the Acquisition Agreement, VGX's board of directors consulted with VGX's management and financial and legal advisors regarding the strategic, operational and financial aspects of the transaction. The management team of VGX performed analyses of the business, financial performance and condition, competitive environment, and prospects of each Inovio and VGX as separate entities

and on a combined basis for VGX's board of directors. The VGX board of directors also considered an assessment of other potential strategic opportunities and alternatives to the Merger, including development opportunities and other possible merger or acquisition alternatives, and determined that the Merger with Inovio was the best strategic fit and presented a unique opportunity to enhance and expand VGX's operations and product offerings and best positioned VGX for future growth.

In the course of reaching its decision to approve the Merger, VGX's board of directors considered a variety of factors, including but not limited to, the following:

Pipeline and Markets. The combined group's two lead DNA vaccine programs, utilizing electroporation delivery, would likely target what VGX's management believes are significant and growing major market needs.

Management Team. The combined group would be led by an experienced senior management with representation from both VGX and Inovio.

Access to Capital. The combined group would remain a public reporting company traded on a national securities exchange and thereby the legacy VGX programs may gain access to additional funding sources.

Due Diligence. The results of VGX's due diligence review of Inovio.

The VGX board of directors considered the following factors pertaining to the strategic rationale for the combination of the two companies, supporting its decision to approve the Merger:

the fact that both VGX and Inovio have a strong commitment to advancing the treatment of infectious diseases and cancer;

that the anticipated combined group's product portfolio would include internally developed clinical-stage vaccine candidates for prevention and treatment of HIV infection and cervical cancer therapy and a clinical-stage small molecule therapeutic candidate for inflammatory diseases including rheumatoid arthritis and type I diabetes;

VGX would will gain access to Inovio's partnered programs with pharmaceutical companies, which would complement VGX's current internal development programs, including significant alliances with Merck; Wyeth; Vical; Tripep; University of Southampton; Moffitt Cancer Center, and potentially mitigate the overall risk to the development programs of both companies;

VGX's collaborative relationships with Dow Chemical and The University of Pennsylvania would likely be maintained and further enhance the combined group's development initiatives;

the anticipation that the combined group would have a robust R&D pipeline and that the combined group would be able to leverage both companies' expertise in DNA vaccines and electroporation devices to drive development;

the expectation that the combined group would have more financial and human resources and expertise to dedicate to the research and development of more biopharmaceutical products and the engineering of its electroporation technology, while benefiting from potential operational efficiencies; and

the combined group would be able to offer wider electroporation based DNA delivery device choices to its licensing partners than VGX alone;

The VGX board of directors also considered the following financial factors pertaining to the Merger, which supported its decision to approve the Merger and enter into the related agreements:

information concerning the financial performance, financial condition, business and prospects of VGX as a separate entity and on a potential combined basis with Inovio, including revenues,

complementary products and technologies, and the potential for revenue enhancement and cost savings;

information concerning the recent and past financing history of VGX and the stock price performance of Inovio common stock;

the prices paid in comparable transactions involving other biopharmaceutical companies, as well as the trading performance of the stock of comparable companies in the industry;

the primarily stock-based consideration for the Merger, which should preserve the financial strength of the combined company for continued business investment;

the significant ownership position of legacy VGX stockholders in the combined group after the Merger; and

the anticipation that the combined group, with its greater capitalization, would obtain additional interest and coverage from the financial community, providing increased access to capital if needed and provide the combined group's stockholders with increased liquidity.

The VGX board of directors also considered the following governance factors as support for its decision to approve the Merger:

representation of legacy VGX directors on the board of directors of the combined company;

that J. Joseph Kim, the current chairman of the board, president and chief executive officer of VGX, will become the chief executive officer of the combined company;

that the management team would be drawn from both VGX and Inovio, providing strength from both management teams; and

the perceived complementary cultural fit and organizational structure of both companies and the management team members from VGX and Inovio that would integrate the companies.

The VGX board of directors evaluated the reasonableness of terms and conditions of the Merger, including:

the structure of the Merger and the level of certainty provided by the Merger Exchange Ratio, as well as the projected percentage of the total outstanding shares of Inovio common stock that current VGX stockholders would own after the Merger;

the provisions that prohibit Inovio from soliciting other acquisition offers;

the circumstances under which a termination fee and expenses are payable by Inovio to VGX and the nature of the negotiating process that resulted in the termination fee provisions;

the perceived likelihood of the parties' obtaining the necessary regulatory and stockholder approvals;

the belief of VGX's management that the Merger would be approved by the requisite authorities, without the imposition of conditions to preclude or materially diminish the benefits expected from the Merger, and would otherwise be completed in accordance with the terms of the agreement; and

the ability to complete the Merger as a reorganization for U.S. federal income tax purposes.

The VGX board of directors weighed these advantages and opportunities against the following material factors that may weigh negatively against the Merger:

the risk that anticipated cost savings, operational synergies and other benefits sought in the Merger might not be fully realized;

the time, effort and costs involved in integrating the management teams, strategies, cultures and organizations of the two companies, including the risk of diverting management's attention from other strategic priorities to implement merger integration efforts;

the risk that the per share value of the consideration to be paid in the Merger to the VGX stockholders could decrease significantly from the value prior to the announcement of the original agreement and plan of merger because the Merger Exchange Ratio would not be adjusted for changes in the market price of Inovio common stock;

the possibility that the Merger might not be completed or might be unduly delayed and the potential adverse consequences if the Merger is not completed or is delayed;

the effect of the public announcement of the Merger on Inovio's stock price;

the substantial costs to be incurred in connection with the Merger, including the costs of integrating the businesses of VGX and Inovio and retaining key personnel and the transaction expenses arising from the merger, such as certain retention payments that may be required to be made to directors, officers and other employees of Inovio;

the risk that, despite VGX's efforts and the efforts of Inovio after the Merger, the combined company may lose key personnel;

the risk that the restrictions on the conduct of VGX's business during the period between the signing of the agreement and plan of merger and the completion of the Merger may negatively impact VGX's business;

litigation risks associated with the transaction or with the combination of the two companies; and

the other risks of the type and nature described under "*Risk Factors*."

In reaching its decision to approve the Merger, VGX's board of directors also considered the interests that certain directors and officers of VGX have in the transaction. See the section entitled *"Interests of Directors, Officers and Affiliates"* on page 85.

After consideration of these factors, the VGX board of directors determined that these risks could be mitigated or managed by VGX or Inovio or by the combined company following the Merger, were reasonably acceptable under the circumstances or, in light of the anticipated benefits, the risks were unlikely to have a materially adverse impact on the Merger or on the combined company following the Merger, and that, overall, these risks were significantly outweighed by the potential benefits of the Merger.

Although this discussion of the information and factors considered by the VGX board of directors is believed to include the material factors considered by the VGX board of directors, it is not intended to be exhaustive and may not include all of the factors considered by the VGX board of directors. In reaching its determination to approve the Merger and approve and adopt the original agreement and plan of merger and the Acquisition Agreement, the VGX board of directors did not find it useful and did not attempt to quantify or assign any relative or specific weights to the various factors that it considered in reaching its determination that the Merger and the related agreements are advisable and fair to and in the best interests of VGX and the VGX stockholders. Rather, the VGX board of directors based its position and determination on the totality of the information presented to and factors considered by it. In addition, individual members of the VGX board of directors may have given differing weights to different factors.

This summary of the reasoning of VGX's board of directors, as well as certain information presented in this section, is forward-looking in nature. This information should be read in light of the factors discussed under the section entitled *"Cautionary Note Regarding Forward Looking Statements"* on page 24. VGX cannot assure you that the potential benefits or opportunities considered by VGX's board of directors will be achieved through completion of the transaction. See the section entitled *"Risk Factors"* beginning on page 26.

Recommendation of VGX's Board of Directors

After careful consideration and with advice from Needham, VGX's board of directors determined that the Acquisition Agreement and the transactions contemplated by the Acquisition Agreement, including the terms of the Merger, are fair, reasonable and in the best interests of VGX. **VGX's board of directors recommends that VGX stockholders vote FOR the proposal seeking approval of the Merger, including adoption of the Acquisition Agreement.** The individual proposal, as recommended by the VGX board of directors, is described in greater detail, beginning on page 216 of this joint proxy statement/prospectus.

In considering the determination by the VGX board of directors that the Merger and the related agreements are advisable and fair to and in the best interests of VGX and the VGX stockholders, you should be aware that certain VGX directors and officers have arrangements that may cause them to have interests in the transaction that are different from, or are in addition to, the interests of VGX stockholders generally. See the section entitled *"Interests of Directors, Officers and Affiliates"* on page 85.

Resulting Ownership of Inovio; Change of Control

The Acquisition Agreement anticipates the calculation of the Merger Exchange Ratio such that the legacy holders of Inovio's securities and VGX's securities will respectively hold 50 percent of the fully-diluted share capital upon closing of the Merger, excluding the VGX convertible debt assumed in the Merger. If the Merger is consummated, based on the fully-diluted share capital outstanding of each of Inovio and VGX as of the record date, current holders of Inovio securities will own approximately [ ]% and holders of VGX securities will own approximately [ ]% of the fully-diluted share capital of the combined company (including the VGX convertible debt) and [ ]% and [ ]%, respectively, of the anticipated issued and outstanding shares of capital stock post-Merger (including the outstanding shares of Inovio Series C preferred stock on an as-converted basis). This shift in the ownership of Inovio as a result of the Merger, if completed, or the related shift in the voting power of the legacy Inovio stockholders, will constitute a "Change of Control" or "Change in Control" as defined in a number of Inovio agreements, or other qualifying triggering event, impacting the rights of Inovio and/or the other parties to such agreements, as follows:

Inovio 2000 Plan. The Inovio 2000 Plan currently does not define a "Change in Control," instead defining certain "Terminating Events" upon which the vesting of options outstanding pursuant to the Inovio 2000 Plan accelerates and after which, if not exercised upon such acceleration, the outstanding options terminate. Under the existing terms of the Inovio 2000 Plan, a Terminating Event includes a merger or consolidation of Inovio where immediately following such transaction the Inovio stockholders as a group will hold less than a majority of the outstanding capital stock of the surviving corporation. Thus, under the existing Inovio 2000 Plan, the resulting shift of ownership of Inovio's outstanding capital stock post-Merger would result in a Terminating Event under the Inovio 2000 Plan. If amended, as proposed in Proposal 2, contained elsewhere in this joint proxy statement/prospectus, prior to the closing of the Merger, the resulting shift in the ownership of Inovio shall instead constitute a "Change in Control" under the proposed amended and restated Inovio 2000 Plan (included with this joint proxy statement/prospectus as *Annex D*). Under the proposed amended and restated Inovio 2000 Plan, the consummation of a merger or consolidation involving Inovio following which the beneficial owners of the outstanding Inovio capital stock immediately prior to such transaction continue to beneficially own less than 75% of the outstanding shares of common stock and the combined voting power immediately after such transaction. As the legacy Inovio common stockholders will not retain beneficial ownership and voting power in excess of 75%, upon approval of the 2000 Plan Amendment and closing of the Merger, any Inovio options issued and outstanding under the Inovio 2000 Plan will become fully vested and exercisable.

Inovio 2007 Plan. Under the Inovio 2007 Omnibus Incentive Plan, a "Change in Control" includes the consummation of a merger or consolidation involving Inovio following which the beneficial owners of the outstanding Inovio capital stock immediately prior to such transaction continue to beneficially own less than 75% of the outstanding shares of common stock and the combined voting power immediately after such transaction. As the legacy Inovio common stockholders will not retain beneficial ownership and voting power in excess of 75%, upon closing of the Merger any Inovio options or other equity awards issued and outstanding under the Inovio 2007 Omnibus Incentive Plan will become fully vested and exercisable.

Sponsored Research, License and Collaborative Arrangements: Some of Inovio's sponsored research, license and/or collaborative arrangements contain "Change of Control" provisions that that will be triggered by the resulting shift in the ownership of Inovio, if the Merger is completed, which may enable premature termination of such arrangements or otherwise may impact the status of such arrangements for the combined group. For example, Inovio's agreement with Wyeth requires Inovio provide Wyeth with certain notifications of a pending qualifying transaction and enables Wyeth to terminate the arrangement if such notice and certain other written assurances regarding the priority and commitment to the arrangement are not timely provided to Wyeth by Inovio prior to consummation of such transaction. Similarly, Inovio's arrangement with Merck requires certain notice of a Change of Control transaction and also enables termination under limited circumstances as a result. Other of Inovio's and VGX's arrangements require that the company seek and obtain prior written consent from the collaborative party ahead of the consummation of any Change of Control transaction. Inovio intends to comply with the notice, information and/or consent requirements of these various provisions, and does not anticipate any changes in its arrangements with these collaborative parties, however in some instances, even if Inovio complies with such requirements, the other parties to these arrangements may control whether there will be changes to such arrangements as a result of the Merger.

In addition, Inovio has reviewed the rights of the holders of the outstanding shares of its Series C preferred stock and its outstanding warrants, and has determined that the Merger should not have any impact on the current rights of such securities, on the basis that the Merger does not qualify as a "Change of Control" or other qualifying event as defined for such securities, or if the Merger does trigger potential consequences, such adjustments are not applicable due to the significant negative differential between the pricing of the security in question and the current market price of Inovio's common stock. For example, the majority of the outstanding Inovio warrants include a Change of Control provision that, if triggered, only requires adjustment of the exercise price or allows cash redemption of the warrant if changes in rights are being made to the underlying security, the Inovio common stock, or such class of underlying security is being purchased or exchanged in a transaction, which would not occur upon closing of the Merger, if completed. However, Inovio has identified one form of warrant issued in 2004 that also provides the warrantholder, upon a "consolidation" of Inovio with another company, the ability to elect to receive cash consideration equal to the fair market value of the warrant as determined in accordance with customary valuation methodology used in the investment banking industry. Using the Black-Scholes valuation method favored by investment banks for such valuations, Inovio anticipates that its cash redemption obligation for such warrants would be significantly less than $1,000 total, if the current transaction is deemed a qualifying consolidation and the warrantholder seeks such redemption.

Opinion of Inovio's Financial Advisor

Oppenheimer acted as a financial advisor to Inovio to evaluate, and to render an opinion to the Inovio board of directors with respect to, the fairness, from a financial point of view, to Inovio of the consideration payable by Inovio in the Merger. On July 2, 2008, at a meeting of Inovio's board of

directors held to evaluate the Merger, Oppenheimer rendered to Inovio's board of directors an oral opinion, which was confirmed by delivery of a written opinion dated July 2, 2008, to the effect that, as of that date and based on and subject to the matters described in its opinion, the Merger Exchange Ratio provided for in the original agreement and plan of merger (prior to its amendment) was fair, from a financial point of view, to Inovio. Oppenheimer's opinion, dated July 2, 2008, relates only to the Merger Exchange Ratio provided for in the original merger agreement and does not take into account any events or developments after the date of such opinion, including any modification to the proposed Merger or the Merger Exchange Ratio provided for in the Acquisition Agreement, dated as of December 5, 2008, as further amended on March 31, 2009.

The full text of Oppenheimer's written opinion, dated July 2, 2008, which describes the assumptions made, procedures followed, matters considered and limitations on the review undertaken, is attached to this joint proxy statement/prospectus as *Annex B*. ***Oppenheimer's opinion was provided to Inovio's board of directors in connection with its evaluation of the Merger Exchange Ratio from a financial point of view to Inovio and does not address any other aspect of the Merger. Oppenheimer's opinion does not address the underlying business decision of Inovio to effect the Merger, the relative merits of the Merger as compared to any alternative business strategies that might exist for Inovio or the effect of any other transaction in which Inovio might engage and does not constitute a recommendation to any stockholder as to how such stockholder should vote or act with respect to any matters relating to the Merger.*** The summary of Oppenheimer's opinion described below is qualified in its entirety by reference to the full text of its opinion.

In arriving at its opinion, Oppenheimer:

- reviewed a draft, dated July 1, 2008, of the original agreement and plan of merger (prior to its amendment);
- reviewed audited financial statements of Inovio and VGX for fiscal years ended December 31, 2007, 2006 and 2005 and unaudited financial statements of Inovio and VGX for the three months ended March 31, 2008;
- reviewed historical market prices and trading volumes of Inovio common stock;
- held discussions with the senior managements of Inovio and VGX with respect to the businesses and prospects of Inovio and VGX;
- reviewed and analyzed the market values of companies that Oppenheimer deemed relevant in evaluating Inovio and VGX;
- reviewed and analyzed publicly available financial terms of transactions that Oppenheimer deemed relevant in evaluating the Merger;
- reviewed and analyzed publicly available financial terms of licensing transactions that Oppenheimer deemed relevant in evaluating the product candidates of Inovio and VGX;
- discussed with Inovio's management its assessments as to the anticipated pro forma funding needs of, and cash available to, Inovio;
- reviewed public information concerning Inovio and VGX; and
- performed such other analyses, reviewed such other information and considered such other factors as Oppenheimer deemed appropriate.

In rendering its opinion, Oppenheimer relied upon and assumed, without independent verification or investigation, the accuracy and completeness of all of the financial and other information provided to or discussed with Oppenheimer by Inovio, VGX and their respective employees, representatives and affiliates or otherwise reviewed by Oppenheimer. Oppenheimer was advised that financial forecasts

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relating to Inovio and VGX had not been prepared by the managements of Inovio and VGX and, accordingly, Oppenheimer did not undertake an analysis of the future financial performance of Inovio and VGX. Oppenheimer assumed, with Inovio's consent, that the final terms of the merger agreement would not vary materially from those set forth in the draft reviewed by Oppenheimer. Oppenheimer also assumed, with Inovio's consent, that the Merger would qualify for federal income tax purposes as a tax-free reorganization under Section 368(a) of the Code. Oppenheimer further assumed, with Inovio's consent, that the Merger and related transactions, including the (i) sale by VGX to VGXI of certain assets relating to its DNA plasmid products for total cash consideration of $9,110,000, referred to as the VGXI asset sale, and the use of the proceeds from the VGXI asset sale and (ii) repayment of an aggregate of $7.75 million of the outstanding convertible debt of VGX not converted into Inovio common stock in the anticipated automatic conversion of certain convertible debt assumed in the Merger, referred to as the VGX convertible debt conversion, as such debt becomes due and payable, would be consummated in accordance with their respective terms without waiver, modification or amendment of any material term, condition or agreement and in compliance with all applicable laws and other requirements and that, in the course of obtaining the necessary regulatory or third party approvals, consents and releases with respect to the Merger and related transactions, no delay, limitation, restriction or condition would be imposed that would have an adverse effect on Inovio, VGX or the contemplated benefits of the Merger. Oppenheimer neither made nor obtained any independent evaluations or appraisals of the assets or liabilities, contingent or otherwise, of Inovio or VGX.

Oppenheimer's opinion relates to the relative values of the fully diluted equity of Inovio and VGX after giving effect, in the case of VGX, to the VGX convertible debt conversion. Oppenheimer did not express any opinion as to the underlying valuation, future performance or long-term viability of Inovio or VGX, the actual value of Inovio common stock when issued or the price at which Inovio common stock would trade at any time. Oppenheimer was not requested to, and it did not, participate in the negotiation or structuring of the Merger or any related transaction. Oppenheimer expressed no view as to, and its opinion did not address, any terms or other aspects or implications of the Merger (other than the Merger Exchange Ratio to the extent expressly specified in its opinion) or any related transaction or any aspect or implication of any other agreement, arrangement or understanding entered into in connection with the Merger or otherwise, including, without limitation, the form or structure of the Merger or any related transaction, including the VGX convertible debt conversion, or any terms or aspects of the VGXI asset sale or the use of the proceeds from the VGXI asset sale. Oppenheimer also expressed no view as to, and its opinion did not address, the fairness of the amount or nature of, or any other aspect relating to, the compensation to be received by any individual officers, directors or employees of any parties to the Merger, or any class of such persons, relative to the Merger Exchange Ratio. In addition, Oppenheimer expressed no view as to, and its opinion did not address, Inovio's underlying business decision to proceed with or effect the Merger nor did its opinion address the relative merits of the Merger as compared to any alternative business strategies that might exist for Inovio or the effect of any other transaction in which Inovio might engage. Oppenheimer's opinion was necessarily based on the information available to it and general economic, financial and stock market conditions and circumstances as they existed and could be evaluated by Oppenheimer on the date of its opinion. Although subsequent developments may affect its opinion, Oppenheimer does not have any obligation to update, revise or reaffirm its opinion. Except as described above, Inovio imposed no other instructions or limitations on Oppenheimer with respect to the investigations made or the procedures followed by it in rendering its opinion.

This summary is not a complete description of Oppenheimer's opinion or the financial analyses performed and factors considered by Oppenheimer in connection with its opinion. The preparation of a financial opinion is a complex analytical process involving various determinations as to the most appropriate and relevant methods of financial analysis and the application of those methods to the particular circumstances and, therefore, a financial opinion is not readily susceptible to summary

description. Oppenheimer arrived at its ultimate opinion based on the results of all analyses undertaken by it and assessed as a whole, and did not draw, in isolation, conclusions from or with regard to any one factor or method of analysis for purposes of its opinion. Accordingly, Oppenheimer believes that its analyses and this summary must be considered as a whole and that selecting portions of its analyses and factors or focusing on information presented in tabular format, without considering all analyses and factors or the narrative description of the analyses, could create a misleading or incomplete view of the processes underlying Oppenheimer's analyses and opinion.

In performing its analyses, Oppenheimer considered industry performance, general business, economic, market and financial conditions and other matters existing as of the date of its opinion, many of which are beyond the control of Inovio and VGX. No company, business or transaction used in the analyses is identical to Inovio, VGX or the Merger, and an evaluation of the results of those analyses is not entirely mathematical. Rather, the analyses involve complex considerations and judgments concerning financial and operating characteristics and other factors that could affect the acquisition, public trading or other values of the companies, business segments or transactions analyzed.

The assumptions and estimates contained in Oppenheimer's analyses and the ranges of valuations resulting from any particular analysis are not necessarily indicative of actual values or future results, which may be significantly more or less favorable than those suggested by its analyses. In addition, analyses relating to the value of businesses or securities do not purport to be appraisals or to reflect the prices at which businesses or securities actually may be sold. Accordingly, the assumptions and estimates used in, and the results derived from, Oppenheimer's analyses are inherently subject to substantial uncertainty.

The type and amount of consideration payable in the Merger were determined through negotiation between Inovio and VGX, and the decision to enter into the transaction was solely that of Inovio's board of directors. Oppenheimer's opinion and financial presentation were only one of many factors considered by Inovio's board of directors in its evaluation of the Merger and should not be viewed as determinative of the views of Inovio's board of directors or management with respect to the Merger or the Merger Exchange Ratio.

The following is a summary of the material financial analyses reviewed with Inovio's board of directors in connection with Oppenheimer's opinion dated July 2, 2008. ***The financial analyses summarized below include information presented in tabular format. In order to fully understand Oppenheimer's financial analyses, the tables must be read together with the text of each summary. The tables alone do not constitute a complete description of the financial analyses. Considering the data in the tables below without considering the full narrative description of the financial analyses, including the methodologies and assumptions underlying the analyses, could create a misleading or incomplete view of Oppenheimer's financial analyses.*** For purposes of the financial analyses summarized below, the "Implied Merger Exchange Ratio" refers to the implied Merger Exchange Ratio of approximately 0.9803x calculated as set forth in the original agreement and plan of merger (prior to its amendment) based on outstanding common stock, warrant and option information for Inovio and VGX provided by the respective managements of Inovio and VGX.

Sum-of-the-Parts Analysis

Oppenheimer performed separate sum-of-the-parts analyses of Inovio and VGX based on the sum of (i) the implied values of their respective product candidates and other operating assets, plus (ii) their respective net cash, calculated as cash and cash equivalents less debt, and the book value of their respective non-operating assets as of March 31, 2008 as adjusted, in the case of VGX's net cash, to reflect the VGXI asset sale and the VGX convertible debt conversion.

Inovio. In performing the sum-of-the-parts analysis of Inovio, implied values were calculated as follows:

in the case of each of Inovio's vaccine product candidates currently in Phase One clinical trials, Oppenheimer applied a discount, to take into account, among other things, the fact that development rights to these product candidates have already been licensed to third parties and the early development stage of these product candidates, of 70% (or, in the case of prostate cancer and hepatitis C programs, a discount of 50% given recent public announcements of positive clinical developments for such programs) to a selected range of transaction values, calculated as the consideration (excluding contingent payments) payable in the relevant transaction, derived from the following 12 selected vaccine licensing transactions:

Transaction Date	Parties to Transaction
12/2007	Maxygen, Inc. / Sanofi Pasteur, Inc.
2/2007	AVANT Immunotherapeutics, Inc. / Select Vaccines Limited
10/2006	Intercell AG / Merck & Co., Inc.
6/2006	Sanofi Pasteur, Inc. / Emergent BioSolutions Inc.
3/2006	Hawaii Biotech, Inc. / Avantogen Limited
7/2005	Merck & Co., Inc. / Geron Corporation
6/2004	Kirin Brewery Co., Ltd. (Pharmaceutical Division) / Merix Corporation
5/2004	Intercell AG / Merck & Co., Inc.
4/2004	Cerus Corporation / MedImmune, Inc.
3/2004	Innogenetics N.V. / Genencor International, Inc.
12/2002	Corixa Corporation / Kirin Brewery Co., Ltd. (Pharmaceutical Division)
4/2002	Bavarian Nordic A/S / PowderJect Pharmaceuticals PLC

in the case of Inovio's pre-clinical electroporation devices, approximately 50% of Inovio's pre-clinical electroporation devices were assumed, at the direction of Inovio's management, not to progress to Phase One clinical trials (and, accordingly, were assigned no value) and, for each of the remaining devices, Oppenheimer utilized a selected range of transaction values derived from the selected vaccine licensing transactions and applied a discount of 50%, to take into account, among other things, the likelihood that development rights to these devices will be licensed to third parties and the early development stage of these devices as well as the fact that publicly announced studies had published positive findings relating to electroporation technology; and

in the case of Inovio's auction rate securities investments that have been reclassified by Inovio as long-term assets, Oppenheimer applied a 10% discount to the face value of the securities to reflect lack of liquidity with respect to such securities.

VGX. In performing the sum-of-the-parts analysis of VGX, implied values were calculated as follows:

in the case of each of VGX's vaccine product candidates, Oppenheimer utilized a selected range of transaction values derived from the selected vaccine licensing transactions;

in the case of VGX's animal health division, Oppenheimer utilized a selected range of enterprise values, calculated as fully-diluted market value based on closing stock prices on July 1, 2008, less cash, cash equivalents and investments in unconsolidated affiliates, plus straight debt and preferred stock, out-of-the-money convertible securities and minority interests, derived from the

following five selected publicly traded companies with operations in the animal health segment of the biopharmaceutical industry:

Bioniche Life Sciences Inc.
Daesung Microbiological Labs Co., Ltd.
Heska Corporation
ImmuCell Corporation
Imugene Limited

in the case of VGX's 30.4% equity interest in VGX International, Inc., Oppenheimer utilized the implied market value of such equity interest based on the closing stock price of VGX International, Inc. on July 1, 2008 and applied a discount of 25% to reflect emerging market risk and lack of liquidity with respect to such equity interest;

in the case of VGX's 1027 Program, Oppenheimer utilized a selected range of transaction values, calculated as the consideration (excluding contingent payments) payable in the relevant transaction, derived from the following five selected autoimmune licensing transactions:

Transaction Date	Parties to Transaction
2/2007	Roche Holdings, Ltd. / BioCryst Pharmaceuticals, Inc.
7/2006	Actelion Pharmaceuticals Ltd. / Roche Holdings, Ltd.
6/2006	Schering-Plough Corporation / Celera Genomics Group
1/2003	Genentech, Inc. / TolerRx Inc.
5/2000	Repligen Corporation / Tolerance Therapeutics LLC

in the case of VGX's pre-clinical research program with the University of Pennsylvania, Oppenheimer utilized a selected range of transaction values derived from the selected vaccine licensing transactions and applied a discount of 10% to reflect the early development stage of the program.

Based on implied per share equity reference ranges for Inovio and VGX derived from the sum of (i) the implied aggregate value of their respective product candidates and operating assets plus (ii) their respective net cash and the book value of non-operating assets as of March 31, 2008 (as adjusted, in the case of VGX's net cash, to reflect the VGXI asset sale and the VGX convertible debt conversion), the sum-of-the-parts analyses of Inovio and VGX indicated the following implied exchange ratio reference range, as compared to the Implied Merger Exchange Ratio:

Implied Exchange Ratio Reference Range	Implied Merger Exchange Ratio
1.1961x - 1.7544x	0.9803x

Selected Companies Analyses

Oppenheimer performed separate selected companies analyses of Inovio and VGX in which Oppenheimer reviewed financial and stock market information of Inovio, VGX and the following eight selected publicly held companies with operations in the vaccine or immunotherapy segments of the biopharmaceutical industry, which are segments of such industry in which Inovio and VGX operate:

Antigenics Inc.

AVANT Immunotherapeutics, Inc.

Biovest International, Inc.

CEL-SCI Corporation

Dynavax Technologies Corporation

Introgen Therapeutics, Inc.

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Novavax, Inc.

Vical Incorporated

Oppenheimer reviewed enterprise values of the selected companies, calculated as fully-diluted market value based on closing stock prices on July 1, 2008, less cash, cash equivalents and investments in unconsolidated affiliates, plus straight debt and preferred stock, out-of-the-money convertible securities and minority interests, of the selected companies. Financial data for the selected companies were based on public filings. Based on implied per share equity reference ranges for Inovio and VGX derived by applying the amount of Inovio's and VGX's net cash as of March 31, 2008 (as adjusted, in the case of VGX's net cash, to reflect the VGXI asset sale and the VGX convertible debt conversion) to the range of enterprise values of the selected companies, the selected companies analyses of Inovio and VGX indicated the following implied exchange ratio reference range, as compared to the Implied Merger Exchange Ratio:

Implied Exchange Ratio Reference Range	Implied Merger Exchange Ratio
0.0646x - 11.0995x	0.9803x

Selected Precedent Transactions Analysis

Oppenheimer performed separate selected precedent transactions analyses of Inovio and VGX in which Oppenheimer reviewed the transaction values of the following nine selected transactions in the biopharmaceutical industry (a) involving companies with either operations in the vaccine segment of such industry, which is a segment in which Inovio and VGX operate, or product candidates in an early development stage or (b) in which the acquiror and the target had complementary technologies:

Announcement Date	Acquiror	Target
5/12/2008	Intercell AG	Iomai Corporation
10/22/2007	Celldex Therapeutics, Inc.	AVANT Immunotherapeutics, Inc.
7/25/2007	Cell Therapeutics, Inc.	Systems Medicine, Inc.
5/7/2007	Peptech Ltd.	Evogenics Pty Ltd.
6/8/2006	Axonyx Inc.	TorreyPines Therapeutics, Inc.
4/12/2006	Infinity Pharmaceuticals, Inc.	Discovery Partners International, Inc.
1/9/2006	Cancervax Corporation	Micromet, Inc.
9/26/2005	Corgentech Inc.	AlgoRx Pharmaceuticals Inc.
9/14/2005	MedImmune, Inc.	Cellective Therapeutics, Inc.

Oppenheimer reviewed transaction values in the selected transactions, calculated as the equity value implied for the target company based on the consideration payable in the selected transaction, including contingent payments, less cash, cash equivalents and investments in unconsolidated affiliates, plus straight debt and preferred stock, out-of-the-money convertible securities and minority interests. Financial data for the selected transactions were based on publicly available information at the time of announcement of the relevant transaction. Based on implied per share equity reference ranges for Inovio and VGX derived by applying the amount of Inovio's and VGX's net cash as of March 31, 2008 (as adjusted, in the case of VGX's net cash, to reflect the VGXI asset sale and the VGX convertible debt conversion) to the range of transaction values of the selected transactions, the selected precedent transactions analyses of Inovio and VGX indicated the following implied exchange ratio reference range, as compared to the Implied Merger Exchange Ratio:

Implied Exchange Ratio Reference Range	Implied Merger Exchange Ratio
0.1471x - 5.2720x	0.9803x

Miscellaneous

Inovio has agreed to pay Oppenheimer for its financial advisory services with respect to the rendering its opinion in connection with the Merger an aggregate fee of $325,000, a portion of which was payable upon Oppenheimer's engagement by Inovio and the balance of which was payable upon delivery of Oppenheimer's opinion (regardless of the conclusion reached in the opinion). Inovio also has agreed to reimburse Oppenheimer for its reasonable expenses, including reasonable fees and expenses of its legal counsel, and to indemnify Oppenheimer and related parties against liabilities, including liabilities under the federal securities laws, relating to, or arising out of, its engagement. Oppenheimer and its affiliates in the past have performed investment banking and other services for Inovio unrelated to the Merger, for which services Oppenheimer and its affiliates have received compensation, including financial advisory services to Inovio in connection with potential acquisition transactions in 2007. In the ordinary course of business, Oppenheimer and its affiliates may actively trade the securities of Inovio for Oppenheimer's and its affiliates' own accounts and for the accounts of customers and, accordingly, may at any time hold a long or short position in such securities.

The issuance of Oppenheimer's opinion was approved by an authorized committee of Oppenheimer. Inovio selected Oppenheimer to provide certain financial advisory services in connection with the Merger based on Oppenheimer's reputation and experience and its familiarity with Inovio and its business. Oppenheimer is an internationally recognized investment banking firm and, as a part of its investment banking business, is regularly engaged in valuations of businesses and securities in connection with acquisitions and mergers, underwritings, secondary distributions of securities, private placements and valuations for other purposes.

Appraisal Rights

Under the DGCL, holders of VGX common stock have the right to seek appraisal of their shares of VGX common stock in connection with the Merger and to receive payment in cash for the fair value of their shares of VGX common stock as determined by the Delaware Court of Chancery, or the "Chancery Court," together with a fair rate of interest, if any, in lieu of the consideration they would otherwise be entitled to pursuant to the Acquisition Agreement. These rights are known as "appraisal rights." VGX stockholders electing to exercise appraisal rights must comply with the provisions of Section 262 of the DGCL, or "Section 262," the full text of which appears in *Annex E* to this joint proxy statement/prospectus, in order to perfect their rights. Strict compliance with the Delaware statutory procedures will be required. For VGX stockholders who have properly exercised appraisal rights to receive the fair value of their shares, at least one VGX stockholder who has properly exercised appraisal rights must litigate an appraisal proceeding in the Chancery Court.

The following is intended as a brief summary of the material provisions of the Delaware statutory procedures required to be followed by a VGX stockholder in order to dissent from the Merger and to perfect appraisal rights. This summary, however, is not a complete statement of all applicable requirements and is qualified in its entirety by reference to Section 262. Failure to precisely follow any of the statutory procedures set forth in Section 262 may result in a termination or waiver of a VGX stockholder's appraisal rights.

Section 262 requires that stockholders be notified that appraisal rights will be available not less than 20 days before the stockholders' meeting to vote on the Merger. A copy of Section 262 must be included with such notice. This joint proxy statement/prospectus constitutes VGX's notice to its stockholders of the availability of appraisal rights in connection with the Merger in compliance with the requirements of Section 262. If a VGX stockholder wishes to consider exercising his or her appraisal rights, he or she should carefully review the text of Section 262 contained in *Annex E* since failure to timely and properly comply with the requirements of Section 262 will result in the loss of his or her appraisal rights under Delaware law.

If a VGX stockholder elects to demand appraisal of his or her shares, he or she must satisfy each of the following conditions:

The VGX stockholder must deliver to VGX a written demand for appraisal of his or her shares of common stock before the vote with respect to the Merger is taken. This written demand for appraisal must be in addition to and separate from any proxy or vote abstaining from or voting against the adoption of the Acquisition Agreement. Voting against or failing to vote for the adoption of the Acquisition Agreement by itself does not constitute a demand for appraisal within the meaning of Section 262.

The VGX stockholder must not vote in favor of the adoption of the Acquisition Agreement. A vote in favor of the adoption of the Acquisition Agreement, by proxy or in person, will constitute a waiver of his or her appraisal rights in respect of the shares so voted and will nullify any previously filed written demands for appraisal. A proxy card which is signed and does not contain voting instructions will, unless revoked, be voted "FOR" the adoption of the Acquisition Agreement and will nullify any previous written demand for appraisal.

If a VGX stockholder fails to comply with either of these conditions and the Merger is completed, he or she will be entitled to receive the merger consideration for his or her shares of VGX common stock as provided for in the Acquisition Agreement, but he or she will have no appraisal rights with respect to his or her shares of VGX common stock.

All demands for appraisal should be addressed to VGX Pharmaceuticals, Inc., 450 Sentry Parkway, Blue Bell, Pennsylvania 19422, Attention: Secretary, and must be delivered before the vote on the Acquisition Agreement is taken at the VGX special meeting, and should be executed by, or on behalf of, the record holder of the shares of VGX common stock. The demand must reasonably inform VGX of the identity of the stockholder and the intention of the stockholder to demand appraisal of such stockholder's shares of VGX common stock.

To be effective, a demand for appraisal by a holder of VGX's common stock must be made by, or in the name of, such registered stockholder, fully and correctly, as the stockholder's name appears on the stock certificate(s). Beneficial owners who are not record holders may not directly make appraisal demands to VGX. The beneficial holder must, in such cases, have the registered owner, such as a broker, bank or other nominee or other nominee, submit the required demand in respect of those shares. If shares are owned of record in a fiduciary capacity, such as by a trustee, guardian or custodian, execution of a demand for appraisal should be made by or for the fiduciary; and if the shares are owned of record by more than one person, as in a joint tenancy or tenancy in common, the demand should be executed by or for all joint owners. An authorized agent, including an authorized agent for two or more joint owners, may execute the demand for appraisal for a stockholder of record; however, the agent must identify the record owner or owners and expressly disclose the fact that, in executing the demand, he or she is acting as agent for the record owner. A record owner, such as a broker, who holds shares as a nominee for others, may exercise his or her right of appraisal with respect to the shares held for one or more beneficial owners, while not exercising this right for other beneficial owners. In that case, the written demand should state the number of shares as to which appraisal is sought. Where no number of shares is expressly mentioned, the demand will be presumed to cover all shares held in the name of the record owner.

If a VGX stockholder holds his or her shares of VGX common stock in a brokerage account or in other nominee form and he or she wishes to exercise appraisal rights, he or she should consult with his or her broker, bank or other nominee to determine the appropriate procedures for the making of a demand for appraisal by the nominee.

Within ten days after the Effective Time of the Merger, the surviving corporation must give written notice that the Merger has become effective to each VGX stockholder who has properly filed a written demand for appraisal and who did not vote in favor of the Acquisition Agreement. At any time within 60 days after the Effective Time, any VGX stockholder who has demanded an appraisal has the right to withdraw the demand and to accept the consideration specified by the Acquisition Agreement for his or her shares of VGX common stock. Within 120 days after the Effective Time of the Merger, the surviving corporation or any stockholder who has complied with Section 262 shall, upon written request to the surviving corporation, be entitled to receive a written statement setting forth the aggregate number of shares not voted in favor of the Acquisition Agreement and with respect to which demands for appraisal rights have been received and the aggregate number of holders of such shares. Within 120 days after the Effective Time, either the surviving corporation or any VGX stockholder who has complied with the requirements of Section 262 may file a petition in the Chancery Court demanding a determination of the fair value of the shares held by all VGX stockholders entitled to appraisal. Upon the filing of the petition by a VGX stockholder, service of a copy of such petition shall be made upon the surviving corporation. The surviving corporation has no obligation to file such a petition in the event there are dissenting stockholders. Accordingly, the failure of a stockholder to file such a petition within the period specified could nullify the stockholder's previously written demand for appraisal.

If a petition for appraisal is duly filed by a VGX stockholder and a copy of the petition is delivered to the surviving corporation, the surviving corporation will then be obligated, within 20 days after receiving service of a copy of the petition, to provide the Chancery Court with a duly verified list containing the names and addresses of all VGX stockholders who have demanded an appraisal of their shares and with whom agreements as to the value of their shares have not been reached by the surviving corporation. After notice to dissenting stockholders who demanded appraisal of their shares, the Chancery Court is empowered to conduct a hearing upon the petition, and to determine those VGX stockholders who have complied with Section 262 and who have become entitled to the appraisal rights provided thereby. The Chancery Court may require the VGX stockholders who have demanded payment for their shares to submit their stock certificates to the Register in the Chancery Court for notation thereon of the pendency of the appraisal proceedings, and if any stockholder fails to comply with that direction, the Chancery Court may dismiss the proceedings as to that stockholder.

After determination of the VGX stockholders entitled to appraisal of their shares of VGX common stock, the appraisal proceeding shall be conducted in accordance with the rules of the Chancery Court, including any rules specifically governing appraisal proceedings. The appraisal proceeding is a litigation proceeding. At the conclusion of the litigation, the Chancery Court will appraise the shares, determining their fair value exclusive of any element of value arising from the accomplishment or expectation of the Merger, together with a fair rate of interest, if any. When the value is determined, the Chancery Court will direct the payment of such value in cash, with interest thereon accrued during the pendency of the proceeding, if the Chancery Court so determines, to the VGX stockholders entitled to receive the same, upon surrender by such holders of the certificates representing those shares.

In determining fair value, the Chancery Court is required to take into account all relevant factors. VGX stockholders should be aware that the fair value of their shares as determined under Section 262 could be more, the same or less than the value that they are entitled to receive under the terms of the Acquisition Agreement. Stockholders also should be aware that investment banking opinions as to the fairness from a financial point of view of the consideration payable in a merger are not opinions as to "fair value" under Section 262. Unless the Chancery Court in its discretion determines otherwise for

good cause shown, interest from the Effective Time of the Merger through the date of the payment of the judgment shall be compounded quarterly and shall accrue at 5% over the Federal Reserve discount rate (including any surcharge) as established from time to time during the period between the Effective Time of the Merger and the date of payment of the judgment.

Costs of the appraisal proceeding may be imposed upon the surviving corporation and the VGX stockholders participating in the appraisal proceeding by the Chancery Court as the Chancery Court deems equitable in the circumstances. Upon the application of a VGX stockholder, the Chancery Court may order all or a portion of the expenses incurred by any VGX stockholder in connection with the appraisal proceeding, including, without limitation, reasonable attorneys' fees and the fees and expenses of experts, to be charged pro rata against the value of all shares entitled to appraisal. Any VGX stockholder who had demanded appraisal rights will not, after the Effective Time of the Merger, be entitled to vote shares subject to that demand for any purpose or to receive payments of dividends or any other distribution with respect to those shares, other than with respect to payment as of a record date prior to the Effective Time; however, if no petition for appraisal is filed within 120 days after the Effective Time of the Merger, or if the VGX stockholder delivers a written withdrawal of his or her demand for appraisal and an acceptance of the terms of the Merger within 60 days after the Effective Time of the Merger, then the right of that VGX stockholder to appraisal will cease and that stockholder will be entitled to receive the merger consideration for shares of VGX's common stock held by such stockholder pursuant to the Acquisition Agreement. Any withdrawal of a demand for appraisal made more than 60 days after the Effective Time of the Merger may only be made with the written approval of the surviving corporation and must, to be effective, be made within 120 days after the Effective Time.

Failure to comply with all of the procedures set forth in Section 262 will result in the loss of a stockholder's statutory appraisal rights. In view of the complexity of Section 262, VGX stockholders who may wish to dissent from the Merger and pursue appraisal rights should consult their legal advisors.

Accounting Treatment

The Merger will be accounted for using the purchase method of accounting for business combinations under U.S. GAAP. Although the business combination of Inovio and VGX is a "merger of equals," generally accepted accounting principles require that one of the two companies in the transaction be designated as the acquirer for accounting purposes. After a review of relevant factors, in accordance with the provisions of Statement of Financial Accounting Standards No. 141R, Business Combinations (SFAS 141R), Inovio has been determined to be the accounting acquirer. In evaluating the appropriate accounting treatment under SFAS 141R, the parties and their accountants considered all relevant facts and circumstances, including, without limitation, the entity issuing equity securities, the relative operational size of the legacy entities, the relative voting rights of the legacy holders in the combined group, the composition of the post-Merger company's board of directors and its committees, and the composition and relevant experience of senior management; a majority of these factors favored a determination of Inovio as the accounting acquirer. Accordingly, the historical consolidated financial statements of Inovio will be carried forward at their historical cost, the purchase price will be allocated to VGX's identifiable assets and liabilities based on their estimated fair values at the date of the consummation of the Merger, and any excess of the purchase price over those fair values will be accounted for as goodwill. The results of final valuations of property, plant and equipment, and intangible and other assets and the finalization of any potential plans of restructuring have not yet been completed. Inovio will revise the allocation of the purchase price based on VGX's net assets at the time of the Merger and when additional information becomes available.

Listing or Quotation of Inovio Common Stock

Inovio has notified the NYSE Amex of the Acquisition Agreement, the Merger and the other agreements contemplated by the Acquisition Agreement and provided the NYSE Amex with a copy of the Acquisition Agreement, the schedules and exhibits thereto and other documentation requested by the NYSE Amex. After reviewing these items, the NYSE Amex determined that the Merger does not constitute a Reverse Merger under Section 341 of the exchange's Company Guide, and Inovio promptly filed an additional listing application with respect to the shares of Inovio common stock to be issued or become issuable upon closing of the Merger consistent with its covenants in the Acquisition Agreement to use commercially reasonable efforts to obtain approval of such additional listing, as well as maintain the current listing of its common stock on the NYSE Amex. However, the NYSE Amex warned Inovio and VGX that if facts material to the Section 341 determination change, whether prior to or after the closing, the Merger could subsequently be determined to constitute a "Reverse Merger" under Section 341, which would require Inovio to meet the initial listing requirements of the NYSE Amex at such time. Under such circumstances, if Inovio is able to satisfy such initial listing requirements using commercially reasonable efforts, it will file an initial listing application with the NYSE Amex. However, if Inovio is not able to meet the NYSE Amex's initial listing requirements using commercially reasonable efforts, or NYSE Amex otherwise notifies Inovio that it is out of compliance with the NYSE Amex continued listing standards and Inovio cannot maintain the listing of its common stock using commercially reasonable efforts, then Inovio will, in consultation with VGX if pre-closing, pursue listing or quotation of the Inovio common stock on an alternate securities exchange or quotation system, respectively, for which it does qualify, including approval for listing or quotation of the shares of Inovio common stock to be issued or become issuable (or issued, if post-closing) in relation to the Merger.

Restrictions on Ability to Sell Inovio Common Stock

The Acquisition Agreement provides that certain shares of Inovio common stock issued at closing of the Merger, or issuable pursuant to securities assumed in the Merger, will be subject to lock-up restrictions for an initial period post-Merger, in conjunction with which certain holders of Inovio and VGX securities will be asked to execute lock-up agreements. Specifically, shares of Inovio common stock held at the closing, received pursuant to the Merger, or received upon exercise or conversion of options, warrants or convertible debt assumed in the Merger (the "Restricted Securities") held by any of the following persons shall be subject to lock-up restrictions: (a) certain holders of Restricted Securities named in the Acquisition Agreement, (b) directors, executive officers and employees of VGX just prior to closing, (c) holders of the outstanding convertible debt of VGX just prior to closing, and (d) the directors, executive officers, and employees of Inovio (each a "Restricted Party" and together, the "Restricted Parties").

For the duration of the applicable lock-up period, each Restricted Party shall not (a) sell, assign, exchange, transfer, pledge, hypothecate, distribute or otherwise dispose of (other than by operation of law where the transferee remains subject to and bound by the provisions of the Acquisition Agreement applicable during the lock-up period) (i) any Restricted Securities, or (ii) any interest (including, without limitation, an option to buy or sell) in any Restricted Securities, in whole or in part, or (b) engage in any transaction in respect to Restricted Securities or any interest in the Restricted Securities, the intent or effect of which is the effective economic disposition of such shares (the foregoing restrictions are referred to in this joint proxy statement/prospectus as the "Lock-Up Restrictions"). However, in no event shall any of the Lock-Up Restrictions restrict the transfer of the Restricted Securities pursuant to a tender offer, exchange offer or merger transaction relating to any shares of Inovio common stock subsequent to the Merger.

The Lock-Up Restrictions shall generally apply to Restricted Securities held by the Restricted Parties, *except* with respect to shares of Inovio common stock issued upon conversion of the VGX

convertible debt, for 24 months from the closing of the Merger. However, the Lock-Up Restrictions shall lapse as to 25% of the shares of Inovio common stock (held directly or underlying other Restricted Securities) initially subject to such Lock-Up Restrictions at closing upon each six-month anniversary of the date of the closing, and, if the Restricted Party is an employee and/or director of Inovio or VGX or any of their subsidiaries just prior to the Effective Time of the Merger, the Lock-Up Restrictions shall no longer apply at all upon the termination of such Restricted Party's employment or directorship with Inovio or any of its subsidiaries. The Lock-Up Restrictions shall apply to any shares of Inovio common stock issued upon conversion of the converted VGX convertible debt for six months from the closing, but shall lapse as to 50% of the shares of Inovio common stock underlying the VGX convertible debt upon the three-month anniversary of the date of closing.

To effect the Lock-up Restrictions, upon closing Inovio will issue a stop order to its transfer agent with respect to the shares of Inovio common stock held by or issuable to the Restricted Parties, and the shares of Inovio common stock issued to the Restricted Parties in the Merger and thereafter during the effective period for the Lock-Up Restrictions shall bear a restrictive legend reflecting the Lock-Up Restrictions. Prior to the closing, Inovio shall also obtain from the chief executive officer of Inovio and shall use its best efforts to obtain from all other Inovio-affiliated Restricted Parties lock-up agreements in customary form detailing the Lock-Up Restrictions. Prior to the closing, VGX shall also obtain from the chief executive officer of VGX and shall use its best efforts to obtain from all other VGX-affiliated Restricted Parties, except those who will hold Restricted Securities consisting of solely of shares of Inovio common stock issued at the Effective Time pursuant to the Merger, lock-up agreements in customary form detailing the Lock-Up Restrictions.

Upon the expiration of the general periods during which the Lock-Up Restrictions are applicable, Inovio shall instruct its transfer agent to remove the stop order. Prior to such times, Inovio shall also notify its transfer agent regarding the interim lapsing of the Lock-Up Restrictions as to Restricted Securities held by the Restricted Parties within five business days of each of the applicable anniversary dates. To the extent a holder of previously Restricted Securities needs assistance with the issuance of new share certificates in order to make a transfer of some or all of that portion of its shares of Inovio common stock which were previously issued with the restrictive legend, the post-Merger company intends to assist such holder in its communications with the transfer agent to effectuate such issuance and/or transfer.

Interests of Directors, Officers and Affiliates

In considering the recommendation of Inovio's board of directors that Inovio stockholders vote in favor of the issuance of Inovio's securities in conjunction with the Merger and the resulting change of control of Inovio, Inovio stockholders should be aware that some Inovio executive officers and directors have interests in the transaction that may be different from, or in addition to, their interests as stockholders of Inovio. These interests include the execution of new employment agreements, to be effective upon closing of the Merger, between Inovio and its current executive officers, which provide for certain payments upon closing of the Merger and eligibility for future severance payments under certain terms and conditions.

As of December 31, 2008, Inovio's directors and executive officers as a group beneficially held 2,640,925 shares of Inovio common stock including options and warrants to purchase 2,169,381 shares of Inovio common stock exercisable within 60 days of the record date also held by the Inovio directors and executive officers, equivalent to approximately 5.93% of the shares of Inovio common stock entitled to vote at the Inovio special meeting. Approval of the proposals at the Inovio special meeting requires the affirmative vote of the holders of a majority of the outstanding shares of Inovio common stock present at the Inovio special meeting, in person or by proxy duly authorized.

Inovio's board of directors was aware of these interests and considered them, among other matters, in making its recommendation to Inovio's stockholders that they approve the transaction and other related proposals. In addition, subsequent to such recommendation, Dr. Avtar Dhillon, Simon Benito and [ ] were selected to continue service on the Inovio board as directors post-closing, for which Mr. Benito and [ ] will continue to receive customary director compensation.

In considering the recommendation of VGX's board of directors that VGX stockholders vote in favor of the issuance of Inovio's securities in conjunction with the Merger and the resulting change of control of VGX, VGX stockholders should be aware that some VGX executive officers and directors have interests in the transaction that may be different from, or in addition to, their interests as stockholders of VGX. These interests include

- Dr. J. Joseph Kim, Chief Executive Officer of VGX, will become the Chief Executive Officer and a director of Inovio post-closing;
- Dr. Morton Collins, a current director of VGX, will serve on the post-Merger board of directors; and
- Dr. C. Jo White, Chief Medical Officer of VGX, will serve as the Chief Medical Officer of Inovio post-closing.

Dr. Collins will receive customary director compensation for his service on the post-Merger board of directors.

As of the record date, all directors and executive officers of VGX as a group owned approximately 33.2% of the shares of VGX common stock entitled to vote at the VGX special meeting; this percentage does not include options and warrants to purchase 5,973,000 shares of VGX common stock exercisable within 60 days of the record date also held by the VGX executive officers and directors. The affirmative vote at the VGX special meeting of the holders of a majority of the outstanding shares of VGX common stock, or approximately 21,143,853 shares based on the number of shares of outstanding VGX common stock on March 6, 2009, is required to approve the Merger and the Acquisition Agreement.

VGX's board of directors was aware of these interests and considered them, among other matters, in making its recommendation to VGX's stockholders that they approve the transaction.

Directors and Management of Inovio Following the Transaction

Directors

The Acquisition Agreement provides that Inovio shall identify and nominate three individuals from its current board of directors and that VGX shall identify and nominate two individuals from its current board of directors to serve on the board of directors of the post-Merger company. At least two of the individuals put forth by Inovio and one individual put forth by VGX must be "independent" pursuant to the rules and regulations of the NYSE Amex and the Rule 10A-3(b) as promulgated under the Exchange Act. Inovio's current board of directors will take all actions necessary such that the following individuals nominated by Inovio and VGX pursuant to the terms of the Acquisition Agreement shall be appointed to the Inovio board of directors at the closing. The following is a list and brief biography of each person who is expected to serve as a director of Inovio upon and after the

closing of the Merger pursuant to the arrangement described above, annotated with the anticipated service of such individuals on the committees of the post-Merger board of directors:

Name	Age	Position
Avtar Dhillon, M.D.	48	Chairman of the Board, President, Director
J. Joseph Kim, Ph.D.	40	Chief Executive Officer, Director
Simon X. Benito(1)(2)(3)	[ ]	Director
[ ](1)(2) (3)	48	Director
Morton Collins, Ph.D.(1)(2)(3)	72	Director

(1) Member of the Compensation Committee

(2) Member of Nomination and Corporate Governance Committee

(3) Member of the Audit Committee

AVTAR DHILLON, M.D. joined Inovio as the President and Chief Executive Officer, and as a director, in October 2001. Post-Merger, Dr. Dhillon will remain as President and a director of the combined company and is anticipated to serve as Chairman of the Board. Prior to joining Inovio, Dr. Dhillon was engaged by MDS Capital Corp. (now Lumira Capital Corp.), one of North America's leading healthcare venture capital organizations, as a consultant in July 1998, and subsequently became Investment Manager in August 1999 and Vice President in 2000. In July 1989, Dr. Dhillon started a medical clinic and subsequently practiced family medicine for over 12 years. From March 1997 to July 1998, Dr. Dhillon served as consultant to Cardiome Pharmaceuticals, a biotechnology company listed on NASDAQ National Market and the Toronto Stock Exchange. Dr. Dhillon has a Bachelor of Science, honors degree in physiology and M.D. degree from the University of British Columbia. Dr. Dhillon is also a director of Protox Therapeutics, a publicly traded specialty pharmaceutical company and Auricle Biomedical, a capital pool company.

J. JOSEPH KIM, PH.D. will join Inovio at closing of the Merger as its Chief Executive Officer and a director. A co-founder of VGX Pharmaceuticals and its current President, Chief Executive Officer and a director since 2000, Dr. Kim is a veteran of the biopharmaceutical industry. Prior to VGX, Dr. Kim led efforts in manufacturing and process development of several FDA-approved products and developmental therapeutics at Merck. These products include FDA-approved vaccines for Hepatitis as well as developmental vaccines and therapeutics for HIV/AIDS. Dr. Kim has published over 70 peer-reviewed scientific papers and book chapters, holds numerous patents and sits on several editorial boards and review panels. In 2002, Dr. Kim was named as one of the world's top 100 young innovators by Technology Review magazine and as one of the "40 under 40" by the *Philadelphia Business Journal,* which highlights most dynamic professionals who are under 40 years of age in the region. Dr. Kim was also selected on the list of the "50 Most Influential Men" in the October 2003 and in the October 2006 "Power Issue" of *Details Magazine*. In 2004, Dr. Kim and VGX Pharmaceuticals were selected as one of 30 Technology Pioneers by the World Economic Forum. Furthermore, Dr. Kim was featured in the "Who's Next 2005" issue of *Newsweek International*, which included a group of 10 leaders, scientists, and executives at the forefront of change and impact in the world. Most recently in 2006, Dr. Kim has been named a Young Global Leader by the Forum of Young Global Leaders, an affiliate of the World Economic Forum. Dr. Kim was among 175 leading executives, public figures and intellectuals under the age of 40 from 50 countries. Dr. Kim has also been featured in articles in *Forbes* and *the New Yorker* and in numerous other Media Outlets. Dr. Kim was trained in economics, engineering and biological sciences at MIT where he was a U.S. Senate Honors Scholar. He holds a Ph.D. in Biochemical Engineering from the University of Pennsylvania and an MBA in Finance from the Wharton School.

SIMON X. BENITO has been a director of Inovio since December 2003. Prior to his retirement, Mr. Benito had a successful and extensive career serving several health care companies in senior

executive positions, including 25 years at Merck & Co, Inc. His most recent positions included Senior Vice President, Merck Vaccine Division; Executive Vice President, Merck-Medco Managed Care; and Executive Director and Vice President, Merck Human Health, Japan. In addition, Mr. Benito was a Fellow of the Institute of Chartered Accountants in England and Wales for over thirty years until his retirement in 1999. Since April 2005, Mr. Benito has served as a director of DURECT Corporation, a publicly traded specialty pharmaceutical company.

MORTON COLLINS, PH.D. has been a director of VGX since June 2008. Dr. Collins has been a General Partner of Battelle Ventures since July 2003 and Innovations Valley Partners since August 2005. For the past 40 years, Dr. Collins has acquired broad expertise in venture capital funding of early-stage high-technology companies as a founder and managing partner of five different funds, Developmental Science Ventures I, II, III, and IV and Cardinal Partners. He chaired President Reagan's Task Force on Innovation and Entrepreneurship and served as a technology policy advisor to President George H. W. Bush. He is a former President, Director and Chairman of the National Venture Capital Association, and currently serves as Director to Kopin Corporation and Strategic Diagnostics, Inc. and several private companies. Dr. Collins holds a B.S. in Engineering from the University of Delaware, and his M.A. and Doctorate Degrees in Engineering from Princeton University.

Executive Officers

In addition to Dr. Kim, who shall serve as Chief Executive Officer, and Dr. Dhillon, who shall serve as President of the post-Merger company, as noted above under "*Directors,*" the management team of Inovio shall consist of the following persons effective as of the closing and contingent upon the occurrence of the closing:

Name	Age	Position
Peter Kies	45	Chief Financial Officer
C. Jo White	54	Chief Medical Officer
Niranjan Sardesai	41	Senior Vice President, Research and Development
Kevin Rassas	62	Senior Vice President, Business Development
Gene Kim	40	Vice President, Finance
Punit Dhillon	28	Vice President, Operations
Iacob Mathiesen	42	Vice President, Research and Development
Michael Fons	49	Vice President, Corporate Development

PETER KIES Chief Financial Officer. Mr. Kies has been employed by Inovio as Chief Financial Officer since June 2002. For the 15 years prior to joining Inovio, Mr. Kies acquired broad expertise in the functional and strategic management of biotechnology and high technology companies across the full spectrum of corporate growth, from Initial Public Offering to profitability. From May 1996 until joining Inovio, he served as Chief Financial Officer for Newgen Results Corporation, and prior to that served as Controller for Cytel Corporation and as an auditor for Ernst & Young LLP. Mr. Kies holds a B.S. in Business Administration from United States International University in San Diego, California.

C. JO WHITE, M.D. Chief Medical Officer. Dr. White has served as Chief Medical Officer of VGX since 2005. She has 21 years of senior level clinical/medical affairs positions with major pharmaceutical companies including BMS, Wyeth and Merck. Her experience has been focused in the area of infectious diseases and she is trained as an Internist and Infectious Disease specialist. Dr. White has designed and conducted over 40 Phase 1-4 trials, filed several Biologics License Applications/Marketing Authorization Applications and has obtained regulatory approval for 5 different vaccines and drugs in both the U.S. and Europe. Dr. White completed a fellowship in Infectious Diseases at the National Institutes of Health (NIH) in the National Institute of Allergy and Infectious

Diseases (NIAID). Dr. White is board certified in both Internal Medicine and Infectious Diseases. She graduated summa cum laude from the University of Texas in Austin with a B.A. in Microbiology. She received her medical degree with honors from Baylor College of Medicine in Houston, Texas.

NIRANJAN SARDESAI, PH.D. Senior Vice President, Research and Development. Dr. Sardesai has served as Senior Vice President, Research and Development of VGX since November 2007. Dr. Sardesai is an experienced veteran of the pharmaceutical industry, with a special focus in R&D and Management of Technology. Prior to joining VGX in September 2006, Dr. Sardesai was the President of Nvision Consulting, Inc. for the period from June 2005 to September 2006. He also served as the Director of R&D and Director of Applied Research at the Fujirebio Diagnostics, Inc. from October 2000 to December 2005. At Fujirebio, Dr. Sardesai oversaw all aspects of the company's R&D activities, with a special focus on new product development. Prior to Fujirebio, he worked as a Senior Scientist at IGEN International, Inc. Dr. Sardesai received a Ph.D. in Chemistry from California Institute of Technology and an MBA in Entrepreneurial Management from the Wharton School of the University of Pennsylvania. Dr. Sardesai also completed post-doctoral fellowships at the Scripps Research Institute and the Massachusetts Institute of Technology. Dr. Sardesai received his M. Sc. in Chemistry from the Indian Institute of Technology.

KEVIN RASSAS Senior Vice President, Business Development. Mr. Rassas has served as Senior Vice President, Business Development of VGX since July 2006. He first joined VGX in December 2003 to head VGX's business development efforts. Mr. Rassas has over 30 years of pharmaceutical industry experience, including senior level general management responsibility for several major international markets with Wyeth and G.D.Searle. Mr. Rassas' background includes significant experience in International Operations, P&L Management, Strategic Planning, Business Development, Finance and Administration, New Product Introductions, Joint Ventures, Project Management, and Human Resources. Mr. Rassas received a Bachelor of Arts in Economics from the University of Notre Dame and his MBA in Finance from the Kellogg School of Management at Northwestern University.

GENE KIM Vice President, Finance. Mr. Kim has joined VGX in 2005 as Director of Finance and has served as Chief Financial Officer of VGX since May 2006. Mr. Kim has over 13 years of experience in the financial services and energy related industries. Prior to joining VGX, he served as a financial advisor to several small start-ups in the Washington DC area as a part of AEG Capital, a position he held from November 2003 to October 2005. He has also served as a Director of Finance for several high-tech start-ups in Silicon Valley, including Yodlee, a firm providing technology solutions for the financial services industry, and Pandesic, a joint venture between Intel and SAP. His duties included the establishment and integration of policies and procedures, implementation of accounting systems, and financial planning and analysis. Prior to his work with start-ups, he worked for Bankers Trust/Deutsche Bank as a trader in the interest rate arbitrage group. Mr. Kim began his career as a chemical engineer with Unocal where he worked as a refinery engineer. Mr. Kim has an M.B.A. in Finance from the Wharton School of Business at the University of Pennsylvania and a Bachelor of Science in Chemical Engineering from UCLA, and is a Certified Public Accountant.

PUNIT DHILLON Vice President, Operations. Punit Dhillon was promoted by Inovio to Vice President, Finance and Operations in January 2008. Mr. Dhillon joined Inovio in September 2003 and has played a role in various corporate finance projects, including management of financing transactions, as well as day-to-day management of operational functions. Mr. Dhillon was most recently Executive Director of Finance and Operations. Prior to joining Inovio, he worked for a corporate finance law firm as a law clerk. He previously worked with MDS Capital Corp. (now Lumira) and was a consultant to several early stage health and life-science companies where he acquired broad experience in corporate management, finance and capital markets. Mr. Dhillon has a Bachelor of Arts, Honors, in Political Science and a minor in Business Administration from Simon Fraser University. Mr. Dhillon is also a director of Auricle Biomedical, a capital pool company.

MICHAEL FONS, PH.D. Vice President, Corporate Development. Michael Fons, PhD, was promoted by Inovio to Vice President of Corporate Development in August 2007. Dr. Fons joined Inovio as Executive Director of Corporate Development in June 2004. In such capacity, he has been instrumental in defining Inovio's corporate strategy relating to DNA vaccines and DNA delivery, including assisting in securing DNA-related license agreements, acquiring valuable intellectual property assets, and establishing a strong standard for the management of Inovio's corporate relationships. From 2002 to 2004, Dr. Fons held the position of Executive Director, Business Development and Technology Assessment at Vical, Inc. Dr. Fons previously held business development roles with GeneMedicine, and Valentis. He is an Adjunct Associate Professor of Microbiology and Immunology with the University of Texas Medical Branch. Dr. Fons is a published author of 24 papers in scientific journals and numerous book chapters.

IACOB MATHIESEN Vice President, Research and Development. Iacob Mathiesen is currently the managing director of Inovio's Norwegian subsidiary, Inovio AS, which is conducting preclinical research on DNA vaccines. Mr. Mathiesen joined Inovio when a company he co-founded in 1999 to pursue research and development relating to electroporation and for which he was chief executive officer was acquired by Inovio in 2005. Mr. Mathiesen has pioneered novel advancements for electroporation methods and devices for DNA delivery and has been named as inventor or co-inventor on multiple patents and co-authored numerous scientific papers relating to the use of electroporation for DNA delivery. Mr. Mathiesen received a B.Sc. in Mathematics and Natural Sciences in 1991, an M.Sc. in Mathematics and Natural Sciences in 1993, and a Ph.D. in Medicine in 1999, all from the University of Oslo, Norway.

Family Relationships

No family relationships exist between any of the directors or executive officers of Inovio or VGX or the combined group, except that Mr. Punit Dhillon, Inovio's current Vice President, Finance and Operations and the combined group's intended Vice President, Operations, is the nephew of Dr. Avtar Dhillon, Inovio's President and Chief Executive Officer and director and the combined group's intended President, director and Chairman of the Board. Neither Mr. Dhillon nor Dr. Dhillon have been party to any transaction requiring disclosure pursuant to Item 404(a) of Regulation S-K.

Legal Proceedings

No current Inovio or VGX directors or executive officers, nor any intended directors or executive officers of the combined group, have been involved in the certain legal proceedings listed in Item 401 of Regulation S-K.

Corporate Governance

Inovio's Corporate Governance Policy, which includes the charters of the committees of the board of directors, is available on its website, *www.inovio.com*. Historically the Inovio board of directors has implicitly and explicitly acknowledged its responsibility for the stewardship of Inovio in the following ways, and the parties do not anticipate any changes in such policies and procedures upon closing of the Merger.

Committees of the Board of Directors

Audit Committee

The functions of the Audit Committee include retaining Inovio's independent registered public accounting firm, reviewing its independence, reviewing and approving the planned scope of Inovio's annual audit, reviewing and approving any fee arrangements with Inovio's independent registered public accounting firm, overseeing its audit work, reviewing and pre-approving any non-audit services that may

be performed by it, reviewing the adequacy of accounting and financial controls, reviewing Inovio's critical accounting policies and reviewing and approving any related party transactions. The Inovio board of directors amended the charter for the Audit Committee on March 6, 2008, to better reflect the practices and responsibilities of the Audit Committee. The Audit Committee's charter, a component of Inovio's Corporate Governance Policy, is available separately on its website at:

http://media.corporate-ir.net/media_files/irol/10/105128/corpGov/AuditCommittee.pdf

Upon closing of the Merger, the parties anticipate that Simon Benito, [ ], and Dr. Morton Collins will serve as members of the Audit Committee; each of these individuals is independent under the NYSE Amex listing standards. The Inovio board of directors previously determined that Mr. Benito is an "audit committee financial expert" as defined under Item 407(d)(5)(ii) of Regulation S-K under the Securities Act.

Compensation Committee

The Compensation Committee determines the salary of the executive officers of Inovio, grants stock options under the 2007 Omnibus Incentive Plan and performs such other functions regarding compensation as the board of directors may delegate. The Inovio board of directors amended the charter for the Compensation Committee on March 27, 2008. The Compensation Committee's charter, a component of our corporate governance policy, is available separately on our website at:

http://media.corporate-ir.net/media_files/irol/10/105128/corpGov/CompCommit.pdf.

Upon closing of the Merger, the parties anticipate that Simon Benito, [ ] and Dr. Morton Collins will serve as the members of the Compensation Committee. Each member of the Compensation Committee is independent under the NYSE Amex listing standards.

Nomination and Corporate Governance Committee

The Nomination and Corporate Governance Committee identifies and recommends candidates for election to the Inovio board of directors. It advises the board of directors on all matters relating to directorship practices, including the criteria for selecting directors, policies relating to tenure and retirement of directors and compensation and benefit programs for non-employee directors. While the Nomination and Corporate Governance Committee has not established any minimum criteria for serving as a director, the Committee focuses on selecting individuals that have skill sets that augment the skill sets of the current directors and are most likely to assist in the building and success of Inovio. In addition, the Committee believes it appropriate for at least one member of the board of directors to meet the criteria for an "audit committee financial expert," as defined by the SEC rules, that independent members of the board who serve on the audit committee are able to read and understand fundamental financial statements, including a balance sheet, income statement, and cash flow statement and that at least a majority of the members of the board of directors meet the definition of "independent" under NYSE Amex rules.

The Nomination and Corporate Governance Committee also makes recommendations relating to the duties and membership of committees of the board of directors, recommends processes to evaluate the performance and contributions of individual directors and the board of directors as a whole, approves procedures designed to provide that adequate orientation and training are provided to new members of the board of directors, consults with the Chief Executive Officer in the process of recruiting new directors and assists in locating senior management personnel and selecting members for the scientific advisory board.

The Nomination and Corporate Governance Committee has developed a policy to govern Inovio's approach to corporate governance issues and provides a forum for concerns of individual directors about matters not easily or readily discussed in a full board meeting (e.g., the performance of management). Individual directors are entitled to engage outside advisors at the expense of Inovio, with

the prior approval of the Nomination and Corporate Governance Committee, and with the full knowledge of management. The board of directors amended the charter for the Nomination and Corporate Governance Committee on March 27, 2008. The Nomination and Corporate Governance Committee's charter, a component of Inovio's Corporate Governance Policy, is available separately on Inovio's website at: *http://media.corporate-ir.net/media_files/irol/10/105128/corpGov/NomandCorpGov.pdf*

Upon closing of the Merger, the parties anticipate that Simon Benito, [ ] and Dr. Morton Collins will serve as the members of the Nomination and Corporate Governance Committee, and each is independent under the NYSE Amex listing standards.

Strategic Planning and Identification of Risks

Management prepares an annual business plan for Inovio and presents the plan to the Inovio board of directors for its review and comments. In connection therewith, the board of directors discusses various strategic matters with management and identifies business risks associated with Inovio's activities.

Senior Management

The board of directors takes responsibility for appointing those members of senior management who become Inovio's officers. Currently, the members of senior management of Inovio are: Dr. Avtar Dhillon, president and chief executive officer; Peter Kies, chief financial officer and human resources manager; Dr. Michael Fons, vice president, corporate development; and Punit Dhillon, vice president, finance and operations; however, if the Merger is completed, the executive officers of the post-Merger company will be the individuals noted under "*Executive Officers"* above.

Communications Policy

The board of directors has procedures in place to ensure effective communication between Inovio, its stockholders, prospective investors, and the public, including the dissemination of information on a regular and timely basis. Historically, the Chairman of the board of directors, the chief executive officer, the chief financial officer and the vice president, finance and operations, along with various other Inovio employees and consultants, devoted a portion of their time to dealing with stockholders and prospective investors. Stockholders who want to communicate with the board or any individual director can write to Inovio's Secretary at the following address: 11494 Sorrento Valley Road, San Diego, CA 92121-1318; such correspondence should indicate that status as an Inovio stockholder. Depending on the subject matter, management will:

Forward the communication to the director or directors to whom it is addressed;

Attempt to handle the inquiry directly, for example, where it is a request for information about Inovio or it is a stock-related matter; or

Not forward the communication if it is primarily commercial in nature or if it relates to an improper or irrelevant topic.

Internal Control and Management Information Systems

Along with management, the board of directors is responsible for Inovio's internal control and management information systems. The Audit Committee of the board of directors meets with Inovio's independent registered public accounting firm quarterly to review Inovio's financial statements and to review Inovio's financial reporting procedures.

Independence from Management

To ensure that the board of directors functions independently of management, Inovio has separated the office of chairman of the Board from that of chief executive officer. Further the independent directors meet on a regular basis as often as necessary to fulfill their responsibilities, including at least annually in executive session without the presence of non-independent directors and management.

Upon the closing of the Merger, the parties anticipate that Simon Benito, [ ], and Dr. Morton Collins will serve on the board of directors, and each is independent under the NYSE Amex listing standards.

Modified Plurality Voting Policy

On December 5, 2008, the Inovio board of directors, upon recommendation from its Nomination and Corporate Governance Committee adopted a Modified Plurality Voting Policy as an addition to its Corporate Governance Policy. The Modified Plurality Voting Policy provides that any nominee for director in an uncontested election who receives (a) a greater number of votes "withheld" from his or her election than votes "for" his or her election and (b) votes "withheld" from his or her election that constitute thirty-five percent (35%) or more of the outstanding shares of Inovio common stock, must promptly tender his or her written resignation following the certification of the stockholder vote. The Inovio board of directors, in accordance with the procedures set out in the policy and upon a recommendation from the Nomination and Corporate Governance Committee, shall either accept such resignation or defer its acceptance for no more than thirty days to enable the Inovio board to maintain compliance with applicable rules and regulations. Inovio shall promptly disclose such determination on any pending resignation via a Current Report on Form 8-K. A copy of the Modified Plurality Voting Policy is posted to Inovio's website as part of Inovio's overall Corporate Governance Policy.

Code of Ethics

Inovio has adopted a Code of Ethics, which applies to all directors, officers and employees, including the principal executive officer, principal financial and accounting officer and controller. The purpose of the Code of Ethics is to promote honest and ethical conduct. The Code of Ethics was previously filed with Inovio's Annual Report on Form 10-K for the year ended December 31, 2004 as Exhibit 14.1, is available on Inovio's website and is also available in print, without charge, upon written request to the Secretary at 11494 Sorrento Valley Road, San Diego, CA 92121-1318. Any amendments to or waivers of the Code of Ethics will be promptly posted on the Inovio's website at *www.Inovio.com* or in a report on Form 8-K, as required by applicable laws.

Material Contracts and Relationships Between Inovio and VGX

In November 2006, Inovio granted VGX a world-wide non-exclusive license to its DNA delivery technology for intratumoral delivery of a proprietary gene to control growth of melanoma and other cancers. Under the terms of the license agreement, Inovio received an upfront license fee from VGX and may receive payments from VGX based on successful completion of clinical and regulatory milestones. Inovio exclusively supplies VGX with electroporation devices for the therapy covered by the license agreement and would receive royalties on the sale of products covered by the license. As of December 31, 2008, VGX has paid Inovio $50,000 related to an upfront payment for the licensing agreement and issued Inovio 25,000 shares of VGX common stock (which were valued at $125,000 at the time of issuance in 2006).

In December 2008, Inovio entered into a master research agreement with VGX so that Inovio may provide clinical and regulatory services as well as advanced electroporation delivery of DNA vaccines for each company's research uses. The cross-license is strictly for research use only and will permit

Inovio and VGX, to conduct certain internal research on DNA vaccines delivered using electroporation and other research and development services. Under the terms of the agreement VGX will own all data and new intellectual property created by Inovio related to VGX's proprietary materials and technology and Inovio will own all data and new intellectual property created by VGX related to Inovio's proprietary materials and technology. The master research agreement can be terminated by either party with 90 days notice. The scope of each specific research project will be governed by a project agreement between Inovio and VGX. Each company will be compensated for its services based on a pre-determined hourly rate per full time employee outlined in the specific project agreement. Currently, it is contemplated that Inovio through its wholly-owned subsidiary in Norway, Inovio AS, will assist VGX to manage clinical and regulatory aspects for certain planned clinical trials.

CERTAIN MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES OF THE MERGER

The following discussion summarizes the material U.S. federal income tax consequences of the Merger that are generally applicable to holders of VGX common stock. This discussion is based on the Code, judicial decisions and administrative regulations and interpretations in effect as of the date of this proxy statement/prospectus, all of which are subject to change, possibly with retroactive effect. Accordingly, the U.S. federal income tax consequences of the Merger to the holders of VGX common stock could differ from those described below.

The discussion assumes that VGX stockholders hold their shares of VGX common stock as a capital asset. This discussion does not address all aspects of U.S. federal income taxation that may be relevant to holders of VGX common stock in light of their particular circumstances, nor does it address the U.S. federal income tax consequences to holders that are subject to special rules under U.S. federal income tax law, including:

- dealers in securities or foreign currencies;
- tax-exempt organizations;
- financial institutions or insurance companies;
- holders who have a "functional currency" other than the U.S. dollar;
- holders who own their shares indirectly through partnerships, trusts, S corporations or any other entity treated as a flow-through entity for U.S. federal income tax purposes that may be subject to special treatment;
- holders all or part of whose Inovio stock received in the Merger will be subject to forfeiture provisions;
- holders who acquired their shares in connection with stock options or stock purchase plans or other compensatory transactions; and
- holders who hold their shares as a hedge or as part of a straddle, constructive sale, conversion transaction, or other risk management transaction.

This discussion is also limited to United States persons who hold VGX common stock (a "U.S. holder") and receive Inovio common stock therefor in the Merger. For purposes of this discussion, the term "United States person" means

- An individual citizen or resident of the United States;
- A corporation (or an entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- An estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- A trust that (x) is subject to the supervision of a court within the United States and the control of one or more United States persons or (y) has a valid election in effect under applicable Treasury regulations to be treated as a United States person.

In addition, this discussion does not address the tax consequences of the Merger to a VGX option holder, warrant holder, or convertible debt holder, including the assumption by Inovio of outstanding options and warrants to acquire VGX common stock or convertible debt of VGX.

In addition, this discussion does not address any tax consequences of the Merger under foreign, state or local law or U.S. federal estate and gift tax laws. No ruling has been or will be obtained from the IRS regarding any matter relating to the Merger and no assurance can be given that the IRS will not assert, or that a court will not sustain, a position contrary to any aspect of this discussion. Inovio and VGX urge holders

of VGX common stock to consult their own tax advisors as to the U.S. federal income tax consequences of the Merger, as well as the effects of state, local and foreign tax laws in light of their own situations.

In addition, completion of the Merger is contingent upon the receipt by (i) VGX of an opinion of its counsel, Duane Morris LLP, dated as of the closing date, to the effect that, on the basis of facts, representations and assumptions set forth in such opinion, the Merger will be treated as a reorganization within the meaning of Section 368(a) of the Code and (ii) Inovio of an opinion of its counsel, K&L Gates LLP, dated as of the closing date, to the effect that, on the basis of facts, representations and assumptions set forth in such opinion, the Merger will be treated as a reorganization within the meaning of Section 368(a) of the Code.

The opinions of K&L Gates LLP, counsel to Inovio, and Duane Morris LLP, counsel to VGX, which are required as a condition to closing the Merger, are and will be based on U.S. federal income tax laws in effect as of the date of these opinions. An opinion of counsel is not binding on the IRS or any court. In rendering their respective opinions, Duane Morris LLP and K&L Gates LLP will rely on certain assumptions, including assumptions regarding the absence of changes in existing facts and the completion of the Merger strictly in accordance with the Merger agreement and this proxy statement/prospectus. The opinions will also rely upon certain representations and covenants made by the management of Inovio, Submerger and VGX and will assume that these representations are true, correct and complete without regard to any knowledge limitation, and that Inovio and VGX, as the case may be, will comply with these covenants. If any of these assumptions or representations is inaccurate in any way, or any of the covenants are not complied with, the opinions could be adversely affected.

Assuming that the Merger qualifies as a reorganization within the meaning of Section 368(a) of the Code, the material U.S. federal income tax consequences of the Merger to holders of VGX common stock are as follows.

Exchange of VGX common stock solely for Inovio common stock. A holder of VGX common stock who exchanges such holder's shares solely for Inovio common stock in the Merger will not recognize gain or loss. Such holder will have an aggregate tax basis in the Inovio common stock received in the Merger equal to the holder's aggregate adjusted tax basis in the VGX common stock surrendered in the Merger, and the holding period for the Inovio common stock will include the holding period for the VGX common stock.

Dissenting Stockholders. Holders of VGX common stock are entitled to dissenters rights under Delaware law in connection with the Merger. If a U.S. holder receives cash pursuant to the exercise of dissenters' rights, that U.S. holder generally will recognize gain or loss measured by the difference between the cash received and the adjusted tax basis of such holder's shares. This gain should be long-term capital gain or loss if the U.S. holder held VGX common stock as a capital asset for more than one year. If a holder of VGX common stock who receives cash pursuant to the exercise of dissenters rights is treated as owning Inovio common stock after the Merger, as the result of the application of the constructive ownership rules, all or a portion of the cash received by the holder may be taxed as a dividend. Any holder of VGX common stock that plans to exercise dissenters' rights in connection with the Merger is urged to consult a tax advisor to determine the related tax consequences.

Failure of the Merger to Qualify as a Reorganization. If the Merger is not treated as a "reorganization" within the meaning of Section 368(a) of the Code, then VGX would recognize gain or loss equal to the difference between the amount realized in the Merger and the tax basis of its assets. In addition, each U.S. holder would recognize gain or loss equal to the difference between the sum of the fair market value of the Inovio common stock and such holder's tax basis in VGX common stock surrendered in exchange therefor.

Backup Withholding. Non-corporate holders of VGX common stock may be subject to information reporting and backup withholding at a rate of 28% on any cash payments received. Generally, backup withholding will not apply, however, if a holder of VGX common stock:

- furnishes a correct taxpayer identification number and certifies that such holder is not subject to backup withholding on the substitute Form W-9 or successor form included in the election form/letter of transmittal received; or
- is otherwise exempt from backup withholding.

Any amounts withheld under the backup withholding rules will generally be allowed as a refund or credit against a holder's U.S. federal income tax liability, provided the required information is furnished to the IRS.

Reporting Requirements. A significant holder of VGX common stock for U.S. federal income tax purposes who receives shares of Inovio common stock as a result of the Merger will be required to retain records pertaining to the Merger and to file with such holder's U.S. federal income tax return for the year in which the Merger takes place a statement setting forth certain facts relating to the Merger. Such statement must include the holder's tax basis in and fair market value of VGX common stock surrendered in the Merger.

THIS SUMMARY IS NOT A SUBSTITUTE FOR AN INDIVIDUAL ANALYSIS OF THE TAX CONSEQUENCES OF THE MERGER TO YOU. WE URGE YOU TO CONSULT A TAX ADVISOR REGARDING THE PARTICULAR FEDERAL, STATE, LOCAL AND FOREIGN TAX CONSEQUENCES OF THE MERGER TO YOU.

THE ACQUISITION AGREEMENT

The following summary of the Acquisition Agreement is qualified in its entirety by reference to the complete text of the Acquisition Agreement, which is incorporated by reference and a copy of which is attached as Annex A to this joint proxy statement/prospectus. The rights and obligations of the parties are governed by the express terms and conditions of the Acquisition Agreement and not by this summary or any other information contained in this joint proxy statement/prospectus. We urge you to read the Acquisition Agreement carefully and in its entirety, as well as this joint proxy statement/prospectus, before making any decisions regarding the Merger.

The Acquisition Agreement has been included with this joint proxy statement/prospectus to provide you additional information regarding its terms. The Acquisition Agreement sets forth the contractual rights of Inovio and VGX but is not intended to be a source of factual, business or operational information about Inovio or VGX. That kind of information can be found elsewhere in this joint proxy statement/prospectus and in the other filings Inovio makes with the SEC, which are available as described in "Where You Can Find More Information."

As a stockholder, you are not a third party beneficiary of the Acquisition Agreement and therefore you may not directly enforce any of its terms or conditions. The parties' representations, warranties and covenants were made as of specific dates and only for purposes of the Acquisition Agreement and are subject to important exceptions and limitations, including a contractual standard of materiality different from that generally relevant to investors. In addition, the representations and warranties may have been included in the Acquisition Agreement for the purpose of allocating risk between Inovio and VGX, rather than to establish matters as facts. Certain of the representations, warranties and covenants in the Acquisition Agreement are qualified by information Inovio filed with the SEC prior to the date of the Acquisition Agreement, as well as by disclosure schedules each of Inovio and VGX delivered to the other party prior to signing the Acquisition Agreement. The disclosure schedules have not been made public because, among other reasons, they include confidential or proprietary information. The parties believe, however, that all information material to a stockholder's decision to approve the Merger is included or incorporated by reference in this document.

You should also be aware that none of the representations or warranties has any legal effect among the parties to the Acquisition Agreement after the effective time of the Merger, nor will the parties to the Acquisition Agreement be able to assert the inaccuracy of the representations and warranties as a basis for refusing to close the transaction unless all such inaccuracies as a whole have had or would be reasonably likely to have a material adverse effect on the party that made the representations and warranties.

Furthermore, you should not rely on the covenants in the Acquisition Agreement as actual limitations on the respective businesses of Inovio and VGX, because either party may take certain actions that are either expressly permitted in the confidential disclosure letters to the Acquisition Agreement or as otherwise consented to by the appropriate party, which may be given without prior notice to the public.

Structure of and Consideration for the Transaction

The Transaction

The Acquisition Agreement contemplates that VGX will merge with and into Inovio's wholly-owned subsidiary Submerger, with Submerger surviving as the continuing entity and a wholly-owned subsidiary of Inovio, to be renamed "VGX Pharmaceuticals, LLC." In conjunction with the consummation of the merger, based upon an exchange ratio defined by the Acquisition Agreement, Inovio will exchange shares of its common stock for outstanding shares of VGX common stock and will assume and convert VGX's other outstanding securities into securities exercisable or convertible, as the case may be, for Inovio common stock. Upon issuance of such Inovio securities in conjunction with the merger of Submerger and VGX, holders of VGX securities will become holders of securities in Inovio,

the parent, public reporting entity of the combined group. At the Effective Time of the transaction, an integrated board of directors and management team will also take over leadership of the combined group.

Effect of Merger on Inovio Securities

Inovio stockholders will continue to own their existing shares of Inovio common stock upon closing of the Merger. The closing will not have any effect on the Inovio securities outstanding prior to the Effective Time, except that the closing may constitute a "Change of Control" or "Change in Control", as such terms are used in the Inovio incentive plans and related agreements, Inovio's organizational documents and certain of Inovio's outstanding warrants, resulting in:

Subsequent to the 2000 Plan Amendment as contemplated by the Acquisition Agreement, the acceleration of vesting for Inovio's outstanding stock options;

Potential claims for redemption of some or all of the shares of outstanding Inovio Series C preferred stock pursuant to the terms and conditions set forth in the applicable Certificates of Designations, Rights and Preferences, at the discretion of each holder of shares of the Inovio Series C preferred stock; and

Potential claims for redemption of certain of Inovio's outstanding warrants.

Outstanding membership interests in Submerger immediately prior to the Effective Time shall continue unchanged as membership interests in the Surviving Entity.

Effect of Merger on VGX Securities

Subject to the terms and conditions of the Acquisition Agreement, as a result of the Merger, and without any action on the part of Inovio, Submerger, VGX or the holder of any of VGX's outstanding securities, the following will occur:

VGX Common Stock. Each share of VGX common stock issued and outstanding immediately prior to the Effective Time (other than any shares held by Inovio, which are to be canceled outright, and any dissenting shares) will be canceled and extinguished and automatically converted into the right to receive a number of shares of Inovio common stock based on the Merger Exchange Ratio, as defined in the Acquisition Agreement and discussed below. Any fraction of a share of Inovio common stock that would otherwise be received by a holder of VGX common stock upon the exchange will be aggregated per holder and will be rounded up to the nearest whole share.

VGX Options. All outstanding options to purchase shares of VGX common stock immediately prior to the Effective Time, whether or not then exercisable or vested, will be assumed by Inovio, and each such option will cease to represent an option to acquire shares of VGX common stock and will be converted automatically into an option to purchase shares of Inovio common stock in an amount, at an exercise price and subject to such terms and conditions determined as provided below. Each such VGX option so assumed by Inovio will be subject to, and shall become exercisable and vested upon, the same terms and conditions as are currently applicable to the VGX option, except that (i) each assumed VGX option shall be exercisable for, and represent the right to acquire, that number of shares of Inovio common stock (rounded up to the nearest whole share) equal to: (A) the number of shares of VGX common stock subject to such VGX option multiplied by (B) the Merger Exchange Ratio and (ii) the exercise price per share of Inovio common stock subject to each assumed VGX option shall be an amount equal to: (A) the exercise price per share of VGX common stock subject to such VGX option in effect immediately prior to the Effective Time divided by (B) the Merger Exchange Ratio (rounded up to the nearest whole cent).

VGX Warrants. All outstanding warrants to purchase shares of VGX common stock immediately prior to the Effective Time, whether or not then exercisable, will be assumed by Inovio, and each such VGX warrant will cease to represent a warrant to acquire shares of VGX common stock and will be converted automatically into a warrant to purchase shares of Inovio common stock in an amount, at an exercise price and subject to such terms and conditions determined as provided below. Each such VGX warrant so assumed by Inovio will be subject to, and will become exercisable upon the same terms and conditions as are currently applicable to such VGX warrant, except that (i) each assumed VGX warrant will be exercisable for, and represent the right to acquire, that number of shares of Inovio common stock (rounded up to the nearest whole share) equal to: (A) the number of shares of VGX common stock subject to such VGX warrant immediately prior to the Effective Time multiplied by (B) the Merger Exchange Ratio and (ii) the exercise price per share of Inovio common stock subject to each assumed VGX warrant will be an amount equal to: (A) the exercise price per share of VGX common stock subject to such VGX warrant in effect immediately prior to the Effective Time divided by (B) the Merger Exchange Ratio (rounded up to the nearest whole cent).

VGX Convertible Debt. All VGX debt and convertible debt outstanding immediately prior to the Effective Time will be assumed by operation of the Merger. Pursuant to the closing conditions of the Acquisition Agreement, the parties anticipate that all notes evidencing non-convertible VGX debt and all VGX convertible debt not explicitly scheduled in the Acquisition Agreement shall be paid in full, principal and interest accrued, prior to or concurrent with closing of the Merger. The remaining $4.4 million of VGX convertible debt outstanding just prior to the Effective Time shall have been amended prior to closing of the Merger to allow for optional conversion at $1.05 per share of Inovio common stock after the Effective Time and to provide for mandatory conversion at $1.05 per share of Inovio common stock should the Inovio common stock trade at or above $2.10 per share for five consecutive trading days after the Effective Time. As of the Effective Time, each note evidencing VGX convertible debt not repaid as of the Effective Time will continue to represent a right to receive repayment of principal and interest thereon, but will cease to represent a right to acquire shares of VGX common stock in satisfaction thereof and will be converted automatically, in accordance with its terms and conditions at the Effective Time, into a right to acquire that number of shares of Inovio common stock (rounded up to the nearest whole share) equal to (i) the principal amount of the assumed note, plus the accrued and unpaid interest thereon (if provided for by the terms of such note), as of the Effective Time, divided by (ii) $1.05.

Cancellation of Inovio and VGX-Owned VGX Securities. Each share of VGX common stock, or any VGX option, VGX warrant or VGX convertible debt, held by VGX or owned by Inovio or Submerger or any direct or indirect wholly-owned or majority owned subsidiary of VGX or of Inovio immediately prior to the Effective Time will be canceled and extinguished without any conversion thereof.

Inovio and VGX also agreed that, at the Effective Time, any other contractual rights to receive shares of VGX common stock, other than the VGX options, warrants and convertible debt (which will be assumed and converted in as discussed above), shall cease to represent a right to receive shares of VGX common stock in accordance with the terms and conditions of the contract providing such rights and shall be converted into a right to receive a number of shares of Inovio common stock equal to (A) the number of shares of VGX common stock subject to such right immediately prior to the Effective Time multiplied by (B) the Merger Exchange Ratio, in accordance with the terms and conditions of the contract providing such right.

Merger Exchange Ratio

The Merger Exchange Ratio to be utilized to calculate the number of Inovio securities to be issued at the Effective Time, and the pricing of the assumed options and warrants, shall be equal to the quotient obtained by dividing:

the sum of the (i) total number of shares of Inovio common stock outstanding, (ii) the total number of shares of Inovio common stock issuable upon conversion of shares of Inovio preferred stock, (iii) the total number of shares of Inovio common stock issuable upon exercise of Inovio options, whether vested or unvested, and (iv) the total number of shares of Inovio common stock issuable upon exercise of Inovio warrants, each as outstanding immediately prior to the Effective Time, less (i) the total number of any shares of Inovio common stock held by VGX or any of its subsidiaries immediately prior to the Effective Time and (ii) the total number of any shares of Inovio common stock issuable under other securities held by VGX or any of its subsidiaries immediately prior to the Effective Time; by

the sum of the (i) total number of shares of VGX common stock outstanding, (ii) the total number of shares of VGX common stock issuable upon exercise of the VGX options, whether vested or unvested, and (iii) the total number of shares of VGX common stock issuable upon exercise of the VGX warrants, each as outstanding immediately prior to the Effective Time, less (i) the total number of any shares of VGX common stock held by and (ii) the total number of any shares of VGX common stock issuable under other securities held by Inovio or any of its subsidiaries immediately prior to the Effective Time. For clarity, this calculation will not include the number of shares of VGX common stock issuable upon conversion of the VGX convertible debt outstanding immediately prior the Effective Time.

Effective Time of the Transaction

Subject to the provisions of the Acquisition Agreement, Inovio, Submerger and VGX shall cause the Merger to be consummated by filing a certificate of merger with the Secretary of State of the State of Delaware in such form as is required by, and executed and acknowledged in accordance with, the relevant provisions of the DGCL and making all other filings or recordings required under the DGCL to effect the Merger. The Certificate of Merger, when duly filed with the Secretary of State of the State of Delaware in accordance with the relevant provisions of the DGCL, shall state an effective date for the Merger of the same date as the closing date and the Effective Time of the Merger shall be the same time as the time when the closing is completed, unless Inovio and VGX shall mutually agree to a different date and time for filing and effectiveness.

Exchange of Securities

Procedure for Exchange of VGX Common Stock

Within three business days following the Effective Time of the Merger, Inovio shall cause Inovio's transfer agent, Computershare Trust Company, or the "Exchange Agent," to mail to each holder of record (as of the Effective Time) of a certificate or certificates prior to the Effective Time represented outstanding shares of VGX common stock and which shares were converted into the right to receive the per share applicable consideration, pursuant Acquisition Agreement: (i) a letter of transmittal (which shall specify that delivery shall be effected, and risk of loss and title to the certificates shall pass, only upon delivery of the certificates to the Exchange Agent and shall be in such form and have such other provisions as the Exchange Agent, VGX and Inovio may reasonably specify) and (ii) instructions for use in effecting the surrender of the Certificates (including a means of hand-delivery) in exchange for the applicable consideration as set forth in Acquisition Agreement. Promptly after surrender of certificates for cancellation to the Exchange Agent, together with such letter of transmittal, duly completed and validly executed in accordance with the instructions thereto and such other documents

as may be reasonably specified in the letter of transmittal, the holder of record of such certificates shall receive in exchange therefor the applicable consideration as set forth in the Acquisition Agreement in respect of each share of VGX common stock represented by the certificates, and the certificates so surrendered shall be canceled. Until so surrendered, outstanding certificates will be deemed from and after the Effective Time, for all corporate purposes, to evidence the ownership of the applicable consideration as set forth in the Acquisition Agreement, into which such shares of VGX common stock shall have been so converted.

Procedures for Exchange of VGX Options, Warrants and Convertible Debt

From and after the Effective Time, for all corporate purposes, the instruments evidencing outstanding VGX options, VGX warrants and the VGX convertible debt will be deemed to evidence the ownership of the applicable consideration as set forth in the Acquisition Agreement into which such securities shall have been so converted. These instruments will not be automatically exchanged.

No Fractional Shares

No fraction of a share of Inovio common stock will be issued or paid by virtue of the Merger. Adjustments for fractional shares issued upon exchange of Inovio common stock for VGX common stock or issuable pursuant to assumed and converted VGX options, VGX warrants and VGX convertible debt will be made pursuant to the terms and conditions for such assumption and conversion set forth in the Acquisition Agreement.

Representations and Warranties

The Acquisition Agreement contains customary representations and warranties of VGX relating to, among other things:

Organization; Standing and Power; Charter Documents; Subsidiaries;

Capital Structure;

Authority; Non-Contravention; Necessary Consents;

Records; Financial Information;

Absence of Certain Changes or Events;

Taxes;

Intellectual Property;

Regulatory Compliance; Permits;

Litigation;

Brokers' and Finders' Fees; Fees and Expenses;

Employee Matters and Benefit Plans;

Title to Properties;

Environmental Matters;

Contracts;

Board Approval;

Transactions with Related Parties;

Insurance;

Liabilities;

Product Claims;

Accounts Receivable;

Anti-Takeover Statute Not Applicable; and

Foreign Corrupt Practices.

The Acquisition Agreement contains customary representations and warranties of Inovio and Submerger relating to, among other things:

Organization; Standing and Power; Charter Documents; Subsidiaries;

Capital Structure;

Authority; Non-Contravention; Necessary Consents;

Records; SEC Reports; Financial Statements; Controls;

Absence of Certain Changes or Events;

Tax Returns and Audits;

Intellectual Property;

Regulatory Compliance; Permits;

Litigation;

Brokers' and Finders' Fees; Fees and Expenses;

Employee Matters and Benefit Plans;

Title to Properties;

Environmental Matters;

Contracts;

Board Approval;

Transactions with Related Parties;

Insurance;

Liabilities;

Product Claims;

Accounts Receivable;

Anti-Takeover Statute Not Applicable;

Foreign Corrupt Practices;

Listing and Maintenance Requirements;

Opinion of Financial Advisor; and

Operations of Submerger.

Conduct of Business Prior to Completion of the Transaction

During the period prior to the Effective Time or the termination of the Acquisition Agreement, Inovio and VGX and each of its subsidiaries shall, except as otherwise expressly contemplated by the Acquisition Agreement,

- carry on its business in the usual, regular and ordinary course, in substantially the same manner as conducted prior to the execution of the original agreement and plan of merger and in compliance in all material respects with all applicable laws and regulations;

- pay its debts and taxes when due, pay or perform other material obligations when due;

- use all commercially reasonable efforts to preserve intact each of their present business organization, taken as a whole;

- use all commercially reasonable efforts to keep available the services of the current officers, employees and consultants and

- manage in the ordinary course its business relationships with third parties.

Without limiting the generality of the foregoing and without exception, VGX and/or each subsidiary will use all reasonable efforts to prepare all tax returns that are required to be filed by VGX or such subsidiary on or before the Effective Time. VGX or such subsidiary shall use all reasonable efforts to deliver each such income and franchise tax return, in a form ready to be filed, to Inovio for review at least ten business days before the due date for such income and franchise tax return.

VGX has also agreed that, prior to the earlier of the Effective Time or the termination of the Acquisition Agreement, it will refrain from doing any of the following without the prior written consent of Inovio, which consent may not be unreasonably withheld or delayed:

- Cause, permit or propose any amendments to VGX charter documents or any of the VGX subsidiary charter documents;

- Adopt a plan of complete or partial liquidation or dissolution;

- Declare, accrue, set aside or pay any dividends on or make any other distributions, whether in cash, stock, equity securities or property, in respect of any capital stock or split, combine or reclassify any capital stock or issue or authorize the issuance of any other securities in respect of, in lieu of or in substitution for any capital stock, other than any such transaction effected in the ordinary course of business by a wholly owned subsidiary of it that remains a wholly owned subsidiary of it after consummation of such transaction;

- Purchase, redeem or otherwise acquire, directly or indirectly, any shares of its capital stock or the capital stock of its subsidiaries, except repurchases of unvested shares in connection with the termination of the employment relationship with any employee pursuant to stock option or purchase agreements in effect on the date of the Acquisition Agreement;

- Issue, deliver, sell, authorize, pledge or otherwise encumber any shares of capital stock, or any securities convertible into shares of capital stock, or subscriptions, rights, warrants or options to acquire any shares of capital stock or any securities convertible into shares of capital stock, or enter into other agreements or commitments of any character obligating it to issue any such securities or rights, other than (A) issuances of VGX common stock upon the exercise of VGX options, VGX warrants or VGX convertible debt outstanding as of the date of the Acquisition Agreement in accordance with the terms of such securities as of the date of the Acquisition Agreement, (B) grants of stock options under VGX's existing option plan at fair market value, *provided* that such options (1) are issued in the ordinary course of business consistent with past practice, (2) vest in accordance with VGX's standard vesting schedule under the applicable

option plan, and (3) are issued no later than five business days prior to the initial filing of the Form S-4 for the transaction and (C) reservation of VGX common stock in connection with certain amendments to the notes evidencing some or all of the VGX convertible debt to provide for their conversion in connection with the Merger as contemplated by the Acquisition Agreement;

Acquire or agree to acquire by merging or consolidating with, or by purchasing any material equity or voting interest in or a material portion of the assets of, or by any other manner, any business of any person or division thereof, or otherwise acquire or agree to acquire any assets of any other person, which acquisition would be material to the business of VGX;

Sell, lease, license, encumber or otherwise dispose of any properties or assets except (A) the sale, lease or disposition (other than through licensing) of property or assets which are not, individually or in the aggregate, material to the business of VGX and its subsidiaries or (B) the sale, licensing or distribution of VGX products and services in the ordinary course of business;

Make any loans, advances or capital contributions to, or investments in, any other person, other than: (A) loans or investments by it or a wholly owned subsidiary of it to it or any wholly-owned subsidiary of it or (B) employee advances for travel and entertainment expenses made in the ordinary course of business;

Except as required by US GAAP as concurred with by its independent auditors, make any material change in its methods or principles of accounting since the date of VGX balance sheet;

Make any tax election or accounting method change that is reasonably likely to adversely affect the tax liability or tax attributes of VGX or any of its subsidiaries or settle or compromise any income tax liability or consent to any extension or waiver of any limitation period with respect to taxes;

Revalue any of its assets other than in the ordinary course of business;

Commence or enter into any settlement of litigation other than the settlements involving the payment of money only in an amount not in excess of $250,000 individually for any one settlement or $500,000 in the aggregate for all such settlements, other than in connection with the Acquisition Agreement and the transactions contemplated by the Acquisition Agreement;

Commence or enter into any clinical scientific program prior to the closing;

Except as required by legal requirements, VGX employee plans, this Agreement or contracts currently binding on VGX or its subsidiaries or policies of VGX currently in effect,

increase in any manner the amount of compensation or fringe benefits of, pay any bonus to or grant severance or termination pay to any employee of VGX or any subsidiary of VGX (other than increases in connection with performance reviews or annual salary increases of amounts up to 110% of current salary and bonuses not exceeding $1,000,000 in the aggregate to all employees),

make any increase in or commitment to increase any benefits provided under any employee plan (including any severance plan), adopt or amend or make any commitment to establish, terminate, adopt or amend any employee plan or

waive any stock repurchase rights, accelerate, amend or change the period of exercisability of VGX options or other securities outstanding pursuant to the VGX option plan, or reprice any VGX options or authorize cash

payments in exchange for any VGX options;

Sell, grant or modify in any material respect any material contract which is a license with respect to VGX intellectual property other than in connection with the sale or license of VGX's

products in the ordinary course of business or grant any exclusive rights with respect to any VGX intellectual property;

Enter into, renew or modify any contracts containing, or otherwise subject the Surviving Entity or Inovio to, any non-competition, exclusivity or other material restrictions on VGX or any of its businesses prior to closing, or the Surviving Entity or Inovio, or any of their respective businesses, following the closing;

Enter into any agreement or commitment the effect of which would be to grant to a third party following the Merger any actual or potential right of license to any intellectual property owned by Inovio or any of its subsidiaries (other than VGX and its subsidiaries);

Take any action that would result, or is reasonably likely to result, in any of the conditions to the Merger set forth in the Acquisition Agreement not being satisfied, that would materially impair the ability of VGX to consummate the Merger in accordance with the terms in the Acquisition Agreement or materially delay such consummation;

Hire any executive officer level employees;

Incur any indebtedness for borrowed money or guarantee any such indebtedness of another person, issue or sell any debt securities or options, warrants, calls or other rights to acquire any debt securities of VGX or any of its subsidiaries, guarantee any debt securities of another person, enter into any "keep well" or other agreement to maintain any financial statement condition of any other Person (other than any wholly-owned subsidiary of it) or enter into any arrangement having the economic effect of any of the foregoing, other than (A) in connection with the financing of ordinary course trade payables, (B) indebtedness for money borrowed in an amount not exceeding $100,000 in the aggregate, or (C) entry into a line of credit of up to $2,000,000 with Inovio or one of its subsidiaries consistent with the terms of the Acquisition Agreement;

Make or commit to make capital expenditures in excess of $1,000,000 in the aggregate in any consecutive twelve (12) month period;

Modify in any material respect, amend or terminate any VGX scheduled contract currently in effect, or waive, release or assign any material rights or claims thereunder, except in the ordinary course consistent with past practice or enter into any agreement that would constitute a VGX scheduled contract;

Enter into any contract requiring VGX or any of its subsidiaries to pay in excess of $1,000,000 in the aggregate in any consecutive twelve month period;

Enter into any transaction of the type described in Item 404(a) of Regulation S-K of the rules and regulations of the SEC;

Make or commit to make any payment for any brokerage or finders' fee or agents' commissions or any similar charges in connection with the Acquisition Agreement or the transactions contemplated hereby; or

Agree to take any of the actions described above.

Inovio has also agreed that, prior to the earlier of the Effective Time or the termination of the Acquisition Agreement, it will refrain from doing any of the following without the prior written consent of VGX:

Fail to file any periodic reports required to be filed with the SEC pursuant to the Exchange Act, except in such case as (i) the consent of Inovio's auditors is required in connection with such filing and the auditors have not delivered such consent or (ii) filing without the consent of

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Inovio's auditors would cause its auditors to withdraw from representing Inovio and the auditors have not delivered such consent;

Cause or permit or propose any amendments to Inovio charter documents or any of the Inovio subsidiary charter documents;

Adopt a plan of complete or partial liquidation or dissolution;

Declare, accrue, set aside or pay any dividends on or make any other distributions (whether in cash, stock, equity securities or property) in respect of any capital stock, except as required pursuant to the terms of the Inovio preferred stock outstanding as of the date of the Acquisition Agreement, or split, combine or reclassify any capital stock or issue or authorize the issuance of any other securities in respect of, in lieu of or in substitution for any capital stock, other than any such transaction effected in the ordinary course of business by a wholly owned Subsidiary of it that remains a wholly owned Subsidiary of it after consummation of such transaction;

Purchase, redeem or otherwise acquire, directly or indirectly, any shares of its capital stock or the capital stock of its subsidiaries, except repurchases of unvested shares in connection with the termination of the employment relationship with any employee pursuant to stock option or purchase agreements in effect on the date of the Acquisition Agreement;

Issue, deliver, sell, authorize, pledge or otherwise encumber any shares of capital stock, or any securities convertible into shares of capital stock, or subscriptions, rights, warrants or options to acquire any shares of capital stock or any securities convertible into shares of capital stock, or enter into other agreements or commitments of any character obligating it to issue any such securities or rights, other than:

issuances of Inovio common stock upon the exercise of Inovio options or Inovio warrants outstanding as of the date of the Acquisition Agreement in accordance with the terms of such securities as of the date of the Acquisition Agreement,

grants of stock options under the Inovio's equity incentive plans at fair market value, *provided* that such options (1) are issued in the ordinary course of business consistent with past practice, (2) vest in accordance with Inovio's standard vesting schedule under the applicable equity incentive plan, and (3) are issued no later than five business days prior to the initial filing of the Form S-4 related to the transaction; and

issuance of Inovio common stock upon conversion of Inovio preferred stock outstanding as of the date of the Acquisition Agreement in accordance with the terms of such securities;

Acquire or agree to acquire by merging or consolidating with, or by purchasing any material equity or voting interest in or a material portion of the assets of, or by any other manner, any business of any person or division thereof, or otherwise acquire or agree to acquire any assets of any other person, which acquisition would be material to the business of Inovio;

Sell, lease, license, encumber or otherwise dispose of any properties or assets except (A) the sale, lease or disposition (other than through licensing) of property or assets which are not, individually or in the aggregate, material to the business of Inovio and its subsidiaries or (B) the sale, licensing or distribution of Inovio products and services in the ordinary course of business;

Make any loans, advances or capital contributions to, or investments in, any other person, other than: (A) loans or investments by it or a wholly owned Subsidiary of it to it or any wholly-owned subsidiary of it, (B) employee advances for travel and entertainment expenses made in the ordinary course of business, or (C) extension of a line of credit up to

$2,000,000, upon Inovio board approval and consistent with the terms of the Acquisition Agreement;

Except as required by US GAAP as concurred with by its independent auditors, make any material change in its methods or principles of accounting since the date of Inovio balance sheet;

Make any tax election or accounting method change that is reasonably likely to adversely affect the tax liability or tax attributes of Inovio or any of its subsidiaries or settle or compromise any income tax liability or consent to any extension or waiver of any limitation period with respect to taxes;

Revalue any of its assets other than in the ordinary course of business;

Commence or enter into any settlement of litigation other than the settlements involving the payment of money only in an amount not in excess of $250,000 individually for any one settlement or $500,000 in the aggregate for all such settlements, other than in connection with the Acquisition Agreement and the transactions contemplated by the Acquisition Agreement;

Commence or enter into any clinical scientific program prior to the Effective Time;

Except as required by legal requirements, employee plans, the Acquisition Agreement or contracts currently binding on Inovio or its subsidiaries or policies of Inovio currently in effect, (A) increase in any manner the amount of compensation or fringe benefits of, pay any bonus to or grant severance or termination pay to any employee of Inovio or any subsidiary of Inovio (other than increases in connection with performance reviews or annual salary increases of amounts up to 110% of current salary and bonuses not exceeding $1,000,000 in the aggregate to all employees), (B) make any increase in or commitment to increase any benefits provided under any employee plan (including any severance plan), adopt or amend or make any commitment to establish, terminate, adopt or amend any employee plan or (C) waive any stock repurchase rights, accelerate, amend or change the period of exercisability of Inovio options or other securities outstanding pursuant to the Inovio equity incentive plans, or reprice any Inovio options or authorize cash payments in exchange for any Inovio options;

Sell, grant or modify in any material respect any material contract which is a license with respect to Inovio intellectual property other than in connection with the sale or license of Inovio's products in the ordinary course of business or grant any exclusive rights with respect to any Inovio intellectual property;

Enter into, renew or modify any material contracts containing, or otherwise subject the Surviving Entity or Inovio or any of its subsidiaries to any non-competition, exclusivity or other material restrictions on their respective businesses following the Effective Time;

Enter into any agreement or commitment the effect of which would be to grant to a third party following the Merger any actual or potential right of license to any intellectual property owned by VGX or any of its subsidiaries (other than Inovio and its subsidiaries);

Take any action that would result, or is reasonably likely to result, in any of the conditions to the Merger set forth in the Acquisition Agreement not being satisfied, that would materially impair the ability of Inovio to consummate the Merger in accordance with the terms hereof or materially delay such consummation

Hire any executive officer level employees;

Incur any indebtedness for borrowed money or guarantee any such indebtedness of another Person, issue or sell any debt securities or options, warrants, calls or other rights to acquire any debt securities of Inovio or any of its subsidiaries, guarantee any debt securities of another person, enter into any "keep well" or other agreement to maintain any financial statement condition of any other person (other than any wholly-owned Subsidiary of it) or enter into any

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arrangement having the economic effect of any of the foregoing, other than (A) in connection with the financing of ordinary course trade payables or (B) indebtedness for money borrowed in an amount not exceeding $100,000 in the aggregate;

Make or commit to make capital expenditures in excess of $1,000,000 in the aggregate in any consecutive twelve month period;

Modify in any material respect, amend or terminate any Inovio scheduled contract currently in effect, or waive, release or assign any material rights or claims thereunder, except in the ordinary course consistent with past practice or enter into any agreement that would constitute an Inovio scheduled contract;

Enter into any contract requiring Inovio or any of its subsidiaries to pay in excess of $1,000,000 in the aggregate in any consecutive twelve month period;

Enter into any transaction of the type described in Item 404(a) of Regulation S-K of the rules and regulations of the SEC;

Make or commit to make any payment for any brokerage or finders' fee or agents' commissions or any similar charges in connection with the Acquisition Agreement or the transactions contemplated the Acquisition Agreement;

Adjust the tax treatment of Submerger; or

Agree to take any of the actions described above.

Inovio and VGX have each granted the other party certain limited consents allowing actions otherwise barred by such provisions, related to entry into certain material agreements, issuance of securities and incurrence of cetain debt.

Regulatory Matters

Inovio, Submerger and VGX are required to make all filings, notices, petitions, statements, registrations, submissions of information, application or submission of other documents required by any governmental entity in connection with the Merger and the transactions contemplated hereby, including:

notification and report forms with the U.S. Federal Trade Commission and the Antitrust Division of the U.S. Department of Justice as required by the HSR Act, if applicable;

any other filing or correspondence necessary to obtain any necessary consent;

filings under any other comparable pre-merger notification forms required by the merger notification or control laws of any applicable jurisdiction; and

any filings required under the Securities Act, the Exchange Act, any applicable state or securities or "blue sky" laws and the securities laws of any foreign country, or any other legal requirement relating to the Merger, including, if applicable, assisting any foreign stockholders in making such individual registrations and filings as may be necessary for individual acquisition of Inovio securities in the Merger or the other transactions contemplated by the Acquisition Agreement.

No Solicitation

From and after the date of the original agreement and plan of merger until the Effective Time or termination of the Acquisition Agreement, Inovio or VGX has not and will not, nor will they authorize or has either authorized any of their respective officers, directors, affiliates or employees or any investment banker, attorney or other advisor or representative retained by any of them to, directly or indirectly

solicit, initiate, encourage or induce the making, submission or announcement of any acquisition proposal,

participate in any discussions or negotiations regarding, or furnish to any person any information with respect to, or take any other action to facilitate any inquiries or the making of any proposal that constitutes or may reasonably be expected to lead to, any acquisition proposal,

engage in discussions with any person with respect to any acquisition proposal, except as to the existence of these provisions,

approve, endorse or recommend any acquisition proposal, or

enter into any letter of intent or similar document or any contract, agreement or commitment contemplating or otherwise relating to any acquisition transaction.

However, until the date on which the Acquisition Agreement is approved by the required vote of the Inovio and VGX stockholders, this provision shall not prohibit Inovio or VGX from furnishing information regarding Inovio or VGX and its subsidiaries to, entering into a confidentiality agreement with or entering into discussions with, any person or group in response to a superior offer submitted by such person or group to the extent and so long as:

neither Inovio or VGX nor any representative of Inovio or VGX and its subsidiaries shall have violated any of the restrictions set forth in the Acquisition Agreement in connection with obtaining such superior offer,

the Inovio board of directors or the VGX board of directors concludes in good faith, after consultation with its outside legal counsel, that such action is required in order for the Inovio board or the VGX board to comply with its fiduciary obligations to the Inovio or VGX stockholders under applicable law,

(x) at least one business day prior to furnishing any such information to, or entering into discussions or negotiations with, such person or group, Inovio gives VGX written notice or VGX gives Inovio written notice, as applicable, of the identity of such person or group and of Inovio's or VGX's intention to furnish information to, or enter into discussions or negotiations with, such person or group and (y) Inovio or VGX receives from such person or group an executed confidentiality agreement containing terms no less favorable to the disclosing party than the terms of the confidentiality agreement, and

contemporaneously with furnishing any such information to such person or group, Inovio or VGX furnishes such information to Inovio or VGX, as applicable (to the extent such information has not been previously furnished by Inovio to VGX or VGX to Inovio, as applicable).

At the time of the signing of the original agreement and plan of merger, Inovio and VGX and their subsidiaries immediately ceased any and all existing activities, discussions or negotiations with any parties conducted prior to signing the merger agreement with respect to any acquisition proposal.

In addition to the foregoing, Inovio or VGX are required to: (i) provide the each other with at least forty-eight hours prior written notice (or such lesser prior written notice as provided to the members of the other party's board but in no event less than eight hours) of any board meeting at which the board is reasonably expected to consider an acquisition proposal for evaluation of whether it constitutes a superior offer and together with such notice deliver a copy of the acquisition proposal for review and (ii) provide each other with at least three business days' prior written notice of a board meeting at which the board is reasonably expected to recommend a superior offer to the stockholders in lieu of the Acquisition Agreement and the Merger and recommend withdrawal of its prior recommendation pursuant to the Acquisition Agreement and together with such notice deliver a copy of the superior offer for review.

Other Covenants

Some of the other material terms to which Inovio and VGX agreed, other than those related to the preparation, filing and mailing of this joint proxy statement/prospectus and holding of the Inovio and VGX special meetings, include:

Promptly following the execution of the Acquisition Agreement, four significant VGX stockholders identified in the Acquisition Agreement who hold approximately 41% of the issued and outstanding VGX common stock executed voting agreements, to be effective at the time VGX solicits the approval of the Merger by the VGX stockholders, pledging support for the transaction.

Immediately after the Effective Time, the Surviving Entity or Inovio will mail all notices and disclosures required under Section 262 of the DGCL to the extent not already mailed to VGX stockholders.

Inovio and VGX agreed to provide access to its books and records to each other and each party's accountants, counsel, directors, officers, employees and other representatives, and comply with its obligations under the existing confidentiality agreement between the parties;

Inovio and VGX agreed to consult with each other and agree on any press releases or public statements about the transaction;

Inovio and VGX agreed to use reasonable best efforts to comply with all legal requirements with respect to the transaction, to make all filings reasonably determined by the parties to be required by any governmental entity in connection with the transaction, and to fully cooperate with one other to identify the detailed steps and procedures necessary or desirable to effect the transactions contemplated by the Acquisition Agreement;

Inovio and VGX agreed to provide prompt notice to the other party through the Effective Time if either becomes aware that any of its representations or warranties have become untrue or inaccurate, or that it has failed to comply with or satisfy any covenant, condition or agreement to be complied with or satisfied by it under the Acquisition Agreement;

Inovio and VGX agreed that upon request of VGX subsequent to the effective date of the registration statement of which this joint proxy statement/prospectus is a part and subject to approval of Inovio's board of directors at such time, Inovio shall provide VGX with a line of credit up to $2,000,000 for use to fund continuing operations, to be documented upon issuance with customary terms and conditions.

Inovio agreed to arrange for each employee who is a participant in a VGX welfare benefit plan (within the meaning of Section 3(1) of ERISA), including any vacation plan or program, who becomes an employee of Inovio, any Inovio subsidiary or the Surviving Entity and their dependents to be eligible for substantially similar employee welfare benefits as those received by Inovio employees with similar positions and responsibilities;

Inovio agreed to take all corporate action necessary to reserve for issuance a sufficient number of shares of Inovio common stock for delivery upon exercise of the assumed VGX options and warrants and any conversion of the assumed VGX convertible debt;

Inovio agreed to seek and obtain a determination from the NYSE Amex regarding the applicability to the Merger of Section 341 of the Company Guide of the NYSE Amex and the definition of "Reverse Merger" Section 341 provides, as soon as possible after the date of the Acquisition Agreement and no later than the effective date of the registration statement of which this joint proxy statement/prospectus is a part. Inovio further agreed to use commercially reasonable efforts to (i) maintain the listing of its common stock on the NYSE Amex and

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(ii) file and seek approval for either an additional listing application or initial listing application, depending on the outcome of the NYSE Amex's Section 341 analysis, provided, however, if Inovio is unable to maintain its listing on the NYSE Amex or satisfy the initial listing standards for the NYSE Amex using commercially reasonable efforts prior to the closing, then Inovio agreed to use commercially reasonable efforts to have the Inovio common stock, including the shares to be issued or issuable in relation to the Merger, listed or quoted on an alternate securities exchange or quotation system for which it can qualify, as selected in consultation with VGX.

Inovio agreed to, and agreed to cause the Surviving Entity to, fulfill and honor all rights to indemnification existing as of the date of the Acquisition Agreement (i) in favor of an officer, director or employee of VGX or any of its subsidiaries, whether provided in the VGX charter documents or pursuant to any contractual agreement (as in effect as of the date of the Acquisition Agreement) to survive the Merger and be observed by the Surviving Entity to the fullest extent permitted by applicable law, and (ii) in favor of an officer, director or employee of Inovio or any of its subsidiaries, whether provided in the Inovio charter documents or pursuant to any contractual agreement (as in effect as of the date of the Acquisition Agreement) to survive the Merger and be observed by Inovio to the fullest extent permitted by applicable law, in each case until not earlier than the sixth anniversary of the Effective Time.

Inovio agreed to cause Submerger to comply with all of its obligations under or relating to the Acquisition Agreement, and Submerger agreed that prior to the Effective Time, it shall not engage in any business which is not in connection with the Merger pursuant to the Acquisition Agreement.

Inovio and VGX agreed to use commercially reasonable efforts to take or cause to be taken any action necessary for the transaction to qualify as a reorganization within the meaning of Section 368(a) of the Code, report the transaction as a reorganization within the meaning of such section, and cooperate and use commercially reasonable efforts in order for each party to obtain tax opinions from their respective counsel.

VGX agreed to deliver to Inovio financial information as anticipated by the Acquisition Agreement.

VGX agreed to deliver to Inovio a letter identifying all known persons who, as known to VGX, would be deemed affiliates of the VGX for purposes of Rule 144 of the Securities Act, and to update such letter from time to time prior to the Effective Time if and when VGX learns that additional persons would be deemed affiliates of VGX for such purposes.

Inovio agreed to execute employment agreements with certain individuals from Inovio management as identified in the Acquisition Agreement, to be effective upon closing.

Please see the Acquisition Agreement for additional covenants of Inovio and VGX.

Conditions to the Transaction

Inovio's obligation to consummate the Merger and issue its securities pursuant to the Acquisition Agreement, which we refer to as the "closing," will not take place until the parties satisfy, or waive where allowable, the other conditions listed in the Acquisition Agreement. These closing conditions include but are not limited to the following:

The registration statement, of which this joint proxy statement/prospectus is a part, shall have become effective under the Securities Act and shall not be the subject of any stop order or proceeding seeking a stop order.

Inovio shall have obtained the approval of Inovio's stockholders of (1) the Acquisition Agreement, the Merger and the other transactions contemplated by the Acquisition Agreement, and (2) the amendment of the Inovio 2000 Plan to clarify the acceleration of vesting of Inovio options issued and outstanding at the Effective Time and to remove the termination of unexercised Inovio options issued and outstanding under the Inovio 2000 Plan at the Effective Time.

VGX shall have obtained the approval of VGX's stockholders of the Acquisition Agreement, the Merger and the other transactions contemplated by the Acquisition Agreement.

The number of dissenting VGX stockholders shall not exceed ten percent (10%) of the number of shares of outstanding VGX common stock.

No governmental entity, as defined in the Acquisition Agreement, shall have enacted, issued, promulgated, enforced or entered any statute, rule, regulation, executive order, decree, injunction or other order (whether temporary, preliminary or permanent) which is in effect and which has the effect of making the Merger illegal or otherwise prohibiting consummation of the Merger, the issuance of the Inovio's securities to VGX stockholders or the assumption of the VGX securities.

The directors and officers of VGX and Inovio in office immediately prior to the closing shall have resigned as directors and officers, unless they will continue in the same capacity with the combined group.

The waiting period, if any (and any extension thereof), applicable to the Merger under the HSR Act shall have been terminated or shall have expired.

Inovio shall have received an opinion of K&L Gates LLP, and VGX shall have received an opinion of Duane Morris LLP, each to the effect that the Merger will qualify as a "reorganization" within the meaning of Section 368(a) of the Code.

The representations and warranties by Inovio, VGX and Submerger contained in the Acquisition Agreement shall continue to be true and correct in all material respects as of the closing.

There shall not have occurred an event having a material adverse effect with respect to Inovio or VGX.

Inovio, VGX and Submerger shall have performed or complied in all material respects with the agreements and covenants required by the Acquisition Agreement to be performed or complied with by them, and VGX and Inovio shall have received certificate from each other to such effect signed by a duly authorized officer.

Each of Inovio and VGX shall have furnished the other party all consents, approvals and waivers required by the Acquisition Agreement to be obtained by it.

There shall not have been a suspension in trading of Inovio's common stock on the NYSE Amex or, if applicable pursuant to the terms of the Acquisition Agreement, an alternate securities exchange or quotation system, at any time during the five trading days prior to and on the closing date. However, this closing condition will be automatically waived if the Inovio common stock is in the process of being listed or quoted on an alternate securities exchange or quotation system and such transition requires a halt of trading on the closing date or the two trading days prior to the closing date.

If Inovio has filed an additional listing application with the NYSE Amex, the Inovio common stock remains listed on the NYSE Amex and the NYSE Amex has not given Inovio any notice that the shares to be issued or issuable pursuant to the Merger may not be authorized for listing on the NYSE Amex, then such shares shall be authorized for listing on the NYSE

Amex and

Inovio shall not have taken any action which would reasonably be expected to result in the delisting of the Inovio Common Stock from the NYSE Amex (however, the failure to implement a reverse stock split prior to closing shall not constitute an action for this purpose). In all other instances, Inovio shall have either obtained, or have made arrangements to obtain concurrent with the closing, listing or quotation of the Inovio common stock on an alternate securities exchange or quotation system (as selected in consultation with VGX), including any necessary assignment of a new trading symbol and the listing or quotation of the shares to be issued or become issuable in the Merger.

VGX and Inovio shall have received customary legal opinions from each other's counsel reasonably acceptable and consistent with the opinions anticipated pursuant to the Acquisition Agreement.

VGX's auditor's opinion with respect to the VGX audited consolidated financial statements (including restatements thereof, if applicable) for the periods ended December 31, 2005, 2006 and 2007, shall remain in full force and effect and VGX shall not have received any written notice from its auditors that such opinions and related financial statements may no longer be relied upon, nor that VGX's reviewed financial statements for each of the quarters ended subsequent to January 1, 2008 may no longer be relied upon.

VGX shall have (i) paid in full, principal and interest accrued, all VGX debt and convertible debt, other than $4.4 million of VGX convertible debt specifically identified in the Acquisition Agreement and (ii) amended the remaining VGX convertible debt to allow for optional conversion at $1.05 per share after the Effective Time and to provide for mandatory conversion at $1.05 per share should the Inovio common stock trade at or above $2.10 per share for five consecutive trading days after the Effective Time.

VGX shall have entered into a manufacturing agreement in conjunction with its prior asset sale to VGXI, Inc., such agreement shall upon its terms be effective at the time of the closing and bear a term for at least twelve months post-closing.

VGX shall not have accelerated the vesting of the VGX options prior to or upon the closing.

Inovio and Submerger shall have received a legal opinion from Duane Morris LLP reasonably acceptable to Inovio and Submerger.

VGX shall have received payment in full of all principal and interest owed on all loans to VGX's directors, officers and/or employees and there shall be no outstanding loans from VGX or any affiliate of VGX to any director, officer or employee of VGX or any of its subsidiaries, other than advances made in the ordinary course of business for business purposes.

The signatories to the voting trust agreement contemplated by the Acquisition Agreement shall have provided executed signature pages to the voting trust agreement, to be held in escrow pending the closing.

Termination of the Acquisition Agreement

The Acquisition Agreement may be terminated prior to the date the registration statement, of which this joint proxy statement/prospectus is a part, becomes effective, under several circumstances, including:

by mutual written consent duly authorized by the boards of directors of Inovio and VGX;

by either Inovio or VGX, if, with certain exceptions related to the status of the transaction, the closing shall not have occurred by June 30, 2009;

if a governmental entity shall have issued an order, decree or ruling or taken any other action (including the failure to take action), in any case having the effect of permanently restraining, enjoining or otherwise prohibiting the Merger, which order, decree or ruling is final and nonappealable;

by VGX, upon a breach of any representation, warranty, covenant or agreement on the part of Inovio set forth in the Acquisition Agreement, or if any representation or warranty of Inovio shall have become untrue, in either case such that the conditions set forth in the Acquisition Agreement would not be satisfied as of the time of such breach or as of the time such representation or warranty shall have become untrue, with certain cure period exceptions;

by Inovio, upon a breach of any representation, warranty, covenant or agreement on the part of Inovio set forth in the Acquisition Agreement, or if any representation or warranty of VGX shall have become untrue, in either case such that the conditions set forth in the Acquisition Agreement would not be satisfied as of the time of such breach or as of the time such representation or warranty shall have become untrue, with certain cure period exceptions;

by VGX, upon written notice to Inovio setting forth (i) the determination of VGX's board of directors that a competing proposed received constitutes a VGX superior offer, as defined by the Acquisition Agreement, (ii) the determination of VGX's board of directors to withdraw its recommendation in favor of recommending the VGX superior offer to the VGX stockholders, in satisfaction of its fiduciary duties, and (iii) VGX's representation of full and complete compliance with the terms of the Acquisition Agreement's no solicitation provisions prior to such termination, with certain limitations related to compliance with notice and document delivery requirements pursuant to the Acquisition Agreement; or

by Inovio, upon written notice to Inovio setting forth (i) the determination of Inovio's board of directors that a competing proposed received constitutes a Inovio superior offer, as defined by the Acquisition Agreement, (ii) the determination of Inovio's board of directors to withdraw its recommendation in favor of recommending the Inovio superior offer to the Inovio stockholders, in satisfaction of its fiduciary duties, and (iii) Inovio's representation of full and complete compliance with the terms of the Acquisition Agreement's no solicitation provisions prior to such termination, with certain limitations related to compliance with notice and document delivery requirements pursuant to the Acquisition Agreement.

Termination Payment

In the event that the Acquisition Agreement is terminated by Inovio pursuant to the termination provision of the Acquisition Agreement that allows for withdrawal of the Inovio board's recommendation to the Inovio stockholders in favor of the Merger in relation to receipt and recommendation of an Inovio superior offer, Inovio shall promptly, but in no event later than two business days after the date of such event, pay VGX a fee equal to $3,500,000 in immediately available funds and such payment shall be the sole and exclusive remedy relating therewith. In the event that the Acquisition Agreement is terminated by VGX pursuant to the termination provision of the Acquisition Agreement which allows for withdrawal of the VGX board's recommendation to the VGX stockholders in favor of the Merger in relation to receipt and recommendation of a VGX superior offer, VGX shall promptly, but in no event later than two business days after the date of such event, pay Inovio a fee equal to $3,500,000 in immediately available funds and such payment shall be the sole and exclusive remedy relating therewith.

Transaction Expenses

Whether or not the transaction is completed, all fees and expenses incurred in connection with the Acquisition Agreement and the transactions contemplated by the Acquisition Agreement will be paid by the party incurring the fees or expenses.

Indemnification

Inovio will, and will cause the Surviving Entity to, fulfill and honor all rights to indemnification existing as of the date of the Acquisition Agreement (i) in favor of an officer, director or employee of VGX or any of its subsidiaries, whether provided in the VGX charter documents or pursuant to any contractual agreement (as in effect as of the date of the Acquisition Agreement) to survive the Merger and be observed by the Surviving Entity to the fullest extent permitted by applicable law, and (ii) in favor of an officer, director or employee of Inovio or any of its subsidiaries, whether provided in the Inovio charter documents or pursuant to any contractual agreement (as in effect as of the date of the Acquisition Agreement) to survive the Merger and be observed by Inovio to the fullest extent permitted by applicable law, in each case until not earlier than the sixth anniversary of the Effective Time.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the registrant pursuant to the foregoing provisions, the registrant has been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Amendment and Waiver

Subject to applicable law, any provision of the Acquisition Agreement may be amended by the parties thereto at anytime by execution of an instrument in writing signed on behalf of each of the parties thereto.

Governing Law

The laws of the State of Delaware govern the Acquisition Agreement, regardless of the laws that might otherwise govern under applicable principles of conflicts of law.

OTHER AGREEMENTS RELATED TO THE TRANSACTION

VGX Support Stockholders Voting Agreements

The Acquisition Agreement requires that four identified VGX stockholders, who collectively hold approximately 41% of the issued and outstanding VGX common stock, enter into voting agreements with Inovio. Dr. J. Joseph Kim, president, chief executive officer and director of VGX, Dr. David Weiner, a founder of VGX and significant stockholder, Dr. Morton Collins, a director of VGX, and Young K. Park, a significant stockholder of VGX (each referred to in this joint proxy statement/prospectus as a "support stockholder"), have each executed a voting agreement providing that he, in his capacity as a VGX stockholder only, shall vote or cause to be voted for approval and adoption of the Acquisition Agreement and the transactions contemplated thereby all shares of VGX common stock over which he has sole voting power, and use commercially reasonable efforts to cause any shares of VGX common stock over which he shares voting power to be voted for approval and adoption of the Acquisition Agreement and the transactions contemplated thereby, at the VGX special meeting. In the voting agreement, each support stockholder acknowledges that he will not be entitled to exercise and is therefore effectively waiving any rights of appraisal of his shares of VGX common stock that he may otherwise be entitled to with respect to such shares of VGX common stock under Section 262 of the DGCL. Further, each support stockholder agrees in the voting agreement not to offer, sell, transfer

or otherwise dispose of or encumber his right to exercise the voting power of any shares of VGX common stock over which he has sole dispositive power, and to use my commercially reasonable efforts to not permit the offer, sale, transfer or other disposition or encumbrance of his right, if any, to direct the voting of any shares of VGX common stock over which he has shared dispositive power, with limited exceptions.

The voting agreement provides for specific performance of the covenants and agreements upon any breach. The voting agreements shall terminate upon the earlier of the Effective Time of the Merger or any termination of the Acquisition Agreement. Each voting agreement may not be amended except by an instrument in writing signed on behalf of each of the parties, and is governed by the laws of the State of Delaware, without giving effect to the principles of conflicts of law thereof.

Voting Trust Agreement

Five significant stockholders of VGX will enter into a voting trust agreement to be signed and become effective concurrent with the closing of the Merger. These stockholders will place an aggregate of 8,000,000 shares of VGX stock into a voting trust, which will be administered by an independent committee of the board of directors of Inovio post-merger. The trustees would vote the shares in accordance with the percentage of votes cast by all stockholders on any particular matter. The trust will have a term of ten years and would terminate earlier upon a change in control of the combined group. The agreement will also terminate with respect to a stockholder if that stockholder dies or the stockholder's employment with the combined company is terminated other than for cause, as defined in the trust agreement. If Dr. J. Joseph Kim's employment with the combined group is terminated, the trust will terminate with respect to all stockholders party to the agreement upon the date of such termination. A stockholder will have the right to cause the trustees to sell the shares deposited in the trust by that stockholder, or to tender the shares in the event of a tender offer or exchange offer, for the benefit of the stockholder under certain conditions.

Lock-up Agreements

The Acquisition Agreement provides for certain lock-up arrangements with respect to shares of Inovio common stock outstanding at the Effective Time of the Merger or issuable upon the assumption of outstanding VGX securities at the Effective Time of the Merger, as described in *"Restrictions on Ability to Sell Inovio Common Stock"* beginning on page 84. To support the implementation of such restrictions, Inovio agreed to obtain lock-up agreements reflecting the Lock-Up Restrictions prior to the closing from Dr. Avtar Dhillon and, using its best efforts, from all other Inovio related Restricted Parties. Likewise, VGX agreed to obtain lock-up agreements reflecting the Lock-Up Restrictions prior to the closing from Dr. J. Joseph Kim and, using its best efforts, from all other VGX-related Restricted Parties, except those who will hold Restricted Securities consisting of solely of shares of Inovio common stock issued at the Effective Time pursuant to the Merger. In addition to setting forth the Lock-Up Restrictions as dictated by the Acquisition Agreement for acknowledgement by the Restricted Party, the lock-up agreements authorizes Inovio, during the applicable Lock-Up Period, to cause its transfer agent to decline to transfer and to note stop transfer restrictions on the transfer books and records of Inovio with respect to the shares of common stock that are restricted from transfer pursuant to the agreement. The lock-up agreement also provides the Restricted Party's acknowledgement that the lock-up agreement, and the Lock-Up Restrictions set forth in the lock-up agreement, are irrevocable on the part of the Restricted Party and survive the Restricted Party's death or incapacity, except where such death or incapacity is the cause of the Restricted Party's full termination of employment or directorship with Inovio or one of its subsidiaries.

Employment Agreements

Inovio has executed new employment agreements with certain members of its management team and other key employees for their continued service post-Merger, to be effective at the Effective Time of the Merger. Until the Effective Time, the terms and conditions of any existing employment agreements between Inovio and these employees continue to govern the employment relationship.

General Terms and Conditions

All of the employment agreements to become effective upon closing of the Merger include the following general acknowledgements, covenants, terms and conditions:

Acknowledgement that the closing of the Merger referenced above will not trigger any severance or change of control provisions of the employee's prior employment arrangements with Inovio or its subsidiaries.

The employee's intended title, hours, duties and the ability of such title or duties to be adjusted.

The employee's annual salary, the employee's eligibility for salary increases, discretionary bonuses and equity incentives, and the role of other management or a committee of the Inovio board in establishing performance objectives related thereto.

The employee's fringe benefits, including participation in health, hospitalization, life or other insurance provided by Inovio, vacation and sick leave, and reimbursement for business-related expenses.

The agreement's initial two year term, unless terminated earlier pursuant to its termination provisions, with an automatic one year renewal on the expiration date and on each successive anniversary date thereafter, unless either party gives written notice of non-renewal and termination to the other party at least ninety (90) days prior to any expiration date.

Occurrence of a "Change in Control" for purposes of the employment agreements as: (i) a majority of the directors elected at any annual or special general meeting of stockholders of the company are not individuals nominated by the company's then incumbent board of directors; (ii) there is occurrence of an event whereby any person or entity becomes the beneficial owner of shares representing 50% or more of the combined voting power of the voting securities of the company; or (iii) there is a merger or consolidation of the company with one or more corporations as a result of which, immediately following such merger or consolidation, the stockholders of the company as a group, as they were immediately prior to such event, will hold less than a majority of the outstanding capital stock of the surviving corporation.

The employee's right to terminate the employment agreement: (i) at any time upon providing six weeks notice in writing to the company, (ii) upon a material breach or default of any term of the employment agreement by the company, including any reduction in salary, if such material breach or default has not been remedied within 15 days after written notice of the material breach or default has been delivered by the employee to the company, or (iii) during the initial two year period or during any one year period immediately after a Change of Control (as defined in the agreement) if (a) the employee ceases to report directly to his or her prior supervising position or (b) there is any other material reduction in the employee's duties, position, authority or responsibilities with the company relative to the duties, position, authority or responsibilities in effect immediately prior to such reduction, if the company does not cure or remedy such issues within 15 days after written notice from the employee.

The company's right to immediately terminate the employee for "Cause" upon the occurrence of any of the following events: (i) the employee acts unlawfully, dishonestly, in bad faith or grossly negligent with respect to the business of the company as determined by the board (in some

cases, upon completion of a reasonable investigation and provision of a detailed report of the results of such investigation to the employee); (ii) the employee commits any crime or fraud against the company or its property or the conviction of employee of any felony offense or crime reasonably likely to bring discredit upon the employee or the company; or (iii) a material breach or default of any term of the employment agreement by the employee if such material breach or default remains unremedied 30 days after the company delivers written notice of the material breach or default to the employee.

The company's right to terminate the employee's employment at any time at its discretion without Cause upon certain written notice to the employee.

The termination of employment upon the occurrence of the employee's death or permanent or extended disability.

The types and amounts of compensation due to the employee upon termination, depending on the terms and circumstances of such termination.

The applicability of the laws of the State of California to the employment agreement, without regard to California's choice of law rule.

The continued effectiveness of any confidentiality, invention assignment, non-solicit and non-compete agreement(s) previously executed in favor of the company by the employee.

Employment Agreement for Dr. Avtar Dhillon President

Dr. Avtar Dhillon's agreement provides for his employment as president of Inovio post-Merger, in which role he will report to the Inovio board of directors. Pursuant to Dr. Dhillon's employment agreement, within 60 days of the beginning of each fiscal year, the Compensation Committee of Inovio's board of directors and Dr. Dhillon shall agree to his performance milestones and the amount of bonus for which Dr. Dhillon will be eligible if Dr. Dhillon as President achieves such milestones. Although Dr. Dhillon's employment agreement has a two year term, the terms and conditions of the employment agreement acknowledge that the terms of Dr. Dhillon's employment shall remain subject to further negotiation and mutual agreement in the month prior to completion of one year of service after the Effective Time. If the parties do not reach mutually agreeable terms prior to the completion of the first year of service after the Effective Time, the employment agreement will terminate, which shall be treated as a voluntary termination upon notice by Dr. Dhillon, effective as of the end of the first year of service.

Upon the Effective Time of the Merger, Inovio will deposit a closing payment equal to 24 months of Dr. Dhillon's current annual salary into a mutually agreed upon escrow account. Inovio agreed to provision of such closing payment as an incentive to retain Dr. Dhillon's services post-Merger, in recognition of the fact that he would have been eligible for full severance under his current employment agreement had Dr. Dhillon terminated employment in conjunction with the Merger, and in recognition of Dr. Dhillon's agreement to alter the structure and scope of his current severance arrangements in his new employment agreement. An amount equal to 50% of the closing payment and any accrued interest on such amount shall be automatically released to Dr. Dhillon upon the six month anniversary of the Effective Time, and the remainder of the closing payment and any remaining accrued interest shall be released to Dr. Dhillon upon the one year anniversary of the Effective Time, unless Dr. Dhillon or Inovio terminate the employment relationship prior to such time. If Dr. Dhillon terminates the agreement other than upon voluntary notice (unrelated to a material breach or default by the company or other circumstances addressed by the agreement) or the company terminates Dr. Dhillon for any reason, the entire closing payment and any accrued interest shall be released from the escrow account upon the date of termination. If Dr. Dhillon voluntarily terminates the employment relationship without a breach by the company or under the other circumstances addressed by the

agreement, then the entire closing payment and any accrued interest shall be released from the escrow account on the later of the date of termination or the six month anniversary of the Effective Time.

In addition to the general provisions for termination of the employment agreement, Dr. Dhillon's employment agreement provides that if the company relocates Dr. Dhillon's place of employment more than 50 miles from its current location in San Diego, California, and Dr. Dhillon does not consent to such relocation, then either the company or Dr. Dhillon may terminate the employment agreement and such termination shall be treated the same as a rightful termination by the employee upon an unremedied material breach by the company.

In the event of the termination of Dr. Dhillon's employment agreement for any reason, the company shall provide Dr. Dhillon, upon receipt of an executed release of claims in favor of Inovio: (i) any earned but unpaid salary as of the date of termination, (ii) any accrued but unused vacation pay as of such date, (iii) any unreimbursed business expenses incurred as of the termination date, (iv) any pending health care benefits, and (v) any earned but unpaid bonus amounts from the closing of the Merger. However, if Dr. Dhillon terminates the agreement due to a material breach or default by the company, a change in his position or duties or a company relocation of his position without his consent within the initial term of the agreement or after a Change of Control, or the company terminates Dr. Dhillon without Cause or upon death or disability, the company shall also pay Dr. Dhillon (or his estate as applicable) an amount equal to the annual bonus, if any, most recently paid to Dr. Dhillon, multiplied by the fraction of which the number of days between the fiscal year end related to the bonus and the date of termination is the numerator, and 365 is the denominator. In addition, if the employment agreement terminates under such enumerated circumstances, and Dr. Dhillon has been employed for less than one year since the Effective Time, Inovio shall pay him an amount equal to the remainder of his salary for such initial one-year period.

Further, under any termination scenario, the company shall continue Dr. Dhillon's group health care benefits for a period of twelve months from his termination date or shall pay 100% the premiums required to continue his group health care coverage for a period of twelve months under the applicable provisions of the Consolidated Omnibus Budget Reconciliation Act of 1985, or "COBRA,", provided that Dr. Dhillon elects to continue and remains eligible for these benefits under COBRA, and does not become eligible for health coverage through another employer during such period.

Employment Agreement for Peter Kies Chief Financial Officer

Mr. Kies' agreement provides for his employment as chief financial officer of Inovio post-Merger, in which role he will report to the Inovio board of directors. Pursuant to Mr. Kies' employment agreement, within 60 days of the beginning of each fiscal year, the Compensation Committee of Inovio's board of directors and Mr. Kies shall agree to his performance milestones and the amount of bonus for which Mr. Kies will be eligible if Mr. Kies as chief financial officer achieves such milestones. In addition, upon the Effective Time of the Merger, Mr. Kies shall receive a closing payment equal to six months of his current annual salary and, upon the earlier of the six-month anniversary of the Effective Time or the date of Mr. Kies' termination pursuant to the employment agreement (other than upon his voluntary termination upon notice to the company), shall receive an additional closing payment equal to six months of his current annual salary. Inovio agreed to provision of such closing payment as an incentive to retain Mr. Kies' services post-Merger, in recognition of the fact that he would have been eligible for full severance under his current employment agreement had Mr. Kies terminated employment in conjunction with the Merger, and in recognition of Mr. Kies' agreement to alter the structure and scope of his current severance arrangements in his new employment agreement.

In addition to the general provisions for termination of the employment agreement, Mr. Kies' employment agreement provides that if the company relocates Mr. Kies' place of employment more than 50 miles from its current location in San Diego, California, and Mr. Kies does not consent to such

relocation, then either the company or Mr. Kies may terminate the employment agreement and such termination shall be treated the same as a rightful termination by the employee upon an unremedied material breach by the company.

In the event of the termination of Mr. Kies' employment agreement for any reason, the company shall provide Mr. Kies: (i) any earned but unpaid salary as of the date of termination, (ii) any accrued but unused vacation pay as of such date, (iii) any unreimbursed business expenses incurred as of the termination date, (iv) any pending health care benefits, and (v) any earned but unpaid bonus amounts from the closing of the Merger. However, if Mr. Kies terminates the agreement due to a material breach or default by the company, a change in his position or duties or a company relocation of his position without his consent within the initial term of the agreement or after a Change of Control, or the company terminates Mr. Kies without Cause or upon death or disability, the company shall also pay Mr. Kies (or his estate as applicable) an amount equal to the annual bonus, if any, most recently paid to Mr. Kies, multiplied by the fraction of which the number of days between the fiscal year end related to the bonus and the date of termination is the numerator, and 365 is the denominator. Further, under any termination scenario, the company shall continue Mr. Kies' group health care benefits for a period of six months from his termination date or shall pay 100% the premiums required to continue his group health care coverage for a period of six months under the applicable provisions of COBRA, provided that Mr. Kies elects to continue and remains eligible for these benefits under COBRA, and does not become eligible for health coverage through another employer during such period.

Form of Vice President Employment Agreement

Mr. Punit Dhillon and Mr. Michael Fons have executed employment agreements as Vice President, Operations and Vice President, Corporate Development, respectively, effective upon closing of the Merger. The form of Vice President employment agreement provides that these individuals will report to the Chief Executive Officer of Inovio, and that within 60 days of the beginning of each fiscal year, the Compensation Committee of Inovio's board of directors shall set performance milestones and the amount of bonus for which each Vice President will be eligible if he achieves such milestones. In addition, upon the Effective Time of the Merger, Mr. Dhillon and Mr. Fons shall each receive a closing payment equal to three months of his annual salary at the Effective Time.

In addition to the general provisions for termination of the employment agreement, the form of Vice President employment agreement provides that if the company relocates a Vice President's place of employment more than 50 miles from its current location in San Diego, California, and the Vice President does not consent to such relocation, then either the company or the Vice President may terminate the employment agreement and such termination shall be treated the same as a rightful termination by the employee upon an unremedied material breach by the company.

In the event of the termination of a Vice President's employment agreement for any reason, the company shall provide the terminating Vice President: (i) any earned but unpaid salary as of the date of termination, (ii) any accrued but unused vacation pay as of such date, and (iii) any unreimbursed business expenses incurred as of the termination date. However, if the Vice President terminates the agreement due to a material breach or default by the company, a change in his position or duties or a company relocation of his position without his consent within the initial term of the agreement or after a Change of Control, or the company terminates the Vice President without Cause, the company shall also pay the Vice President an amount equal to six months of the employee's annual salary at the time of termination, to be paid in such regular intervals over the six month period as shall be determined by the company, provided that Employee signs a standard release of all claims as presented by the company, and an amount equal to the Vice President's annual bonus, if any, most recently received, multiplied by the fraction of which the number of days between the fiscal year end related to the bonus and the date of termination is the numerator, and 365 is the denominator. However, if terminated due to death or disability, the Vice President's estate shall only also be entitled to the prorated annual

bonus. Further, under any termination scenario, the company shall either continue the Vice President's healthcare benefits for a six month period post-termination or otherwise secure coverage for the Vice President for such period.

Mr. Dhillon's agreement also allows for his duties to be performed outside of Inovio's headquarters up to five days per calendar month and provides certain travel benefits in support of such efforts.

Form of Executive Director Employment Agreement

Mr. Stephen Kemmerrer and Mr. Rune Kjeken have executed employment agreements as Executive Director, Engineering and Executive Director, Research & Development, respectively, effective upon closing of the Merger. The form of Executive Director employment agreement provides that these individuals will report to the Chief Executive Officer of Inovio, and that within 60 days of the beginning of each fiscal year, the Chief Executive Officer shall set performance milestones and the amount of bonus for which each Executive Director will be eligible if he achieves such milestones. In addition, upon the Effective Time of the Merger, Mr. Kemmerrer and Mr. Kjeken shall each receive a closing payment equal to three months of his annual salary at the Effective Time.

In addition to the general provisions for termination of the employment agreement, the form of Executive Director employment agreement provides that if the company relocates a Executive Director's place of employment more than 50 miles from its current location in San Diego, California, and the Executive Director does not consent to such relocation, then either the company or the Executive Director may terminate the employment agreement and such termination shall be treated the same as a rightful termination by the employee upon an unremedied material breach by the company.

In the event of the termination of a Executive Director's employment agreement for any reason, the company shall provide the terminating Executive Director: (i) any earned but unpaid salary as of the date of termination, (ii) any accrued but unused vacation pay as of such date, and (iii) any unreimbursed business expenses incurred as of the termination date. However, if the Executive Director terminates the agreement due to a material breach or default by the company, a change in his position or duties or a company relocation of his position without his consent within the initial term of the agreement or after a Change of Control, or the company terminates the Executive Director without Cause, the company shall also pay the Executive Director an amount equal to three months of the employee's annual salary at the time of termination, to be paid in such regular intervals over the three month period as shall be determined by the company, provided that the Executive Director signs a standard release of all claims as presented by the company. However, if terminated due to death or disability, the Executive Director's estate is entitled to an amount equal to the Executive Director's annual bonus, if any, most recently received, multiplied by the fraction of which the number of days between the fiscal year end related to the bonus and the date of termination is the numerator, and 365 is the denominator.

Form of Key Employee Employment Agreement

Ms. Maggie Campbell, Ms. Catherine Ngo and Mr. Doug Murdock have executed employment agreements as Controller, Accounting Manager and Director, Intellectual Property, respectively, effective upon closing of the Merger, and are referred to as "Key Employees." The form of Key Employee employment agreement provides that these individuals will report to the Chief Executive Officer of Inovio, and that within 60 days of the beginning of each fiscal year, the Chief Executive Officer shall set performance milestones and the amount of bonus for which each Key Employee will be eligible if she or he achieves such milestones. In addition, upon the Effective Time of the Merger, each of these Key Employees shall each receive a closing payment equal to two months of her or his annual salary at the Effective Time.

In the event of the termination of a Key Employee's employment agreement for any reason, the company shall provide the terminating Key Employee: (i) any earned but unpaid salary as of the date of termination, (ii) any accrued but unused vacation pay as of such date, and (iii) any unreimbursed business expenses incurred as of the termination date. However, if the Key Employee terminates the agreement due to a material breach or default by the company, a change in his position or duties or a company relocation of his position without his consent within the initial term of the agreement or after a Change of Control, or the company terminates the Key Employee without Cause, the company shall also pay the Key Employee an amount equal to three months of the employee's annual salary at the time of termination, to be paid in such regular intervals over the three month period as shall be determined by the company, provided that the Key Employee signs a standard release of all claims as presented by the company. However, if terminated due to death or disability, the Key Employee's estate is entitled to an amount equal to the Key Employee's annual bonus, if any, most recently received, multiplied by the fraction of which the number of days between the fiscal year end related to the bonus and the date of termination is the numerator, and 365 is the denominator.

INFORMATION ABOUT THE COMPANIES

Inovio Biomedical Corporation

Overview

Inovio Biomedical Corporation, or "Inovio," a Delaware corporation, organized in 2001, is a San Diego-based biomedical company focused on the development of next-generation vaccines to prevent or treat cancers and chronic infectious diseases. Such vaccines, which could potentially protect millions of people from debilitation or death from diseases without adequate treatments, may represent multi-billion dollar market opportunities. Historically, successful development of this new generation of vaccines DNA vaccines has been hindered by the lack of safe, efficient and cost effective DNA delivery methods capable of enabling their potency. However, Inovio's electroporation-based DNA delivery technology has shown potential in pre-clinical and clinical studies to play a pivotal role in facilitating delivery and enhancing the potency of preventive and therapeutic vaccines.

Inovio is a leader in developing DNA delivery solutions based on electroporation, which uses brief, controlled electrical pulses to create temporary pores in cell membranes and enable increased cellular uptake of a useful biopharmaceutical. Once the DNA vaccine enters a cell, it can then "express" the proteins it was encoded to produce. These proteins, or antigens, are designed to be uniquely associated with a targeted cancer or infectious disease, and may then stimulate a more powerful immune response if the immune system encounters the targeted disease at a subsequent time.

Inovio's business strategy to realize value for the company and its stockholders is as follows:

First, Inovio has leveraged its patented technologies through licensing and collaborations, such as its licensing arrangements with Merck & Co., Inc., or "Merck," Wyeth Pharmaceuticals, or "Wyeth" and Vical Inc., or "Vical," among other research-driven biopharmaceutical companies as well as government and non-government agencies. Inovio is licensing the use of its electroporation-based DNA delivery systems for partners to use in conjunction with their proprietary DNA vaccines or DNA-based immunotherapies. These arrangements provide Inovio with some combination of upfront payments, development fees, milestone payments, royalties and a supply agreement. These collaborators either have active programs that are pursuing development of proprietary agents or researching the use of Inovio's technology or are currently evaluating such programs. However, there is no assurance that these licensing partners will continue these electroporation-based activities. Currently, Merck has completed electroporation-based treatments in their initial Phase I cancer trial. Merck licensed from Inovio a second target in December of 2007 for which it has filed an IND. There is no assurance that Merck will continue to develop either program into a Phase II study. In addition, Wyeth continues to evaluate internal strategic options prior to initiating further development of electroporation-based infectious disease programs.

Second, Inovio is pursuing proprietary vaccine development or co-development, resulting in whole or partial ownership in promising vaccines to prevent or treat cancers and chronic infectious diseases.

Inovio's technology is protected by an extensive patent portfolio covering in vivo electroporation. Inovio's patent portfolio encompasses a range of apparatuses, methodologies, conditions, and applications including oncology, gene delivery, vascular, transdermal as well as ex vivo electroporation.

Inovio's Core Technology

Most drugs and biologics must enter into a cell through a cell membrane in order to perform their intended function. However, gaining entry into a cell through the outer cell membrane can be a significant challenge. In the 1970s it was discovered that the brief application of high-intensity, pulsed electric fields can create temporary and reversible permeability, or pores, in the cell membrane. This pulse-induced permeabilization of the cellular membrane is generally referred to as electroporation. One observable effect of cell membrane electroporation is less restricted exchange of molecules

between the cell exterior and interior the benefit being that it allows and enhances the uptake of, for example, a biopharmaceutical agent previously injected into local tissue. The extent of membrane permeabilization depends upon various electrical, physical, chemical, and biological parameters.

The transient, reversible nature of this electrical permeabilization of membranes is the underlying basis of Inovio's electroporation instruments, which are designed to harness this phenomenon by delivering controlled electrical pulses into tissue to facilitate the uptake of useful biopharmaceuticals. Inovio's technology generates electric fields in target tissues to induce electroporation, which increases cellular uptake even for large molecules such as DNA. Most cell types and tissue can be successfully electroporated as long as applicators with the appropriate configuration of needle electrodes can be used to expose cells and tissues to the electric field.

DNA vaccines have potential as therapeutic agents for treating various diseases. One of the key obstacles to the successful development and commercialization of DNA vaccines has been the limitations associated with current delivery systems. Alternative approaches based on the use of viruses and lipids are complex and expensive, and have in the past created concerns regarding safety. Electroporation provides a straightforward, cost effective method for delivering DNA into cells with high efficiency and minimal complications (as compared to viral vectors) and, importantly, inducing clinically relevant levels of gene expression.

Inovio has multiple systems designed to create different electroporation conditions for different applications. The current systems consist of two basic components: a pulse generator and an applicator that is inserted into selected tissue.

MedPulser® DNA Electroporation System

Inovio's MedPulser® DNA Electroporation System was designed to create conditions to deliver DNA into tumor cells that promote optimal responses to gene-based immunotherapeutic cytokines. The cytokine-encoding plasmid is first injected with a syringe/needle into the selected tumor. Using a remote control, the pulse generator is switched on. High-voltage electrical pulses are generated and delivered through an attached electrical cord into the injected tissue through an electrode-needle array on the applicator. The electrode-needle array consists of a total of six needle-electrodes. The needle-electrode arrays are available in different sizes and configurations to facilitate access to tumors of different sizes and in different locations.

MedPulser® DNA Delivery System

The MedPulser® DNA Delivery System (DDS) was developed to optimize the delivery of DNA into muscle cells. The modified system is similar to the MedPulser® Electroporation System. The primary differences are in the parameters of the electric pulses delivered by the generator and the needle-electrode configuration of the applicator. The pulse is designed specifically for DNA delivery with a lower strength electrical field of longer duration than for tumor electroporation. The applicator has a four needle-electrode array consisting of one set of opposite pairs. They are available in a range of configurations to meet the requirements of a variety of applications.

Elgen System

The Elgen® DNA Delivery System, Inovio's newest generation of electroporation systems, is designed primarily for muscle delivery. It consists of a computer-controlled, motorized two needle delivery device that injects DNA and delivers electroporation pulses through one pair of needles. An earlier prototype version of this experimental system is currently under evaluation in Inovio's clinical trial for a prostate cancer vaccine at the University of Southampton in the U.K.

Choice of Tissue for DNA Delivery

Muscle Delivery. Inovio's proprietary electroporation method consists of a DNA delivery system designed to introduce a plasmid vector into muscle, skin or tumor tissue. The plasmid(s) may be encoded for therapeutic protein(s) for gene therapy, or antigens for immunization.

Skeletal muscle has been a core focus because it is mainly composed of large elongated cells with multiple nuclei. Muscle cells are non-dividing, hence long-term expression can be obtained without integration of the gene of interest into the genome. Muscle cells have been shown to have a capacity for secretion of proteins into the blood stream. Secreted therapeutic proteins may therefore act systemically and produce therapeutic effects in distant tissues of the body. In this respect, the muscle functions as a factory for the production of the biopharmaceutical needed by the body. It is envisioned that delivery of DNA by electroporation to muscle cells will circumvent the costly and complicated production procedures of viral gene delivery vectors, protein-based drugs, conventional vaccines and monoclonal antibodies. This approach may therefore to provide long-term stable expression of a therapeutic protein or monoclonal antibody at a sustained level. For vaccination the DNA cause muscle cells to produce antigenic proteins that the immune system will identify as foreign and against which it will mount an immune response. As with conventional vaccines, the immune system will then develop memory of this antigen (and related disease) for future reference. Intra muscular delivery by electroporation of DNA encoded antigens has been shown to induce both humoral (antibody) and cellular (T-cell) immune responses. Inovio is currently collaborating in three clinical programs (Merck, Tripep and the University of Southampton) related to DNA delivery to muscle for immunization.

Tumor Delivery. Inovio has an extensive intellectual property position relating to *in vivo* delivery of genes directly into tumor cells. Tumor cells can be readily transfected with genes encoding selected cytokines or potentially lethal proteins for the treatment of a variety of cancers. The goal of effective tumor delivery is the ultimate elimination of the transfected tumor, and Inovio has experienced very few concerns regarding the safety of the procedure in its trials to date. A Phase I/II clinical immunotherapy trial conducted by Vical was designed to deliver IL-2 directly to accessible melanoma lesions. In December, 2008, Inovio announced final results of a similar clinical study conducted by Moffitt to deliver IL-12 directly to accessible melanoma lesions.

Skin Delivery. While Inovio has generated preclinical and preliminary clinical evidence that intramuscular electroporation-based DNA delivery will be effective for a number of vaccines, electroporation of the skin may also be a relevant route of administration. Skin or intradermal administration is important and is becoming an attractive site for immunization given its high density of antigen presenting cells (APCs). Unlike muscle, skin is the first line of defense against most pathogens and is therefore very rich in immune cells and molecules. Skin specifically contains certain cells that are known to help in generating a robust immune response. With intradermal administration of electroporation, Inovio may be able to demonstrate a comparable immune response to muscle delivery. Inovio will continue to invest research and patenting resources into developing a viable skin electroporation system for clinical evaluation.

Applications of DNA Vaccine Technology

Inovio and its partners are developing DNA delivery technology for two broad applications:

Cancer

Cancer is a disease of uncontrolled cell growth. Although cancer has been a major focus of pharmaceutical companies for decades, cancer remains one of the leading causes of death in the United States. Traditionally, three approaches have been available for treatment of cancer: surgery, radiation therapy, and chemotherapy. When detected early and still confined to a single location, cancer may be cured by surgery or radiation therapy. However, neither surgery nor radiation therapy can cure cancer that has spread throughout the body. Although chemotherapy can sometimes

effectively treat cancer that has spread throughout the body, a number of non-cancerous cells, such as bone marrow cells, are also highly susceptible to chemotherapy. As a result, these types of treatments cause significant side effects and morbidity. Finally, it is common to see cancer return after apparently successful treatment by each of these means. The limitations of current cancer treatments are clearly demonstrated by the mortality rate of this disease.

For many decades, it has been suggested that the immune system should also be able to recognize cancer cells as abnormal and destroy these cells. However, cancer cells have developed mechanisms that allow them to escape the surveillance of the immune system. Immunotherapy, a process which uses the patient's own immune system to treat cancer, may have advantages over surgery, radiation therapy, and chemotherapy. Many cancers appear to have developed the ability to "hide" from the immune system. A treatment that can augment the immune response against tumor cells by making the cancer more "visible" to the immune system would likely represent a significant improvement in cancer therapy. Immune-enhancing proteins such as IL-2 and IL-12, used by partners in Phase I/II trials, have shown encouraging results. There is also a need to stimulate a stronger cellular immune response (i.e. generating T-cells) to specifically attack cancerous cells. This requires the use of technology such as DNA vaccines.

Electroporation offers effective delivery of DNA and may help Inovio develop novel cancer therapies. Inovio's current clinical-stage approaches consist of directly injecting tumors with certain plasmids followed by intratumoral electroporation as well as directly delivering certain plasmids into muscle followed by intramuscular electroporation. Upon uptake into cells, the plasmid directs the production of the encoded immunostimulatory proteins. The convenience and ability to repeat administration may offer advantages over current modalities of therapy. In addition, cancer therapies using non-viral DNA delivery may offer an added margin of safety compared with viral-based delivery, as no viral DNA/RNA or viral particles are contained in the formulation. Studies in animals have demonstrated the safety and potential efficacy of electroporation-based delivery. Subsequently, in human studies, a very low incidence of treatment-related serious adverse events has been observed.

In addition to immunotherapy approaches, numerous cancer antigens have been identified over the past few decades and better identification tools are under development by others. Inovio will continue to evaluate opportunities to acquire or partner cancer antigens that may be useful for large market cancers such as breast, lung and prostate.

Infectious Diseases

DNA vaccines for infectious diseases use portions of the genetic code of a pathogen to cause the host to produce proteins of the pathogen that may induce an immune response. Compared with conventional vaccines that use live, weakened, or dead pathogens to produce an immune response, this method potentially offers superior safety and ease of manufacturing, as well as convenient storage and handling characteristics. DNA vaccines have the potential to induce potent T-cell responses against target pathogens as well as trigger production of antibodies. Over the past decade, many scientific publications have documented the effectiveness of DNA vaccines in contributing to immune responses in dozens of species, including non-human primates and humans. Since electroporation can increase uptake of DNA into cells, it may consequently increase the potency of DNA vaccines. Increased T-cell responses and antibody production when DNA vaccines are delivered using electroporation has been demonstrated in a large number of species including nonhuman primates.

Vaccines are generally recognized as the most cost-effective approach for infectious disease healthcare. However, the technical limitations of conventional vaccine approaches have constrained the development of effective vaccines for many diseases. Development of vaccines based on conventional methods requires significant infrastructure in research and manufacturing. In addition, the safety risks associated with certain conventional vaccine approaches may offset their potential benefits. Inovio believes its potential vaccine products may be simpler to manufacture than vaccines made using live

viruses or protein subunit approaches, including those involving mammalian, avian or insect cells, or egg-based culture procedures. In addition, Inovio's DNA delivery technologies may accelerate certain aspects of vaccine product development such as non-clinical evaluation and manufacturing.

Similar to the requirements for fighting cancer, it is apparent that an effective approach for addressing chronic infections, which are also deadly and debilitating, requires the ability to generate a strong cellular immune response. This new generation of vaccines DNA vaccines is showing this capability. In addition to the targets already partnered, Inovio has been evaluating other potential disease targets in its internal development program.

Business Strategy

Inovio's objective is to be a biomedical company focused on developing and commercializing products that address significant unmet medical needs and, as a result, improve patients' quality of life. To achieve this objective, Inovio's business strategy currently includes the following key elements.

Therapeutic Drug and DNA Delivery

Inovio develops equipment designed to enable the use of electroporation to achieve efficient and cost-effective delivery into patients of DNA vaccines targeting a variety of illnesses. Although there are many diseases for which improved drug or DNA delivery is important, Inovio believes that its greatest opportunities lie in applying electroporation to DNA-based therapies (including immunotherapy) in the areas of cancer and chronic infectious diseases.

Advancing Inovio's Product Pipeline

The strategy to advance Inovio's product pipeline has two key components: Inovio has leveraged its patented technologies through licensing arrangements with companies such as Merck, Wyeth and Vical, among other research-driven biopharmaceutical companies, as well as collaborations with government and non-government agencies. These partners are pursuing development of proprietary agents or conducting research using Inovio's electroporation-based DNA delivery systems. Resources used to support Inovio's partners in these efforts are funded by its partners. In addition, these arrangements provide Inovio with some combination of upfront payments, development fees, milestone payments, royalties and a supply agreement.

In addition to expanding and providing electroporation delivery expertise, Inovio is directing resources to proprietary vaccine development or co-development, resulting in whole or partial ownership in DNA vaccine candidates. Inovio is focusing on the development of DNA-based therapies in the areas of cancer and chronic infectious diseases. The selection of targets for Inovio's independent or co-development programs is driven by four key criteria: complexity of the product development program, competition, cost of development and commercial opportunities. Inovio intends to retain significant participation in product development and commercialization of any DNA vaccines and therapeutics in pre-clinical and human trials that receive regulatory approval, although it may choose to secure additional partnerships to accelerate product development and commercialization. Inovio currently has a collaborative commercialization agreement with Tripep AB to co-develop a novel DNA hepatitis C virus (HCV) therapeutic vaccine.

Expand Market Opportunity

Inovio is continually evaluating and implementing opportunities to enhance its core technologies and assessing other DNA delivery technologies. Inovio is developing future product candidates based on these technologies through pre-clinical and clinical testing to determine their safety and efficacy. Inovio also seeks to develop additional applications for its technologies by testing new approaches to disease control or prevention. These efforts could lead to further independent product development or

licensing opportunities. In addition, Inovio continually evaluates compatible technologies or products that may be of potential interest for in-licensing or acquisition.

Expand the Application of Inovio's Technologies and Enable Product Development Through Strategic Collaborations

In pre-clinical trials and early clinical trials, Inovio's technology has enabled high levels of DNA uptake and gene expression without significant acute side effects. Based on the results obtained, Inovio believes that its technology is well positioned and is as capable as competing technologies to meet the delivery requirements for DNA vaccines and immunotherapy. Inovio's strategy is to develop DNA vaccine and immunotherapy applications with major pharmaceutical, biotechnology and government agency partners wherever reasonable and/or possible to license its DNA delivery technology for specific genes or specific medical indications. In most partnering situations, Inovio provides proprietary instruments and expertise to optimize the delivery of DNA for particular applications and the partner company provides its proprietary gene, allowing Inovio access to complementary technologies or greater resources. Inovio believes that entering into selective collaborations as part of its product development programs can enhance the success of Inovio's product development and commercialization, diversify Inovio's product portfolio and enable Inovio to better manage its operating costs. Inovio's collaboration with partners allows pre-clinical research, clinical trials and mutually beneficial opportunities to expand Inovio's product pipeline, which may lead to the introduction of a new treatment and/or products in the marketplace at a rate and range which Inovio may not be able to support on its own. Additionally, such collaborations enable Inovio to leverage investment by its collaborators and reduce its net cash burn while retaining significant economic rights. Inovio's goal is to enter into additional agreements to license its electroporation technology for use in the delivery of DNA for specific targets.

Products and Product Development

Together with Inovio's licensees and collaborators, Inovio is currently developing a number of DNA-based vaccines and therapeutics for the prevention or treatment of cancer and chronic infectious diseases. Inovio's current independent development focus is on these areas as well. The table below

summarizes progress in Inovio's independent, collaborative and out-licensed product development programs as of December 5, 2008.

		Pre-Clinical Studies		Development Status				
Product Area	**Product Target and Indication(s)**	**In Vitro**	**In Vivo**	**Phase I**	**Phase II**	**Phase III**	**Phase IV**	**Development**
DNA Delivery Immunotherapy	Malignant Melanoma	X	X	X				Moffitt/RMR
	Metastatic Melanoma	X	X	X*				Vical
DNA Delivery Tumor-associated antigen therapeutic vaccines	HER-2 and CEA-expressing cancers	X	X	IP				Merck
	Prostate Cancer	X	X	IP				Univ. of Southampton
	hTERT-expressing cancers	X	X	IP				Merck
	Unspecified Cancer	X	X					Inovio
DNA Delivery Infectious disease vaccine	HCV Vaccine	X	X	IP				Tripep/Inovio
	CMV Vaccine	X	X					Vical
	Unspecified Targets	X	X					Wyeth
	Biodefense Targets	X	IP					US Army
	HIV Vaccine	X	IP					National Cancer Institute
	HIV Vaccine	X	IP					International AIDS Vaccine Initiative
	Unspecified Targets	X	IP					Inovio

X = Completed

IP = In Progress

* = Final data pending

DNA Vaccines and Immunotherapies

The technical limitations of conventional vaccine approaches have constrained the development of effective vaccines for many diseases. In addition, the safety risks associated with certain conventional vaccine approaches may offset their potential benefits. In the broader vaccine marketplace, it is important to note a changing dynamic. Traditionally, vaccines have been predominantly focused on the pediatric market, intended to protect children from diseases that could cause them serious harm. Today, there is a growing interest in vaccines against diseases that may affect adolescents and adults, which include both sexually transmitted diseases and infections that strike opportunistically, such as during pregnancy or in immuno-compromised individuals, including the geriatric population. Inovio believes its technologies, because of their potential safety and development time advantages, could be ideally suited for the development of this new generation of vaccines. Preclinical studies in animals have demonstrated the safety and potential efficacy of this approach.

DNA vaccines are intended to prevent a disease (prophylactic vaccines) or to treat an existing disease (therapeutic vaccines). A DNA vaccine consists of DNA plasmid molecules encoding a selected antigen or fragment of an antigen that are introduced into cells of humans or animals with the purpose of evoking an immune response to the encoded antigen. Information encoded in the vaccine DNA plasmid molecules directs the cells to produce proteins that may then trigger the immune system to mount one or both of two responses: the production of antibodies, also known as humoral immune response, and/or the activation of T-cells and "killer cells," collectively termed cell-mediated immune response. These responses can neutralize or eliminate infectious agents (viruses, bacteria, and other microorganisms) or abnormal cells (e.g. malignant tumor cells). DNA vaccines have several advantages over traditional vaccines in that they are non-pathogenic (meaning they cannot cause the disease), may be effective against diseases which cannot be controlled by traditional vaccines, and are relatively fast, easy and inexpensive to design and produce. DNA vaccines are stable under normal environmental conditions for extended periods of time and do not require continuous refrigeration. Another potentially major advantage of DNA vaccines is their short development cycle. For example, DNA vaccines against newly identified viral agents may be developed within weeks or months, as opposed to the years often required to develop a traditional vaccine candidate.

DNA vaccines against cancer use a portion of the genetic code of a cancer antigen to cause a host to produce proteins of the antigen that may induce an immune response.

Inovio has acquired considerable expertise in the delivery and efficacy evaluation of DNA vaccines, both against infectious agents and complex diseases, such as cancer. In most cases Inovio has chosen skeletal muscle as the target tissue for vaccine delivery as this muscle is known to facilitate robust and long-lasting immune responses. However, skin is also an attractive target for DNA vaccination and Inovio has developed and patented technology for DNA delivery into skin cells as well.

Inovio is building a DNA franchise around the use of Inovio's proprietary electroporation technology together with gene-based treatments. Inovio's development efforts involve license agreements with Wyeth, Merck and Vical, in which these companies are supporting the development and registration of therapies using Inovio's devices. To date, most of Inovio's DNA vaccine development programs have been primarily initiated by corporate partners who sustain the majority of the development expenses and have the ability to conduct the commercialization activities.

Cancer: DNA-Based Immunotherapies

In December 2004, Inovio initiated a Phase I clinical trial sponsored by the H. Lee Moffitt Cancer Center using its MedPulser® DNA Electroporation System to deliver plasmid DNA coding for IL-12 to tumors with the aim of treating malignant melanoma. The study was designed to assess the use of electrical pulses generated by Inovio's proprietary electroporation technology to deliver into tumor cells a plasmid DNA encoding a cytokine, interleukin-12, which stimulates adaptive and innate immunity. In December, 2008, Inovio reported that final results of this trial was presented in the peer-reviewed *Journal of Clinical Oncology* in a paper prepared by Drs. Adil Daud, Richard Heller et al, titled, "Phase I Trial of Interleukin-12 Plasmid Electroporation in Patients With Metastatic Melanoma."

The paper concluded: "This first human trial, to our knowledge, of gene transfer utilizing in vivo DNA electroporation in metastatic melanoma showed that it is safe, effective, reproducible, and titratable." The findings showed not only regression of treated melanoma skin lesions, but also regression of distant untreated lesions, suggesting a systemic immune response to the localized treatment.

Highlights of the study results, as reported in the paper, include:

Twenty-four patients were enrolled in seven cohorts with escalating dose levels of plasmid IL-12 between December 2004 and February 2007. Locally injected plasmid IL-12 was followed by electroporation.

The experimental regimen was found to be safe and well tolerated, with minimal systemic toxicity. Because there was no dose-limiting toxicity in cohorts one through five, the experimental plan was amended to add two additional cohorts. Transient pain with the administration of the electrical pulses was the most frequent adverse event experienced by patients.

The study demonstrated significant and dose-dependent increases in intratumoral IL-12 protein expression and concomitant increases in intratumoral levels of IFN-γ.

Sixty lesions (76%) were observed to have greater than 20% necrosis (death of tumor cells), with 19 (24%) having 50% 99% necrosis, and 25 (32%) having 100% necrosis.

Ten subjects (53%) showed evidence of a systemic response (either stable disease or a complete response) during the study.

Injected lesions and distant non-injected lesions showed regression after treatment. Of 19 patients with additional sites of disease outside of the treated lesions, two (10%) with untreated distant lesions and no other systemic therapy showing complete regression of all metastases. These responses occurred over 6 18 months, with gradual volume loss occurring at sites distinct from the electroporated sites, arguing for immune system involvement. Neither of these patients has developed any new evidence of distant disease to date. Six of 19 (32%) showed disease stabilization lasting from 4 20 months.

Electroporated tumors demonstrated CD4+ and CD8+ lymphocytic infiltrate in the treated lesions.

In July 2005, Inovio announced, along with its partner, Vical, the initiation of a human Phase I clinical study of an investigational method of delivering plasmid DNA coding for interleukin-2 (IL-2), a potent immune system stimulant, for patients with recurrent metastatic melanoma. Intravenous delivery of IL-2 protein is already approved as a treatment for metastatic melanoma, but frequently causes severe systemic toxicities. The novel treatment approach being studied in this trial involves direct injection into a tumor lesion of plasmid DNA (pDNA) encoding IL-2, followed by electroporation in which local application of electrical pulses is intended to enhance the uptake of pDNA into tumor cells. The pDNA is designed to cause cells within the tumor to produce high levels of IL-2 protein locally and thereby stimulate the immune system to attack the tumor without the systemic toxicities associated with injected IL-2. Interim results on 19 patients from this trial were presented in June, 2007, and demonstrated that intratumoral delivery of pDNA encoding IL-2 into melanoma tumors, followed by electroporation, was administered safely following sedative premedication. No serious adverse events related to the study drug or to the administration procedure were reported and the treatment was well-tolerated. The majority of related adverse events were localized to the treatment site, with the most frequent being mild injection site pain. Individual tumor responses were seen in 12 of 39 (31%) evaluated tumors after injection of different escalating doses (0.5 to 5 mg per tumor). Treated tumors (7 of 18, or 38%) showed local responses more frequently than did untreated tumors (5 of 21, or 24%). No overall clinical responses by standard RECIST (Response Evaluation Criteria in Solid Tumors) criteria were observed among the 19 subjects evaluated following one or two cycles of treatment. Two subjects (11%) showed activity in distant, untreated tumors, including one subject showing shrinkage and disappearance of lung tumors. This trial has completed enrollment of 26 patients.

Cancer: DNA Vaccines

In April 2005, The University of Southampton initiated a U.K. Medicines and Healthcare products Regulatory Agency (MHRA) approved Phase I/II clinical trial undertaken in collaboration with Inovio. The study uses Inovio's electroporation technology to deliver a therapeutic plasmid-based DNA vaccine

to skeletal muscle with the aim of treating recurrent prostate cancer. The trial, sponsored and led by the University of Southampton, is investigating whether the DNA vaccine, developed at the University of Southampton, can stimulate patients to develop immune responses against prostate cancer and whether use of Inovio's electroporation system enhances this response. In June, 2008, *Inovio* reported that Dr. Christian H. Ottensmeier, MD, PhD, Cancer Research UK Senior Clinical Research Fellow at the University of Southampton, presented updated interim data from this clinical study at the American Society of Gene Therapy 11th Annual meeting. The data reaffirmed that, post-treatment, this therapy has proven to be safe and well-tolerated. Additional data further validated higher levels of antibody and anti-DOM CD4 responses achieved in patients treated using electroporation. This academic study is a phase I/II study of 30 HLA A2+ patients with biochemical failure of prostate cancer. The study is testing a DNA fusion vaccine, developed in Southampton, encoding for an immunostimulant sequence from tetanus linked to a sequence from prostate specific membrane antigen (PSMA27). The study is also evaluating electroporation as a novel delivery strategy for DNA vaccines compared to DNA delivered without electroporation.

Patient enrollment for this study has been completed. Monitoring of antibody responses was completed for the 20 patients at the first and second dose levels. Monitoring of CD4 cellular immunity had been completed for the 10 patients at the lowest dose. These 10 patients had additionally been assessed for CD8 T-cell responses. Reported interim results included:

Vaccination with and without electroporation has been safe and well-tolerated.

14 of 20 patients developed increases in anti-DOM (the immunostimulant sequence from tetanus) antibody. Of these increased responses, 5 of 10 were in the arm not using electroporation; 9 of 10 were in the electroporation arm. Antibody responses were generally higher in patients treated using electroporation compared to those treated with the DNA vaccine alone (without electroporation).

In 9 of 10 patients in the low dose cohort, significant increases in CD4 responses were observed relative to pre-treatment. Of these increased responses, 4 of 5 were in the electroporation arm. Patients treated exclusively with electroporation produced a higher average CD4 response; patients initially treated without electroporation and later receiving a boost in conjunction with electroporation also displayed increased CD4 responses following the electroporation boost.

In the low dose cohort, the PSMA27 antigen induced CD8+ cytotoxic T-cells (measured by cultured IFNg ELISPOT) not detected before vaccination in 6 of 10 subjects.

In November 2005, Merck initiated a Phase I clinical trial of a DNA cancer vaccine based on Inovio's DNA gene delivery technology that uses pDNA encoding human epidermal growth factor receptor 2, or HER-2, and carcinoembryonic antigen, or CEA. As a result of Merck reaching this milestone, Inovio received a payment of $2.0 million. The Phase I trial is evaluating the safety, tolerability and immunogenicity of the vaccine.

In December 2007, Inovio received an additional $2.0 million milestone payment from Merck, resulting from the filing of a second Investigational New Drug (IND) application to the Food and Drug Administration ("FDA") by Merck for a DNA-based vaccine using Inovio's DNA delivery technology. The milestone relates to Inovio's collaboration and license with Merck initiated in May 2004 for the development of certain DNA vaccines. Further development of the product may lead to additional milestone payments and royalties to Inovio. Inovio received this milestone payment for its contribution to the collaboration, which has so far demonstrated the high level of gene delivery and expression that is thought to be necessary for the induction of a therapeutic immune response. Merck has funded all clinical development costs of these candidates to date.

As of October, 2008, Merck had begun to enroll patients for this study, which is using a DNA vaccine encoding for hTERT to target non-small cell lung and prostate cancers. The vaccine is delivered using Inovio's electroporation DNA delivery technology.

Inovio reported in September, 2008, that in a preclinical study of a proprietary DNA-based therapeutic vaccine, in mice with metastatic melanoma treated with a DNA vaccine via intramuscular delivery, six of eight (75%) were tumor-free at the conclusion of the study.

Numerous cancer antigens have been identified over the past few decades and better identification tools are under development by others. Inovio will continue to evaluate opportunities to acquire or partner cancer antigens that may be useful in large market cancers such as breast, lung and prostate.

Infectious Diseases: DNA Vaccines

In January 2006, Inovio signed an agreement with Sweden-based Tripep to co-develop a therapeutic vaccine for hepatitis C virus (HCV) using electroporation. The vaccine is based on Tripep's proprietary HCV antigen construct and delivered to infected individuals using Inovio's MedPulser® DNA Delivery System. The study is being conducted at the Karolinska Institute's University Hospital in Sweden. The terms of the development agreement call for each party to fund a portion of the Phase I and subsequent Phase II trials and thereafter share profit according to their contribution. Inovio has 33% ownership in the overall product with the option to increase this to 50% after the completion of the Phase I/II trial.

In November, 2008, Inovio announced that Tripep had reported interim results indicating that in the third and highest dose cohort of the study, two of three subjects demonstrated reductions in viral load of 93% and 99.7%. This compares to previously reported middle dose cohort results demonstrating an 87% and 98% reduction in HCV in two of three subjects; no anti-viral effect was observed in the low dose cohort. No safety issues have been noted to date in the trial. These data suggest a potential dose response of the vaccine and support the inclusion of three additional subjects in the high dose cohort.

In November 2006, Inovio entered into a collaboration and license agreement with Wyeth to develop DNA vaccines against multiple infectious disease targets. For further discussion about this agreement, see "*Partnerships and Collaborations"* below. The selection of targets for its proprietary infectious disease program is driven by three key criteria: the complexity of the product development program, competition, and commercial opportunities.

Inovio reported in July, 2008, that in a preclinical study of a proprietary DNA-based therapeutic vaccine, 100% of immunized mice given a lethal challenge of highly pathogenic H5N1 influenza virus (A/Vietnam/1203/04) survived and showed only minor weight loss. The DNA vaccine design was based on a different influenza strain (H1N1) than the influenza strain used in the challenge, providing evidence that a universal vaccine based on conserved genes common to multiple strains of seasonal influenza and even potential pandemic influenza may have the possibility to provide widespread protection against such viruses.

DNA Vaccines for Biodefense

With the adoption of the Project Bioshield Act in 2004 by the U.S. government, there is an opportunity to secure development funding for proof-of-principle DNA vaccine studies for biowarfare pathogens. Inovio has been successful in securing funding from the U.S. government. Inovio believes DNA vaccines delivered with electroporation for bio-defense have the following advantages:

establishment of a platform technology that can be readily adapted for new threats;

ability to rapidly manufacture and scale-up vaccine candidates for newly identified pathogens;

rapid induction of protective immune responses following vaccination; and

long shelf life of products for stockpiling.

As resources obtained from government funding can be leveraged to enhance the development of technology in the area of cancer and chronic infectious disease, Inovio will continue to pursue opportunities in the area of biodefense. As an example of potential applications in the area of biodefense, one of Inovio's partners (RMR, LLC) is currently employing its skin electroporation technology in the pre-clinical development of an anthrax vaccine under a Department of Defense Small Business Innovation Research Program (SBIR) grant. Inovio currently has commercial rights to this skin electroporation system. The technology may also be useful with respect to targets such as the Lassa fever virus currently being studied by the U.S. Army in collaboration with Inovio (as further outlined under Partnerships and Collaborations below).

Gene Therapy

Over the past decade, classic gene therapy or treatment of inherited disorders has proven difficult. Electroporation of genes encoding therapeutic proteins has, however, demonstrated the potential to resolve these difficulties. In vivo production of proteins such as Factor IX for hemophilia and EPO for anemia represent large market opportunities. Pre-clinical studies for Inovio's partners have demonstrated multiple desirable characteristics of Inovio's approach, including:

Long term expression of the desired gene for convenient dosing;

Lack of immune responses to the plasmid vector;

Ability to achieve therapeutic levels of desired protein at a steady state; and

More natural production of the therapeutic protein than current recombinant proteins.

The major technical hurdle for use of Inovio's technology for classic gene therapy is the induction of an unwanted immune response to the transgene product due to the highly efficient delivery and expression seen with electroporation. As this problem may take significant resources to overcome, Inovio has decided not to focus on this market in the near term.

Animal Health/Veterinary

While Inovio is primarily focused on the use of Inovio's technology in the development of novel human therapeutics, it retains certain rights to veterinary applications and may seek to exploit these rights in the future.

Additional Applications of Inovio's DNA Delivery Technology

In addition to using Inovio's electroporation technology for drug and vaccine delivery, it can be used for research to validate new drug targets and to deliver molecules. Such use of Inovio's technology may facilitate transition into clinical development. Inovio continues to pursue, on a limited basis, research and opportunities in the areas of stem cells, ex vivo applications and RNAi.

Collaborations

In September 2008, Inovio announced it has received a contract for $933,000 from the Department of Defense (US Army) to continue research and development of DNA-based vaccines delivered via its proprietary electroporation system. The contract, titled "Design and Engineering of the Elgen Gene Delivery System for Screening and Validation of Vaccine Candidates of Military Relevance," will run through May 2010. This project is focused on identifying DNA vaccine candidates with the potential to provide rapid, robust immunity to protect against bio-warfare and bioterror attacks.

In November 2006, Inovio entered into a collaboration and license agreement with Wyeth for a worldwide non-exclusive license to Inovio's technology for certain infectious disease targets, for which Inovio received an upfront payment of $4.5 million. Inovio will also receive research support, annual maintenance fees, royalties on any net product sales and, contingent upon the achievement of clinical and regulatory milestones, payments of up to $60.0 million over the term of the agreement.

Inovio may not receive any future payments from Wyeth and we believe Wyeth is evaluating internal strategic options prior to initiating further development of electroporation based infectious disease programs.

In October 2006, Inovio announced that it acquired from Valentis, Inc. certain DNA delivery and expression assets, including Valentis' DNAvax® polymer delivery system and GeneSwitch® gene regulation technology.

In July 2006, Inovio announced it extended its license with RMR Technologies, LLC ("RMR") by exercising an existing option to license certain patented technology relating to the delivery of gene-based therapeutics into skin. This extends a long-standing relationship with the University of South Florida scientists and RMR founders Drs. Heller (now Executive Director, Frank Reidy Research Center for Bioelectrics, Old Dominion University), Jaroszeski, and Gilbert. This relationship dates back to the co-development of Inovio's MedPulser® Electroporation Instrument for treatment of solid tumors, including head and neck cancers. RMR is the collective effort of three scientists in collaboration with the University of South Florida and the H. Lee Moffitt Cancer Center and Research Institute. The license included other patents involving the delivery of genes or drugs via ex vivo, intratumoral, and intramuscular electroporation. Recent pre-clinical studies suggest that, for certain indications, needle-less skin electroporation of DNA plasmids encoding selected antigens may also be effective at inducing desired immune responses. The patented technology licensed from RMR covers various skin electroporation electrode designs and methods, including a needle-less design using a flexible material. RMR has agreed to collaborate in an effort to develop research prototypes into commercial grade electrodes for skin delivery as well as other novel forms of electroporation-assisted DNA delivery. Inovio has agreed to provide RMR with other development expertise pertinent to projects such as RMR's SBIR-funded pre-clinical study using RMR's proprietary dermal electrodes to deliver a DNA vaccine against anthrax. In connection with the acquisition of this exclusive license, Inovio issued 86,956 shares of Inovio common stock at a price of $2.30 per share, worth $200,000 on the date of issuance.

Inovio also licensed from RMR patents that claim the intratumoral delivery method used in the ongoing clinical trial at the Moffitt Cancer Center & Research Institute, which is delivering the gene encoding IL-12 directly to melanoma lesions. RMR, Inovio, the University of South Florida and Moffitt Cancer Center have been collaborating in the development of this novel therapy for melanoma for the past two years.

In May 2006, Inovio announced the acquisition, under a license with Sphergen SARL, of rights to several patent families relating to the use of electroporation technology. The rights Inovio licensed included two patents with broad claims regarding electroporation of nucleic acids in muscle and tumor tissue. This intellectual property acquisition enhanced the breadth of Inovio's patent portfolio directed to the use of electroporation technology to deliver therapeutic biopharmaceuticals. The license also includes grants of rights to know-how, future improvements, and provisions for exclusivity in applications to human medicine.

In January 2006, Inovio signed a collaborative agreement with Tripep to co-develop a therapeutic hepatitis C virus (HCV) DNA vaccine using electroporation. Under the terms of this agreement, Inovio pledged certain electroporation equipment toward an ongoing Phase I/II study of the proprietary Tripep vaccine in exchange for a minimum of 33% of the licensing revenues or commercial income that might be derived from the vaccine. Under the terms of the agreement, Tripep will only commercialize the

electroporation-based vaccine with Inovio equipment. If Inovio decides not to continue to support the co-development, Inovio will retain a profit share of sub-licensing fees or commercial revenues going forward.

In May 2005, Inovio announced that Merck exercised an option for a non-exclusive license for an additional antigen to be used with Inovio's MedPulser® DNA Delivery System. This option exercise was provided for under the 2004 license and research collaboration agreement between Merck and Inovio, and brought the total number of antigens licensed by Merck to three. Inovio received an option fee for the additional target antigen. Under the terms of Inovio's licensing agreement with Merck, Inovio is eligible for milestone and royalty payments if certain development goals and commercialization of the device are achieved by Merck.

In April 2005, Inovio announced the initiation of a U.K. Medicines and Healthcare products Regulatory Agency (MHRA) approved Phase I/II clinical trial undertaken in collaboration with the University of Southampton. Inovio's electroporation technology is being used to deliver a therapeutic plasmid-based DNA vaccine to skeletal muscle with the aim of treating recurrent prostate cancer. The trial, sponsored and led by the University of Southampton, is investigating whether the DNA vaccine, developed at the University of Southampton, can stimulate patients to develop immune responses against prostate cancer and whether use of Inovio's electroporation system enhances this response.

In October 2004, Inovio announced an agreement with Vical wherein Vical licensed Inovio's DNA delivery technology for use with HIV, cytomegalovirus (CMV) and melanoma (using pDNA IL-2) targets. This agreement was based on an option agreement established with Vical in October of 2003 for a worldwide license for the use of Inovio's proprietary in vivo electroporation delivery technology in combination with Vical's proprietary vaccines.

In May 2004, Inovio announced a significant licensing deal with Merck for the development of Merck's DNA cancer and infectious disease vaccines. The terms of the agreement include milestone and royalty payments for successful completion of the clinical development of the vaccines by Merck. Under the terms of the agreement, Merck reimbursed Inovio for the co-development of a proprietary electroporation system for the delivery of Merck's DNA vaccines. This development and commercialization agreement was an extension of an initial evaluation agreement established in 2003. Merck received the right to use Inovio's proprietary technology for two specific antigens with an option to extend the agreement to include a limited number of additional target antigens. In addition, Merck obtained a non-exclusive license to the intellectual property related to the initial two specific antigens. Merck is responsible for all development costs and clinical programs.

The research carried out under the above agreements may result in new long-term license agreements with the other parties and may provide Inovio with additional data that Inovio believes will assist it in assessing the efficacy of using its MedPulser® DNA Electroporation System for delivery of DNA vaccines and gene therapies. The data should further assist Inovio in its licensing and commercialization efforts. In addition to the above collaboration and licensing arrangements, Inovio may develop proprietary DNA therapeutic product through early stage clinical trials and partner the product for late stage clinical development and marketing. Inovio may have to negotiate license(s) for genes or other components of the product if they are not in the public domain.

Market

Inovio's product development strategy is focused on pursuing significant product opportunities where Inovio's technology is considered enabling. During 2007, Inovio prioritized its efforts after assessing different market opportunities based on an evaluation of technology risk, market size and partner interest in DNA vaccines. Based on Inovio management's assessment of the market opportunities, oncology applications appear to represent the best market opportunities, followed by

applications for infectious diseases, gene therapy for protein deficiency diseases and biodefense DNA vaccines.

Inovio believes there is a significant unmet clinical need to develop more efficacious vaccines that stimulate cellular immunity (i.e. can induce T-cell responses) and can be applied to diseases such as cancer, hepatitis C or HIV infection. For these applications, Inovio's scientists believe that DNA vaccines may offer an improvement over conventional vaccination. Inovio's scientists believe that electroporation of DNA is critical to maximizing the efficiency of DNA vaccination and meeting unmet clinical needs for therapeutic vaccines, which some industry analysts consider to be a multi-billion dollar market opportunity.

Competition

Although there are many competing technologies for DNA delivery, Inovio believes electroporation has a unique strategic position compared to such technologies for the following reasons:

Minimal or no delivery related side effects, and

Enhances DNA vaccine potency.

Minimal or No Delivery Related Side Effects

Any company that is developing a DNA based delivery technology, such as viral delivery systems, lipid-based systems, or electroporation technology with an aim to carry out in vivo gene delivery for the treatment of various diseases, is a potential competitor of Inovio. Currently there are five key DNA delivery technologies: viral, lipids, naked DNA, "gene gun" and electroporation. All are promising technologies, but they each also have their unique obstacles to overcome. Management believes Inovio's electroporation system is strongly positioned to succeed as the dominant delivery method for DNA vaccines.

Viral vectors can be highly effective, however, there continue to be concerns regarding potential mutations, unwanted immune responses against the vector itself (preventing its use for re-administration or booster shots) and other side effects. Viral technology has yet to show predictable, consistent safety and is very expensive. Lipids can be effective, but may also have toxicity issues and are relatively expensive. Naked DNA is widely considered to be safe and is relatively inexpensive, but is not very effective. The gene gun technology (using gold particles as carriers of DNA for skin delivery) looks promising, however, there are data suggesting that electroporation offers equal or better efficacy and may offer broader utility without requiring a carrier. Not requiring a carrier allows electroporation to have a unique advantage over competing technologies because it eliminates one additional component that may independently propagate side effects and create manufacturing and quality control challenges.

Competitive advantages of electroporation over other delivery systems are summarized on Table 1 below:

Table 1: Present comparison of DNA Delivery technologies

Carrier/Vector Type	Carrier/Vector Issues	Efficacy	Economics
Viral	Mutations Immune Response Infection Symptoms	+++++	$$$$$
Lipids	Toxicity	++	$$
Particle Gun	Manufacturability	++++	$$$
Naked DNA	No Vector	+	$
(Electroporation Enhanced)	No Vector	++++	$

Enabling DNA vaccines

Commercial and academic institutions have been trying for over 15 years to develop DNA vaccines with sufficiently potent immune responses to make them commercially viable without much success. One facet of DNA vaccine research and development ("R&D") has been to combine an adjuvant component to help initiate a general immune response to complement the specific immune response induced by the DNA vaccine, but adjuvants complicate manufacturing and may generate additional unwanted side effects.

In addition to being a highly efficient delivery method of plasmid to muscle cells, Inovio has shown that the mild electrical pulses of electroporation also have an adjuvant effect. This adjuvant effect seems to be related to more CpG-containing plasmid gaining access to intracellular toll-like receptors, which stimulate innate immune responses, and to slight muscle damage, which can lead to a danger signal to the immune system(1). To date, few, if any, common adjuvants seem to be required to augment immune responses observed after DNA vaccine delivery with electroporation.

(1) Babiuk, S. et al., 2004, Increased gene expression and inflammatory cell infiltration caused by electroporation are both important for improving the efficacy of DNA vaccines. J. Biotech. 110:1

General observations to date suggest that for many DNA encoded antigens there has to be an increase in gene expression of 10-100-fold (compared to naked DNA) in order to achieve a therapeutic benefit in large animals including man. Electroporation is currently the only method whereby one can routinely see increases in gene expression approaching or exceeding 100 to 1000 fold, thereby making the development of a large number of vaccines and therapeutics possible. In effect, electroporation increases the trivial levels of gene expression seen with naked DNA alone to the therapeutic levels needed for the development of successful commercial products. This puts Inovio in a unique position relative to competing technologies.

Competitive Technologies in the Area of DNA Delivery

Effective DNA delivery technologies are crucial for DNA vaccines. Many of the leading scientists in these fields have pointed out that the major obstacle to success has been the lack of safe, efficient, and economical methods of delivering DNA. Of the more than 800 gene therapy and DNA vaccine clinical trials started in the U.S. to date, none have progressed to regulatory approval. Inovio believes that existing DNA delivery alternatives have been a significant bottleneck to the successful development and commercialization of these promising next generation of vaccines. The following descriptions highlight the issues of the existing alternatives.

Viral DNA Delivery

This technology utilizes a virus as a carrier to deliver genetic material into target cells. The method is very efficient for delivering vaccine antigens and has the advantage of mimicking real viral infection so that the recipient will mount a broad immune response against the vaccine. The greatest limitation of the technology is problems with unwanted immune responses against the viral vector, limiting its use to patients who have not been previously exposed to the viral vector and making repeated administration difficult. In addition, complexity and safety concerns increase the cost of vaccines and complicate regulatory approval.

Ballistic DNA Delivery (Gene Gun)

This technology utilizes micron sized DNA-coated gold particles that are shot into the skin using compressed gas. The method has matured considerably over the last 15 years and has been shown to be an efficient method to deliver a number of vaccine antigens. Since the DNA is dry coated, excellent stability of the vaccine can be achieved. The method is limited to use in skin and only a few micrograms of genetic material can be delivered each time. This may limit the utility of the method for targets such as cancer where higher doses of vaccine antigens and stronger T-cell responses are needed.

Lipid DNA Delivery

A number of lipid formulations have been developed that increase the effect of DNA vaccines. These work by either increasing uptake of the DNA into cells or by acting as an adjuvant, alerting the immune system. While there has been steady progress in this field, lipid delivery tends to be less efficient than viral vectors and is hampered by concerns regarding toxicity and increased complexity.

"Naked" DNA Delivery

The simplest DNA delivery mode is the injection of "naked" plasmid DNA into target tissue, usually skeletal muscle. This method is safe and economical but inefficient in terms of cell transfection, the process of transferring DNA into a cell across the outer cell membrane. Unfortunately, it is the least effective way of delivering DNA since only an extremely small fraction (approximately one out of twenty million) of the DNA molecules are taken up by the cells. While the method may have provided some utility for the field of gene therapy, a number of clinical studies over the last decade have shown that the method is inadequate for delivering DNA vaccines into large animals and humans.

"Naked" DNA Delivery With Electroporation

When naked DNA injection is followed by electroporation of the target tissue, transfection is significantly greater with resultant gene expression generally enhanced from 100 to 1000-fold. This increase makes many DNA vaccine candidates potentially feasible without unduly compromising safety or cost.

In December 2004, the first patient was treated using Inovio's electroporation system to deliver a plasmid DNA-based immunotherapy and Inovio has initiated, together with partners, additional Phase I clinical trials using Inovio's electroporation technology to deliver DNA-based immunotherapies or DNA vaccines. To date Inovio scientists have not observed any serious adverse events that can be attributed to the use of electroporation in these clinical DNA studies.

Inovio believes that the greatest obstacle to making DNA vaccines and immunotherapy a reality, namely the safe, efficient, and economical delivery of DNA plasmid constructs into target cells, and also believes that electroporation may become the method of choice for DNA delivery into cells in many applications.

There are other companies with electroporation intellectual property and devices. Inovio believes it has significant competitive advantages over other companies focused on electroporation for multiple reasons:

- Inovio has a long history and experience in developing the methods and devices that will optimize the use of electroporation in conjunction with DNA-based agents. This extensive experience has been validated with multiple sets of interim data from multiple clinical studies assessing DNA-based immunotherapies against cancers and infectious disease. Inovio, in conjunction with its partners and collaborators, has been the leader in establishing proof-of-principle of electroporation-delivered DNA vaccines and immunotherapies.

- The company has a broad product line of electroporation instruments designed to enable DNA delivery in tumors, muscle, and skin.

- Inovio has been very proactive in filing for patents, as well as acquiring and licensing additional patents, to expand and strengthen Inovio's international patent estate. Inovio has, as discussed below under Intellectual Property, the leading number of patents pertaining to electroporation. Inovio's patent estate has been rigorously assessed by leading vaccine companies Merck and Wyeth prior to them consummating substantial license agreements with Inovio.

While other companies have and continue to develop electroporation devices and possess certain patents relating to the use of electroporation, Inovio believes it has a strongly researched position and that its patent estate provides it with the potential to block competition in key areas of focus.

Medical Device Manufacturing

Inovio is a medical device manufacturer and, as such, operates in a regulated industry. Inovio must comply with a variety of manufacturing, product development and quality regulations in order to be able to distribute Inovio's products commercially around the world. In Europe, Inovio must comply with the MDD. Inovio has a Quality System certified by its international Notified Body to be in compliance with the international Quality System Standard, ISO13485, and meeting the Annex II Quality System requirements of the MDD. Inovio completed an Annex II Conformity Assessment procedure and achieved its CE Mark of the MedPulser® electroporation system in March 1999. Inovio completed an Annex II Conformity Assessment procedure and achieved its CE Mark of the Elgen electroporation system in November 2006.

In the U.S., Inovio is required to maintain facilities, equipment, processes and procedures that are in compliance with quality systems regulations. Inovio's systems have been constructed to be in compliance with these regulations and its ongoing operations are conducted within these systems. Commercially distributed devices within the U.S. must be developed under formal design controls and be submitted to the FDA for clearance or approval. As Inovio prepares for U.S. marketing, all development activity is performed according to formal procedures to ensure compliance with all design control regulations.

Inovio employs modern manufacturing methods and controls to optimize performance and control costs. Internal capabilities and core competencies are strategically determined to optimize Inovio's manufacturing efficiency. Inovio utilizes contract manufacturers for key operations, such as clean room assembly and sterilization, which are not economically conducted in-house. Inovio outsources significant sub-assemblies, such as populated printed circuit boards, for which capital requirements or manufacturing volumes do not justify vertical integration. As Inovio transitions from late-stage development activities into higher volume manufacturing activities, internal capabilities will be modified and added, as appropriate, to meet its changing priorities.

Currently, the durable electronic generator in the MedPulser® and Elgen system is assembled from outsourced populated printed circuit boards, and then tested, packaged and inventoried at

Inovio's manufacturing facility. The disposable applicators used with the MedPulser® system are assembled and sterilized in a clean room at outside contract manufacturers. Additional current and future manufacturing of applicators for clinical trials and commercial distribution is planned to be done using a combination of internal manufacturing and outside contract manufacture.

Intellectual Property

Inovio's success and ability to compete depends upon its intellectual property. Inovio maintains a broad-based patent portfolio (both original and in-licensed technologies) that as of December 5, 2008, includes over 62 issued U.S. patents and 181 issued foreign counterpart patents, all of which collectively include claims to methods and/or devices for clinical use in the electroporation medical arts. Specifically, patented subject matter, as well as subject matter pending in the U.S. and foreign patent offices, includes method and device claims for delivering by electroporation medically important substances to the interior of cells in various body tissues such as a patient's muscle, skin, and other organs.

Inovio's core technology is centered on five broad, medically relevant "indication" categories including oncology, gene therapy/delivery (including vaccination with expressible vectors), vascular administration (e.g. by catheter), transdermal administration (including delivery of substances for cancer, gene therapy, and cosmetic applications), and ex vivo administration (e.g. by electroporation of cells outside the body and introducing the created cells to the patient).

Supporting Inovio's primary business focus, its intellectual property in gene therapy and DNA delivery enjoys a broad scope of patent protection, such as found in U.S. patent numbers 5,273,525 and in-licensed patents 6,110,161, 6,261,281, 6,610,044, 6,958,060 and 6,939,862, which include claims reciting methods and apparatus for implanting macromolecules (e.g. DNA and pharmaceutical compounds) into selected tissues of a patient by electroporation. U.S. patent number 6,763,264, with claims reciting methods of delivering expression vectors and molecules, and U.S. patent number 6,697,669, with claims reciting methods of in vivo electroporation of skin and muscle, provide broad-based coverage to the company. Other of Inovio's patents protect its proprietary methodology of electroporation wherein the electroporation process is carried out using "opposed-paired" electric field pulsing. Such patents include, and are not limited to, U.S. patent numbers 6,241,701, 6,120,493, 6,233,482, and 5,702,359C1. It is important to understand that patents having claims directed to methods of delivering substances to tissues using electroporation and devices for such methods, are generally applicable to DNA delivery and oncological applications.

With respect to oncology, U.S. patent number 6,569,149 provides broad claim coverage directed to a method for the application of electric fields to a tissue of a patient having a "cell proliferation disorder" for the purpose of introducing molecules into cells of the tissue to treat the cell proliferation disorder. Such method comprises providing an array of multiple opposed pairs of electrodes connected to a generator, wherein at least two pairs of electrodes, after being placed in selected tissue along with the substance being electroporated, are activated simultaneously with electric pulses. Likewise, in-licensed patent 6,528,315 claims methods of electroporation of DNA to tumor cells in a broad manner.

Inovio has a number of issued U.S. and foreign patents claiming a widely used gene regulation technology called GeneSwitch® that permits control of gene expression from DNA sequences via a small molecule that can be administered orally. For example, U.S. patents 5,364,791 and 6,599,698 claim various aspects of this unique regulation system that may be used in gene therapy products. In addition to electroporation technology for gene delivery, the company also acquired a group of patents claiming the delivery of DNA using polymers (e.g., 6,040,295 and 6,514,947) and lipids (e.g., 6,387,395 and 6,235,310) that are useful in the development of certain DNA vaccines.

Inovio's patent portfolio is also active with respect to vascular, transdermal, and ex vivo applications of electroporation technology. For example, U.S. patent 5,704,908 includes claims directed to an electroporation balloon catheter. Additionally, U.S. patent 6,342,247 is directed to methods of increasing vasodilation, an important indication in maintaining blood flow in certain patients with vessel occlusion problems. U.S. patents 6,697,669, 6,654,636, 5,810,762, and 5,439,440 provide claims to transdermal application of electric fields to surface tissues, while U.S. patents 6,027,488, 6,746,441, 6,800,484, and 6,150,148 include claims to electroporation of cells in vitro. Such electroporated cells could be used either in laboratory settings or for introduction into patient blood stream or other tissues.

Of further importance to Inovio, the currently issued patents provide a strong base for the claimed subject matter for the various indications to at least the year 2017 and numerous claims will be in force to between 2018 and 2020.

Corporate History and Headquarters

Inovio was originally incorporated on June 29, 1983, under the laws of California as Biotechnologies & Experimental Research, Inc. On December 10, 1991, the entity changed its corporate name to BTX, Inc. and again on February 8, 1994 changed it to Genetronics, Inc. On April 14, 1994, the board of directors approved a share exchange agreement with Consolidated United Safety Technologies Inc. On September 2, 1997, the company listed on the Toronto Stock Exchange ("TSE") as Genetronics Biomedical Ltd, under the laws of British Columbia, Canada, which wholly-owned Genetronics, Inc. On June 15, 2001, the entity completed a change in jurisdiction of incorporation from British Columbia, Canada, to the state of Delaware. This change was accomplished through a continuation of Genetronics Biomedical Ltd. into Genetronics Biomedical Corporation, a Delaware corporation. On January 17, 2003, Genetronics voluntarily de-listed from the TSE, where Inovio's common stock had been listed since September 2, 1997. On March 31, 2005, the corporate name changed from Genetronics Biomedical Corporation to Inovio Biomedical Corporation. Inovio conducts its business through its U.S. wholly-owned subsidiary, Genetronics, Inc., a Norwegian wholly-owned subsidiary, Inovio AS, and a wholly-owned subsidiary in the Republic of Singapore, Inovio Asia Pte. Ltd., which may be a platform for future research and development efforts.

Inovio's principal executive offices are located at 11494 Sorrento Valley Road, San Diego, California 92121-1318, and the telephone number is (858) 597-6006.

Employees

As of March 16, 2009, Inovio employed 27 people on a full-time basis and 9 people under consulting and project employment agreements. Of the combined total, 22 were in product research, which includes research and development, quality assurance, clinical, engineering, and manufacturing, and 14 were in general and administrative, which includes corporate development, information technology, legal, investor relations, finance, and corporate administration. None of Inovio's employees are subject to collective bargaining agreements. Inovio considers its employee relations to be good.

Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of financial condition and results of operations should be read in conjunction with the Inovio Consolidated Financial Statements and Notes thereto derived from the December 31, 2008 Annual Report on Form 10-K, which statements are included elsewhere in this joint proxy statement/prospectus.

This discussion and analysis contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements with regards to Inovio's revenue, spending, cash flow, products, actions, plans, strategies and objectives. Forward-looking statements include, without

limitation, any statement that may predict, forecast, indicate or simply state future results, performance or achievements, and may contain the words "believe," "anticipate," "expect," "estimate," "intend," "plan," "project," "will be," "will continue," "will result," "could," "should," "would," "may," "might," or any variations of such words with similar meanings. Any such statements are subject to risks and uncertainties that could cause Inovio's actual results to differ materially from those which are Inovio's management's current expectations or forecasts. Such information is subject to the risk that such expectations or forecasts, or the assumptions underlying such expectations or forecasts, become inaccurate. Such risks and uncertainties are disclosed from time to time in Inovio's reports and such risks and uncertainties are further discussed in this joint proxy statement/prospectus under "Risk Factors" beginning on page 26.

Critical Accounting Policies

The SEC defines critical accounting policies as those that are, in management's view, important to the portrayal of our financial condition and results of operations and require management's judgment. Our discussion and analysis of our financial condition and results of operations is based on our audited consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles ("U.S. GAAP"). The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses. We base our estimates on experience and on various assumptions that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from those estimates. Our critical accounting policies include:

Revenue Recognition. Revenue is recognized in accordance with Staff Accounting Bulletin ("SAB") No. 104, *Revenue Recognition in Financial Statements,* and EITF Issue 00-21, *Revenue Arrangements with Multiple Deliverables.*

License fees are comprised of initial fees and milestone payments derived from collaborative licensing arrangements. We continue to recognize non-refundable milestone payments upon the achievement of specified milestones upon which we have earned the milestone payment, provided the milestone payment is substantive in nature and the achievement of the milestone was not reasonably assured at the inception of the agreement. We defer payments for milestone events which are reasonably assured and recognize them ratably over the minimum remaining period of our performance obligations. Payments for milestones which are not reasonably assured are treated as the culmination of a separate earnings process and are recognized as revenue when the milestones are achieved.

We have adopted a strategy of co-developing or licensing our gene delivery technology for specific genes or specific medical indications. Accordingly, we have entered into collaborative research and development agreements and have received funding for pre-clinical research and clinical trials. Payments under these agreements, which are non-refundable, are recorded as revenue as the related research expenditures are incurred pursuant to the terms of the agreements and provided collectibility is reasonably assured.

We receive non-refundable grants under available government programs. Government grants towards current expenditures are recorded as revenue when there is reasonable assurance that we have complied with all conditions necessary to receive the grants, collectibility is reasonably assured, and as the expenditures are incurred.

Research and development expenses. Since our inception, virtually all of our activities have consisted of research and development efforts related to developing our electroporation technologies. Research and development expenses consist of expenses incurred in performing research and development activities including salaries and benefits, facilities and other overhead expenses, clinical trials, contract services and other outside expenses. Research and development expenses are charged to operations as they are incurred. We review and accrue clinical trials expense based on work performed,

which relies on estimates of total costs incurred based on patient enrollment, completion of studies and other events.

Valuation of Goodwill and Intangible Assets. Our business acquisitions typically result in goodwill and other intangible assets, and the recorded values of those assets may become impaired in the future. Acquired intangible assets are still being developed for the future economic viability contemplated at the time of acquisition. We are concurrently conducting Phase I and pre-clinical trials using the acquired intangibles, and we have entered into certain significant licensing agreements for use of these acquired intangibles.

We record patents at cost and amortize these costs using the straight-line method over the expected useful lives of the patents or 17 years, whichever is less. Patent cost consists of the consideration paid for patents and related legal costs. License costs are recorded based on the fair value of consideration paid and amortized using the straight-line method over the shorter of the expected useful life of the underlying patents or the term of the related license agreement. As of December 31, 2008, our goodwill and intangible assets resulting from acquisition costs of Inovio AS, and additional intangibles including patents and license costs, net of accumulated amortization, totaled $9.8 million.

The determination of the value of such intangible assets requires management to make estimates and assumptions that affect our consolidated financial statements. We assess potential impairments to intangible assets when there is evidence that events or changes in circumstances indicate that the carrying amount of an asset may not be recovered. Our judgments regarding the existence of impairment indicators and future cash flows related to intangible assets are based on operational performance of our acquired businesses, market conditions and other factors. If impairment is indicated, we reduce the carrying value of the intangible asset to fair value. While our current and historical operating and cash flow losses are potential indicators of impairment, we believe the future cash flows to be received from our intangible assets will exceed the intangible assets' carrying value, and accordingly, we have not recognized any impairment losses through December 31, 2008.

Although there are inherent uncertainties in this assessment process, the estimates and assumptions we use are consistent with our internal planning. If these estimates or their related assumptions change in the future, we may be required to record an impairment charge on all or a portion of our goodwill and intangible assets. Furthermore, we cannot predict the occurrence of future impairment-triggering events nor the impact such events might have on our reported asset values. Future events could cause us to conclude that impairment indicators exist and that goodwill or other intangible assets associated with our acquired businesses are impaired. Any resulting impairment loss could have an adverse impact on our results of operations.

Stock-based Compensation. Stock-based compensation cost is estimated at the grant date based on the fair-value of the award and is recognized as an expense ratably over the requisite service period of the award. Determining the appropriate fair-value model and calculating the fair value of stock-based awards at the grant date requires considerable judgment, including estimating stock price volatility, expected option life and forfeiture rates. We develop our estimates based on historical data. If factors change and we employ different assumptions in future periods, the compensation expense that we record may differ significantly from what we have recorded in the current period. A small change in the estimates used may have a relatively large change in the estimated valuation. We use the Black-Scholes pricing model to value stock option awards. We recognize compensation expense using the straight-line amortization method.

Auction Rate Securities and Auction Rate Securities Rights. We account for Auction Rate Securities ("ARS") under FAS 115, *Accounting for Certain Investments in Debt and Equity Securities*, and FAS 157, *Fair Value Measurements*. We account for ARS Rights in accordance with SFAS No. 159, *The Fair Value*

Option for Financial Assets and Financial Liabilities Including an amendment to FASB Statement No. 115. Our investments in ARS and our ARS Rights are recorded at their estimated fair value as there is currently no liquid market which indicates value. We have used a discounted cash flow model to determine the estimated fair value of our investment in ARS and our ARS Rights as of December 31, 2008. The assumptions used in preparing the discounted cash flow model include estimates for interest rates, timing and amount of cash flows and expected holding period of the ARS and ARS Rights. Changes in the estimated fair value of the ARS and ARS Rights are reflected in the consolidated statement of operations as "Other income, net."

Registered Common Stock Warrants. We account for registered common stock warrants in accordance with EITF Issue 00-19, *Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock,* on the understanding that in compliance with applicable securities laws, the registered warrants require the issuance of registered securities upon exercise and do not sufficiently preclude an implied right to net cash settlement. We classify registered warrants on the consolidated balance sheet as a current liability which is revalued at each balance sheet date subsequent to the initial issuance in October 2006 and August 2007. Determining the appropriate fair-value model and calculating the fair value of registered warrants requires considerable judgment, including estimating stock price volatility and expected warrant life. We develop our estimates based on historical data. A small change in the estimates used may have a relatively large change in the estimated valuation. We use the Black-Scholes pricing model to value the registered warrants. Changes in the fair market value of the warrants are reflected in the consolidated statement of operations as "Other income, net."

Recent Accounting Pronouncements

Information regarding recent accounting pronouncements is contained in Note 3 to the Consolidated Financial Statements, included elsewhere in this report.

Results of Operations

Comparison of Years Ended December 31, 2008 and 2007

The audited consolidated financial data for the years ended December 31, 2008 and December 31, 2007 is presented in the following table and the results of these two periods are used in the discussion thereafter.

	December 31, 2008	December 31, 2007	Increase/ (Decrease) $	Increase/ (Decrease) %
Revenue:				
License fee and milestone payments	$ 791,401	$ 2,793,478	$(2,002,077)	(72)%
Revenue under collaborative research and development arrangements	1,077,967	1,854,303	(776,336)	(42)
Grants and miscellaneous revenue	228,264	159,948	68,316	43
Total revenue	2,097,632	4,807,729	(2,710,097)	(56)
Operating expenses:				
Research and development	5,750,494	9,625,947	(3,875,453)	(40)
General and administrative	10,005,602	11,080,202	(1,074,600)	(10)
Total operating expenses	15,756,096	20,706,149	(4,950,053)	(24)
Loss from operations	(13,658,464)	(15,898,420)	(2,239,956)	(14)
Other income, net	49,006	3,421,580	(3,372,574)	(99)
Interest income, net	643,836	1,272,397	(628,561)	(49)
Net loss	(12,965,622)	(11,204,443)	1,761,179	16
Imputed and declared dividends on preferred stock		(23,335)	23,335	100
Net loss attributable to common stockholders	$(12,965,622)	$(11,227,778)	$ 1,737,844	15%

Revenue

Our revenue consists of license fees, milestone payments, and amounts received from collaborative research and development arrangements and grants.

Our total revenue decreased $2.7 million or 56% for the year ended December 31, 2008, as compared to fiscal 2007 due to decreases in milestone payments and revenue under collaborative research and development arrangements, offset partially by an increase in grants and other revenue.

The $2.0 million decrease in license fees and milestone payments for the year ended December 31, 2008, as compared to fiscal 2007 was primarily due to the recognition of a $2.0 million milestone payment during fiscal 2007, resulting from the achievement of a clinical milestone by Merck for the filing of an investigational new drug application for the second Merck product in a major market. Under our agreement with Merck, we may receive additional future milestone payments linked to the successful development of a product. Revenue from various other license agreements remained consistent during the year ended December 31, 2008 and 2007.

The $776,000 decrease in revenue under collaborative research and development arrangements during the year ended December 31, 2008, as compared to the 2007 fiscal year, was due to an $368,000 decrease in Wyeth billings based on our collaborative agreement related to the commercialization of the Elgen device, and $408,000 in lower Merck collaborative research billings during 2008 as compared to 2007. Billings from research and development work performed pursuant to the Wyeth and Merck agreements are recorded as revenue as the related research expenditures are incurred. Revenues from

collaborative research and development arrangements are expected to decline in 2009, as Wyeth continues to evaluate internal strategic options prior to initiating further development of electroporation-based infectious disease programs. Under our research and collaboration agreement with Merck, we have provided the majority of the required device development for use in their clinical trials. Development activities for Merck will be limited until trial results are obtained.

The $68,000 increase in grant and miscellaneous revenue was due to more revenue recognized from U.S. Army grants during fiscal 2008 as compared to fiscal 2007. On September 26, 2008, we received a new contract for $933,000 from the Department of Defense (U.S. Army) to continue research and development of DNA-based vaccines delivered via our proprietary electroporation system. The contract, titled "Design and Engineering of the Elgen Gene Delivery System for Screening and Validation of Vaccine Candidates of Military Relevance," will run through May 2010. This project is focused on identifying DNA vaccine candidates with the potential to provide rapid, robust immunity to protect against bio-warfare and bioterror attacks.

During the years ended December 31, 2008 and 2007, we recognized revenue of $135,000 and $159,000, respectively, attributable to the operations of Inovio AS, which amounted to approximately 6% and 3% of our total revenue. Inovio AS' revenue primarily consists of amounts received from grants and licensing revenue.

Research and Development Expenses

The $3.9 million decrease in research and development expenses for the year ended December 31, 2008, as compared to fiscal 2007, was primarily due to a decrease in clinical trial expenses associated with patient enrollment, clinical site costs, data collection and monitoring costs related to the discontinuation of the SECTA clinical trials. Additional decreases are associated with less consulting and advisory services received, offset by higher labor and other development costs associated with the expansion of our in-house engineering and research expertise. Research and development expenses attributable to Inovio AS were $751,000 and $697,000 for the years ended December 31, 2008 and 2007, respectively.

Our research and development activities reflect our efforts to advance our products through the various stages of product development. The expenditures that will be necessary to execute our development plans are subject to numerous uncertainties, which may affect our research and development expenditures and capital resources. Even if earlier results are positive, we may obtain different results in later stages of development, which could impact our development expenditures for a particular product. Although we spend a considerable amount of time planning our development activities, we may be required to alter our plan based on new circumstances or events. Any deviation from our plan may require us to incur additional expenditures or accelerate or delay the timing of our development spending.

General and Administrative Expenses

General and administrative expenses include business development expenses and the amortization of intangible assets. The $1.1 million decrease in general and administrative expenses for the year ended December 31, 2008, as compared to fiscal 2007, was primarily due to a decrease in outside consulting and advisory services related to partnering our SECTA therapy program as well as a decrease in personnel costs and employee stock-based compensation expense, offset by increased legal fees related to the execution of the definitive merger agreement with VGX as well as other corporate matters. General and administrative costs attributable to Inovio AS were $150,000 and $84,000 for the years ended December 31, 2008 and 2007, respectively.

Stock-based Compensation.

Stock-based compensation cost is measured at the grant date, based on the fair value of the award reduced by estimated forfeitures, and is recognized as expense over the employee's requisite service period. Total compensation cost under SFAS No. 123(R) for our stock plans for the years ended December 31, 2008 and 2007 was $1.0 million and $1.6 million, of which $286,000 and $354,000 was included in research and development expenses and $746,000 and $1.2 million was included in general and administrative expenses, respectively. At December 31, 2008, there was $752,000 of total unrecognized compensation cost, related to unvested stock options, which we expect to recognize over a weighted-average period of one year, as compared to $1.3 million for the year ended December 31, 2007. Total stock-based compensation for options granted to non-employees for the years ended December 31, 2008 and 2007 was $58,000 and $119,000, respectively.

Other Income/(Expense)

We recorded other income (expense) for the years ended December 31, 2008 and 2007 of $49,000 and $3.4 million, respectively. The decrease in other income (expense) is primarily due to the revaluation of registered common stock warrants issued by us in October 2006 and August 2007. We are required to revalue the warrants at each balance sheet date to fair value. If unexercised, the warrants will expire in October 2011 and August 2012, respectively.

Interest Income/(Expense)

Interest income (expense) for the years ended December 31, 2008 and 2007 was $644,000 and $1.3 million, respectively. The decrease in interest and other income for fiscal 2008, as compared to fiscal 2007, was primarily due to a lower cash and investments balance and lower average interest rate.

Imputed and Declared Dividends on Preferred Stock

The holders of our Series C Preferred Stock were entitled to receive an annual dividend at a rate of 6%, in shares of common stock or cash, payable quarterly, through May 20, 2007. As part of this dividend, we paid cash of $23,000 during fiscal 2007 to holders of our Series C Preferred Stock. No dividends were paid to holders of our Series C Preferred Stock during the year ended December 31, 2008.

Income Taxes

Since inception, we have incurred operating losses and accordingly have not recorded a provision for income taxes for any of the periods presented. As of December 31, 2008, we had net operating loss carry forwards for federal and state income tax purposes of approximately $59.4 million and $58.0 million, respectively. We also had federal and state research and development tax credits of approximately $1.2 million and $1.5 million, respectively. If not utilized, the net operating losses and credits will begin to expire in 2013. Utilization of net operating losses and credits are subject to a substantial annual limitation due to ownership change limitations provided by the Internal Revenue Code of 1986, as amended.

Comparison of Years Ended December 31, 2007 and 2006

The audited consolidated financial data for the years ended December 31, 2007 and December 31, 2006 is presented in the following table and the results of these two periods are used in the discussion thereafter.

	December 31, 2007	December 31, 2006	Increase/ (Decrease) $	Increase/ (Decrease) %
Revenue:				
License fee and milestone payments	$ 2,793,478	$ 1,337,105	$ 1,456,373	109%
Revenue under collaborative research and development arrangements	1,854,303	962,207	892,096	93
Grants and miscellaneous revenue	159,948	1,168,866	(1,008,918)	(86)
Total revenue	4,807,729	3,468,178	1,339,551	39
Operating expenses:				
Research and development	9,625,947	8,509,785	1,116,162	13
General and administrative	11,080,202	8,304,587	2,775,615	33
Total operating expenses	20,706,149	16,814,372	3,891,777	23
Loss from operations	(15,898,420)	(13,346,194)	2,552,226	19
Other income, net	3,421,580	320,706	3,100,874	967
Interest income, net	1,272,397	681,546	590,851	87
Net loss	(11,204,443)	(12,343,942)	(1,139,499)	(9)
Imputed and declared dividends on preferred stock	(23,335)	(2,005,664)	(1,982,329)	(99)
Net loss attributable to common stockholders	$(11,227,778)	$(14,349,606)	$(3,121,828)	(22)%

Revenue

Our revenue consists of license fees, milestone payments, and amounts received from collaborative research and development arrangements and grants.

Our total revenue increased $1.3 million or 39% for the year ended December 31, 2007, as compared to fiscal 2006 due to significant increases in license fees, milestone payments and revenue under collaborative research and development arrangements, offset partially by a large decrease in grant revenue.

The $1.5 million increase in license fees and milestone payments for the year ended December 31, 2007, as compared to fiscal 2006 was primarily due to the recognition of a $2.0 million milestone payment during fiscal 2007, resulting from the achievement of a clinical milestone by Merck for the filing of an investigational new drug application for the second Merck product in a major market. Under our agreement with Merck, we may receive additional future milestone payments linked to the successful development of a product. We also recognized $175,000 in higher Wyeth license fee revenue in fiscal 2007 as compared to fiscal 2006, and acquired license agreements to our GeneSwitch® technology resulting in increased revenue of $130,000 during fiscal 2007. These increases were partially offset by no Valentis license fee revenue during fiscal 2007 as compared to $480,000 during fiscal 2006, and decreased revenue of $344,000 from the Merck licensing agreement in 2007 as this agreement was fully amortized in May 2007.

The $892,000 increase in revenue under collaborative research and development arrangements during the year ended December 31, 2007, as compared to the 2006 fiscal year, was due to an $814,000

increase in Wyeth billings based on our collaborative agreement related to the commercialization of the Elgen device, and $78,000 in higher Merck collaborative research billings during 2007 as compared to 2006. Billings from research and development work performed pursuant to the Wyeth and Merck agreements are recorded as revenue as the related research expenditures are incurred.

The $1.0 million decrease in grant and miscellaneous revenue was due to minimal revenue recognized from U.S. Army grants during fiscal 2007 as compared to $899,000 during fiscal 2006 and a reduction in revenue recognized by Inovio AS from our European Union grant due to the timing of work performed.

During the years ended December 31, 2007 and 2006, we recognized revenue of $159,000 and $1.1 million, respectively, attributable to the operations of Inovio AS, a Norwegian company that we acquired in January 2005, which amounted to approximately 3% and 33% of our total revenue. Inovio AS' revenue primarily consists of amounts received from grants and licensing revenue.

Research and Development Expenses

The $1.1 million increase in research and development expenses for the year ended December 31, 2007, as compared to fiscal 2006, was primarily due to an increase in clinical trial expenses associated with patient enrollment, clinical site costs, data collection and monitoring costs, and increased costs related to the use of Clinical Research Organization ("CROs") and Clinical Research Associates ("CRAs") related to our SECTA therapy program. Additional increases are associated with the expansion of our in-house engineering and research expertise, increased consulting services, increased lab supplies related to our existing and next generation programs, increased outside lab testing performed, and expensed inventory costs. These increases were partially offset by a $672,000 decrease in expenses attributable to Inovio AS totaling $697,000 and $1.4 million during the years ended December 31, 2007 and 2006, respectively.

Our research and development activities reflect our efforts to advance our products through the various stages of product development. The expenditures that will be necessary to execute our development plans are subject to numerous uncertainties, which may affect our research and development expenditures and capital resources. Even if earlier results are positive, we may obtain different results in later stages of development, which could impact our development expenditures for a particular product. Although we spend a considerable amount of time planning our development activities, we may be required to alter our plan based on new circumstances or events. Any deviation from our plan may require us to incur additional expenditures or accelerate or delay the timing of our development spending.

General and Administrative Expenses

General and administrative expenses include business development expenses and the amortization of intangible assets. The $2.8 million increase in general and administrative expenses for the year ended December 31, 2007, as compared to fiscal 2006, was primarily due to an increase in outside consulting services related to partnering our SECTA therapy program, an increase in investor relations services associated with expanding our DNA and gene therapy program, an increase in personnel expenses associated with expanding our in-house expertise, increased legal fees associated with intellectual property and business development efforts, and increased legal, accounting and auditing fees primarily attributable to matters related to correspondence with the SEC. In addition, we recorded a reduction of goodwill in 2007 related to the realization of foreign net operating loss carryforwards. General and administrative costs attributable to Inovio AS were $84,000 for the year ended December 31, 2007 and were insignificant for the year ended December 31, 2006.

Stock-based Compensation.

Effective January 1, 2006, we adopted Statement of Financial Accounting Standards ("SFAS") No. 123(R), *Stock-based Payment*, and elected to adopt the modified prospective application method. SFAS No. 123(R) requires us to use a fair-value based method to account for stock-based compensation. Accordingly, stock-based compensation cost is measured at the grant date, based on the fair value of the award reduced by estimated forfeitures, and is recognized as expense over the employee's requisite service period. Total compensation cost under SFAS No. 123(R) for our stock plans for the years ended December 31, 2007 and 2006 was $1.6 million and $1.3 million, of which $354,000 and $423,000 was included in research and development expenses and $1.2 million and $921,000 was included in general and administrative expenses, respectively. At December 31, 2007, there was $1.3 million of total unrecognized compensation cost, related to unvested stock options, which we expect to recognize over a weighted-average period of one year, as compared to $947,000 for the year ended December 31, 2006. Total stock-based compensation for options granted to non-employees for the years ended December 31, 2007 and 2006 was $119,000 and $203,000, respectively.

Other Income/(Expense)

We recorded other income (expense) for the years ended December 31, 2007 and 2006 of $3.4 million and $321,000, respectively. The increase in other income (expense) is primarily due to the revaluation of registered common stock warrants issued by us in October 2006 and August 2007. We are required to revalue the warrants at each balance sheet date to fair value. If unexercised, the warrants will expire in October 2011 and August 2012, respectively.

Interest Income/(Expense)

Interest income (expense) for the years ended December 31, 2007 and 2006 was $1.3 million and $682,000, respectively. The increase in interest income for fiscal 2007, as compared to fiscal 2006, was primarily due to a larger cash and short-term investments balance and higher average interest rate.

Imputed and Declared Dividends on Preferred Stock

The former holders of our Series A and B Preferred Stock received an annual dividend at a rate of 6%, in shares of common stock or cash, payable quarterly through September 30, 2006. As a result, no dividends were paid to Series A or B Preferred Stock holders during the year ended December 31, 2007. We paid cash of $345 and issued a total of 2,871 shares valued at $8,000 to the former holders of our Series A Preferred Stock, and we paid $15,000 in cash to the former holders of our Series B Preferred Stock during fiscal 2006.

The holders of our Series C Preferred Stock were entitled to receive an annual dividend at a rate of 6%, in shares of common stock or cash, payable quarterly, through May 20, 2007. As part of this dividend, we paid cash of $23,000 during fiscal 2007 to holders of our Series C Preferred Stock. We paid cash $117,000 during fiscal 2006 to holders of our Series C Preferred Stock and accrued $15,000 for certain holders of our Series C Preferred Stock who participated in an equity financing we completed in October 2006.

During 2006, we recorded an imputed dividend charge of $1.9 million during the three months ended December 31, 2006, related to the investors who converted $1.2 million of their Series C Preferred Stock investment into 473,744 shares of our common stock as part of our private placement closed in October 2006. This imputed dividend charge was calculated using guidance contained in Emerging Issues Task Force ("EITF") Issue No. 00-27, *Application of Issue No. 98-5 to Certain Convertible Instruments*. As part of this private placement, these investors received 304,450 additional shares of our common stock, as compared to the number of shares of our common stock into which

their existing Series C Preferred Stock could have been converted under the original terms of the Series C Preferred Stock. Under EITF Issue No. 00-27, this incremental number of shares of our common stock was multiplied by the price of our common stock on the commitment date of the original Series C Preferred Stock issuance, or $6.08 per share, to calculate the $1.9 million imputed dividend charge associated with this beneficial conversion.

Income Taxes

Since inception, we have incurred operating losses and accordingly have not recorded a provision for income taxes for any of the periods presented. As of December 31, 2007, we had net operating loss carry forwards for federal and state income tax purposes of approximately $55.9 million and $50.8 million, respectively. We also had federal and state research and development tax credits of approximately $714,000 and $989,000, respectively. If not utilized, the net operating losses and credits will begin to expire in 2013. Utilization of net operating losses and credits are subject to a substantial annual limitation due to ownership change limitations provided by the Internal Revenue Code of 1986, as amended

Liquidity and Capital Resources

Historically, our primary uses of cash have been to finance research and development activities including clinical trial activities in the oncology, DNA vaccines and other immunotherapy areas of our business. Since inception, we have satisfied our cash requirements principally from proceeds from the sale of equity securities.

Recent Sales of Equity Securities

In May 2007, we completed a registered equity financing wherein we issued and sold 4,595,094 shares of our common stock for $3.52 per share, resulting in aggregate cash proceeds of $16.2 million, prior to offering expenses of $110,000.

Working Capital and Liquidity

As of December 31, 2008, we had working capital of $554,000, as compared to $25.6 million as of December 31, 2007. The decrease in working capital during the year ended December 31, 2008 was primarily due to expenditures related to our research and development activities, as well as various general and administrative expenses related to consultants, legal, accounting and audit, corporate development, and investor relations activities. In addition, a substantive reduction in working capital was due to the reclassification of the fair value of our auction rate securities, or ARS, from current to non-current investments in 2008, due to the illiquid state of these ARS. Management believes that Inovio's cash and cash equivalents at December 31, 2008 are sufficient to meet its planned working capital needs through December 31, 2009. To continue its product development Inovio plans to raise additional working capital through equity or debt financings.

Our ARS are AAA-rated municipal debt obligations with a long-term maturity and an interest rate that is reset in short-term intervals through auctions. Due to conditions in the global credit markets, in 2008, these securities, representing a par value of $13.6 million, had insufficient demand resulting in multiple failed auctions. As a result, these affected securities are currently not liquid and the interest rates have been reset to predetermined higher rates.

In December 2008, we, via our wholly-owned subsidiary Genetronics, Inc., or "Genetronics", which holds the ARS, accepted an offer of ARS Rights from UBS. The ARS Rights permit us to require UBS to purchase our ARS at par value at any time during the period of June 30, 2010 through July 2, 2012. If we do not exercise our ARS Rights, the ARS will continue to accrue interest as determined by the auction process or the terms of the ARS if the auction fails. If the ARS Rights are not exercised

before July 2, 2012 they will expire and UBS will have no further obligation to buy our ARS. UBS has the discretion to purchase or sell our ARS at any time without prior notice so long as we receive a payment at par upon any sale or disposition. UBS will only exercise its discretion to purchase or sell our ARS for the purpose of restructurings, dispositions or other solutions that will provide us with par value for our ARS. As a condition to accepting the offer of ARS Rights, we released UBS from all claims except claims for consequential damages relating to its marketing and sales of ARS. We also agreed not to serve as a class representative or receive benefits under any class action settlement or investor fund.

In conjunction with the acceptance of the ARS Rights, we also amended our existing loan agreement with UBS Bank USA, increasing the existing credit line up to $12.1 million, with the ARS pledged as collateral. The loan will be treated as a "no net cost loan", as it will bear interest at a rate equal to the average rate of interest paid to Genetronics on the pledged ARS, and the net interest cost to Genetronics will be zero. The Company fully drew down on the line of credit in December 2008.

Typically the fair value of ARS approximates par value due to the frequent resets through the auction process. While we continue to earn interest on our ARS at the maximum contractual rates, these investments are not currently trading and therefore do not currently have a readily determinable market value. Accordingly, the estimated fair value of the ARS no longer approximates par value. We have used a discounted cash flow model to determine the estimated fair value of our investment in ARS and our ARS Rights as of December 31, 2008. The assumptions used in preparing the discounted cash flow model include estimates for interest rates, timing and amount of cash flows and expected holding period of the ARS and ARS Rights.

We elected to measure the ARS Rights under the fair value option of SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities Including an amendment to FASB Statement No. 115,* to mitigate volatility in reported earnings due to their linkage to the ARS, and recognized a gain of approximately $4.3 million and recorded a corresponding long-term investment. Reflecting our intent to exercise the ARS Rights during the period of June 30, 2010 through July 2, 2012, we transferred our ARS from investments available-for-sale to trading securities. As a result of this transfer and as we no longer intend to hold the ARS until the fair value recovers, we recognized an other-than-temporary impairment loss of approximately $4.4 million, representing a reversal of the related temporary valuation allowance that was previously recorded in other comprehensive loss. We believe this loss is primarily attributable to the limited liquidity of these investments and have no reason to believe that any of the underlying issuers are presently at risk of default. The recording of the fair value of the ARS Rights and the recognition of the other-than-temporary impairment loss resulted in a net impact to the Consolidated Statement of Operations for the year ended December 31, 2008 of approximately $99,000, which was recorded as other expense.

As of December 31, 2008, we had an accumulated deficit of $152.8 million. We have operated at a loss since 1994, and we expect this to continue for some time. The amount of the accumulated deficit will continue to increase, as it will be expensive to continue research and development efforts. If these activities are successful and if we receive approval from the FDA to market equipment, then even more funding will be required to market and sell the equipment. The outcome of the above matters cannot be predicted at this time. We are evaluating potential partnerships as an additional way to fund operations. We will continue to rely on outside sources of financing to meet our capital needs beyond next year.

Our long-term capital requirements will depend on numerous factors including:

- The ability to raise additional working capital through equity or debt financings;

- The costs associated with raising capital or obtaining liquidity and completing transactions, such as the Merger with VGX Pharmaceuticals, Inc.;

The costs of manufacturing scale-up and the cost of commercialization activities and arrangements;

The progress and magnitude of the research and development programs, including preclinical and clinical trials;

The time involved in obtaining regulatory approvals;

The cost involved in filing and maintaining patent claims;

Competitor and market conditions;

The ability to establish and maintain collaborative arrangements; and

The ability to obtain grants to finance research and development projects.

The ability to generate substantial funding to continue research and development activities, preclinical and clinical studies and clinical trials and manufacturing, scale-up, and selling, general, and administrative activities is subject to a number of risks and uncertainties and will depend on numerous factors including:

The ability to raise funds in the future through public or private financings, collaborative arrangements, grant awards or from other sources;

Our potential to obtain equity investments, collaborative arrangements, license agreements or development or other funding programs in exchange for manufacturing, marketing, distribution or other rights to products developed by us; and

The ability to maintain existing collaborative arrangements.

The global financial markets have recently experienced significant limits on available credit for companies of all sizes, and extreme volatility in market prices limiting the ability of companies to raise capital at favorable prices, if at all. This lack of liquidity and the consistently changing market conditions are currently impacting our ARS as discussed above, as well as creating significant fluctuations in the market price of our common stock. We cannot project how long such conditions will last in the global financial markets, and we cannot guarantee that additional funding whether via incurrence of debt or equity sales will be available when needed or on favorable terms. If it is not, we will be required to scale back our research and development programs, preclinical studies and clinical trials, and selling, general, and administrative activities, or otherwise reduce or cease operations and our business and financial results and condition would be materially adversely affected.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenue, expenses, and results of operations, liquidity, capital expenditures or capital resources.

Contractual Obligations

On December 19, 2008, we amended our existing loan agreement with UBS Bank USA, increasing the existing credit line up to $12.1 million, with our Auction Rate Securities pledged as collateral. We fully drew down on the line of credit on December 23, 2008. Advances under the Line of Credit bear interest at LIBOR plus 1.00% (the "Spread Over LIBOR"). UBS may change the Spread Over LIBOR at its discretion when the Collateral consisting of ARS may be sold, exchanged or otherwise conveyed by the Company for gross proceeds that are, in the aggregate, not less than the par value of such securities. The loan will be treated as a "no net cost loan", as it will bear at a rate equal to the average rate of interest paid to the Company on the pledged ARS, and the net interest cost to the Company will be zero.

As of December 31, 2008, we did not have any other material long-term debt or other known contractual obligations, except for the operating lease for our facility, which expires in February 2010, and operating leases for copiers, which expire in 2009 through 2011.

We are contractually obligated to make the following operating lease payments as of December 31, 2008:

	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating lease obligations	$683,617	$539,825	$143,792	$	$

Executive Compensation

Summary Compensation Table

The following table sets forth compensation information for 2008 and 2007 for Inovio's president and chief executive officer, the chief financial officer and human resources manager, the two other executive officers serving at December 31, 2008, one former executive officer who served during 2008, and the managing director of Inovio AS (which Inovio collectively refers to as its "named executive officers"), whose salary and bonus exceeded $100,000 for 2008.

Name and Principal Position	Year	Salary (1)	Bonus (2)	Stock Awards (3)	Option Awards (4)	All Other Compensation	Total
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
Dr. Avtar Dhillon, President and Chief Executive Officer	2008	$ 369,417		$102,218	$178,332	$ 18,725(5)	$ 668,692
	2007	$ 357,503	$116,375	$ 69,188	$391,394	$ 5,342	$ 939,802
Peter Kies, Chief Financial Officer and HR Manager	2008	$ 220,784			$ 98,931		$ 319,715
	2007	$ 206,966	$ 26,600		$128,244		$ 361,810
Michael Fons, Vice President, Corporate Development	2008	$ 197,061			$ 59,833	$ 3,220	$ 260,114
	2007	$ 188,180	$ 16,625		$ 81,877	$ 3,324	$ 290,006
Punit Dhillon, Vice President, Operations and Finance(6)	2008	$ 171,876			$ 85,517	$ 3,900	$ 261,293
	2007	$ 145,736	$ 13,300		$ 94,025	$ 3,900	$ 256,961
Dietmar Rabussay, Vice President, Research and Development(7)	2008	$ 69,506			$ 15,488	$ 114,723	$ 199,717
	2007	$ 185,391			$ 63,927	$ 5,200	$ 254,518
Iacob Mathiesen, Managing Director, Inovio AS(8)	2008	$ 188,556		$ 63,420	$ 51,543		$ 303,519
	2007	$ 179,449		$166,050	$ 62,985		$ 408,484

(1) Salary includes contributions made by the employee to Inovio's 401(k) plan.

(2) There were no bonuses paid for the year 2008. Bonus payments for 2007 were made in February 2008.

(3) Represents the compensation costs of stock awards, calculated for financial reporting purposes for the year utilizing the provisions of Statement of Financial Accounting Standards ("SFAS") No. 123R, rather than an amount paid to or realized by the named executive officer. See Note 10, "Stockholder's Equity," to our Audited Consolidated Financial Statements for information concerning the SFAS 123R values, which are based on the fair value of our common stock on the date of grant. There can be no assurance that the SFAS 123R amounts will ever be realized. The stock award to Dr. Dhillon includes compensation expense related to a 2007 restricted stock award of 75,000 shares of which 18,750 shares vested immediately at a fair value of $3.69 per share. The total value of the

award was $276,750, and the remaining value vests annually in March over the next three years. The stock award to Dr. Dhillon also includes compensation expense related to a 2008 restricted stock award of 75,000 shares of which 18,750 shares vested immediately at a fair value of $0.87 per share. The total value of the award was $65,250, and the remaining value vests annually in February

over the next three years. The stock award to Mr. Mathiesen includes compensation expense related to a restricted stock award in 2007 of 90,000 shares of which 45,000 shares vested immediately at a fair value of $3.69 per share. The total value of the award was $332,100, and the remaining value will vest in December 2009.

(4)

Represents the compensation costs of stock options calculated for financial reporting purposes for the year utilizing the provisions of SFAS No. 123R, rather than an amount paid to or realized by the named executive officer. See Note 10, "Stockholder's Equity" to our Audited Consolidated Financial Statements for the assumptions made in determining SFAS 123R values. Ratable amounts expensed for grants that were made in prior years are included. There can be no assurance that the SFAS 123R amounts will ever by realized by the named executive officer.

(5)

Consists of $6,058 of 401(k) match and $12,667 of travel expenses for Dr. Dhillon's spouse reimbursed pursuant to our travel policy.

(6)

Officer was promoted from Executive Director, Finance and Operations in January 2008.

(7)

Officer resigned on May 2, 2008. Amounts included in all other compensation reflect severance payments paid on a bi-weekly basis through October 2008 as well as all unused accrued vacation and paid time off.

(8)

Managing Director of Inovio AS salary paid in Norwegian Kroners but translated to U.S. Dollars using the average exchange rate for 2008.

Grants of Plan Based Awards

The following table sets forth certain information with respect to stock and option awards and other plan-based awards granted to Inovio named executive officers during 2008. Amounts representing Estimated Future Payouts Under Non-Equity Incentive Awards (i.e. thresholds, targets and minimums), and Estimated Future Payouts Under Equity Incentive Plan Awards (i.e. thresholds, targets and minimums) have not been reported in the following table as they are not applicable to Inovio compensation program during 2008.

Name	Grant Date	All Other Stock Awards: Number of Shares of Stock (#)(1)	All Other Option Awards: Number of Securities Underlying Options (#)	Exercise or Base Price of Option Awards ($/Share)	Grant Date Fair Value of Stock and Option Awards ($)
(a)	(b)	(c)	(d)	(e)	(f)
Avtar Dhillon,	2/1/2008		75,000	$ 0.87	$ 35,010
President and Chief Executive Officer	2/1/2008	75,000			$ 65,250
	12/9/2008		100,000	$ 0.50	$ 32,360
Peter Kies,	2/1/2008		30,000	$ 0.87	$ 14,004
Chief Financial Officer and HR Manager	7/9/2008		60,000	$ 1.06	$ 34,230
	12/9/2008		40,000	$ 0.50	$ 12,944
Michael Fons,	2/1/2008		20,000	$ 0.87	$ 34,230
Vice President, Corporate Development	7/9/2008		60,000	$ 1.06	$ 9,336
	12/9/2008		20,000	$ 0.50	$ 6,472
Punit Dhillon,	2/1/2008		50,000	$ 0.87	$ 23,340
Vice President, Finance and Operations	7/9/2008		60,000	$ 1.06	$ 34,230
	12/9/2008		70,000	$ 0.50	$ 22,652
Iacob Mathiesen,					
Managing Director, Inovio AS	7/9/2008		50,000	$ 1.06	$ 28,525

(1) The amount reflects the number of restricted stock awards granted on February 1, 2008 pursuant to the 2007 Omnibus Incentive Plan with a grant date fair value of $0.87 per share.

Options Exercised

There were no options exercised by Inovio named executive officers during 2008.

Outstanding Equity Awards at Fiscal Year-End Table

The following tables set forth certain information with respect to outstanding equity awards to the named executive officers under Inovio equity incentive plans during 2008.

	OPTION AWARDS			
Name	**Number of Securities Underlying Unexercised Options (#) Exercisable**	**Number of Securities Underlying Unexercised Options (#) Unexercisable**	**Option Exercise Price ($)**	**Option Expiration Date**
(a)	**(b)**	**(c)**	**(d)**	**(e)**
Avtar Dhillon	100,000		2.08	10/09/2011
President and CEO	25,000		1.64	04/28/2012
	124,999		1.96	06/27/2012
	12,499		1.00	10/24/2012
	62,500		1.08	01/09/2013
	81,249		2.52	08/07/2013
	37,499		5.00	11/06/2013
	125,000		5.00	12/31/2013
	150,000		3.82	01/14/2015
	56,250	18,750	2.89	03/06/2016
	112,500	112,500	3.16	03/07/2017
	18,750	56,250	0.87	02/01/2018
	25,000	75,000	0.50	12/09/2018
	931,246	262,500		
Peter Kies				
	37,500		1.96	06/27/2012
CFO and HR Manager	7,500		1.00	10/24/2012
	12,500		1.24	03/24/2013
	14,375		2.52	08/07/2013
	20,000		4.46	02/24/2015
	33,750	11,250	2.89	03/06/2016
	37,500	37,500	3.16	03/07/2017
	7,500	22,500	0.87	02/01/2018
	15,000	45,000	1.06	07/09/2018
	10,000	30,000	0.50	12/09/2018
	195,625	146,250		
Michael Fons				
	37,500		5.32	06/16/2014
VP, Corporate Development	15,000	5,000	2.45	03/22/2016
	10,000	10,000	3.16	03/08/2017
	12,500	12,500	3.75	05/03/2017
	5,000	15,000	0.87	02/01/2018
	15,000	45,000	1.06	07/09/2018
	5,000	15,000	0.50	12/09/2018
	100,000	102,500		

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	OPTION AWARDS			
Name	**Number of Securities Underlying Unexercised Options (#) Exercisable**	**Number of Securities Underlying Unexercised Options (#) Unexercisable**	**Option Exercise Price ($)**	**Option Expiration Date**
(a)	**(b)**	**(c)**	**(d)**	**(e)**
Dietmar Rabussay(1)	3,750		16.52	02/06/2010
VP, Research and Development	500		6.00	08/24/2010
	6,250		6.28	05/16/2011
	7,500		1.80	10/23/2011
	7,500		1.64	04/28/2012
	7,500		1.00	10/24/2012
	12,500		1.24	03/24/2013
	19,937		2.52	08/07/2013
	10,000		4.46	02/24/2015
	33,750	11,250	2.89	03/06/2016
	12,500	12,500	3.16	03/07/2017
	121,687	23,750		
Punit Dhillon				
	25,000		2.76	06/30/2013
VP, Finance and Operations	6,250		2.52	08/07/2013
	15,000		4.33	02/24/2015
	26,250	8,750	2.45	03/22/2016
	20,000	20,000	3.16	03/08/2017
	7,500	7,500	3.75	05/03/2017
	12,500	37,500	0.87	02/01/2018
	15,000	45,000	1.06	07/09/2018
	17,500	52,500	0.50	12/09/2018
	145,000	171,250		

	OPTION AWARDS			
Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price ($)	Option Expiration Date
(a)	(b)	(c)	(d)	(e)
Iacob Mathiesen	15,000	5,000	2.45	03/22/2016
Managing Director, Inovio AS	10,000	10,000	3.16	03/08/2017
	12,500	12,500	3.75	05/03/2017
	12,500	37,500	1.06	07/09/2018
	50,000	65,000		

(1) Dietmar Rabussay resigned effective May 2, 2008 however remains with Inovio as a consultant. All options listed remain outstanding.

	STOCK AWARDS	
Name	Number of Unvested Shares (#)(1)	Fair Market Value ($)
(a)	(b)	(c)
Avtar Dhillon President & CEO	93,750	187,313
Iacob Mathiesen Managing Director, Inovio AS	45,000	166,050
	138,750	353,363

(1) The amount reflects the number of unvested restricted stock awards outstanding at December 31, 2008.

Compensation Committee Interlocks and Insider Participation

In 2008, the Compensation Committee consisted of James L. Heppell (Chair), Simon Benito, Tazdin Esmail and Robert W. Rieder, each of whom is an independent director under the NYSE Amex listing standards. Other than James L. Heppell, who is a former officer of Inovio, no member of the Compensation Committee is a former or current officer or employee of Inovio.

During 2008, Avtar Dhillon, Inovio Chief Executive Officer, served as a director of BC Advantage (VCC) Funds, Inc. James L. Heppell, a member of Inovio Compensation Committee, serves as President and Fund Manager of BC Advantage (VCC) Funds, Inc.

No other persons who were members of the Compensation Committee during 2008 had any relationships requiring disclosure.

Compensation of Directors

During 2008, Inovio paid each non-employee director of Inovio (other than the Chairman of the Board) an annual retainer fee of $19,000 and paid the Chairman of the Board an annual retainer fee of $35,000. Inovio pays or reimburses all reasonable expenses associated with directors' attendance at and participation in board and committee meetings and other company business which a director attends. For 2008, Inovio also paid an additional $9,000 to the Compensation Committee chairman as compensation for services as that committee's chairman, an additional $14,000 to the Audit Committee chairman as compensation for services as that committee's chairman, and an additional $5,000 to the Nomination and Corporate Governance Committee chairman as compensation for services as that

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committee's chair. Inovio also pays each non-employee director $1,500 for attendance at each board meeting conducted in person and $750 for each board meeting conducted telephonically.

Inovio does not pay director fees to its directors who are also Inovio employees. Thus, Dr. Dhillon does not receive director fees.

Non-employee directors are eligible to receive, from time to time, grants of options to purchase shares of common stock under the Plan as determined by the full board of directors. During the year ended December 31, 2008, Inovio granted 10-year options to purchase a total of 225,000 shares of its common stock to its non-employee directors. Mssrs. Bandali, Benito, Esmail, Heppell, Rieder and Rietiker received 15,000 shares each, at an exercise price of $0.89. Mr. Rietiker and Mr. Gan also received 30,000 shares each upon joining the Board of Directors in 2008, exercisable at $1.05 and $0.89, respectively. In August 2008, Mr. Heppell also received options to purchase 75,000 shares of common stock, exercisable at $1.03 per share. In December 2008, Mr. Chong also received options to purchase 15,000 shares of common stock, exercisable at $0.50 per share, which were disclaimed in conjunction with his resignation from the Board of Directors as reported on Form 8-K on February 6, 2009.

Director Compensation Table

The following table sets forth certain information with respect to director compensation during 2008. Amounts representing Stock Awards, Non-equity Incentive Plan Compensation, and All Other Compensation are not included in the following table as they are not applicable to Inovio compensation program during 2008.

Name	Fees Earned or Paid in Cash ($)	Option Awards ($)(2)	Total ($)
(a)	(b)	(c)	(d)
James Heppell	58,250	42,144	100,394
Simon Benito	48,000	26,379	74,379
Tazdin Esmail	39,000	26,379	65,379
Riaz Bandali	28,000	26,379	54,379
Robert Rieder	31,750	33,607	65,357
Stephen Rietiker	23,250	12,693	35,943
Patrick Gan	15,500	3,182	18,682
Chin Cheong Chong(1)			

(1) In December 2008, Mr. Chong also received options to purchase 15,000 shares of its common stock, exercisable at $0.50 which were disclaimed in conjunction with the resignation from the Board of Directors as reported on Form 8-K on February 6, 2009.

(2) Represents the compensation costs of stock options calculated for financial reporting purposes for the year utilizing the provisions of SFAS No. 123R, rather than an amount paid to or realized by the director. See Note 10, "Stockholders' Equity" to our Audited Consolidated Financial Statements for the assumptions made in determining SFAS 123R values. Ratable amounts expensed for grants that were made in prior years are included. There can be no assurance that the SFAS 123R amounts will ever by realized by the director.

VGX Pharmaceuticals, Inc.

Overview

VGX, a Delaware corporation founded in December 2000 by Dr. J. Joseph Kim and Professor David B. Weiner, is a biopharmaceutical company engaged in the discovery and development of novel vaccines and therapies for major infectious diseases and cancers. VGX has product candidates for the treatment of infectious diseases including HIV, as well as cancer and inflammatory diseases. The lead therapeutic programs in infectious diseases and oncology are well complemented by a research pipeline of next-generation DNA vaccines. VGX's proprietary position, coupled with a patented DNA delivery system (CELLECTRA® electroporation device), and access to cGMP plasmid manufacturing capabilities form VGX's DNA vaccines and therapies platform.

VGX's clinical development programs include PENNVAX -B, a DNA vaccine for the prevention of HIV in Phase I clinical trials; VGX-1027, a small molecule drug for inflammatory diseases in Phase I clinical trials; VGX-3100, a DNA therapeutic vaccine for cervical cancer in Phase I clinical trials; and the CELLECTRA® electroporator, a DNA delivery device in Phase I clinical trials. In addition, VGX has filed INDs for VGX-3200, a novel DNA therapy that utilizes GHRH for the treatment of cancer cachexia and anemia and for VGX-3400, a DNA preventative vaccine for avian influenza. VGX has established a vertically-integrated DNA Vaccines and Therapies Platform with extensive capabilities including SynCon DNA-based product candidates, the CELLECTRA® delivery device, and access to efficient cGMP plasmid manufacturing. Vertical control over key aspects of product development has enabled VGX to consistently develop multiple product candidates, from bench-to-IND filing, within one year. The product candidates and technology programs are protected by VGX's extensive global intellectual property portfolio.

VGX's business strategy to realize value for the company and its stockholders is as follows:

VGX has identified and licensed-in key technologies from world-class institutions for the treatment of infectious diseases, cancer, and inflammatory diseases. It has collaborated with various governmental agencies and organizations such as the National Institute of Allergy and Infectious Diseases (NIAID), HIV Vaccine Trials Network (HVTN), Adult Clinical Trials Group (ACTG), and the Defense Threat Reduction Agency (DTRA). These collaborations provide a third-party validation of VGX's technology as well as a means to subsidize the further development of its product pipeline in a non-dilutive manner. VGX has also secured license agreements with its affiliate, VGX International, a publicly traded company in Korea, in which the affiliate shares the development costs for some of its drug candidates.

VGX is pursuing the development of a small molecule drug for inflammatory diseases, and building a DNA vaccines platform for the prevention and treatment of various infectious diseases and cancers. The DNA vaccines platform possessed by VGX dramatically shortens the time needed to take a potential drug candidate from bench to clinical trials as little as a year in some cases. The efficacy of the platform was demonstrated with the recent IND opening of VGX's DNA vaccine for cervical cancer, VGX-3100, which was successfully shepherded from the research lab to preclinical toxicity studies, to an opening of an IND in approximately a year. VGX is currently leveraging its DNA vaccines platform to begin clinical trials for two other DNA vaccines candidates.

VGX's technology is protected by an extensive patent portfolio that covers VGX's products, including VGX DNA-based Vaccines and Therapies such as PENNVAX DNA-based preventive and therapeutic vaccine for HIV, VGX-3100 DNA-based therapeutic vaccine for Cervical Cancer, VGX-3200 DNA-based therapy for treating for Cancer Cachexia, VGX-3400 DNA-based vaccine for treating Avian Flu, VGX-150 DNA-based therapy for treating Melanoma; Small Molecule Drugs, including VGX-1027 for the treatment of inflammatory diseases rheumatoid arthritis (RA) and type 1 diabetes (T1D); and Protein-based Drugs including VGX-100 for treating Lymphoma/Gastric Cancer.

In addition, there is also patent coverage over VGX's DNA vaccine platform, which includes electroporation devices, such as CELLECTRA® electroporators, and proprietary biomolecules, including a variety of DNA vectors and functional nucleotide elements, such as novel promoters. VGX's patent portfolio encompasses technologies that range from electroporation devices and their methods of use, proprietary polynucleotide and protein sequences, and a variety of proprietary vaccines and small molecules.

VGX was incorporated in Delaware in December 2000 under the name Viral Genomics, Inc. In 2001, VGX changed its name to VGX Pharmaceuticals, Inc. In October 2005, VGX purchased a controlling interest in VGX International, Inc., a pharmaceutical and manufacturing company that is publicly traded on the Korean Stock Exchange.

In February 2007, VGX acquired the assets of ADViSYS, Inc., a Houston, Texas-based company for its DNA plasmid manufacturing, electroporation delivery, and growth hormone releasing hormone (GHRH) technologies. In May 2007, VGX formed a subsidiary for the animal product applications of its GHRH technology, VGX Animal Health, and remains the majority stockholder of that company. VGX Animal Health's lead candidate, LifeTide SW5 received regulatory approval in Australia in January 2008 and became the world's first approved DNA therapy for food animals.

In June 2008, VGX announced a strategic reorganization designed to focus its resources on developing content for DNA vaccines and therapeutics and its electroporation delivery device by selling its manufacturing operations to VGXI, Inc., a wholly-owned U.S. Subsidiary of VGX International. VGXI is a cGMP contract manufacturer of DNA plasmids utilizing 500 liter and 100 liter fermentors in the U.S. and has plans underway for a 3000 liter scale facility in Korea.

VGX anticipates that over the next several years a number of key demographic and technological factors should accelerate growth in the market for vaccines and medical therapies to prevent and treat infectious diseases, aging associated conditions and cancer, particularly in VGX's product categories. These factors include the following:

Rise in emerging infectious diseases and the threat of pandemics. The attention received by the pandemic potential of avian influenza has mobilized cross-border agencies including governments, world health organizations and private and public corporations to develop effective vaccination and therapeutics strategies. VGX's candidate vaccines for avian influenza, chikungunya and dengue are intended to serve this need.

Increased consumer awareness. In areas such as cervical cancer, increased consumer awareness related to human papillomavirus (HPV) infection, the primary cause of cervical cancer, has led to renewed efforts for developing effective therapies. The current vaccines for cervical cancer prevention (Gardasil and Cervarix), while being effective measures for prevention in the unexposed population, are ineffective in people infected with HPV.

Large unmet need. In areas such as human immunodeficiency virus (HIV) and hepatitis C virus (HCV) (prevention and therapy) there is a large unmet need with no vaccine options on the market. With the exit of several players in the recent years from the HIV vaccine development area, if successful, VGX believes it is positioned to obtain a significant market position.

Increased regulatory activity. The anti-inflammatory market represents a large market with several small molecule and antibody based therapeutics already available to patients. However, several of the disease-modifying anti-rheumatic drugs (DMARDS) have recently come under regulatory scrutiny resulting in changes to labeling due to the serious side effects of increased susceptibility to opportunistic infections in patients receiving these drugs. An orally bio-available small-molecule therapeutic that can be effective and less immunosuppressive can emerge as a viable alternative to the market leaders.

Potential Products, Technologies and Services

Research and development expense to further the development of VGX's potential products and technologies were $13.1 million and $10.8 million for the fiscal years ended December 31, 2008 and 2007, respectively. For the period from December 12, 2000 (inception) through December 31, 2008, total research and development expenses totaled $39,185,000.

The following discussion describes VGX's products currently in development, the anticipated market for such products as well as the competitive environment in these markets. VGX is currently exploring strategic opportunities with each of these potential products and technologies, including the license or sale of such potential products and technologies.

Proprietary Product Candidates

PENNVAX -B

Market Opportunity for Treatment of HIV

Since its discovery in 1981, acquired immunodeficiency syndrome (AIDS) has killed more than 25 million people. In 2005, the total number of HIV-infected people worldwide reached an estimated 38.6 million, with 4.1 million newly infected individuals. In 2005, the disease claimed approximately 3.1 million lives. UNAIDS estimates that 60,000 individuals were newly infected with HIV across the U.S. and Western Europe in 2005, bringing the number of HIV-infected people to approximately 1.75 million. Over half of these individuals live in the U.S.

In 2005, the HIV therapeutic drug (antiretrovirals) market accounted for 1.8% of global pharmaceutical sales and 17% of total anti-infective sales. Although this is relatively small compared to other therapeutic areas, the HIV market has enjoyed strong growth. It generated $7.4 billion of sales in 2005 and experienced a Compound Annual Growth Rate (CAGR) of 13.3% from 2001-2005, making it one of the fastest growing infectious disease markets.

Effective vaccines have been actively pursued for over 20 years, without much success. The HIV represents one of the most confounding targets in medicine. The virus' high mutagenicity has made effective vaccine development challenging. Its outer envelope, swathed in sugar molecules, is difficult to attack, and HIV strikes the very cells that the immune system launches to thwart such an infection. Although several antiretrovirals are available to treat the patients once they are infected, vaccines are necessary to stop the spread of disease and perhaps reduce the need for antiretroviral treatment.

Traditional vaccines that work by exposing people to a weakened or killed microbe or proteins have failed in human testing. Noting that many long-term survivors have high counts of killer CD8+ T cells, the HIV vaccines field has turned to stimulating the immune system to generate those cells. A recent failure of HIV vaccines, which adopted the use of adenovirus or a common human cold virus that had been altered to prevent viral replication, to deliver HIV proteins as vaccines, was not effective. A different approach is needed to develop an effective vaccine for HIV.

Clinical Trial Status

VGX has initiated two separate Phase I clinical trials in 2007; one for prevention of infection and the other for therapeutic vaccination for individuals already affected with HIV. Both trials are conducted in clinical centers in the U.S. in collaboration with the University of Pennsylvania and the HIV Vaccines Trials Network (HVTN), which is the largest HIV vaccine testing organization in the world and is funded by the U.S. National Institutes of Health (NIH).

Competitive Landscape

After many years of rapid development and introduction of new antiretroviral drugs for treatment of HIV infection, the introduction of new drugs to the market for treatment of HIV infection appears to be waning. Available drugs, despite several limitations, have set a high standard that must be met in terms of efficacy. However, there is still a significant need for better HIV therapies and patents are expiring on early HIV drugs. For example, zidovudine, didanosine and stavudine are available as a generic drug, and other early HIV drugs will soon face such generic competition. To maintain HIV-related revenues, as well as meet the needs of HIV-infected patients, pharmaceutical companies must develop new drugs with improved profiles, especially in terms of toxicity and increased barriers to development of viral resistance. As a result, the medical and commercial needs are fueling continued interest in the development of new nucleosides (NRTIs), non-NRTIs, and protease inhibitors (PI) for treatment of HIV infection.

The latest HIV vaccine approach to fail was Merck & Co.'s recombinant Adenovirus Serotype 5 (Ad5) vector, a weakened form of the cold virus to carry genes from HIV. A large Phase II trial, sponsored by Merck and the federally funded HIV Vaccine Trials Network (HVTN), was prematurely halted in 2007 after the vaccine failed to block or slow down infections. A recent collaborative research study conducted among the teams from University of Pennsylvania, VGX, and Merck directly compared VGX's PENNVAX DNA vaccine delivered with CELLECTRA® device with Merck's recombinant Ad5 vector in an SIV model in non-human primates. The study results showed significant enhancements in the magnitude, frequency, proliferative capacity, and polyfunctionality of the induced immune responses following DNA plasmid-electroporation vaccination compared to the Ad5 vector.

Commercialization Plan

Because HIV vaccine development is a high risk, and expensive proposition, the current model for development is through the formation of large networks of public and private partners. A number of government and global non-profit organizations have taken a leadership position (IAVI, Gates Foundation, NIAID/DAIDS, USMHRP and others) to support this public health crisis because private investors are reluctant to invest in these ventures. VGX plans to develop its portfolio of HIV vaccine candidates through such partnerships.

The VGX HIV franchise consists of candidate vaccines for HIV prevention as well as therapy or treatment. Furthermore, the vaccines are differentiated according to the targeted region of the world with the greatest prevalence of a certain subtype of HIV. Thus, PENNVAX -B is VGX's vaccine for North America and Western Europe and PENNVAX -G is its candidate product for the rest of the world. PENNVAX -B is designed to target HIV Clade B (most commonly found in the U.S., North America, Australia and the European Union (EU). PENNVAX -G is designed to target HIV Clades A, C and D which are more commonly found in Asia, Africa, Russia and South America.

VGX's PENNVAX -B vaccine (without electroporation delivery) is currently in a Phase I clinical trial sponsored by the National Institute of Allergy and Infectious Diseases' (NIAID) Division of AIDS (DAIDS) and being conducted by the HVTN to evaluate the vaccine's safety and immunogenicity in healthy volunteers. The HVTN recently completed enrollment of this 120-patient study. In 2007, VGX, The University of Pennsylvania and the HVTN agreed to collaborate on the development of PENNVAX -B delivered via electroporation using the CELLECTRA® delivery device in healthy, uninfected individuals. The consortium is presently preparing documents to support an Investigational New Drug (IND) filing with the FDA and the initiation of this Phase I study is targeted for the third quarter of 2009.

A second IND is now open allowing testing of PENNVAX -B in a therapeutic setting. This study is conducted in collaboration with the University of Pennsylvania and will target HIV positive individuals. If the Phase I studies are successful in demonstrating enhanced immunological responses to

the HIV antigens, then VGX will partner with the HVTN or another governmental organization to further develop the HIV candidate vaccines through the Phase II and Phase III clinical studies. It is anticipated that given the critical need for preventive and therapeutic vaccines for HIV, the ultimate commercialization will be through a big pharmaceutical company partner, for the North American and EU markets, and a world health agency for the developing world markets.

Therapeutic HPV-16, 18 plasmid vaccine-VGX-3100

Market Opportunity for Treatment of Cervical Cancer

Worldwide it is estimated that there are 473,000 cases of cervical cancer, and 253,500 deaths annually. In 2008 an estimated 3,870 women in the US will die of cervical cancer, and around 11,000 new cases are expected to be diagnosed. Cervical cancer is caused by various types of human papillomavirus (HPV). Many people who may have HPV may not show any signs or symptoms, and, therefore, they can pass the virus to others without even knowing it. Prophylactic vaccines aimed at inducing natural immunity against HPV infection in naive individuals have been approved and are effective against HPV infection, but once a person has an established infection, the vaccines are ineffective for preventing development of cervical cancer. The need for an effective therapeutic vaccine which could treat HPV infected cervical tumor cells is great, replacing surgical procedures in young women that can affect their reproductive potential. It is estimated that approximately $1.7 billion are spent in the United States each year on treatment of cervical cancer.

Clinical Trial Status

An IND for VGX-3100 is open and patient enrollment is ongoing in the Phase I study. This study examines three dose levels of the vaccine. Phase II-III studies will examine the effect of the vaccine in curing patients of intraepithelial cervical neoplasias caused by HPV.

Competitive Landscape

Although prophylactic vaccines for HPV, including Merck's Gardasil® and GSK's Cervarix , have been recently approved in the U.S. and the EU, respectively, no therapeutic vaccine for HPV is available. Furthermore, studies have shown that these approved prophylactic vaccines do not have any therapeutic effects in women who are already infected with HPV. A number of companies are developing therapeutic vaccines for cervical cancer targeting the different subtypes of HPV. Transgene (Strasbourg, France) is likely the most advanced. Their product TG4001, based on MVA-HPV-IL2 is in Phase II studies in partnership with Roche in a deal valued at over 190 million Euros with upfront and near term milestone payments over 23 million Euros. The transgene product only targets HPV16. The VGX product is designed to treat cervical cancers arising from both HPV 16 and HPV 18. Together these two sub-types account for over 70% of the global cases of cervical cancer. MGI Pharma (ZYC 101a) and Stressgen Biopharmaceuticals Corp (HspE7) are two other companies with candidate vaccines in Phase II. Another company, Advaxis, has a HPV16 targeted candidate vaccine in Phase I studies based on a Listeria vector.

Commercialization Plan

VGX-3100 has been manufactured under cGMP by VGXI, Inc. and has been formulated for the Phase I clinical trials. VGX anticipates partnering with a large vaccine company at the Phase II stage for further development and commercialization.

Human Growth Hormone Releasing Hormone (GHRH) -VGX-3200

Market Opportunity for Treatment of Cancer-related Cachexia

Cachexia, an illness affecting up to 5 million people in the U.S. alone, and its associated disorders are common complications of cancer, aging, AIDS, chronic obstructive pulmonary disease (from smoking), chronic kidney and heart failure. Cachexia is one of the most devastating symptoms of cancer and typically results in drastic (greater than 10% of total body weight) weight loss. This complication, which is suffered by up to 75% of cancer patients, can often be fatal before death due to the actual disease. GHRH has been shown in animal models and in dog cancer studies to decrease muscle wasting, correct anemia and dramatically improve the quality of life of treated patients.

GHRH protein administered by daily injection has shown benefit in AIDS patients with metabolic disorders (lipodystrophy) associated with treatment with antiretrovirals and infection with HIV. Phase III studies with this compound are ongoing but the local reactions and the need for daily injections will limit the use of this product.

Clinical Trial Status

Phase I trials are planned in patients with cancer-related cachexia and in AIDS patients with lipodystrophy.

Competitive Landscape

Currently, only a progesterone analogue (Megace® ES) is licensed for treatment for cachexia. The package insert claims include modest weight gain (64% gaining five or more pounds over 12 weeks) and increased appetite. There was no effect on anemia.

Commercialization Plan

Treatment for cachexia, anemia and HIV related lipodystrophy are the first targets for VGX-3200. Additionally, VGX is developing the GHRH technology for a number of other indications including age-related disorders.

Avian Influenza (H5N1) Plasmid Vaccine -VGX-3400

Market Opportunity for Treatment of Avian Influenza

Influenza is one of the most communicable diseases and it typically affects children and the elderly most severely, resulting in hospitalization and deaths. Complications from influenza cause more than 200,000 hospitalizations and lead to approximately 36,000 deaths each year in the U.S. alone, according to the Centers for Disease Control. Worldwide, every year is typically subject to two influenza sessions (during the winter in each hemisphere), resulting in between three and five million cases of severe illness, and up to 500,000 deaths. A pandemic occurs every ten to twenty years, which infects a large proportion of the world's population, and can kill tens of millions of people as the "Spanish Flu" did in just two years (50-100 million deaths during 1918-1919).

New influenza viruses are constantly produced by mutation or by reassortment, and can develop resistance to the standard antiviral drugs. 245 humans have died from the H5N1 strain in twelve countries according to World Health Organization (WHO) data as of September 2008. It has been spreading from Asia despite thoughts that it was under control immediately after outbreaks there in 2004. In 2005, there were reports of H5N1 in wild birds in Europe. In 2006, there were reports of avian influenza A H5N1 strain in wild birds and poultry in Africa and the Near East. Through 2006, over 140 million birds have been killed and over $10 billion have been spent to try to contain H5N1 avian influenza.

Clinical Trial Status

In pre-clinical studies, vaccination with VGX-3400 generated protective levels of hemagglutination inhibition (HAI) titers in 100% of the immunized animals in five separate animal models mice, ferrets, rabbits, pigs and rhesus monkeys. Vaccination with VGX-3400 also protected 100% of the animals from an unmatched, pathogenic H5N1 virus challenge in mouse and ferret models. VGX-3400 also induced significant levels of antigen-specific CD8+ killer T cell responses. The planned Phase I trial will evaluate three levels of the vaccine for safety and immunogenicity. One dose will be chosen for expanded safety and immunogenicity (Phase II/III) studies. No efficacy studies are required for licensure of this vaccine.

Competitive Landscape

Although a number of companies have well developed avian influenza programs and the lead vaccine candidates have entered into national stockpiles (U.S, and EU), there exists a need for new antigen-sparing, rapidly adaptable and easily scalable technologies to prepare for the as yet unknown target presented by the next form of avian influenza. VGX's SynCon platform provides protection from known avian influenza viruses (in animal studies) and has the ability to be tailored to target new and emergent ones.

Commercialization Plan

VGX-3400 has been manufactured under cGMP by VGXI, Inc. and has been formulated for Phase I clinical trials.

CELLECTRA® delivery device

Market Opportunity for DNA plasmid Delivery Devices

DNA vaccines can be developed in a relatively quick and cost-efficient manner. In addition, they provide one of the best ways to induce cellular immune responses. Unlike other delivery methods, electroporation has been shown to enhance potential immune response. This augmentation improves development and expedites clinical trials, providing additional cost effectiveness.

Clinical Trial Status

VGX has developed two applications in the CELLECTRA® device family. The first covers the intra-muscular (IM) delivery of DNA and the second covers the intra-dermal/subcutaneous delivery (ID) of DNA. Both devices have been validated, manufactured under cGMP and are ready for use in human clinical trials. In 2007, VGX filed a device master file (MAF) with the FDA covering the use of the CELLECTRA®-IM EP device in human clinical trials. The device is intended to be used in combination with a DNA plasmid product. VGX has also filed an MAF with the FDA covering the use of the CELLECTRA®-ID EP device in 2009.

Competitive Landscape

Besides Inovio, Ichor and Cytopulse are other companies with an electroporation device presently in human clinical trials. Other players developing electroporation based devices include FIT Biotech, IGEA and Bio-Rad. In contrast to these devices and techniques, the technology incorporated in the CELLECTRA® device family is unique, being based on constant current and software driven pulses that are automatically adapted for each individual patient, versatile and applicable to both DNA vaccines and therapeutics delivered either IM or ID.

Commercialization Plan

VGX's innovative DNA delivery technology allows efficient delivery of DNA plasmids to cover a broad range of applications including gene therapy and vaccines. VGX intends to develop the CELLECTRA® device in combination with its own internally developed products as well as through partnering with external partners via appropriate licensing arrangements. It is anticipated that the device will be used in combination with VGX-3100, VGX-3200, VGX-3400 and the family of PENNVAX vaccines. VGX is also in early stage licensing discussions with other biotechnology companies for the use of the device in combination with their proprietary vaccine candidates. VGX has existing supported research agreements and CRADAs with academic institutions and research organizations. Commercial terms have not been discussed with these entities.

VGX-1027

Market Opportunity for Treatment of Rheumatoid Arthritis and Type 1 Diabetes

In the U.S. alone, 1.3 million people suffer from rheumatoid arthritis (RA) according to the National Institute of Arthritis and Musculoskeletal Skin Diseases (NIAMS). Overall, the prevalence in North America and the EU is expected to increase until at least 2010, due to the aging population. With significant unmet clinical needs and the progressive introduction of higher value and effective biopharmaceuticals, the RA market is expected to more than double in value to $27 billion by 2015.

As of 2007, 23.6 million Americans 7.8 percent of the population have diabetes, of which an estimated 5.7 million people are undiagnosed. Type 1 Diabetes (T1D), which can be fatal if untreated, usually strikes children and young adults, although it can strike at any age. In adults, T1D accounts for 5 to 10 percent (0.9 million -1.8 million people) of all diagnosed cases of diabetes in the U.S. alone. Risk factors for T1D may be autoimmune, genetic, or environmental. No known way to prevent type 1 diabetes exists.

Clinical Trial Status

Phase I studies are underway and indicate that the compound is orally bioavailable and well tolerated to date. After completion of Phase I studies, Phase II/III studies will be conducted in patients with RA to evaluate its effects on pain relief and joint destruction.

Clinical studies of VGX-1027 in patients with T1D are planned after completion of the ongoing Phase I studies for RA. Under the terms of the license agreement between VGX and VGX International, VGX International was granted worldwide rights to develop and market VGX-1027 for T1D. As such, VGX International will lead the Phase II and Phase III clinical trial efforts for T1D. VGX, in return, will receive various milestone payments and a royalty payment based on percentage of net sales.

Competitive Landscape

Treatments for RA include primarily non-steroidal anti-inflammatory drugs (NSAID) for pain and inflammation relief, and disease-modifying anti-rheumatic drugs (DMARDs) for slowing RA's progress. A trend toward the use of DMARDs earlier in the disease demonstrates a reduction in RA's severity, so physicians are prescribing them more often. Advances have been made in biologic DMARDs, which are more effective, but also are more expensive. Studies indicate that as disease severity increases, patients take multiple drugs, though this has also been linked with compliance issues, especially with the elderly. Blockbuster therapeutic agents on the market include Enbrel® (Global Sales of $4.4 Billion in 2006, by Amgen), Remicade® ($3.6 Billion, Johnson & Johnson), and Humira® ($1.9 Billion, Abbott). However, all of these agents require IV or IM delivery. VGX-1027 offers a distinct advantage over such products because it can be taken as a once or twice-a-day pill.

There are very few treatment options available currently for T1D patients other than daily insulin injections. Therefore, there is an unmet demand for a once-a-day, bioavailable small-molecule drug that can be administered orally.

Commercialization Plan

VGX has completed manufacturing of clinical supplies under cGMP to support the Phase I studies. The Phase I single ascending dose (SAD) and multiple ascending dose (MAD) studies have been completed and VGX-1027 has demonstrated oral bioavailability and a satisfactory safety profile in the human studies to-date. VGX intends to develop VGX-1027 through the Phase I (SAD and MAD) and possibly Phase IIa studies prior to licensing to a relevant pharmaceutical partner to continue further development. Small molecule therapeutics for inflammatory diseases continue to be an active area of interest from a licensing point of view with several recently announced deals.

LifeTide SW5

Market Opportunity for Growth Hormone Release Hormone in Food Animals

LifeTide SW5 was shown to decrease perinatal morbidity and mortality in offspring of pigs housed in farm conditions, and in large licensing studies shown to exert its effects for at least three consecutive pregnancies of the treated female pig. Other similar GHRH-expressing plasmids have been used in dairy cows, beef, horses and young pigs. Animals in normal or heat stress conditions showed decreased morbidity, and optimized production parameters milk production and fertility are positively impacted, while laminitis or hoof problems are resolved.

Clinical Trial Status

LifeTide SW5 was approved for use in pigs by the Australian Pesticides and Veterinary Medicines Authority (APVMA) on January 5, 2008. Optimizations made to the LifeTide SW5 plasmid meant to reduce the plasmid dose (from 5 mg to 1 mg) are currently tested. Preliminary data from these studies show similar outcome in groups treated with LifeTide SW5 or the newer construct. At the end of these trials, data will be submitted for review to APVMA and used for future applications for approval.

Competitive Landscape

VGX does not believe there are any other comparable products in the food animal market for the moment. The recombinant growth hormone protein preparations from Monsanto are currently the closest competitor Posilac® indicated to increase milk production in dairy cows (used in approximately 30% of all dairy in the US), and porcine somatotropin used in the finishing phase in pigs in Australia. These products have the disadvantage of requiring frequent administrations (once every 14 days in dairy cows; every day for the last two weeks before slaughter in pigs) and often resulting in adverse effects in treated animals.

Commercialization Plan

On September 10, 2008, VGX Animal Health, Inc., or VGXAH, a majority-owned subsidiary of VGX, signed a Marketing & Distribution Agreement with Country Vet Wholesaling Pty Ltd, an Australian proprietary company, for the sale of LifeTide SW5. In addition, VGXAH has submitted an application for marketing approval in New Zealand, and plans to seek marketing approvals in several other countries in South East Asia, including the Philippines and Indonesia. VGX has also initiated studies to support regulatory approval of this technology in other major markets, including the U.S. and China.

Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of VGX's financial condition and results of operations should be read in conjunction with VGX's Audited Consolidated Financial Statements and Notes thereto included elsewhere in this joint proxy statement/prospectus. This discussion and analysis contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements with regards to VGX's revenue, spending, cash flow, products, actions, plans, strategies and objectives. Forward-looking statements include, without limitation, any statement that may predict, forecast, indicate or simply state future results, performance or achievements, and may contain the words "believe," "anticipate," "expect," "estimate," "intend," "plan," "project," "will be," "will continue," "will result," "could," "should," "would," "may," "might," or any variations of such words with similar meanings. Any such statements are subject to risks and uncertainties that could cause our actual results to differ materially from those which are VGX's management's current expectations or forecasts. Such information is subject to the risk that such expectations or forecasts, or the assumptions underlying such expectations or forecasts, become inaccurate. Such risks and uncertainties are further discussed in this joint proxy statement/prospectus under "Risk Factors" beginning on page 26.

Critical Accounting Policies

The SEC defines critical accounting policies as those that are, in management's view, important to the portrayal of VGX's financial condition and results of operations and require management's judgment. VGX's discussion and analysis of its financial condition and results of operations is based on its unaudited consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these consolidated financial statements requires VGX to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses. VGX bases its estimates on experience and on various assumptions that VGX believes are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from those estimates. VGX's critical accounting policies include:

Revenue Recognition. Revenue is recognized in accordance with SAB No. 104, Revenue Recognition in Financial Statements and EITF Issue 00-21, Revenue Arrangements with Multiple Deliverables. VGX has been awarded contracts from the government as well as grants from certain third-party organizations to help fund research for the technologies and drugs that VGX is attempting to bring to full commercial use. Once research and development expenditures qualifying under the grant are incurred, grant reports are periodically completed and submitted to the granting agency for review. If approved, the granting agency will then remit payment to VGX. Such amounts are recorded as revenue upon receipt.

License fees are comprised of initial fees and milestone payments derived from collaborative licensing arrangements. VGX recognizes non-refundable milestone payments upon the achievement of specified milestones upon which VGX has earned the milestone payment, provided the milestone payment is substantive in nature and the achievement of the milestone was not reasonably assured at the inception of the agreement. VGX defers payments for milestone events which are reasonably assured and recognize them ratably over the minimum remaining period of its performance obligations. Payments for milestones which are not reasonably assured are treated as the culmination of a separate earnings process and are recognized as revenue when the milestones are achieved.

With regards to revenue recognition related to product sales, VGX recognizes revenue in accordance with SAB No. 104 and records revenue when it has satisfied all the requirements under SAB No. 104.

With regard to contract manufacturing services, VGX recognizes revenue from the DNA plasmids it produces for its customers, to their specifications, only upon shipment from its premises, at which

time title and all benefits and risks of ownership pass to the customer. The value of the inventory includes the cost of raw materials, direct labor and facility overhead. Overhead costs include indirect manufacturing costs such as utilities and depreciation that cannot be directly linked to the production of specific products.

Deferred revenue represents billings for products and services which will be recognized when the products are shipped or the services provided. VGX manufactures DNA plasmids for its customers, to their specifications, in compliance with the terms and conditions outlined in a contract or master services agreement. The agreements typically consist of a series of payments, to be made to VGX at specified points during the production process, which typically spans several months. As a result, payments are made to VGX for these contracted services in advance of, and during, the production process, and are recorded as deferred revenue on the balance sheet until the product is shipped to the customer, at which time revenue is recognized. During 2007, several progress payments were made to VGX from its customers; however, at the request of the customer, VGX stored the inventory in its facility, thus resulting in a significant amount of deferred revenue at December 31, 2007. Since these services were sold as part of the asset purchase agreement executed in 2008, the deferred revenue on the consolidated balance sheet at the time of the sale was considered in the calculation of the gain on the sale of these assets.

Cost of Sales. Cost of product sales includes costs to manufacture and purchase inventory sold to customers, along with shipping, handling and distribution expenses incurred in delivering these goods to customers. Also included in product sales are unabsorbed labor and overhead costs incurred at the DNA plasmid manufacturing facility not directly related to the production of inventory held for sale to customers.

Research and Development Expenses. Since VGX's inception, virtually all of its activities have consisted of research and development efforts related to developing its DNA vaccines and electroporation technologies and its small molecule drug programs. VGX expenses all such expenditures in the period incurred. VGX's expenses related to clinical trials are based on services received and efforts expended pursuant to contracts with multiple research institutions and clinical research organizations that conduct and manage clinical trials on its behalf. The financial terms of these agreements are subject to negotiation and vary from contract to contract and may result in uneven payment flows. Generally, these agreements set forth the scope of work to be performed at a fixed fee or unit price. Payments under the contracts depend on factors such as the successful enrollment of patients or the completion of clinical trial milestones. Expenses related to clinical trials generally are accrued based on contracted amounts applied to the level of patient enrollment and activity according to the protocol. If timelines or contracts are modified based upon changes in the clinical trial protocol or scope of work to be performed, VGX modifies its estimates accordingly on a prospective basis.

Valuation of Goodwill and Intangible Assets. VGX's business acquisitions typically result in goodwill and other intangible assets, and the recorded values of those assets may become impaired in the future. Acquired intangible assets are still being developed for the future economic viability contemplated at the time of acquisition. VGX is concurrently conducting Phase I and pre-clinical trials using the acquired intangibles, and VGX has entered into certain significant licensing agreements for use of these acquired intangibles.

As of December 31, 2008, VGX's goodwill and intangible assets resulting from acquisition costs of ADViSYS, Inc., net of accumulated amortization, totaled $4.0 million. The determination of the value of such intangible assets requires management to make estimates and assumptions that affect VGX's consolidated financial statements. VGX assesses potential impairments to intangible assets when there is evidence that events or changes in circumstances indicate that the carrying amount of an asset may not be recovered. VGX's judgments regarding the existence of impairment indicators and future cash

flows related to intangible assets are based on operational performance of VGX's acquired businesses, market conditions and other factors. If impairment is indicated, VGX reduces the carrying value of the intangible asset to fair value. As of December 31, 2008, VGX has recognized impairment costs associated with the customer lists and a portion of the assembled workforce acquired from ADViSYS, Inc. when the manufacturing operations based in The Woodlands, TX were sold to a related party.

Although there are inherent uncertainties in this assessment process, the estimates and assumptions VGX uses are consistent with VGX's internal planning. If these estimates or their related assumptions change in the future, VGX may be required to record an impairment charge on all or a portion of VGX's goodwill and intangible assets. Furthermore, VGX cannot predict the occurrence of future impairment-triggering events nor the impact such events might have on VGX's reported asset values. Future events could cause VGX to conclude that impairment indicators exist and that goodwill or other intangible assets associated with VGX's acquired businesses are impaired. Any resulting impairment loss could have an adverse impact on VGX's consolidated results of operations.

VGX expenses patent and related legal costs as well as trademark and license costs as they are incurred.

Stock-Based Compensation. Stock-based compensation cost is estimated at the grant date based on the fair-value of the award and is recognized as an expense ratably over the requisite service period of the award. Determining the appropriate fair-value model and calculating the fair value of stock-based awards at the grant date requires considerable judgment, including estimating stock price volatility, expected option life and forfeiture rates. VGX develops its estimates based on historical data. If factors change and VGX employs different assumptions in future periods, the compensation expense that is to be recorded may differ significantly from what has been recorded in the current period. A small change in the estimates used may have a relatively large change in the estimated valuation. VGX uses the Black-Scholes pricing model to value stock option awards. VGX recognizes compensation expense using the straight-line amortization method.

Recent Accounting Pronouncements

In May 2008, the Financial Accounting Standards Board ("FASB") issued Staff Position No. APB 14-1, Accounting for Convertible Debt Instruments That May Be Settled in Cash upon Conversion (Including Partial Cash Settlement) ("FSP APB 14-1"). This Staff Position clarifies that convertible debt instruments that may be settled in cash upon conversion (including partial cash settlement) are not addressed by paragraph 12 of APB Opinion No. 14, Accounting for Convertible Debt and Debt Issued with Stock Purchase Warrants. Additionally, this Staff Position specifies that issuers of such instruments should separately account for the liability and equity components in a manner that will reflect the entity's nonconvertible debt borrowing rate when interest cost is recognized in subsequent periods. FSP APB 14-1 is effective for financial statements issued for fiscal years beginning after December 15, 2008, and interim periods within those fiscal years. Early adoption is not permitted. VGX does not expect the adoption of this accounting guidance to have a material impact on the consolidated results of operations or financial position.

In May 2008, the Financial Accounting Standards Board issued SFAS No. 162, The Hierarchy of Generally Accepted Accounting Principles ("SFAS No. 162"). SFAS No. 162 identifies the sources of accounting principles and the framework for selecting the principles to be used in the preparation of financial statements that are presented in conformity with U.S. GAAP. VGX is currently evaluating the impact that SFAS No. 162 will have on its consolidated financial statements.

Effective January 1, 2008, VGX has adopted the provisions of Financial Accounting Standards Board Statement No. 157, Fair Value Measurements ("SFAS No. 157") to measure assets and liabilities. SFAS No. 157 establishes a common definition for fair value to be applied to U.S. GAAP requiring use

of fair value, establishes a framework for measuring fair value, and expands disclosure about such fair value measurements. SFAS No. 157 is effective for financial assets and financial liabilities for fiscal years beginning after November 15, 2007. Issued in February 2008, 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, removed leasing transactions accounted for under Statement 13 and related guidance from the scope of SFAS No. 157. FSP 157-2 Partial Deferral of the Effective Date of Statement 157 (FSP 157-2), deferred the effective date of SFAS No. 157 for all nonfinancial assets and nonfinancial liabilities to fiscal years beginning after November 15, 2008. The partial implementation of SFAS No. 157 for financial assets and financial liabilities, effective January 1, 2008, did not have a material impact on VGX's consolidated financial statements. VGX is currently assessing the impact of SFAS No. 157 for non-financial assets and non-financial liabilities on its consolidated financial statements.

VGX management anticipates that, based on the composition of its existing assets and liabilities, the valuations used to estimate the fair value will rely on observable and unobservable inputs. Observable inputs are those that reflect a public market, whereas unobservable inputs are those that reflect management's assumptions about the assumptions market participants would use in pricing the underlying asset or liability. VGX management does not believe that SFAS No. 157 will have a material impact on the amounts reported in the financial statements; however, additional disclosures about the inputs used to develop the measurements of fair value and the effects of certain measurements reported in the consolidated statements of operations for a fiscal period will be required.

Effective January 1, 2008, VGX adopted Financial Accounting Standards Board Statement No. 159, The Fair Value Option for Financial Assets and Financial Liabilities ("SFAS No. 159"). SFAS No. 159 provides companies with an option to report selected financial assets and liabilities at fair value. The Statement also establishes presentation and disclosure requirements designed to facilitate comparisons between companies that choose different measurement attributes for similar types of assets and liabilities. SFAS No. 159 requires companies to provide additional information that will help investors and other users of financial statements to more easily understand the effect of a company's choice to use fair value on its earnings. Adoption of SFAS No. 159 did not have an impact on VGX's consolidated results of operations and financial position.

In December 2007, the Financial Accounting Standards Board issued Statement No. 141 (revised 2007), Business Combinations ("SFAS No. 141(R)"), which is effective for financial statements issued for fiscal years beginning on or after December 15, 2008. SFAS No. 141(R) establishes principles and requirements for how an acquirer recognizes and measures in its financial statements the identifiable assets acquired, the liabilities assumed, any non-controlling interest in the acquiree, and the goodwill acquired in the business combination. SFAS No. 141(R) also establishes disclosure requirements to enable the evaluation of the nature and financial effects of the business combination. FAS 141(R) will be applied prospectively. VGX does not expect the adoption of SFAS 141(R) to have a material impact on the consolidated financial statements.

In December 2007, the FASB issued SFAS No. 160, Non-controlling Interests in Consolidated Financial Statements (an amendment of Accounting Research Bulletin No. 51) ("SFAS No. 160"). SFAS No. 160 requires that non-controlling (minority) interests be reported as a component of equity, that net income attributable to the parent and to the non-controlling interest be separately identified in the income statement, that changes in a parent's ownership interest while the parent retains its controlling interest be accounted for as equity transactions, and that any retained non-controlling equity investment upon the deconsolidation of a subsidiary be initially measured at fair value. This statement is effective for fiscal years beginning after December 31, 2008, and shall be applied prospectively. However, the presentation and disclosure requirements of SFAS No. 160 are required to be applied retrospectively for all periods presented. The retrospective presentation and disclosure requirements of this statement will be applied to any prior periods presented in financial statements for the fiscal year

ending December 31, 2009, and later periods during which VGX had a consolidated subsidiary with a non-controlling interest.

In November 2007, the FASB ratified EITF Issue No. 07-1, Accounting for Collaborative Agreements Related to the Development and Commercialization of Intellectual Property. EITF Issue No. 07-1 defines collaborative agreements as a contractual arrangement in which the parties are active participants to the arrangement and are exposed to the significant risks and rewards that are dependent on the ultimate commercial success of the endeavor. Additionally, it requires that revenue generated and costs incurred on sales to third parties as it relates to a collaborative agreement be recognized as gross or net based on EITF Issue No. 99-19, Reporting Revenue Gross as a Principal versus Net as an Agent . It also requires payments between participants to be accounted for in accordance with already existing generally accepted accounting principles, unless none exist, in which case a reasonable, rational, consistent method should be used. EITF Issue No. 07-1 is effective for fiscal years beginning after December 15, 2008 for all collaborative arrangements existing as of that date, with retrospective application to all periods. VGX management is currently evaluating the impact of this standard and does not anticipate the adoption of EITF Issue No. 07-1 to have a material impact on VGX's consolidated financial statements.

In July 2006, the FASB issued Interpretation No. 48, "Accounting for Uncertainty in Income Taxes" ("FIN 48"). FIN 48 prescribes detailed guidance for the financial statement recognition, measurement and disclosure of uncertain tax positions recognized in an enterprise's financial statements in accordance with FASB Statement No. 109, "Accounting for Income Taxes" ("SFAS No. 109"). Tax positions must meet a more-likely-than-not recognition threshold at the effective date to be recognized upon the adoption of FIN 48 and in subsequent periods. FIN 48 will be applied to all tax positions accounted for under SFAS No. 109 upon initial adoption.

VGX adopted FIN 48 effective January 1, 2008 with no impact on its consolidated financial statements. VGX recognizes interest and penalties, if any, related to uncertain tax positions in income tax expense. Upon adoption of FIN 48, VGX had no interest or penalties accrued related to uncertain tax positions, due to the net operating loss carryforwards that VGX has available.

Results of Operations for the Year Ended December 31, 2008 Compared to the Year Ended December 31, 2007

The audited consolidated financial data for the years ended December 31, 2008 and December 31, 2007 and the period from December 12, 2000 (Inception) to December 31, 2008 is presented in the following table and the results of these periods are used in the discussion thereafter.

	December 31, 2008	December 31, 2007	Increase/ (Decrease) $	Period From December 12, 2000 (Inception) to December 31, 2008
Revenue:				
Revenue from Product Sales	$ 606,211	$ 723,411	$ (117,200)	$ 1,329,622
Government Contract Revenue	1,990,411		1,990,411	1,990,411
Government Grant Revenue	86,120	668,955	(582,835)	1,827,528
License Fee Revenue				75,000
Revenue from Related Parties	376,072		376,072	376,072
Other Operating Revenue, net	68,425	36,448	31,977	104,873
Total Revenue	**3,127,239**	**1,428,814**	**1,698,425**	**5,703,506**
Operating Expenses				
Cost of Product Sales	2,237,238	2,204,254	32,984	4,441,492
Research & Development	13,125,479	10,781,960	2,343,519	39,184,588
General & Administrative	7,808,636	5,082,119	2,726,517	32,969,708
TOTAL Operating Expenses	**23,171,353**	**18,068,333**	**5,103,020**	**76,595,788**
Loss from Operations	**(20,044,114)**	**(16,639,519)**	**3,404,595**	**(70,892,282)**
Other Income (Expense):				
Gain on Sale of Manufacturing Assets to Related Party, net of tax	6,653,153		6,653,153	6,653,153
Losses from Equity Investment in Affiliated Entity	(1,632,812)	(990,338)	642,474	(3,648,681)
Interest Income	423,312	919,026	(495,714)	2,289,676
Interest Expense	(712,242)	(1,128,713)	(416,471)	(3,043,402)
Other Income	218,557		218,557	218,557
Minority Interest	267,634	43,503	224,131	311,137
Total Other Income (Expense)	**5,217,602**	**(1,156,522)**	**6,374,124**	**2,780,440**
Net Loss	**$ (14,826,512)**	**$ (17,796,041)**	**$ (2,969,529)**	**$ (68,111,842)**

Revenue. VGX had total revenue of $3,127,000 and $1,429,000 for the years ended December 31, 2008 and 2007, respectively, and $5,704,000 for the period from December 12, 2000 (inception) through December 31, 2008. It primarily consists of revenue from the DNA contract manufacturing facility acquired from ADViSYS, Inc. in February 2007, sales of Animal Health's LifeTide SW5 product in Australia, government contract and grant revenue, R&D license and cost sharing fees, rental and fees from sublease and consulting agreements with a related party, and other sources including rental of VGX's electroporation devices, sales of associated arrays, and sales of animals used in research activities.

Revenue from product sales to customers of the DNA manufacturing facility for the years ended December 31, 2008 and 2007 totaled $566,000 and $723,000, respectively. This revenue reflects shipments to a customer in the United Kingdom, in response to their supply needs. These manufacturing operations and assets were sold to a related party in June 2008. Revenue from DNA

contract manufacturing operations from December 12, 2000 (inception) through December 31, 2008 was $1,290,000.

Also included in revenue from product sales for the year ended December 31, 2008 and the period from December 12, 2000 (inception) to December 31, 2008, is $40,000 from sales of Animal Health's LifeTide SW5 product in Australia. As marketing approval for this product was received in January 2008, there were no sales recorded in prior periods.

Revenue from the contract with the Defense Threat Reduction Agency (DTRA) to develop VGX's constant current electroporation technology for intradermal (ID) delivery of DNA vaccines and therapeutics was $1,990,000 for the year ended December 31, 2008 as well as for the period from December 12, 2000 (inception) to December 31, 2008. Although the work related to this contract began upon the award in August of 2007, revenues were recorded only after the completion of the DCAA audit establishing VGX as an approved vendor, and once the vouchers for the incurred expenses were approved and the reimbursements were received. As such the first revenues related to the DTRA contract were recognized in 2008.

From May 2003 to April 2008, VGX was granted a sub-award, in conjunction with the University of Pennsylvania, to conduct research activities on a smallpox vaccine for approximately $80,000 per annum. During the year ended December 31, 2008 and 2007, revenue from this grant of $86,000 and $43,000, respectively, was recorded. As noted this sub-award for the development of smallpox vaccines ended on April 30, 2008; it is not expected to be renewed. The remaining $626,000 in grant revenues recognized in the year ended December 31, 2007 consisted of an NIH grant for the Preclinical Test of Biodefense Drug for SEB Toxin Exposure. The reduction in this revenue in 2008 is indicative of the terms of the award, with the majority of activities being conducted in previous years. For the period from December 12, 2000 (inception) to December 31, 2008, revenue from government grants totaled $1,828,000.

Revenue from license fees received by VGX from third parties from December 12, 2000 (inception) through December 31, 2008 totaled $75,000.

For the year ended December 31, 2008, VGX recognized revenue from related parties of $376,000 which consisted of licensing and cost sharing fees of $200,000, rent from a sublease agreement on The Woodlands manufacturing and office facility of $119,000, and consulting fees for DNA plasmid manufacturing support of $57,000. No related party revenue was recognized for any prior periods.

Other operating revenue for the year ended December 31, 2008 reflects $41,000 in revenue from the sale of research animals no longer needed for studies, $23,000 from shipping costs paid to VGX from a manufacturing customer at the completion of the production campaign, and $5,000 from sales of electroporation arrays. Other operating revenue for the year ended December 31, 2007 was $37,000, which represents rental of electroporation devices, sales of associated arrays and research consulting fees. For the period from December 12, 2000 (inception) through December 31, 2008, other operating revenue totaled $105,000.

Cost of Product Sales Expenses. Cost of product sales for the years ended December 31, 2008 and 2007 were $2,237,000 and $2,204,000, respectively, and $4,441,000 for the period from December 12, 2000 (inception) to December 31, 2008. Costs of products manufactured for DNA plasmid customers totaled $331,000 and $626,000 in 2008 and 2007, respectively, and expenses associated with the first shipment of Animal Health's LifeTide SW5 product for sale in Australia, totaled $108,000 in 2008. Collaborative efforts between manufacturing and research are currently underway to decrease the production cost of the LifeTide SW5 in order to improve its gross margin. Also included in cost of product sales for 2008 and 2007 is $1,798,000 and $1,578,000, respectively, of unabsorbed labor and overhead resulting from underutilization of the manufacturing facility.

Research and Development Expenses. Research and development expenses, which include clinical trial costs and pre-clinical research activities, for the years ended December 31, 2008 and 2007, were $13.1 million and $10.8 million, respectively. The increase in research and development expenses for the year ended December 31, 2008, as compared to the year ended December 31, 2007, was primarily related to the milestone payment incurred in conjunction with the acquisition of ADViSYS, and increased spending for preclinical and research projects, including the DTRA and NIAID contracts. For the period from December 12, 2000 (inception) through December 31, 2008, total research and development expenses totaled $39,185,000.

General and Administrative Expenses. General and administrative expenses, which include marketing expenses, business development expenses and the amortization of intangible assets, for the years ended December 31, 2008 and 2007 were $7.8 million and $5.1 million, respectively. The increase in general and administrative expenses for the year ended December 31, 2008 as compared to 2007 was primarily related to an increase in stock-based compensation as a result of the option re-pricing that took place in September 2008, as well as increased intangible asset amortization for two additional months in 2008 (in 2007, the intangible assets were amortized 10 months out of the year since the acquisition of ADViSYS took place at the end of February, 2007), production of marketing materials and product samples and supplies associated with Animal Health's LifeTide SW5 product approved for sale in Australia in January 2008, and increased spending for outside consulting services and legal and accounting fees related to the execution of the definitive merger agreement with INOVIO. These increases are partially offset by a reduction in stock-based compensation for a former related party employee whose options vested completely in June of 2007. For the period from December 12, 2000 (inception) to December 31, 2008, general and administrative expenses totaled $32,970,000.

Stock-Based Compensation. Stock-based compensation cost is measured at the grant date, based on the fair value of the award reduced by estimated forfeitures, and is recognized as expense over the employee's requisite service period. Total compensation cost under SFAS No. 123(R) for VGX's stock plans for the year ended December 31, 2008 was $8,624,000, of which $2,158,000 was included in research and development expenses and $6,466,000 was included in general and administrative expenses. Total compensation cost under SFAS No. 123(R) for VGX's stock plans for the year ended December 31, 2007 was $5,473,000, of which $1,150,000 was included in research and development expenses and $4,323,000 was included in general and administrative expenses. The increase in stock-based compensation expenses for research and development in the year ended December 31, 2008 as compared to 2007 is attributable to the issuance of shares upon the attainment of a key milestone. The increase in stock-based compensation expenses for general and administrative in the year ended December 31, 2008 as compared to 2007 reflects the option re-pricing that took place in September 2008. For the period from December 12, 2000 (inception) through December 31, 2008, total stock-based compensation recorded by VGX is $37,830,000.

Gain on Sale of Manufacturing Assets. On June 10, 2008, an Asset Purchase Agreement was executed whereby all of the manufacturing assets of VGX were sold to a related party. VGX had not previously contemplated the sale of it manufacturing assets, as it was considered to be a part of its overall strategy of becoming a key player in the DNA Vaccines industry. The proceeds from the sale of the assets were to be used to fund VGX's clinical trials as well as redeem convertible debt. While having an internal DNA plasmid manufacturing operation allowed VGX the flexibility and control over the manufacturing of its DNA plasmids, VGX management believed that any potential manufacturing risk could be mitigated through the use of alternate sourcing and supply agreements. In arriving at the selling price, the VGX management, considered in part a report by an independent third party valuation firm who used various valuation methodologies including DCF, Revenue Multiples, and Comp Analysis to determine the value of the manufacturing assets. As such, the board of VGX approved the asset sale and the deal was consummated on June 10, 2008.

For the year ended December 31, 2008 and the period from December 12, 2000 (inception) through December 31, 2008, VGX recognized a one-time gain on the sale of its manufacturing assets of $6,653,000, net of tax of $69,500. The recorded gain was net of VGX's 30.37% stake in VGX International of $2,902,000.

Losses from Equity Investment in Affiliated Entity. VGX recorded expense for the years ended December 31, 2008 and 2007 of $1,633,000 and $990,000, respectively, which reflects VGX's ownership share of the losses of VGX International, Inc., which is accounted for by the equity method in VGX's financial statements. The increase in losses from 2007 to 2008 is attributable to the increased R&D spending by VGX International related to the clinical trial support of VGX-1027. For the period from December 12, 2000 (inception) through December 31, 2008, VGX's portion of losses in VGX International reflected in the consolidated statements of operations is $3,649,000.

Interest Income. Interest income for the years ended December 31, 2008 and 2007 was $423,000 and $919,000, respectively. The decrease in interest income for the year ended December 31, 2008, as compared to 2007, was primarily due to lower cash and investment balances and a lower average interest rate. Interest income from December 12, 2000 (inception) through December 31, 2008 totaled $2,290,000.

Interest Expense. VGX recorded interest expense for the years ended December 31, 2008 and 2007 of $712,000 and $1,129,000, respectively. Included in this expense is interest accrued on loans from investors of $583,000 and $909,000 for the years ended December 31, 2008 and 2007, respectively. The reduction in interest expense is reflective of loans that have been repaid in 2007 and 2008. Also reflected in interest expense is amortization of debt issuance costs of $129,000 and $126,000 for the years ended December 31, 2008 and 2007, respectively. These costs were being amortized over the term of the borrowings, and were fully amortized when the liability related to these costs was satisfied with the issuance of 71,000 stock options in September 2008. For the period from December 12, 2000 (inception) through December 31, 2008, interest expense totaled $3,043,000, which consists of $2,563,000 of interest on loans to investors, $386,000 of debt issuance cost amortization, and $94,000 of foreign currency losses related to repayment of certain loans issued in foreign currency during 2007.

Other Income, net. For the year ended December 31, 2008 and the period from December 12, 2000 (inception) through December 31, 2008, VGX reflected $227,000 in other income, representing the gain realized on the settlement of the liability related to debt issuance costs, which is indicative of a reduction in the stock price from the time the liability was incurred until September 2008, when it was satisfied with the issuance of 71,000 stock options to the investor who was instrumental in assisting VGX with raising funds for the company. This income is partially offset by exchange losses realized on the collection of accounts receivable for product sold by Animal Health in Australia of $8,000 for the year ended December 31, 2008 and the period from December 12, 2000 (inception) through December 31, 2008.

Minority Interest. For the years ended December 31, 2008 and 2007, VGX reflected $267,000 and $44,000, respectively, in minority interest, reflecting the portion of Animal Health's losses attributable to third party stockholders. For the period from December 12, 2000 (inception) through December 31, 2008, VGX reflected $311,000 of minority interest in its consolidated statements of operations.

Income Taxes. Since inception, VGX has incurred operating losses and accordingly has not recorded a provision for income taxes for any of the periods presented. As of December 31, 2008, VGX had net operating loss carry forwards for federal and state income tax purposes of approximately $36.3 million and $30.1 million, respectively, which will expire in 2021 through 2028 if not utilized. Utilization of net operating losses is subject to a substantial annual limitation due to ownership change limitations provided by the Internal Revenue Code of 1986, as amended.

Liquidity and Capital Resources

Historically, VGX's primary uses of cash have been to finance research and development activities including clinical trial activities in its small molecule drug programs as well in the DNA vaccines and other immunotherapy areas of its business. Since inception, VGX has satisfied its cash requirements principally from proceeds of convertible notes and common stock offerings to investors. In 2008, VGX repaid $6,810,000 in notes along with interest of approximately $686,000 to investors. As of December 31, 2008, there were $6,540,000 in notes and convertible notes outstanding. VGX is currently expected to repay $2,140,000 in notes along with accrued interest of approximately $326,000 in 2009. The $3,000,000 tranche due from the related party for the manufacturing asset sale is to be used for the repayment of notes. The remaining $4.4 million in convertible notes are to be repaid in 2010, unless they are converted into common stock per existing conversion terms.

In 2008, VGX earned $200,000 in revenue from a related-party upon the execution of two license agreements, which is to be collected in 2009.

VGX has multiple license agreements with various entities which have had, and may have material impact on cash outlay in the future. In 2007, VGX paid a total of $125,000 to two institutions related to signing of two separate license agreement. In 2008 VGX paid a total of $175,000 to two institutions related to license agreements. The payment for $125,000 was triggered upon the filing of the IND for the HPV clinical trial, while the remaining $50,000 was for the annual maintenance fee related to an existing license agreement and for the execution of an amendment to an existing license agreement.

There are also several future milestone payments by VGX to various licensors which may be relevant to cash in the short and mid-term. These include a $50,000 payment upon the completion of patient enrollment for a Phase II trial of VGX-1027, a $250,000 payment upon the enrollment of first subject in a Phase II trial of VGX-3100, and a $25,000 annual maintenance fee related to an existing license agreement. VGX has also committed to an annual payment of $443,000 in support of a Sponsored Research Agreements with a University; the commitment is expected to decrease to $236,000 per annum starting 2011.

In June 2008, VGX sold its DNA plasmid contract manufacturing operations and assets to a related party. From the period from inception (December 12, 2000) through December 31, 2008, cash provided by these contract manufacturing operations amounted to $1.2 million. This was the result of the $6.7 million gain on the sale of the manufacturing assets which took place in June 2008, offset by cash used in the manufacturing operations of $5.5 million. Following the sale of the manufacturing assets, VGX believes that it will be in a better position to focus on its strategic objectives and devote its resources exclusively to research and clinical development of novel product candidates.

VGX has over the years demonstrated its ability to attain government/non-governmental organization (NGO) grants and contracts in support of its research activities. Since its inception, VGX recognized $3.8 million in revenues from government contracts and grants. In 2008, VGX was awarded a $23.5 million NIH contract to develop a DNA-based preventive HIV Vaccine delivered via electroporation. The term of the contract is five-years, renewable annually, with two option years that can extend the term of the contract to seven years. The contract is expected to subsidize VGX's critical research efforts and help alleviate cash requirements. However, there is no guarantee that the contract will be renewed every year until its scheduled termination date. Although VGX plans to actively continue pursuing government/NGO grant and contract opportunities to subsidize its research efforts, there is no guarantee that it will be able to continue its success in the future.

As of December 31, 2008, VGX had working capital of $3.3 million, as compared to $1.7 million as of December 31, 2007. The increase in working capital during the year ended December 31, 2008 was primarily due to extending terms of existing debt and reclassifying these notes to long-term, along with the proceeds from the sale of the manufacturing assets through an asset purchase agreement with

a related party in June 2008, and the attendant removal of liabilities such as deferred revenue that was associated with the manufacturing business. Key factors that consumed working capital were the repayment of notes and accrued interest to investors, and expenditures for research and development activities, maintenance of VGX's patent portfolio, and general and administrative expenses related to consulting, legal, accounting, audit and other professional services in conjunction with the definitive merger agreement executed with INOVIO.

As of December 31, 2008, VGX had an accumulated deficit of $68.1 million. VGX has operated at a loss since December 12, 2000 (inception), and expects this to continue for some time. The amount of the accumulated deficit will continue to increase, as it will be expensive to continue clinical, research and development efforts. If these activities are successful and if VGX receives approval from the FDA to market products and / or equipment, then even more funding will be required to market and sell the products and equipment. The outcome of the above matters cannot be predicted at this time. VGX will evaluate potential partnerships as an additional way to fund operations, and will continue to rely on outside sources of financing to meet capital needs beyond next year.

VGX's long-term capital requirements will depend on numerous factors including:

- The progress and magnitude of the research and development programs, including preclinical and clinical trials;
- The time involved in obtaining regulatory approvals;
- The cost involved in filing and maintaining patent claims;
- Competitor and market conditions;
- The ability to establish and maintain collaborative arrangements;
- The ability to obtain grants to finance research and development projects; and
- The cost of manufacturing scale-up and the cost of commercialization activities and arrangements.

The ability to generate substantial funding to continue research and development activities, preclinical and clinical studies and clinical trials and manufacturing, scale-up, and selling, general, and administrative activities is subject to a number of risks and uncertainties and will depend on numerous factors including:

- The ability to raise funds in the future through private financings, collaborative arrangements, grant awards or from other sources;
- VGX's potential to obtain equity investments, collaborative arrangements, license agreements or development or other funding programs in exchange for manufacturing, marketing, distribution or other rights to products developed by VGX; and
- The ability to maintain existing collaborative arrangements.

VGX cannot guarantee that additional funding will be available when needed or on favorable terms. If it is not, VGX will be required to scale back research and development programs, preclinical studies and clinical trials, and selling, general, and administrative activities, or otherwise reduce or cease operations and VGX's business and financial results and condition would be materially adversely affected.

Executive Compensation

The following table sets forth compensation information for 2008 and 2007 for VGX's president and chief executive officer, the chief financial officer, and other key executives of VGX who will become executive officers of the combined company.

Summary Compensation Table

Name and Principal Position(1)	Year	Salary ($)	Bonus ($)(2)	Option Awards ($)(3)	All Other Compensation ($)(4)	Total ($)
J. Joseph Kim	2008	248,537		3,502,752	1,060	3,752,349
CEO and President	2007	240,000	40,000	1,766,456	4,260	2,050,716
Kevin W. Rassas	2008	145,700		190,492		336,192
Sr. VP of Bus Development	2007	131,667	10,000	186,177	1,467	329,311
Gene J. Kim	2008	165,800		1,976,560		2,142,360
CFO	2007	151,603	15,000	1,090,721	1,967	1,259,290
Niranjan Y. Sardesai	2008	149,179		196,965		346,144
Sr. VP of Research	2007	131,060	14,000	76,775	1,633	223,468
C. Jo White	2008	221,361	43,260	188,745		453,366
CMO	2007	210,000	42,000	209,782	2,767	464,459

(1) The information set forth in this table relates to the executive officer's position at VGX during the 2008 and 2007 fiscal years

(2) Includes bonus earned in 2008 but which were paid in 2009 and earned in 2007 but which were paid in 2008, respectively.

(3) The amounts in the Option Awards column reflect the estimated dollar amounts to be recognized for financial purposes for the fiscal years ended December 31, 2008 and 2007 in accordance with FAS 123(R), for awards pursuant to the VGX 2001 Equity Incentive Plan, and thus includes amounts attributable to awards granted before 2008 and 2007.

(4) For 2008, consists of life insurance premium payment for which the beneficiary is not VGX. For 2007, consists of matching contribution to VGX 401(k) plan and life insurance premium payment in which the beneficiary is not VGX. VGX ended its policy of matching contribution to the VGX 401(k) plan in the second quarter of 2007.

Employment Agreements

VGX utilizes employment agreements for all executive officers, generally when it is necessary to secure the services of a newly hired executive. VGX currently has employment agreements with:

J. Joseph Kim, Ph.D., VGX's President and Chief Executive Officer, effective as of March 31, 2008

Gene J. Kim, VGX's Chief Financial Officer, effective October 1, 2005, amended as of August 20, 2008;

Kevin W. Rassas, VGX's Senior Vice President, Business Development, effective as of December 17, 2005, amended as of August 20, 2008; and

C. Jo. White, Chief Medical Officer, effective as of August 1, 2005, amended as of August 20, 2008; and

Niranjan Y. Sardesai, Ph.D., Senior Vice President, Research and Development, effective as of November 1, 2007, amended as of August 20, 2008 and October 1, 2008.

J. Joseph Kim, Ph.D., Employment Agreement. Under an executive employment agreement, J. Joseph Kim, Ph.D. serves as VGX's President and CEO. Under the terms of the agreement, Dr. Kim is entitled to receive an annual salary of $254,616. He is also eligible to receive an incentive cash bonus up to the amount, based upon the criteria, as may be determined by the board and targeted at 30% or more of the base salary. In addition to the salary and cash bonus, he is also entitled to participate in such employee benefit plans or programs of VGX, and shall be entitled to such other fringe benefits, as are from time to time adopted by the VGX board of directors.

Under VGX's employment agreement with Dr. Kim, if VGX terminates his employment at any time without cause, as defined in the employment agreement, he is entitled to receive severance compensation in the form of monthly payments of his then-current base salary and of the pro rata bonus amount for a period of 24 months following the effective date of such termination. The pro rata bonus amount shall mean one-twelfth of the greater of (A) the most recent annual cash bonus paid prior to his termination, or (B) the average of the three most recent annual cash bonuses paid prior to his termination. VGX will also continue to pay his COBRA premiums for 18 months thereafter.

VGX has change-in-control agreements in place for the chief executive officer. The rationale for the agreement is that in the event of a change in control of VGX, this individual is most likely to lose his job as a result of redundancy in executive position. If Dr. Kim is terminated as a result of change-in-control, Dr. Kim is entitled to receive payments due him under the conditions of termination without cause as outlined above and a lump sum cash severance payment equal to his then-current monthly base salary and the pro rata bonus amount multiplied by 24 but discounted to present value based on applicable federal rate under the Code.

Gene J. Kim Employment Agreement. Under an executive employment agreement, Gene J. Kim serves as VGX's Chief Financial Officer. Under the terms of the agreement, Mr. Kim is entitled to receive an annual salary of $175,512. He is also eligible to receive an incentive cash bonus up to the amount, based upon the criteria, as may be determined by the board and targeted at 20% or more of the base salary. In addition to the salary and cash bonus, he is also entitled to participate in such employee benefit plans or programs of VGX, and shall be entitled to such other fringe benefits, as are from time to time adopted by the VGX board of directors.

Under VGX's employment agreement with Mr. Kim, if VGX terminates his employment at any time without cause, as defined in the employment agreement, he is entitled to receive severance compensation in the form of monthly payments of his then-current base salary and of the pro rata bonus amount for a period of 12 months following the effective date of such termination. The pro rata bonus amount shall mean one-twelfth of the greater of (A) the most recent annual cash bonus paid prior to his termination, or (B) the average of the three most recent annual cash bonuses paid prior to his termination. VGX will also continue to pay his COBRA premiums for six months thereafter.

Kevin W. Rassas Employment Agreement. Under an executive employment agreement, Kevin W. Rassas serves as VGX's Senior Vice President of Business Development. Under the terms of the agreement, Mr. Rassas is entitled to receive an annual salary of $152,961. He is also eligible to receive an incentive cash bonus up to the amount, based upon the criteria, as may be determined by the board and targeted at 30% or more of the base salary. In addition to the salary and cash bonus, he is also entitled to participate in such employee benefit plans or programs of VGX, and shall be entitled to such other fringe benefits, as are from time to time adopted by VGX board of directors.

Under VGX's employment agreement with Mr. Rassas, if VGX terminates his employment at any time without cause, as defined in the employment agreement, he is entitled to receive severance compensation in the form of monthly payments of his then-current base salary and of the pro rata

bonus amount for a period of six months following the effective date of such termination. The pro rata bonus amount shall mean one-twelfth of the greater of (A) the most recent annual cash bonus paid prior to his termination, or (B) the average of the three most recent annual cash bonuses paid prior to his termination. VGX will also continue to pay his COBRA premiums for six months thereafter.

C. Jo White, M.D. Employment Agreement. Under an executive employment agreement, C. Jo White serves as VGX's Chief Medical Officer. Under the terms of the agreement, Dr. White is entitled to receive an annual salary of $222,789. She is also guaranteed to receive a minimum cash bonus of 20% of her annual salary. In addition to the salary and cash bonus, she is also entitled to participate in such employee benefit plans or programs of VGX, and shall be entitled to such other fringe benefits, as are from time to time adopted by the VGX board of directors.

Under VGX's employment agreement with Dr. White, if VGX terminates her employment at any time without cause, as defined in the employment agreement, she is entitled to receive severance compensation in the form of monthly payments of her then-current base salary and of the pro rata bonus amount for a period of six months following the effective date of such termination. The pro rata bonus amount shall mean one-twelfth of the greater of (A) the most recent annual cash bonus paid prior to her termination, or (B) the average of the three most recent annual cash bonuses paid prior to her termination. VGX will also continue to pay her COBRA premiums for six months thereafter.

Niranjan Sardesai, Ph.D. Employment Agreement. Under an executive employment agreement, Niranjan Sardesai, Ph.D. serves as VGX's Senior Vice President of Research and Development. Under the terms of the agreement, Dr. Sardesai is entitled to receive an annual salary of $171,275 per annum. He is also eligible to receive an incentive cash bonus up to the amount, based upon the criteria, as may be determined by the board and targeted at twenty percent (20%) or more of the base salary. In addition to the salary and cash bonus, he is also entitled to participate in such employee benefit plans or programs of VGX, and shall be entitled to such other fringe benefits, as are from time to time adopted by the VGX board of directors.

Under VGX's employment agreement with Dr. Sardesai, if VGX terminates his employment at any time without cause, as defined in the employment agreement, he is entitled to receive severance compensation in the form of monthly payments of his then-current base salary and of the pro rata bonus amount for a period of six months following the effective date of such termination. The pro rata bonus amount shall mean one-twelfth of the greater of (A) the most recent annual cash bonus paid prior to his termination, or (B) the average of the three most recent annual cash bonuses paid prior to his termination. VGX will also continue to pay his COBRA premiums for six months thereafter.

Elements of Post-Termination Compensation

Change-in-Control Agreements. VGX has change-in-control agreements in place for the chief executive officer. The rationale for the agreement is that in the event of a change in control of VGX, this individual is most likely to lose his job as a result of redundancy in executive position. Information regarding applicable payments under the change of control for the named executive officer is provided in executive officer's employment agreement.

Severance. As part of VGX's executive officers employment agreements, any executive currently working for VGX at the executive officer level whose employment is terminated involuntarily is eligible for severance benefits, provided each of their employment agreement requirements are met. The severance pay and benefits that are payable are stated in each executive's employment agreement.

Internal Revenue Code Section 409A

Code Section 409A relates to accounting treatment for deferred compensation. VGX is aware that it had granted options and warrants which did not comply with the provisions of Section 409A of the

Code. In September 2008, the VGX board of directors approved two methods to bring these non-compliant stock options and warrants into compliance with section 409A of the Code. Each holder of non-compliant options and warrants was given the choice of either agreeing to reset the exercise price at a value that was no less than the fair market value of VGX common stock on the date of repricing, or making a forward election in which the holder was given the option to choose a date after December 31, 2008 on or after which to exercise the stock option and warrant. The new grant prices were determined and were the responsibility of VGX Board of Directors and management, which considered in part preliminary work performed by an independent valuation firm.

Impact of FAS 123R

FAS 123R requires companies to record option grants as expenses at the time of grant. Option expense is one factor that VGX considers in the design of VGX's long-term compensation programs. Other factors include:

- the link to performance that each type of equity award provides;
- the degree of upside leverage and downside risk inherent in each type of award;
- the impact on dilution and overhang that the different equity awards have; and
- the role that each type of equity award has in the attraction, retention, and motivation of VGX's executive and key employee talent.

VGX monitors its FAS 123R expense to ensure that it is reasonable, although expense is not the most important factor in making decisions about VGX's long-term incentive plans.

Option Repricing

In September 2008, the VGX board of directors approved a re-pricing of certain high priced options issued to employee and consultants to lower the grant price in order to improve employee morale. The options were re-priced to new grant prices which ranged from $1.00 to $2.25. The new grant prices were determined and were the responsibility of the VGX Board of Directors and management, which considered in part preliminary work performed by an independent valuation firm. The grant price prior to the re-pricing was $5.00. The repricing of the options was done in accordance with FAS 123R. Using the Black-Scholes Option Pricing Model, the fair values of the modified options at the modification date were calculated. This was then compared against the fair values of the original options at the modification date. The differences between the two were recognized as compensation expense over the remaining life of the options. If the vesting schedule of the options were accelerated, the additional compensations expenses were recognized immediately as opposed to over the length of the vesting schedule. The re-pricing will create an additional non-cash compensation charge of $2,968,745, $324,123, and $52,734 in 2008, 2009, and 2010, respectively.

There was an additional re-pricing of options that were not compliant with Section 409A. In this case, the grant prices of the options were adjusted upwards from $.025 to $.50 to $1.00 to $1.25. As the fair values of the modified options at the modification date was lower than the fair values of the original options at the modification date, no additional compensations expenses were recognized; this is consistent with the fact that the grantees were giving up lower-priced options for the higher-priced ones.

Options Exercised

There were no options exercised by VGX named executive officers during 2008.

Outstanding Equity Awards as of December 31, 2008

The following tables set forth certain information with respect to outstanding equity awards to the named executive officers under VGX equity incentive plans during 2008.

	OPTION AWARDS			
Name	**Number of Securities Underlying Unexercised Options (#) Exercisable**	**Number of Securities Underlying Unexercised Options (#) Unexercisable**	**Option Exercise Price ($)**	**Option Expiration Date**
(a)	**(b)**	**(c)**	**(d)**	**(e)**
J. Joseph Kim	1,000,000		1.25	05/01/2016
President and CEO	400,000	200,000	1.25	1/18/2017
	83,333	166,667	1.25	09/28/2017
		200,000	1.25	09/12/2018
	1,483,333	566,667		
Gene J. Kim				
	150,000		1.25	10/1/2015
CFO	500,000		1.25	5/1/2016
	233,333	116,667	1.25	1/18/2018
	66,667	133,333	1.25	9/28/2017
		200,000	1.25	9/12/2018
	950,000	450,000		
Kevin Rassas				
	200,000		0.05	12/16/2013
Sr. VP, Business Development	400,000		0.20	12/1/2014
	120,000		0.30	12/17/2015
	20,000	10,000	2.25	10/2/2016
	33,333	16,667	2.25	1/18/2017
	5,000	10,000	2.25	11/1/2017
		20,000	1.5	9/12/2018
	778,333	56,667		
Niranjan Sardesai				
	95,000	40,000	1.50	8/28/2016
Sr. VP, Research and Development	16,667	8,333	1.50	1/5/2017
	10,000	5,000	1.50	1/18/2017
	45,000	30,000	1.50	11/1/2017
		50,000	1.50	9/12/2018
	166,667	133,333		

	OPTION AWARDS			
Name	**Number of Securities Underlying Unexercised Options (#) Exercisable**	**Number of Securities Underlying Unexercised Options (#) Unexercisable**	**Option Exercise Price ($)**	**Option Expiration Date**
(a)	**(b)**	**(c)**	**(d)**	**(e)**
C. Jo White	100,000		0.03	10/01/2012
Chief Medical Officer	100,000		1.25	10/01/2012
	100,000		0.20	12/01/2014
	300,000		1.25	09/01/2015
	33,333	16,667	1.25	01/18/2017
		55,000	1.25	09/12/2018