

SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM S-8
REGISTRATION STATEMENT
UNDER THE
SECURITIES ACT OF 1933

VERTEX PHARMACEUTICALS INCORPORATED
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

MASSACHUSETTS
(STATE OR OTHER JURISDICTION
OF INCORPORATION OR ORGANIZATION)

04-3039129
(I.R.S. EMPLOYER
IDENTIFICATION NO.)

130 WAVERLY STREET
CAMBRIDGE, MA 02139-4242
(ADDRESS OF PRINCIPAL EXECUTIVE OFFICES)

AURORA BIOSCIENCES CORPORATION 1996 STOCK PLAN

AURORA BIOSCIENCES CORPORATION EMPLOYEE STOCK PURCHASE PLAN

1993 STOCK OPTION PLAN OF PANVERA CORPORATION

NONQUALIFIED STOCK OPTION AGREEMENT BETWEEN QUORUM SCIENCES, INC. AND UTE MUH

NONQUALIFIED STOCK OPTION AGREEMENT BETWEEN QUORUM SCIENCES, INC. AND
DOUGLAS JOHN BARTELS

NONQUALIFIED STOCK OPTION AGREEMENT BETWEEN QUORUM SCIENCES, INC. AND
STEVE C. WINANS, PH.D.

NONQUALIFIED STOCK OPTION AGREEMENT BETWEEN QUORUM SCIENCES, INC. AND
MICHAEL J. WELSH, M.D.

NONQUALIFIED STOCK OPTION AGREEMENT BETWEEN QUORUM SCIENCES, INC. AND
PAUL V. DUNLAP, PH.D.

NONQUALIFIED STOCK OPTION AGREEMENT BETWEEN QUORUM SCIENCES, INC. AND
J. WOODLAND HASTINGS

NONQUALIFIED STOCK OPTION AGREEMENT BETWEEN QUORUM SCIENCES, INC. AND
UTE MUH, PH.D.

STOCK OPTION AGREEMENT BETWEEN QUORUM SCIENCES, INC. AND
JAMES A. ROMESSER, PH.D.
(FULL TITLES OF THE PLANS)

JOSHUA BOGER, PRESIDENT & CHIEF EXECUTIVE OFFICER
VERTEX PHARMACEUTICALS INCORPORATED
130 WAVERLY STREET
CAMBRIDGE, MA 02139-4242

(617) 577-6000
(NAME, ADDRESS, INCLUDING ZIP CODE, AND TELEPHONE NUMBER, INCLUDING AREA
CODE, OF AGENT FOR SERVICE)

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered(1)	Proposed maximum offering price per share(2)	Proposed maximum aggregate offering price(2)	Amount of registration fee(3)
Common Stock, \$.01 par value	2,757,632 shares	\$14.10	\$38,882,611	\$ 9,721
	310,062 shares	\$39.28	\$12,179,236	\$ 3,045

Rights to Purchase Series A Junior Participating Preferred Stock	(4)	(4)	(4)	None
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- (1) The number of shares of Common Stock, par value \$.01 per share ("Common Stock"), stated above consists of the aggregate number of shares which may be sold (i) upon exercise of options which have been granted under the Aurora Biosciences Corporation 1996 Stock Plan, 1993 Stock Option Plan of PanVera Corporation and Option Agreements between Quorum Sciences, Inc. and certain of its employees and shares of stock which may hereafter be sold under the Aurora Biosciences Corporation Employee Stock Purchase Plan (collectively, the "Plans"). The maximum number of shares which may be sold upon exercise of options granted under the Plans are subject to adjustment in accordance with certain anti-dilution and other provisions of the Plans. Accordingly, pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement covers, in addition to the number of shares stated above, an indeterminate number of shares which may be subject to grant or otherwise issuable after the operation of any such anti-dilution and other provisions.
- (2) Estimated solely for the purpose of determining the registration fee in accordance with Rule 457(c) and (h) under the Securities Act of 1933, as amended, as follows: (i) in the case of shares of Common Stock which may be purchased on the exercise of outstanding options, the fee is calculated based on the weighted average exercise price of the outstanding options; and (ii) in the case of shares of Common Stock which may be purchased under the Aurora Biosciences Corporation Employee Stock Purchase Plan, the price of which is unknown, the fee is calculated on the basis of the average high and low sales prices per share of the Common Stock on The Nasdaq National Market of \$39.28 on July 18, 2001 within 5 business days prior to filing this registration statement.
- (3) Pursuant to Rule 457, the Registrant prepaid the registration fee for 586,977 shares under the Plans when it registered up to 14,725,000 shares of Common Stock pursuant to Registration Statement on Form S-4 (File Number 333-61480) initially filed on May 23, 2001. Therefore, \$2,912 is offset against the total currently due filing fee of \$12,766.
- (4) No separate consideration will be received for the Rights.

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EXPLANATORY NOTE

Vertex Pharmaceuticals Incorporated (the "Registrant") hereby files this Registration Statement on Form S-8 relating to its Common Stock, par value \$0.01 per share, which may be sold upon the exercise of options granted: (i) under the Aurora Biosciences Corporation ("Aurora") 1996 Stock Plan, (ii) under the Aurora Employee Stock Purchase Plan, (iii) under the 1993 Stock Option Plan of PanVera Corporation and (iv) under the Stock Option Agreements between Quorum Sciences, Inc. and certain of its employees (collectively the "Plans").

Pursuant to the merger (the "Merger") provided for in the Agreement and Plan of Merger, dated as of April 29, 2001, among the Registrant, Aurora and Ahab Acquisition Sub, Inc. ("Ahab Sub"), a wholly owned subsidiary of the Registrant, Ahab Sub was merged into Aurora and Aurora became a wholly owned subsidiary of the Registrant effective July 18, 2001. Upon consummation of the Merger, the Registrant assumed the obligations of Aurora under the Plans and each option is governed by the same terms and conditions that governed the applicable option immediately prior to the Merger except that:

- o each such option is exercisable for the number of shares of the Registrant's common stock equal to the number of shares of Aurora common stock issuable upon exercise of the option multiplied by 0.62, rounded down to the nearest whole share;
- o the per share exercise price for the shares of the Registrant's common stock issuable upon the exercise of the assumed option is equal to the exercise price per share of the Aurora option divided by 0.62, rounded up to the nearest whole cent; and
- o each outstanding restricted share of Aurora common stock was converted into the number of restricted shares of the Registrant's Common Stock that is equal to the product of 0.62 multiplied by the shares of Aurora common stock subject to the award.

This Registration Statement relates to the Common Stock of the Registrant issuable upon exercise of the options or which may be sold pursuant to the Plans as follows:

- o 2,616,985 shares subject to the Aurora 1996 Stock Plan.
- o 310,062 shares subject to the Aurora Employee Stock Purchase Plan.
- o 137,947 shares subject to the 1993 Stock Option Plan of PanVera Corporation.
- o 2,700 shares subject to the Stock Option Agreements between Quorum Sciences, Inc. and certain of its employees.

PART I

In accordance with the instructional Note to Part I of Form S-8 as promulgated by the Securities and Exchange Commission, the information specified by Part I of Form S-8 has been omitted from this Registration Statement on Form S-8 for offers of Common Stock pursuant to the Aurora 1996 Stock Plan, the Aurora Employee Stock Purchase Plan, the 1993 Stock Option Plan of PanVera Corporation, and the Stock Option Agreements between Quorum Sciences, Inc. and certain of its employees.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

ITEM 3. INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE.

The following documents filed by the Registrant or Aurora Biosciences Corporation with the Commission are incorporated herein by reference:

(a) The Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2000 (filing date March 26, 2001).

(b) The Registrant's Quarterly Report on Form 10-Q (Commission File No. 000-19319) for the quarter ended March 31, 2001 (filing date May 15, 2001).

(c) The Registrant's Current Report on Form 8-K for the April 29, 2001 event (filing date April 30, 2001).

(d) Aurora's Annual Report on Form 10-K for the fiscal year ended December 31, 2000 (filing date March 15, 2001).

(e) Aurora's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2001 (filing date May 11, 2001).

(f) Aurora's Current Report on Form 8-K for the February 7, 2001 event (filing date February 7, 2001).

(g) Aurora's Current Report on Form 8-K for the March 1, 2001 event (filing date March 7, 2001).

(h) Aurora's Current Report on Form 8-K for the April 2, 2001 event (filing date April 5, 2001).

(i) Aurora's Current Report on Form 8-K for the April 29, 2001 event (filing date April 30, 2001).

(j) Aurora's Current Report on Form 8-K for the March 1, 2001 event (filing date May 18, 2001), which contains financial statements and related information that restate and supercede the financial statements and related information in Aurora's Annual Report on Form 10-K for the fiscal year ended December 31, 2000, filed on March 15, 2001.

(k) Description of the Registrant's Common Stock included in the Registrant's Registration Statement on Form S-4 (Reg. No. 333-61480) filed under the Securities Act of 1933, including any amendment or report filed for the purpose of updating such description.

All reports and other documents filed by the Registrant after the date hereof pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934 prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters

all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be part hereof from the date of filing of such reports and documents.

ITEM 4. DESCRIPTION OF SECURITIES.

Not applicable.

ITEM 5. INTERESTS OF NAMED EXPERTS AND COUNSEL.

Not applicable.

ITEM 6. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Part D of Article 6 of the Restated Articles of Organization of the Registrant provides that no director of the Registrant shall be personally liable to the Registrant or its stockholders for monetary damages for breach of fiduciary duty as a director. Such paragraph provides further, however, that, to the extent provided by applicable law, it will not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the Registrant or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) for distributions made in violation of the Registrant's Restated Articles of Organization or which are made when the Registrant is insolvent or which renders it insolvent, (iv) for loans made to officers or directors of the Registrant which are not repaid if the director has voted for such loans and they have not been approved or ratified as loans reasonably expected to benefit the Registrant, by a majority of directors who are not recipients of such loans or the holders of a majority of voting shares, which holders are not recipients of such loans, and (v) for any transactions from which the director derived an improper personal benefit.

Article V of the Registrant's By-laws provides that the Registrant shall indemnify each of its directors and officers (including persons who serve at the Registrant's request as a director, officer or trustee of another organization in which the Registrant has any interest, direct or indirect, as a stockholder, creditor or otherwise or who serve at the Registrant's request in any capacity with respect to any employee benefit plan) against all liabilities and expenses, including amounts paid in satisfaction of judgments, in compromise or as fines and penalties and counsel fees reasonably incurred by such director or officer in connection with the defense or disposition of any action, suit or other proceeding, whether civil or criminal, in which such director or officer may be involved or with which such person may be threatened, while in office or thereafter, by reason of such person's being or having been such a director, officer or trustee, except with respect to any matter as to which such director or officer shall have been adjudicated in any proceeding not to have acted in good faith in the reasonable belief that such director's or officer's action was in the best interest of the Registrant or, to the extent that such matter relates to service with respect to an employee benefit plan, in the best interest of the participants or beneficiaries of such employee benefit plan.

As to any matter disposed of by a compromise payment by any such person, pursuant to a consent decree or otherwise, Article V of the Registrant's By-laws provides that no indemnification shall be provided to such person for such payment or for any other expenses unless such compromise has been approved as in the best interest of the Registrant, after notice that it involves such indemnification (i) by a disinterested majority of the directors then in office, (ii) by a majority of the disinterested directors then in office, provided there has been obtained an opinion in writing of independent legal counsel to the effect

that such director or officer appears to have acted in good faith in the reasonable belief that such person's action was in the best interest of the Registrant, or (iii) by the holders of a majority of the outstanding stock at the time entitled to vote for directors, voting as a single class, exclusive of any stock owned by any interested director or officer.

Article V of the Registrant's By-laws provides that expenses, including counsel fees, reasonably incurred by any director or officer in connection with the defense or disposition of any such action, suit or other proceeding may be paid from time to time by the Registrant at the discretion of a majority of the disinterested directors then in office, in advance of the final disposition thereof, upon receipt of an undertaking by such director or officer to repay the Registrant the amounts so paid if it is ultimately determined that indemnification for such expenses is not authorized under Article V of the By-laws, which undertaking may be accepted by the Registrant without reference to the financial ability of such director or officer to make repayment.

Article V of the Registrant's By-laws gives the Board of Directors of the Registrant the power to authorize the purchase and maintenance of insurance, in such amounts as the Board of Directors may from time to time deem appropriate, on behalf of any person who is or was a director, officer or agent of the Registrant, or who is or was serving at the request of the Registrant as a director, officer or agent of another organization in which the Registrant has any interest, direct or indirect, as a shareholder, creditor or otherwise, or with respect to any employee benefit plan, against any liability incurred by such person in any such capacity, or arising out of such person's status as such agent, whether or not such person is entitled to indemnification by the Registrant pursuant to Article V or otherwise and whether or not the Registrant would have the power to indemnify the person against such liability.

Section 13(b)(1 1/2) of the Massachusetts Business Corporation Law, Chapter 156B of the General Laws of Massachusetts (the "MBCL") authorizes the provisions, described above, contained in Part D of Article 6 of the Restated Articles of Organization of the Registrant.

Section 67 of the MBCL authorizes the provisions, described above, contained in Article V of the By-laws of the Registrant.

Section 65 of the MBCL provides that performance by a director, officer or incorporator of such person's duties in good faith and in a manner such person reasonably believes to be in the best interest of the corporation, and with such care as an ordinary prudent person in a like position would use under similar circumstances, shall be a complete defense to any claim asserted against such director, officer or incorporator, except as otherwise expressly provided by statute, by reason of such person's being or having been a director, officer or incorporator of the corporation.

ITEM 7. EXEMPTION FROM REGISTRATION CLAIMED.

Not applicable.

ITEM 8. EXHIBITS.

- 4.1 Specimen Common Stock Certificate (Filed as Exhibit 4.1 to the Registrant's Registration Statement on Form S-1 (Registration No. 33-40966) or amendments thereto and incorporated herein by reference).

- 4.2 Restated Articles of Organization filed with the Commonwealth of Massachusetts on July 31, 1991 (Filed as Exhibit 3.1 to the Registrant's Registration Statement on Form S-4 (Reg. No. 333-61480) filed on May 23, 2001, and incorporated herein by reference).
- 4.3 By-Laws, as amended and restated as of March 12, 2001 (Filed as Exhibit 3.5 to the Registrant's Registration Statement on Form S-4 (Reg. No. 333-61480) filed on May 23, 2001, and incorporated herein by reference).
- 5 Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. as to the legality of shares being registered.
- 23.1 Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (included in opinion of counsel filed as Exhibit 5).
- 23.2 Consent of PricewaterhouseCoopers LLP, Independent Accountants.
- 23.3 Consent of Ernst & Young LLP, Independent Auditors.
- 23.4 Consent of Arthur Andersen LLP.
- 23.5 Consent of KPMG LLP.
- 24 Power of Attorney to file future amendments (set forth on the signature page of this Registration Statement.)
- 99.1 Aurora Biosciences Corporation 1996 Stock Plan, as amended.
- 99.2 Aurora Biosciences Corporation Employee Stock Purchase Plan, as amended, and related offering document.
- 99.3 1993 Stock Option Plan of PanVera Corporation.
- 99.4 Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Ute Muh.
- 99.5 Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Douglas John Bartels.
- 99.6 Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Steve C. Winans, Ph.D.
- 99.7 Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Michael J. Welsh, M.D.
- 99.8 Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Paul V. Dunlap, Ph.D.
- 99.9 Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and J. Woodland Hastings, Ph.D.
- 99.10 Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Ute Muh, Ph.D.
- 99.11 Stock Option Agreement between Quorum Sciences, Inc. and James A. Romesser, Ph.D.

ITEM 9. UNDERTAKINGS.

(a) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represents a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

PROVIDED, HOWEVER, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the Registration Statement is on Form S-3, Form S-8 or Form F-3, and the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(b) The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 that is incorporated by reference in this Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Cambridge, MA, on July 23, 2001.

VERTEX PHARMACEUTICALS INCORPORATED

BY: /s/ JOSHUA S. BOGER

 Name: Joshua S. Boger
 Title: President and Chief Executive Officer

Each person whose signature appears below constitutes and appoints Joshua S. Boger and Sarah P. Cecil, and each of them singly, his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them, for him and in his name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement on Form S-8 of Vertex Pharmaceuticals Incorporated and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in or about the premises, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

SIGNATURE	TITLE	DATE
/s/ Joshua S. Boger ----- Joshua S. Boger	Director, Chairman and Chief Executive Officer (principal executive officer)	July 23, 2001
/s/ Johanna Messina Power ----- Johanna Messina Power	Controller (principal financial and accounting officer)	July 23, 2001
/s/ Barry M. Bloom ----- Barry M. Bloom	Director	July 23, 2001

SIGNATURE

TITLE

DATE

/s/ Roger W. Brimblecombe

Roger W. Brimblecombe

Director

July 23, 2001

/s/ Stuart J.M. Collinson

Stuart J.M. Collinson

Director

July 23, 2001

/s/ Donald R. Conklin

Donald R. Conklin

Director

July 23, 2001

/s/ Bruce I. Sachs

Bruce I. Sachs

Director

July 23, 2001

/s/ Charles A. Sanders

Charles A. Sanders

Director

July 23, 2001

/s/ Elaine S. Ullian

Elaine S. Ullian

Director

July 23, 2001

VERTEX PHARMACEUTICALS INCORPORATED

INDEX TO EXHIBITS FILED WITH
FORM S-8 REGISTRATION STATEMENT

EXHIBIT NUMBER	DESCRIPTION
4.1	Specimen Common Stock Certificate (Filed as Exhibit 4.1 to the Registrant's Registration Statement on Form S-1 (Registration No. 33-40966) or amendments thereto and incorporated herein by reference).
4.2	Restated Articles of Organization filed with the Commonwealth of Massachusetts on July 31, 1991 (Filed as Exhibit 3.1 to the Registrant's Registration Statement on Form S-4 (Reg. No. 333-61480) filed on May 23, 2001, and incorporated herein by reference).
4.3	By-Laws, as amended and restated as of March 12, 2001 (Filed as Exhibit 3.5 to the Registrant's Registration Statement on Form S-4 (Reg. No. 333-61480) filed on May 23, 2001, and incorporated herein by reference).
5	Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. as to the legality of shares being registered.
23.1	Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (included in opinion of counsel filed as Exhibit 5).
23.2	Consent of PricewaterhouseCoopers LLP, Independent Accountants.
23.3	Consent of Ernst & Young LLP, Independent Auditors.
23.4	Consent of Arthur Andersen LLP.
23.5	Consent of KPMG LLP.
24	Power of Attorney to file future amendments (set forth on the signature page of this Registration Statement.)
99.1	Aurora Biosciences Corporation 1996 Stock Plan, as amended.
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- 99.11 Stock Option Agreement between Quorum Sciences, Inc. and James A. Romesser, Ph.D.

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

One Financial Center
Boston, Massachusetts 02111

617 542 6000
617 542 2241 FAX

July 23, 2001

Vertex Pharmaceuticals Incorporated
130 Waverly Street
Cambridge, MA 02139-4211

Ladies and Gentlemen:

We have acted as counsel to Vertex Pharmaceuticals Incorporated, a Massachusetts corporation (the "Company"), in connection with the preparation and filing with the Securities and Exchange Commission of a Registration Statement on Form S-8 (the "Registration Statement"), pursuant to which the Company is registering the issuance under the Securities Act of 1933, as amended, of a total of 3,067,694 shares (the "Shares") of its common stock, \$.01 par value per share (the "Common Stock"). The shares include: (a) 2,616,985 shares of Common Stock issuable upon exercise of options awarded under Aurora Biosciences Corporation's 1996 Stock Plan; (b) 310,062 shares of Common Stock which may be sold pursuant to Aurora Biosciences Corporation's Employee Stock Purchase Plan; (c) 137,947 shares of Common Stock issuable upon exercise of options awarded under PanVera Corporation's 1993 Stock Option Plan; and (d) 2,700 shares of Common Stock issuable upon exercise of options awarded under Stock Option Agreements between Quorum Sciences, Inc. and certain of its employees. This opinion is being rendered in connection with the filing of the Registration Statement. All capitalized terms used herein and not otherwise defined shall have the respective meanings given to them in the Registration Statement.

In connection with this opinion, we have examined the Company's Restated Articles of Organization and By-laws, both as currently in effect; such other records of the corporate proceedings of the Company and certificates of the Company's officers as we have deemed relevant; and the Registration Statement and the exhibits thereto.

In our examination, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified or photostatic copies and the authenticity of the originals of such copies.

Based upon the foregoing, we are of the opinion that (i) the Shares have been duly and validly authorized by the Company and (ii) the Shares, when sold, will have been duly and validly issued, fully paid and non-assessable shares of the Common Stock, free of preemptive rights.

BOSTON NEW YORK RESTON WASHINGTON NEW HAVEN

MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, P.C.
Vertex Pharmaceuticals Incorporated.
July 23, 2001
Page 2

Our opinion is limited to the laws of the Commonwealth of Massachusetts and we express no opinion with respect to the laws of any other jurisdiction. No opinion is expressed herein with respect to the qualification of the Shares under the securities or blue sky laws of any state or any foreign jurisdiction.

We understand that you wish to file this opinion as an exhibit to the Registration Statement, and we hereby consent thereto.

Very truly yours,

/s/ Mintz, Levin, Cohn, Ferris,
Glovsky and Popeo, P.C.

Mintz, Levin, Cohn, Ferris,
Glovsky and Popeo, P.C.

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference in this Registration Statement on Form S-8 to register 3,067,694 shares of Vertex Pharmaceuticals Incorporated common stock of our report dated February 22, 2001 relating to the financial statements of Vertex Pharmaceuticals Incorporated, which appears in Vertex Pharmaceuticals Incorporated's Annual Report on Form 10-K for the year ended December 31, 2000.

PricewaterhouseCoopers LLP

Boston, Massachusetts
July 23, 2001

CONSENT OF ERNST & YOUNG LLP, INDEPENDENT AUDITORS

We consent to the incorporation by reference in the Vertex Pharmaceuticals, Inc. Registration Statement (Form S-8), expected to be filed with the Securities and Exchange Commission on or about July 23, 2001, pertaining to the Aurora Biosciences Corporation 1996 Stock Plan, Aurora Biosciences Corporation Employee Stock Purchase Plan, 1993 Stock Option Plan of Panvera Corporation, Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Ute Muh, Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Douglas John Bartels, Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Steve C. Winans, Ph.D., Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Michael J. Welsh, M.D., Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Paul V. Dunlap, Ph.D., Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and J. Woodland Hastings, Nonqualified Stock Option Agreement between Quorum Sciences, Inc. and Ute Muh, Ph.D., and the Stock Option Agreement between Quorum Sciences, Inc. and James A. Romesser, Ph.D. of our report dated April 27, 2001, with respect to the consolidated financial statements of Aurora Biosciences Corporation included in its Current Report (Form 8-K) filed with the Securities and Exchange Commission on May 18, 2001.

/s/ Ernst & Young
ERNST & YOUNG LLP

San Diego, California
July 18, 2001

[Arthur Andersen LLP Letterhead]

CONSENT OF INDEPENDENT PUBLIC ACCOUNTANTS

As independent public accountants, we hereby consent to the incorporation by reference in this Registration Statement and the Registration Statements on Form S-8 (Nos. 333-79133 and 333-30039) pertaining to the Employee Stock Purchase Plan and Non-Employee Directors' Stock Option Plan of our report dated October 20, 2000, with respect to the financial statements of PanVera Corporation included in the Registration Statement on Form S-4 (No. 333-54638) of Aurora Biosciences Corporation. It should be noted that we have not audited any financial statement of PanVera Corporation subsequent to September 30, 2000, or performed any audit subsequent to the date of our report.

/s/ Arthur Andersen LLP
ARTHUR ANDERSEN LLP

Milwaukee, Wisconsin
July 18, 2001

Consent of KPMG LLP

Exhibit 23.5

We consent to the incorporation by reference in this registration statement on Form S-8 of Vertex Pharmaceuticals Incorporated of our report dated November 19, 1998, with respect to the statements of operations, stockholders' equity, and cash flows of PanVera Corporation for the year ended September 30, 1998, which report appears on Form 8-K of Aurora Biosciences Corporation dated May 18, 2001.

/s/ KPMG

Chicago, Illinois
July 18, 2001

AURORA BIOSCIENCES CORPORATION

1996 STOCK PLAN

ADOPTED JANUARY 23, 1996

AS AMENDED AND RESTATED AS OF FEBRUARY 4, 1997

AS AMENDED ON APRIL 21, 1998

AS AMENDED ON MAY 28, 1998

AS AMENDED ON MAY 4, 1999

AS AMENDED ON DECEMBER 7, 1999

AS AMENDED ON MARCH 14, 2000

1. PURPOSES.

(a) The purpose of the Plan is to provide a means by which selected Employees and Directors of and Consultants to the Company, and its Affiliates, may be given an opportunity to benefit from increases in value of the stock of the Company through the granting of (i) Incentive Stock Options, (ii) Nonstatutory Stock Options, (iii) stock bonuses, (iv) rights to purchase restricted stock, and (v) stock appreciation rights, all as defined below.

(b) The Company, by means of the Plan, seeks to retain the services of persons who are now Employees or Directors of or Consultants to the Company or its Affiliates, to secure and retain the services of new Employees, Directors and Consultants, and to provide incentives for such persons to exert maximum efforts for the success of the Company and its Affiliates.

(c) The Company intends that the Stock Awards issued under the Plan shall, in the discretion of the Board or any Committee to which responsibility for administration of the Plan has been delegated pursuant to subsection 3(c), be either (i) Options granted pursuant to Section 6 hereof, including Incentive Stock Options and Nonstatutory Stock Options, (ii) stock bonuses or rights to purchase restricted stock granted pursuant to Section 7 hereof, or (iii) stock appreciation rights granted pursuant to Section 8 hereof. All Options shall be separately designated Incentive Stock Options or Nonstatutory Stock Options at the time of grant, and in such form as issued pursuant to Section 6, and a separate certificate or certificates will be issued for shares purchased on exercise of each type of Option.

2. DEFINITIONS.

(a) "AFFILIATE" means any parent corporation or subsidiary corporation, whether now or hereafter existing, as those terms are defined in Sections 424(e) and (f) respectively, of the Code.

(b) "BOARD" means the Board of Directors of the Company.

(c) "CAUSE" shall mean any of the following: (a) an intentional act

which materially injures the Company; (b) an intentional refusal or failure to follow lawful and reasonable directions of the Board or an individual to whom a person reports (as appropriate); (c) a willful and habitual neglect of duties; or (d) a conviction of a felony involving moral turpitude which is reasonably likely to inflict or has inflicted material injury on the Company.

(d) "CHANGE IN CONTROL" means: (1) a dissolution, liquidation or sale of all or substantially all of the assets of the Company; (2) a merger or consolidation in which the Company is not the surviving corporation; (3) a reverse merger in which the Company is the surviving corporation but the shares of the Company's common stock outstanding immediately preceding the merger are converted by virtue of the merger into other property, whether in the form of securities, cash or otherwise; or (4) after the Listing Date, the acquisition by any person, entity or group within the meaning of Section 13(d) or 14(d) of the Exchange Act or any comparable successor provisions (excluding any employee benefit plan, or related trust, sponsored or maintained by the Company or any Affiliate of the Company) of the beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act, or comparable successor rule) of securities of the Company representing at least fifty percent (50%) of the combined voting power entitled to vote in the election of directors.

(e) "CODE" means the Internal Revenue Code of 1986, as amended.

(f) "COMMITTEE" means a Committee appointed by the Board in accordance with subsection 3(c) of the Plan.

(g) "COMPANY" means Aurora Biosciences Corporation, a Delaware corporation.

(h) "CONCURRENT STOCK APPRECIATION RIGHT" or "CONCURRENT RIGHT" means a right granted pursuant to subsection 8(b)(2) of the Plan.

(i) "CONSTRUCTIVELY TERMINATED" shall mean the voluntary termination of Continuous Status as an Employee, Director or Consultant by a person within fifteen (15) days after any of the following are undertaken without such person's express written consent: (a) the assignment to such person of any duties or responsibilities which result in a material diminution or adverse change of such person's position, status or circumstances of employment or engagement, other than a mere change in title or reporting relationship; (b) reduction by the Company in such person's base salary or compensation; (c) any failure by the Company to continue in effect any benefit plan or arrangement, including incentive plans or plans to receive securities of the Company, in which such person is participating (hereinafter referred to as "Benefit Plans"), or the taking of any action by the Company which would adversely affect such person's participation in or reduce such person's benefits under any Benefit Plans or deprive such person of any fringe benefit then enjoyed by such person, provided, however, that such person's termination shall not be deemed to be Constructively Terminated if the Company offers a range of benefit plans and programs which, taken as a whole, are comparable to the Benefit Plans; (d) a relocation of such person or the Company's principal business offices to a location more than fifty (50) miles from the location at which such person performs duties, except for required travel by such person on the Company's business to an extent substantially consistent with such person's business travel obligations; (e) any breach by the Company of any material agreement between such person and the Company concerning such person's employment or engagement; or (f) any

failure by the Company to obtain the assumption of any material agreement between such person and the Company concerning such person's employment or engagement by any successor or assign of the Company.

(j) "CONSULTANT" means any person, including an advisor, engaged by the Company or an Affiliate to render consulting services and who is compensated for such services, provided that the term "Consultant" shall not include Directors who are paid only a director's fee by the Company or who are not compensated by the Company for their services as Directors.

(k) "CONTINUOUS STATUS AS AN EMPLOYEE, DIRECTOR OR CONSULTANT" means that the service of an individual to the Company, whether as an Employee, Director or Consultant is not interrupted or terminated. The Board, in its sole discretion, may determine whether Continuous Status as an Employee, Director or Consultant shall be considered interrupted in the case of: (i) any leave of absence approved by the Board, including sick leave, military leave, or any other personal leave; or (ii) transfers between locations of the Company or between the Company, Affiliates or their successors.

(l) "COVERED EMPLOYEE" means the chief executive officer and the four (4) other highest compensated officers of the Company for whom total compensation is required to be reported to stockholders under the Exchange Act, as determined for purposes of Section 162(m) of the Code.

(m) "DIRECTOR" means a member of the Board.

(n) "DISABILITY" means permanent and total disability as defined in Section 422(c)(6) of the Code.

(o) "EMPLOYEE" means any person, including Officers and Directors, employed by the Company or any Affiliate of the Company. Neither service as a Director nor payment of a director's fee by the Company shall be sufficient to constitute "employment" by the Company.

(p) "EXCHANGE ACT" means the Securities Exchange Act of 1934, as amended.

(q) "FAIR MARKET VALUE" means, as of any date, the value of the common stock determined as follows and, in each case, in a manner consistent with Section 260.140.50 of Title 10 of the California Code of Regulations:

(i) If the common stock is listed on any established stock exchange or a national market system, including without limitation the National Market System of the National Association of Securities Dealers, Inc. Automated Quotation ("NASDAQ") System, the Fair Market Value of a share of common stock shall be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such system or exchange (or the exchange with the greatest volume of trading in common stock) on the last market trading day prior to the day of determination, as reported in the Wall Street Journal or such other source as the Board deems reliable;

(ii) If the common stock is quoted on the NASDAQ System (but not on the National Market System thereof) or is regularly quoted by a recognized securities dealer but selling prices are not reported, the Fair Market Value of a share of Common Stock shall be the mean between the bid and asked prices for the common stock on the last market trading day prior to the

day of determination, as reported in the Wall Street Journal or such other source as the Board deems reliable;

(iii) In the absence of an established market for the common stock, the Fair Market Value shall be determined in good faith by the Board.

(r) "INCENTIVE STOCK OPTION" means an Option intended to qualify as an incentive stock option within the meaning of Section 422 of the Code and the regulations promulgated thereunder.

(s) "INDEPENDENT STOCK APPRECIATION RIGHT" or "INDEPENDENT RIGHT" means a right granted pursuant to subsection 8(b)(3) of the Plan.

(t) "LISTING DATE" means the first date upon which any security of the Company is listed (or approved for listing) upon notice of issuance on any securities exchange, or designated (or approved for designation) upon notice of issuance as a national market security on an interdealer quotation system if such securities exchange or interdealer quotation system has been certified in accordance with the provisions of Section 25100(o) of the California Corporate Securities Law of 1968.

(u) "NON-EMPLOYEE DIRECTOR" means a Director who either (i) is not a current Employee or Officer of the Company or its parent or subsidiary, does not receive compensation (directly or indirectly) from the Company or its parent or subsidiary for services rendered as a consultant or in any capacity other than as a Director (except for an amount as to which disclosure would not be required under Item 404(a) of Regulation S-K promulgated pursuant to the Securities Act ("Regulation S-K")), does not possess an interest in any other transaction as to which disclosure would be required under Item 404(a) of Regulation S-K, and is not engaged in a business relationship as to which disclosure would be required under Item 404(b) of Regulation S-K; or (ii) is otherwise considered a "non-employee" for purposes of Rule 16b-3.

(v) "NONSTATUTORY STOCK OPTION" means an Option not intended to qualify as an Incentive Stock Option.

(w) "OFFICER" means a person who is an officer of the Company within the meaning of Section 16 of the Exchange Act and the rules and regulations promulgated thereunder.

(x) "OPTION" means a stock option granted pursuant to the Plan.

(y) "OPTION AGREEMENT" means a written agreement between the Company and an Optionee evidencing the terms and conditions of an individual Option grant. Each Option Agreement shall be subject to the terms and conditions of the Plan.

(z) "OPTIONEE" means a person to whom an Option is granted pursuant to the Plan or, if applicable, such other person who holds an outstanding Option.

(aa) "OUTSIDE DIRECTOR" means a Director who either (i) is not a current employee of the Company or an "affiliated corporation" (within the meaning of the Treasury regulations promulgated under Section 162(m) of the Code), is not a former employee of the Company or an "affiliated corporation" receiving compensation for prior services (other than benefits under a tax qualified pension plan), was not an officer of the Company or an "affiliated

corporation" at any time, and is not currently receiving direct or indirect remuneration from the Company or an "affiliated corporation" for services in any capacity other than as a Director, or (ii) is otherwise considered an "outside director" for purposes of Section 162(m) of the Code.

(bb) "PLAN" means this 1996 Stock Plan.

(cc) "RULE 16b-3" means Rule 16b-3 of the Exchange Act or any successor to Rule 16b-3, as in effect with respect to the Company when discretion is being exercised regarding the Plan.

(dd) "SECURITIES ACT" means the Securities Act of 1933, as amended.

(ee) "STOCK APPRECIATION RIGHT" means any of the various types of rights which may be granted under Section 8 of the Plan.

(ff) "STOCK AWARD" means any right granted under the Plan, including any Option, any stock bonus, any right to purchase restricted stock, and any Stock Appreciation Right.

(gg) "STOCK AWARD AGREEMENT" means a written agreement between the Company and a holder of a Stock Award evidencing the terms and conditions of an individual Stock Award grant. Each Stock Award Agreement shall be subject to the terms and conditions of the Plan.

(hh) "SURVIVING STOCK AWARDS" shall have the meaning set forth in Section 13(b) of the Plan.

(ii) "TANDEM STOCK APPRECIATION RIGHT" or "TANDEM RIGHT" means a right granted pursuant to subsection 8(b)(1) of the Plan.

3. ADMINISTRATION.

(a) The Plan shall be administered by the Board unless and until the Board delegates administration to a Committee, as provided in subsection 3(c).

(b) The Board shall have the power, subject to, and within the limitations of, the express provisions of the Plan:

(1) To determine from time to time which of the persons eligible under the Plan shall be granted Stock Awards; when and how each Stock Award shall be granted; whether a Stock Award will be an Incentive Stock Option, a Nonstatutory Stock Option, a stock bonus, a right to purchase restricted stock, a Stock Appreciation Right, or a combination of the foregoing; the provisions of each Stock Award granted (which need not be identical), including the time or times when a person shall be permitted to receive stock pursuant to a Stock Award; whether a person shall be permitted to receive stock upon exercise of an Independent Stock Appreciation Right; and the number of shares with respect to which a Stock Award shall be granted to each such person.

(2) To construe and interpret the Plan and Stock Awards granted under it, and to establish, amend and revoke rules and regulations for its administration. The Board, in the exercise of this power, may correct any defect, omission or inconsistency in the Plan or in any Stock Award

Agreement, in a manner and to the extent it shall deem necessary or expedient to make the Plan fully effective.

(3) To amend the Plan or a Stock Award as provided in Section 14.

(4) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company which are not in conflict with the provisions of the Plan.

(c) The Board may delegate administration of the Plan to a committee of the Board composed of not fewer than two (2) members (the "Committee"), all of the members of which Committee may be, in the discretion of the Board, Non-Employee Directors and/or Outside Directors. If administration is delegated to a Committee, the Committee shall have, in connection with the administration of the Plan, the powers theretofore possessed by the Board, including the power to delegate to a subcommittee of two (2) or more Outside Directors any of the administrative powers the Committee is authorized to exercise (and references in this Plan to the Board shall thereafter be to the Committee or such a subcommittee), subject, however, to such resolutions, not inconsistent with the provisions of the Pla, as may be adopted from time to time by the Board. The Board may abolish the Committee at any time and revert in the Board the administration of the Plan. Additionally, prior to the Listing Date, and notwithstanding anything to the contrary contained herein, the Board may delegate administration of the Plan to a committee of one or more members of the Board and the term Committee shall apply to any person or persons to whom such authority has been delegated. Notwithstanding anything in this Section 3 to the contrary, the Board or the Committee may delegate to a committee of one or more members of the Board the authority to grant Stock Awards to eligible persons who (1) are not then subject to Section 16 of the Exchange Act and/or (2) are either (i) not then Covered Employees and are not expected to be Covered Employees at the time of recognition of income resulting from such Stock Award, or (ii) not persons with respect to whom the Company wishes to comply with Section 162(m) of the Code.

4. SHARES SUBJECT TO THE PLAN.

(a) Subject to the provisions of Section 13 relating to adjustments upon changes in stock, the stock that may be issued pursuant to Stock Awards shall not exceed in the aggregate eight million (8,000,000) shares of the Company's common stock. If any Stock Award shall for any reason expire or otherwise terminate, in whole or in part, without having been exercised in full, the stock not acquired under such Stock Award shall revert to and again become available for issuance under the Plan. Shares subject to Stock Appreciation Rights exercised in accordance with Section 8 of the Plan shall not be available for subsequent issuance under the Plan.

(b) The stock subject to the Plan may be unissued shares or reacquired shares, bought on the market or otherwise.

5. ELIGIBILITY.

(a) Incentive Stock Options and Stock Appreciation Rights appurtenant thereto may be granted only to Employees. Stock Awards other than Incentive Stock Options and Stock Appreciation Rights appurtenant thereto may be granted only to Employees, Directors or Consultants.

(b) No person shall be eligible for the grant of an Option or an award to purchase restricted stock if, at the time of grant, such person owns (or is deemed to own pursuant to Section 424(d) of the Code) stock possessing more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or of any of its Affiliates unless the exercise price of such Option is at least one hundred ten percent (110%) of the Fair Market Value of such stock at the date of grant and the Option is not exercisable after the expiration of five (5) years from the date of grant, or in the case of a restricted stock purchase award, the purchase price is at least one hundred percent (100%) of the Fair Market Value of such stock at the date of grant.

(c) Subject to the provisions of Section 13 relating to adjustments upon changes in stock, no person shall be eligible to be granted Options and Stock Appreciation Rights covering more than five hundred thousand (500,000) shares of the Company's common stock in any twelve (12) month period. This subsection 5(c) shall not apply prior to the Listing Date and, following the Listing Date, shall not apply until (i) the earliest of: (A) the first material modification of the Plan (including any increase to the number of shares reserved for issuance under the Plan in accordance with Section 4); (B) the issuance of all of the shares of common stock reserved for issuance under the Plan; (C) the expiration of the Plan; or (D) the first meeting of stockholders at which directors are to be elected that occurs after the close of the third calendar year following the calendar year in which occurred the first registration of an equity security under section 12 of the Exchange Act; or (ii) such other date required by Section 162(m) of the Code and the rules and regulations promulgated thereunder.

6. OPTION PROVISIONS.

Each Option shall be in such form and shall contain such terms and conditions as the Board shall deem appropriate. The provisions of separate Options need not be identical, but each Option shall include (through incorporation of provisions hereof by reference in the Option or otherwise) the substance of each of the following provisions:

(a) TERM. No Option shall be exercisable after the expiration of ten (10) years from the date it was granted.

(b) PRICE. The exercise price of each Incentive Stock Option shall be not less than one hundred percent (100%) of the Fair Market Value of the stock subject to the Option on the date the Option is granted; the exercise price of each Nonstatutory Stock Option shall be not less than eighty-five percent (85%) of the Fair Market Value of the stock subject to the Option on the date the Option is granted. Notwithstanding the foregoing, an Option (whether an Incentive Stock Option or a Nonstatutory Stock Option) may be granted with an exercise price lower than that set forth in the preceding sentence if such Option is granted pursuant to an assumption or substitution for another option in a manner satisfying the provisions of Section 424(a) of the Code.

(c) CONSIDERATION. The purchase price of stock acquired pursuant to an Option shall be paid, to the extent permitted by applicable statutes and regulations, either (i) in cash at the time the Option is exercised, or (ii) at the discretion of the Board or the Committee, at the time of the grant of the Option, (A) by delivery to the Company of other common stock of the

Company, or (B) in any other form of legal consideration that may be acceptable to the Board.

(d) TRANSFERABILITY. An Option shall not be transferable except by will or by the laws of descent and distribution, and shall be exercisable during the lifetime of the person to whom the Option is granted only by such person; provided, however, that, after the Listing Date, to the extent permitted by applicable law, a Nonstatutory Stock Option shall be transferable by the person to whom such Option is granted upon such terms and conditions as are set forth in the Option Agreement for such Nonstatutory Stock Option, as the Board or Committee shall determine in its discretion. Notwithstanding the foregoing, the person to whom the Option is granted may, by delivering written notice to the Company, in a form satisfactory to the Company, designate a third party who, in the event of the death of the Optionee, shall thereafter be entitled to exercise the Option.

(e) VESTING. The total number of shares of stock subject to an Option may, but need not, be allotted in periodic installments (which may, but need not, be equal). The Option Agreement may provide that from time to time during each of such installment periods, the Option may become exercisable ("vest") with respect to some or all of the shares allotted to that period, and may be exercised with respect to some or all of the shares allotted to such period and/or any prior period as to which the Option became vested but was not fully exercised. The Option may be subject to such other terms and conditions on the time or times when it may be exercised (which may be based on performance or other criteria) as the Board may deem appropriate. The vesting provisions of individual Options may vary but in each case will provide for vesting of at least twenty percent (20%) per year of the total number of shares subject to the Option. The provisions of this subsection 6(e) are subject to any Option provisions governing the minimum number of shares as to which an Option may be exercised.

(f) TERMINATION OF EMPLOYMENT OR RELATIONSHIP AS A DIRECTOR OR CONSULTANT. In the event an Optionee's Continuous Status as an Employee, Director or Consultant terminates (other than upon the Optionee's death or Disability), the Optionee may exercise his or her Option (to the extent that the Optionee was entitled to exercise it as of the date of termination) but only within such period of time ending on the earlier of (i) the date three (3) months following the termination of the Optionee's Continuous Status as an Employee, Director or Consultant (or such longer or shorter period, which shall not be less than thirty (30) days, specified in the Option Agreement), or (ii) the expiration of the term of the Option as set forth in the Option Agreement. If, after termination, the Optionee does not exercise his or her Option within the time specified in the Option Agreement, the Option shall terminate, and the shares covered by such Option shall revert to and again become available for issuance under the Plan.

An Optionee's Option Agreement may also provide that if the exercise of the Option following the termination of the Optionee's Continuous Status as an Employee, Director, or Consultant (other than upon the Optionee's death or Disability) would result in liability under Section 16(b) of the Exchange Act, then the Option shall terminate on the earlier of (i) the expiration of the term of the Option set forth in the Option Agreement, or (ii) the tenth (10th) day after the last date on which such exercise would result in such liability under Section 16(b) of the Exchange Act. Finally, an Optionee's Option Agreement may also provide that if the exercise of the Option following the termination of the Optionee's Continuous Status as an Employee,

Director or Consultant (other than upon the Optionee's death or Disability) would be prohibited at any time solely because the issuance of shares would violate the registration requirements under the Securities Act, then the Option shall terminate on the earlier of (i) the expiration of the term of the Option set forth in the first paragraph of this subsection 6(f), or (ii) the expiration of a period of three (3) months after the termination of the Optionee's Continuous Status as an Employee, Director or Consultant during which the exercise of the Option would not be in violation of such registration requirements.

(g) DISABILITY OF OPTIONEE. In the event an Optionee's Continuous Status as an Employee, Director or Consultant terminates as a result of the Optionee's Disability, the Optionee may exercise his or her Option (to the extent that the Optionee was entitled to exercise it as of the date of termination), but only within such period of time ending on the earlier of (i) the date twelve (12) months following such termination (or such longer or shorter period, which in no event shall be less than six (6) months, specified in the Option Agreement), or (ii) the expiration of the term of the Option as set forth in the Option Agreement. If, at the date of termination, the Optionee is not entitled to exercise his or her entire Option, the shares covered by the unexercisable portion of the Option shall revert to and again become available for issuance under the Plan. If, after termination, the Optionee does not exercise his or her Option within the time specified herein, the Option shall terminate, and the shares covered by such Option shall revert to and again become available for issuance under the Plan.

(h) DEATH OF OPTIONEE. In the event of the death of an Optionee during, or within a period specified in the Option Agreement after the termination of, the Optionee's Continuous Status as an Employee, Director or Consultant, the Option may be exercised (to the extent the Optionee was entitled to exercise the Option as of the date of death) by the Optionee's estate, by a person who acquired the right to exercise the Option by bequest or inheritance or by a person designated to exercise the option upon the Optionee's death pursuant to subsection 6(d), but only within the period ending on the earlier of (i) the date eighteen (18) months following the date of death (or such longer or shorter period, which in no event shall be less than six (6) months, specified in the Option Agreement), or (ii) the expiration of the term of such Option as set forth in the Option Agreement. If, at the time of death, the Optionee was not entitled to exercise his or her entire Option, the shares covered by the unexercisable portion of the Option shall revert to and again become available for issuance under the Plan. If, after death, the Option is not exercised within the time specified herein, the Option shall terminate, and the shares covered by such Option shall revert to and again become available for issuance under the Plan.

(i) EARLY EXERCISE. The Option may, but need not, include a provision whereby the Optionee may elect at any time while an Employee, Director or Consultant to exercise the Option as to any part or all of the shares subject to the Option prior to the full vesting of the Option. Any unvested shares so purchased shall be subject to a repurchase right in favor of the Company, with the repurchase price to be equal to the original purchase price of the stock, or to any other restriction the Board determines to be appropriate; provided, however, that (i) the right to repurchase at the original purchase price shall lapse at a minimum rate of twenty percent (20%) per year over five (5) years from the date the Option was granted, and (ii) such right shall be exercisable only within (A) the ninety (90) day period following the termination of employment or the relationship as a Director or Consultant, or

(B) such longer period as may be agreed to by the Company and the Optionee (for example, for purposes of satisfying the requirements of Section 1202(c)(3) of the Code (regarding "qualified small business stock")), and (iii) such right shall be exercisable only for cash or cancellation of purchase money indebtedness for the shares. Should the right of repurchase be assigned by the Company, the assignee shall pay the Company cash equal to the difference between the original purchase price and the stock's Fair Market Value if the original purchase price is less than the stock's Fair Market Value.

(j) RIGHT OF REPURCHASE. The Option may, but need not, include a provision whereby the Company may elect, prior to the Listing Date, to repurchase all or any part of the vested shares exercised pursuant to the Option; provided, however, that (i) such repurchase right shall be exercisable only within (A) the ninety (90) day period following the termination of employment or the relationship as a Director or Consultant and (ii) such right shall be exercisable only for cash or cancellation of purchase money indebtedness for the shares at a repurchase price equal to the greater of (A) the stock's Fair Market Value at the time of such termination, or (B) the original purchase price paid for such shares by the Optionee.

(k) RIGHT OF FIRST REFUSAL. The Option may, but need not, include a provision whereby the Company may elect, prior to the Listing Date, to exercise a right of first refusal following receipt of notice from the Optionee of the intent to transfer all or any part of the shares exercised pursuant to the Option.

(l) RE-LOAD OPTIONS. Without in any way limiting the authority of the Board or Committee to make or not to make grants of Options hereunder, the Board or Committee shall have the authority (but not an obligation) to include as part of any Option Agreement a provision entitling the Optionee to a further Option (a "Re-Load Option") in the event the Optionee exercises the Option evidenced by the Option agreement, in whole or in part, by surrendering other shares of Common Stock in accordance with this Plan and the terms and conditions of the Option Agreement. Any such Re-Load Option (i) shall be for a number of shares equal to the number of shares surrendered as part or all of the exercise price of such Option; (ii) shall have an expiration date which is the same as the expiration date of the Option the exercise of which gave rise to such Re-Load Option; and (iii) shall have an exercise price which is equal to one hundred percent (100%) of the Fair Market Value of the Common Stock subject to the Re-Load Option on the date of exercise of the original Option. Notwithstanding the foregoing, a Re-Load Option which is granted to a 10% stockholder (as described in subsection 5(b)), shall have an exercise price which is equal to one hundred ten percent (110%) of the Fair Market Value of the stock subject to the Re-Load Option on the date of exercise of the original Option and shall have a term which is no longer than five (5) years.

Any such Re-Load Option may be an Incentive Stock Option or a Nonstatutory Stock Option, as the Board or Committee may designate at the time of the grant of the original Option; provided, however, that the designation of any Re-Load Option as an Incentive Stock Option shall be subject to the one hundred thousand dollar (\$100,000) annual limitation on exercisability of Incentive Stock Options described in subsection 12(e) of the Plan and in Section 422(d) of the Code. There shall be no Re-Load Options on a Re-Load Option. Any such Re-Load Option shall be subject to the availability of sufficient shares under subsection 4(a) and the limits on the

grants of Options under subsection 5(c) and shall be subject to such other terms and conditions as the Board or Committee may determine which are not inconsistent with the express provisions of the Plan regarding the terms of Options.

7. TERMS OF STOCK BONUSES AND PURCHASES OF RESTRICTED STOCK.

Each stock bonus or restricted stock purchase agreement shall be in such form and shall contain such terms and conditions as the Board or the Committee shall deem appropriate. The terms and conditions of stock bonus or restricted stock purchase agreements may change from time to time, and the terms and conditions of separate agreements need not be identical, but each stock bonus or restricted stock purchase agreement shall include (through incorporation of provisions hereof by reference in the agreement or otherwise) the substance of each of the following provisions as appropriate:

(a) PURCHASE PRICE. The purchase price under each restricted stock purchase Stock Award Agreement shall be such amount as the Board or Committee shall determine and designate in such agreement, but in no event shall the purchase price be less than eighty-five percent (85%) of the stock's Fair Market Value on the date such award is made. Notwithstanding the foregoing, the Board or the Committee may determine that eligible participants in the Plan may be awarded stock pursuant to a stock bonus agreement in consideration for past services actually rendered to the Company or for its benefit.

(b) TRANSFERABILITY. No rights under a stock bonus or restricted stock purchase agreement shall be transferable except by will or the laws of descent and distribution or pursuant to a QDRO satisfying the requirements of Rule 16b-3 and any administrative interpretations or pronouncements thereunder, so long as stock awarded under such agreement remains subject to the terms of the agreement.

(c) CONSIDERATION. The purchase price of stock acquired pursuant to a stock purchase agreement shall be paid either: (i) in cash at the time of purchase; or (ii) in any other form of legal consideration that may be acceptable to the Board or the Committee in its discretion. Notwithstanding the foregoing, the Board or the Committee to which administration of the Plan has been delegated may award stock pursuant to a stock bonus agreement in consideration for past services actually rendered to the Company or for its benefit.

(d) VESTING. Shares of stock sold or awarded under the Plan may, but need not, be subject to a repurchase option in favor of the Company in accordance with a vesting schedule to be determined by the Board or the Committee. The applicable agreement shall provide (i) that the right to repurchase at the original purchase price shall lapse at a minimum rate of twenty percent (25%) per year over four (4) years from the date the Stock Award was granted, and (ii) such right shall be exercisable only (A) within the ninety (90) day period following the termination of employment or the relationship as a Director or Consultant, or (B) such longer period as may be agreed to by the Company and the holder of the Stock Award (for example, for purposes of satisfying the requirements of Section 1202(c)(3) of the Code (regarding "qualified small business stock")), and (iii) such right shall be exercisable only for cash or cancellation of purchase money indebtedness for the shares. Should the right of repurchase be assigned by the Company, the assignee shall pay the Company cash equal to the difference between the

original purchase price and the stock's Fair Market Value if the original purchase price is less than the stock's Fair Market Value.

(e) TERMINATION OF EMPLOYMENT OR RELATIONSHIP AS A DIRECTOR OR CONSULTANT. In the event a participant's Continuous Status as an Employee, Director or Consultant terminates, the Company may repurchase or otherwise reacquire, subject to the limitations described in subsection 7(d), any or all of the shares of stock held by that person which have not vested as of the date of termination under the terms of the stock bonus or restricted stock purchase agreement between the Company and such person.

8. STOCK APPRECIATION RIGHTS.

(a) The Board or Committee shall have full power and authority, exercisable in its sole discretion, to grant Stock Appreciation Rights under the Plan to Employees or Directors of or Consultants to, the Company or its Affiliates. To exercise any outstanding Stock Appreciation Right, the holder must provide written notice of exercise to the Company in compliance with the provisions of the Stock Award Agreement evidencing such right. If a Stock Appreciation Right is granted to an individual who is at the time of grant subject to Section 16(b) of the Exchange Act, the Stock Award Agreement shall incorporate all the terms and conditions at the time necessary to assure that the subsequent exercise of such right shall qualify for the safe-harbor exemption from short-swing profit liability provided by Rule 16b-3 promulgated under the Exchange Act (or any successor rule or regulation). Except as provided in subsection 5(c), no limitation shall exist on the aggregate amount of cash payments the Company may make under the Plan in connection with the exercise of a Stock Appreciation Right.

(b) Three types of Stock Appreciation Rights shall be authorized for issuance under the Plan:

(1) TANDEM STOCK APPRECIATION RIGHTS. Tandem Stock Appreciation Rights will be granted appurtenant to an Option, and shall, except as specifically set forth in this Section 8, be subject to the same terms and conditions applicable to the particular Option grant to which it pertains. Tandem Stock Appreciation Rights will require the holder to elect between the exercise of the underlying Option for shares of stock and the surrender, in whole or in part, of such Option for an appreciation distribution. The appreciation distribution payable on the exercised Tandem Right shall be in cash (or, if so provided, in an equivalent number of shares of stock based on Fair Market Value on the date of the Option surrender) in an amount up to the excess of (A) the Fair Market Value (on the date of the Option surrender) of the number of shares of stock covered by that portion of the surrendered Option in which the Optionee is vested over (B) the aggregate exercise price payable for such vested shares.

(2) CONCURRENT STOCK APPRECIATION RIGHTS. Concurrent Rights will be granted appurtenant to an Option and may apply to all or any portion of the shares of stock subject to the underlying Option and shall, except as specifically set forth in this Section 8, be subject to the same terms and conditions applicable to the particular Option grant to which it pertains. A Concurrent Right shall be exercised automatically at the same time the underlying Option is exercised with respect to the particular shares of stock to which the Concurrent Right pertains. The appreciation distribution payable on an exercised Concurrent Right shall be in cash (or, if so provided, in an

equivalent number of shares of stock based on Fair Market Value on the date of the exercise of the Concurrent Right) in an amount equal to such portion as shall be determined by the Board or the Committee at the time of the grant of the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the Concurrent Right) of the vested shares of stock purchased under the underlying Option which have Concurrent Rights appurtenant to them over (B) the aggregate exercise price paid for such shares.

(3) INDEPENDENT STOCK APPRECIATION RIGHTS. Independent Rights will be granted independently of any Option and shall, except as specifically set forth in this Section 8, be subject to the same terms and conditions applicable to Nonstatutory Stock Options as set forth in Section 6. They shall be denominated in share equivalents. The appreciation distribution payable on the exercised Independent Right shall be not greater than an amount equal to the excess of (A) the aggregate Fair Market Value (on the date of the exercise of the Independent Right) of a number of shares of Company stock equal to the number of share equivalents in which the holder is vested under such Independent Right, and with respect to which the holder is exercising the Independent Right on such date, over (B) the aggregate Fair Market Value (on the date of the grant of the Independent Right) of such number of shares of Company stock. The appreciation distribution payable on the exercised Independent Right shall be in cash or, if so provided, in an equivalent number of shares of stock based on Fair Market Value on the date of the exercise of the Independent Right.

9. CANCELLATION AND RE-GRANT OF OPTIONS.

(a) The Board or the Committee shall have the authority to effect, at any time and from time to time, (i) the repricing of any outstanding Options and/or any Stock Appreciation Rights under the Plan and/or (ii) with the consent of the affected holders of Options and/or Stock Appreciation Rights, the cancellation of any outstanding Options and/or any Stock Appreciation Rights under the Plan and the grant in substitution therefor of new Options and/or Stock Appreciation Rights under the Plan covering the same or different numbers of shares of stock, but having an exercise price per share not less than eighty-five percent (85%) of the Fair Market Value (one hundred percent (100%) of the Fair Market Value in the case of an Incentive Stock Option) or, in the case of a 10% stockholder (as described in subsection 5(b)), not less than one hundred ten percent (110%) of the Fair Market Value) per share of stock on the new grant date. Notwithstanding the foregoing, the Board or the Committee may grant an Option and/or Stock Appreciation Right with an exercise price lower than that set forth above if such Option and/or Stock Appreciation Right is granted as part of a transaction to which section 424(a) of the Code applies.

(b) Shares subject to an Option or Stock Appreciation Right canceled under this Section 9 shall continue to be counted against the maximum award of Options and Stock Appreciation Rights permitted to be granted pursuant to subsection 5(c) of the Plan. The repricing of an Option and/or Stock Appreciation Right under this Section 9, resulting in a reduction of the exercise price, shall be deemed to be a cancellation of the original Option and/or Stock Appreciation Right and the grant of a substitute Option and/or Stock Appreciation Right; in the event of such repricing, both the original and the substituted Options and Stock Appreciation Rights shall be counted against the maximum awards of Options and Stock Appreciation Rights permitted to be granted pursuant to subsection 5(c) of the Plan. The provisions of this subsection 9(b) shall be applicable only to the extent required by Section 162(m) of the Code.

10. COVENANTS OF THE COMPANY.

(a) During the terms of the Stock Awards, the Company shall keep available at all times the number of shares of stock required to satisfy such Stock Awards.

(b) The Company shall seek to obtain from each regulatory commission or agency having jurisdiction over the Plan such authority as may be required to issue and sell shares of stock upon exercise of the Stock Award; provided, however, that this undertaking shall not require the Company to register under the Securities Act either the Plan, any Stock Award or any stock issued or issuable pursuant to any such Stock Award. If, after reasonable efforts, the Company is unable to obtain from any such regulatory commission or agency the authority which counsel for the Company deems necessary for the lawful issuance and sale of stock under the Plan, the Company shall be relieved from any liability for failure to issue and sell stock upon exercise of such Stock Awards unless and until such authority is obtained.

11. USE OF PROCEEDS FROM STOCK.

Proceeds from the sale of stock pursuant to Stock Awards shall constitute general funds of the Company.

12. MISCELLANEOUS.

(a) Neither an Employee, Director or Consultant nor any person to whom a Stock Award is transferred under subsection 6(d), 7(b), or 8(b) shall be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares subject to such Stock Award unless and until such person has satisfied all requirements for exercise of the Stock Award pursuant to its terms.

(b) Throughout the term of any Stock Award, the Company shall deliver to the holder of such Stock Award, not later than one hundred twenty (120) days after the close of each of the Company's fiscal years during the term of such Stock Award, a balance sheet and an income statement. This subsection shall not apply when issuance is limited to key employees whose duties in connection with the Company assure them access to equivalent information.

(c) Nothing in the Plan or any instrument executed or Stock Award granted pursuant thereto shall confer upon any Employee, Director, Consultant or other holder of Stock Awards any right to continue in the employ of the Company or any Affiliate (or to continue acting as a Director or Consultant) or shall affect the right of the Company or any Affiliate to terminate the employment of any Employee with or without cause, the right of the Company's Board of Directors and/or the Company's stockholders to remove any Director as provided in the Company's By-Laws and the provisions of the Delaware General Corporation Law or the right to terminate the relationship of any Consultant subject to the terms of such Consultant's agreement with the Company or Affiliate.

(d) To the extent that the aggregate Fair Market Value (determined at the time of grant) of stock with respect to which Incentive Stock Options are exercisable for the first time by any Optionee during any calendar year under

all plans of the Company and its Affiliates exceeds one hundred thousand dollars (\$100,000), the Options or portions thereof which exceed such limit (according to the order in which they were granted) shall be treated as Nonstatutory Stock Options.

(e) The Company may require any person to whom a Stock Award is granted, or any person to whom a Stock Award is transferred pursuant to subsection 6(d), 7(b) or 8(b), as a condition of exercising or acquiring stock under any Stock Award, (1) to give written assurances satisfactory to the Company as to such person's knowledge and experience in financial and business matters and/or to employ a purchaser representative reasonably satisfactory to the Company who is knowledgeable and experienced in financial and business matters, and that he or she is capable of evaluating, alone or together with the purchaser representative, the merits and risks of exercising the Stock Award; and (2) to give written assurances satisfactory to the Company stating that such person is acquiring the stock subject to the Stock Award for such person's own account and not with any present intention of selling or otherwise distributing the stock. The foregoing requirements, and any assurances given pursuant to such requirements, shall be inoperative if (i) the issuance of the shares upon the exercise or acquisition of stock under the Stock Award has been registered under a then currently effective registration statement under the Securities Act, or (ii) as to any particular requirement, a determination is made by counsel for the Company that such requirement need not be met in the circumstances under the then applicable securities laws. The Company may, upon advice of counsel to the Company, place legends on stock certificates issued under the Plan as such counsel deems necessary or appropriate in order to comply with applicable securities laws, including, but not limited to, legends restricting the transfer of the stock.

(f) To the extent provided by the terms of a Stock Award Agreement, the person to whom a Stock Award is granted may satisfy any federal, state or local tax withholding obligation relating to the exercise or acquisition of stock under a Stock Award by any of the following means or by a combination of such means: (1) tendering a cash payment; (2) authorizing the Company to withhold shares from the shares of the common stock otherwise issuable to the participant as a result of the exercise or acquisition of stock under the Stock Award; or (3) delivering to the Company owned and unencumbered shares of the common stock of the Company.

13. ADJUSTMENTS UPON CHANGES IN STOCK.

(a) If any change is made in the stock subject to the Plan, or subject to any Stock Award (through merger, consolidation, reorganization, recapitalization, reincorporation, stock dividend, dividend in property other than cash, stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or other transaction not involving the receipt of consideration by the Company), the Plan will be appropriately adjusted in the type(s) and maximum number of securities subject to the Plan pursuant to subsection 4(a) and the maximum number of securities subject to award to any person during any twelve (12) month period pursuant to subsection 5(c), and the outstanding Stock Awards will be appropriately adjusted in the type(s) and number of securities and price per share of stock subject to such outstanding Stock Awards. Such adjustments shall be made by the Board or the Committee, the determination of which shall be final, binding and conclusive. (The conversion of any convertible securities of the

Company shall not be treated as a "transaction not involving the receipt of consideration by the Company".)

(b) In the event of a Change in Control, then: (i) any surviving or acquiring corporation shall assume any Stock Awards outstanding under the Plan or shall substitute similar stock awards (including an award to acquire the same consideration paid to the stockholders in such Change in Control) for those outstanding under the Plan (such assumed or substituted stock awards are collectively referred to herein as the "SURVIVING STOCK AWARDS"), or (ii) in the event any surviving or acquiring corporation refuses to assume such Stock Awards or to substitute similar stock awards for those outstanding under the Plan (A) with respect to Stock Awards held by persons performing services as Employees, Directors or Consultants immediately prior to the effective date of such Change in Control, subject to any applicable provisions of the California Corporate Securities Law of 1968 and related regulations relied upon as a condition of issuing securities pursuant to the Plan, the vesting of such Stock Awards (and, if applicable, the time during which such Stock Awards may be exercised) shall be accelerated prior to such event and such Stock Awards terminated if not exercised (if applicable) after such acceleration and at or prior to such event, and (B) unless otherwise provided in this Section 13, with respect to any other Stock Awards outstanding under the Plan, such Stock Awards shall be terminated if not exercised (if applicable) prior to the effective date of such Change in Control.

(c) In addition, with respect to any person (i) who is Constructively Terminated within the sixty (60) day period immediately preceding the effective date of a Change in Control or (ii) whose Continuous Status as an Employee, Director or Consultant is terminated by the Company within the sixty (60) day period immediately preceding the effective date of a Change in Control other than (A) for Cause or (B) upon such person's death or Disability, any Stock Awards held by such person shall: (a) become fully vested, and any repurchase right held by the Company with respect to shares acquired by such person under a Stock Award shall lapse, immediately upon the effective date of such Change in Control, (b) in the event such Stock Award is granted after May 28, 1998 or has an exercise price in excess of \$7.50 per share (as adjusted for stock splits and the like subsequent to May 28, 1998) be exercisable within the period ending on the earlier of (u) twelve (12) months following termination of such person's Continuous Status as an Employee, Director or Consultant or (v) expiration of the term of such Stock Award, as set forth therein or as otherwise provided in the Plan and (c) terminate immediately upon the completion of the period described in clause (b) of this sentence, if applicable, or as provided in such Stock Award.

(d) Further, with respect to any person (i) who was providing services as an Employee, Director or Consultant immediately prior to the effective date of a Change in Control and (ii) (A) who is Constructively Terminated within the thirteen (13) month period following the effective date of such Change in Control or (B) whose Continuous Status as an Employee, Director or Consultant is terminated by the surviving or acquiring corporation within the thirteen (13) month period following the effective date of such Change in Control other than (w) for Cause or (x) upon such person's death or Disability, any Surviving Stock Awards held by such person shall: (a) become fully vested, and any repurchase right held by the acquiring or surviving corporation with respect to shares acquired by such

person under a Surviving Stock Award shall lapse, immediately upon termination of such person's Continuous Status as an Employee, Director or Consultant, (b) in the event such Stock Award is granted after May 28, 1998 or has an exercise price in excess of \$7.50 per share (as adjusted for stock splits and the like subsequent to May 28, 1998) be exercisable within the period ending on the earlier of (y) twelve (12) months following termination of such person's Continuous Status as an Employee, Director or Consultant or (z) expiration of the term of such Surviving Stock Award, as set forth therein or as otherwise provided in the Plan and (c) terminate immediately upon completion of the period described in clause (b) of this sentence, if applicable, or as provided in such Stock Award.

(e) Notwithstanding subsections 13(c) and (d) above, in the event all of the following occurs: (i) a contemplated Change in Control would occur prior to May 28, 2000 (the date two (2) years following the adoption of subsections 13(c) through (h)); (ii) such potential acceleration of vesting (and exercisability) under subsections 13(c) or (d) would by itself cause a contemplated Change in Control, that would otherwise be eligible to be accounted for as a "pooling of interests" accounting transaction, to become ineligible for such accounting treatment; and (iii) the potential acquiror of the Company desires to account for such contemplated Change in Control as a "pooling of interests" transaction, then such acceleration shall not occur. Additionally, in the event that the restrictions upon acceleration provided for in the immediately preceding sentence by itself would cause a contemplated Change in Control to become ineligible to be accounted for as a "pooling of interests" accounting transaction, then such restrictions shall be deemed inoperative. Accounting issues shall be determined by the Company's independent public accountants applying generally accepted accounting principles.

(f) The terms of a particular Stock Award may provide for different terms to govern events described in this Section 13. In the event the provisions of this Section 13 conflict with an employment agreement or other agreement relating to the rights of the holder of a Stock Award, the provisions of this Section 13 and the conflicting agreement shall be construed to provide the greatest benefit to the holder of the Stock Award.

14. AMENDMENT OF THE PLAN AND STOCK AWARDS.

(a) The Board at any time, and from time to time, may amend the Plan. However, except as provided in Section 13 relating to adjustments upon changes in stock, no amendment shall be effective unless approved by the stockholders of the Company within twelve (12) months before or after the adoption of the amendment, where the amendment will:

(i) Increase the number of shares reserved for Stock Awards under the Plan;

(ii) Modify the requirements as to eligibility for participation in the Plan (to the extent such modification requires stockholder approval in order for the Plan to satisfy the requirements of Section 422 of the Code); or

(iii) Modify the Plan in any other way if such modification

requires stockholder approval in order for the Plan to satisfy the requirements of Section 422 of the Code or to comply with the requirements of Rule 16b-3.

(b) The Board may in its sole discretion submit any other amendment to the Plan for stockholder approval, including, but not limited to, amendments to the Plan intended to satisfy the requirements of Section 162(m) of the Code and the regulations promulgated thereunder regarding the exclusion of performance-based compensation from the limit on corporate deductibility of compensation paid to certain executive officers.

(c) It is expressly contemplated that the Board may amend the Plan in any respect the Board deems necessary or advisable to provide eligible Employees with the maximum benefits provided or to be provided under the provisions of the Code and the regulations promulgated thereunder relating to Incentive Stock Options and/or to bring the Plan and/or Incentive Stock Options granted under it into compliance therewith.

(d) Rights and obligations under any Stock Award granted before amendment of the Plan shall not be impaired by any amendment of the Plan unless (i) the Company requests the consent of the person to whom the Stock Award was granted and (ii) such person consents in writing.

(e) The Board at any time, and from time to time, may amend the terms of any one or more Stock Award; provided, however, that the rights and obligations under any Stock Award shall not be impaired by any such amendment unless (i) the Company requests the consent of the person to whom the Stock Award was granted and (ii) such person consents in writing.

15. TERMINATION OR SUSPENSION OF THE PLAN.

(a) The Board may suspend or terminate the Plan at any time. Unless sooner terminated, the Plan shall terminate on January 22, 2006, which shall be within ten (10) years from the date the Plan is adopted by the Board or approved by the stockholders of the Company, whichever is earlier. No Stock Awards may be granted under the Plan while the Plan is suspended or after it is terminated.

(b) Rights and obligations under any Stock Award granted while the Plan is in effect shall not be impaired by suspension or termination of the Plan, except with the written consent of the person to whom the Stock Award was granted.

16. EFFECTIVE DATE OF PLAN.

The Plan shall become effective as determined by the Board, but no Stock Awards granted under the Plan shall be exercised unless and until the Plan has been approved by the stockholders of the Company, which approval shall be within twelve (12) months before or after the date the Plan is adopted by the Board, and, if required, an appropriate permit has been issued by the Commissioner of Corporations of the State of California.

AURORA BIOSCIENCES CORPORATION
EMPLOYEE STOCK PURCHASE PLAN
ADOPTED FEBRUARY 4, 1997
AS AMENDED AND RESTATED AS OF MAY 4, 1999
AS AMENDED AND RESTATED AS OF FEBRUARY 27, 2001, AND
MARCH 21, 2001
(SHARE NUMBERS HEREIN HAVE BEEN ADJUSTED TO REFLECT THE FOUR
FOR FIVE REVERSE STOCK SPLIT EFFECTED ON APRIL 25, 1997)

1. PURPOSE.

(a) The purpose of the Employee Stock Purchase Plan (the "Plan") is to provide a means by which employees of Aurora Biosciences Corporation, a Delaware corporation (the "Company"), and its Affiliates, as defined in subparagraph 1(b), which are designated as provided in subparagraph 2(b), may be given an opportunity to purchase stock of the Company.

(b) The word "Affiliate" as used in the Plan means any parent corporation or subsidiary corporation of the Company, as those terms are defined in Sections 424(e) and (f), respectively, of the Internal Revenue Code of 1986, as amended (the "Code").

(c) The Company, by means of the Plan, seeks to retain the services of its employees, to secure and retain the services of new employees, and to provide incentives for such persons to exert maximum efforts for the success of the Company.

(d) The Company intends that the rights to purchase stock of the Company granted under the Plan be considered options issued under an "employee stock purchase plan" as that term is defined in Section 423(b) of the Code.

2. ADMINISTRATION.

(a) The Plan shall be administered by the Board of Directors (the "Board") of the Company unless and until the Board delegates administration to a Committee, as provided in subparagraph 2(c). Whether or not the Board has delegated administration, the Board shall have the final power to determine all questions of policy and expediency that may arise in the administration of the Plan.

(b) The Board shall have the power, subject to, and within the limitations of, the express provisions of the Plan:

(i) To determine when and how rights to purchase stock of the Company shall be granted and the provisions of each offering of such rights (which need not be identical).

(ii) To designate from time to time which Affiliates of the Company shall be eligible to participate in the Plan.

(iii) To construe and interpret the Plan and rights granted under it, and to establish, amend and revoke rules and regulations for its administration. The Board, in the exercise of this

power, may correct any defect, omission or inconsistency in the Plan, in a manner and to the extent it shall deem necessary or expedient to make the Plan fully effective.

(iv) To amend the Plan as provided in paragraph 13.

(v) Generally, to exercise such powers and to perform such acts as the Board deems necessary or expedient to promote the best interests of the Company and its Affiliates.

(c) The Board may delegate administration of the Plan to a Committee composed of not fewer than two (2) members of the Board (the "Committee"). If administration is delegated to a Committee, the Committee shall have, in connection with the administration of the Plan, the powers theretofore possessed by the Board, subject, however, to such resolutions, not inconsistent with the provisions of the Plan, as may be adopted from time to time by the Board. The Board may abolish the Committee at any time and revert in the Board the administration of the Plan.

3. SHARES SUBJECT TO THE PLAN.

(a) Subject to the provisions of paragraph 12 relating to adjustments upon changes in stock, the stock that may be sold pursuant to rights granted under the Plan shall not exceed in the aggregate one million two hundred thousand (1,200,000) shares of the Company's common stock (the "Common Stock"). If any right granted under the Plan shall for any reason terminate without having been exercised, the Common Stock not purchased under such right shall again become available for the Plan.

(b) The stock subject to the Plan may be unissued shares or reacquired shares, bought on the market or otherwise.

4. GRANT OF RIGHTS; OFFERING.

(a) The Board or the Committee may from time to time grant or provide for the grant of rights to purchase Common Stock of the Company under the Plan to eligible employees (an "Offering") on a date or dates (the "Offering Date(s)") selected by the Board or the Committee. Each Offering shall be in such form and shall contain such terms and conditions as the Board or the Committee shall deem appropriate, which shall comply with the requirements of Section 423(b)(5) of the Code that all employees granted rights to purchase stock under the Plan shall have the same rights and privileges. The provisions of separate Offerings need not be identical, but each Offering shall include (through incorporation of the provisions of this Plan by reference in the Offering or otherwise) the period during which the Offering shall be effective, which period shall not exceed twenty-seven (27) months beginning with the Offering Date, and the substance of the provisions contained in paragraphs 5 through 8, inclusive.

(b) If an employee has more than one right outstanding under the Plan, unless he or she otherwise indicates in agreements or notices delivered hereunder: (1) each agreement or notice delivered by that employee will be deemed to apply to all of his or her rights under the Plan, and (2) a right with a lower exercise price (or an earlier-granted right, if two rights have identical exercise prices), will be exercised to the fullest possible extent before a right with a higher exercise price (or a later-granted right, if two rights have identical exercise prices) will be exercised.

5. ELIGIBILITY.

(a) Rights may be granted only to employees of the Company or, as the Board or the Committee may designate as provided in subparagraph 2(b), to employees of any Affiliate of the Company. Except as provided in subparagraph 5(b), an employee of the Company or any Affiliate shall not be eligible to be granted rights under the Plan, unless, on the Offering Date, such employee is in the employ of the Company and has been in the employ of the Company or any Affiliate for such continuous period preceding such grant as the Board or the Committee may require, but in no event shall the required period of continuous employment be greater than two (2) years. In addition, unless otherwise determined by the Board or the Committee and set forth in the terms of the applicable Offering, no employee of the Company or any Affiliate shall be eligible to be granted rights under the Plan, unless, on the Offering Date, such employee's customary employment with the Company or such Affiliate is for at least twenty (20) hours per week and at least five (5) months per calendar year.

(b) Each person who, during the course of an Offering, first becomes an eligible employee of the Company or designated Affiliate shall not be eligible to be granted rights under such Offering.

(c) No employee shall be eligible for the grant of any rights under the Plan if, immediately after any such rights are granted, such employee owns stock possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company or of any Affiliate. For purposes of this subparagraph 5(c), the rules of Section 424(d) of the Code shall apply in determining the stock ownership of any employee, and stock which such employee may purchase under all outstanding rights and options shall be treated as stock owned by such employee.

(d) An eligible employee may be granted rights under the Plan only if such rights, together with any other rights granted under "employee stock purchase plans" of the Company and any Affiliates, as specified by Section 423(b)(8) of the Code, do not permit such employee's rights to purchase stock of the Company or any Affiliate to accrue at a rate which exceeds twenty-five thousand dollars (\$25,000) of fair market value of such stock (determined at the time such rights are granted) for each calendar year in which such rights are outstanding at any time.

(e) Officers of the Company and any designated Affiliate shall be eligible to participate in Offerings under the Plan, provided, however, that the Board may provide in an Offering that certain employees who are highly compensated employees within the meaning of Section 423(b)(4)(D) of the Code shall not be eligible to participate.

6. RIGHTS; PURCHASE PRICE.

(a) On each Offering Date, each eligible employee, pursuant to an Offering made under the Plan, shall be granted the right to purchase up to the number of shares of Common Stock of the Company purchasable with a percentage designated by the Board or the Committee not exceeding fifteen percent (15%) of such employee's Earnings (as defined in subparagraph 7(a)) during the period which begins on the Offering Date (or such later date as the Board or the Committee determines for a particular Offering) and ends on the date stated in the Offering, which date shall be no later than the end of the Offering. The Board or the Committee shall

establish one or more dates during an Offering (the "Purchase Date(s)") on which rights granted under the Plan shall be exercised and purchases of Common Stock effected in accordance with such Offering.

(b) In connection with each Offering made under this Plan, the Board or the Committee shall specify a maximum number of shares which may be purchased by any employee as well as a maximum aggregate number of shares which may be purchased by all eligible employees pursuant to such Offering. In addition, in connection with each Offering which contains more than one Purchase Date, the Board or the Committee may specify a maximum aggregate number of shares which may be purchased by all eligible employees on any given Purchase Date under the Offering. If the aggregate purchase of shares upon exercise of rights granted under the Offering would exceed any such maximum aggregate number, the Board or the Committee shall make a pro rata allocation of the shares available in as nearly a uniform manner as shall be practicable and as it shall deem to be equitable.

(c) The purchase price of stock acquired pursuant to rights granted under the Plan shall be not less than the lesser of:

(i) an amount equal to eighty-five percent (85%) of the fair market value of the stock on the Offering Date; or

(ii) an amount equal to eighty-five percent (85%) of the fair market value of the stock on the Purchase Date.

7. PARTICIPATION; WITHDRAWAL; TERMINATION.

(a) An eligible employee may become a participant in the Plan pursuant to an Offering by delivering a participation agreement to the Company within the time specified in the Offering, in such form as the Company provides; provided, however, that an eligible employee shall be entitled to participate in no more than one (1) Offering at any time. Each such agreement shall authorize payroll deductions of up to the maximum percentage specified by the Board or the Committee of such employee's Earnings during the Offering. "Earnings" is defined as an employee's regular salary or wages (including amounts thereof elected to be deferred by the employee, that would otherwise have been paid, under any cash or deferred arrangement established by the Company), which shall include commissions and overtime pay, but shall exclude bonuses, incentive pay, profit sharing, other remuneration paid directly to the employee, the cost of employee benefits paid for by the Company or an Affiliate, education or tuition reimbursements, imputed income arising under any group insurance or benefit program, traveling expenses, business and moving expense reimbursements, income received in connection with stock options, contributions made by the Company or an Affiliate under any employee benefit plan, and similar items of compensation. The payroll deductions made for each participant shall be credited to an account for such participant under the Plan and shall be deposited with the general funds of the Company or an Affiliate. A participant may reduce (including to zero) or increase such payroll deductions after the beginning of any Offering only as provided for in the Offering. A participant may not make additional payments into his or her account.

(b) At any time during an Offering, a participant may terminate his or her payroll deductions under the Plan and withdraw from the Offering by delivering to the Company a notice of withdrawal in such form as the Company provides. Such withdrawal may be elected at any time prior to the end of the Offering except as provided by the Board or the Committee in the Offering. Upon such withdrawal from the Offering by a participant, the Company shall distribute to such participant all of his or her accumulated payroll deductions (reduced to the extent, if any, such deductions have been used to acquire stock for the participant) under the Offering, without interest, and such participant's interest in that Offering shall be automatically terminated. A participant's withdrawal from an Offering will have no effect upon such participant's eligibility to participate in any other Offerings under the Plan but such participant will be required to deliver a new participation agreement in order to participate in subsequent Offerings under the Plan. A reduction of payroll deductions to zero shall not, by itself, constitute a withdrawal from an Offering.

(c) Rights granted pursuant to any Offering under the Plan shall terminate immediately upon cessation of any participating employee's employment with the Company and any designated Affiliate, for any reason, and the Company shall distribute to such terminated employee all of his or her accumulated payroll deductions (reduced to the extent, if any, such deductions have been used to acquire stock for the terminated employee), under the Offering, without interest.

(d) Rights granted under the Plan shall not be transferable, and, except as provided in paragraph 14, shall be exercisable only by the person to whom such rights are granted.

8. EXERCISE.

(a) On each date specified therefor in the relevant Offering ("Purchase Date"), each participant's accumulated payroll deductions (without any increase for interest) will be applied to the purchase of whole shares of stock of the Company, up to the maximum number of shares permitted pursuant to the terms of the Plan and the applicable Offering, at the purchase price specified in the Offering. No fractional shares shall be issued upon the exercise of rights granted under the Plan. The amount, if any, of accumulated payroll deductions remaining in each participant's account after the purchase of shares on the final Purchase Date of an Offering shall be distributed to the participant after such final Purchase Date, without interest.

(b) No rights granted under the Plan may be exercised to any extent unless the Plan (including rights granted thereunder) is covered by an effective registration statement pursuant to the Securities Act of 1933, as amended (the "Securities Act") and the Plan is in material compliance with all applicable state, foreign and other securities and other laws applicable to the Plan. If on a Purchase Date in any Offering hereunder the Plan is not so registered, no rights granted under the Plan or any Offering shall be exercised on such Purchase Date, and the Purchase Date shall be delayed until the Plan is subject to such an effective registration statement and in such compliance, except that the Purchase Date shall not be delayed more than twelve (12) months and the Purchase Date shall in no event be more than twenty-seven (27) months from the Offering Date. If on the Purchase Date of any Offering hereunder, as delayed to the maximum extent permissible, the Plan is not registered and in such compliance, no rights granted under the Plan or any Offering shall be exercised and all payroll deductions accumulated during the Offering (reduced to the extent, if any, such deductions have been used to acquire stock) shall be distributed to the participants, without interest.

9. COVENANTS OF THE COMPANY.

(a) During the terms of the rights granted under the Plan, the Company shall keep available at all times the number of shares of stock required to satisfy such rights.

(b) The Company shall seek to obtain from each regulatory commission or agency having jurisdiction over the Plan such authority as may be required to issue and sell shares of stock upon exercise of the rights granted under the Plan. If, after reasonable efforts, the Company is unable to obtain from any such regulatory commission or agency the authority which counsel for the Company deems necessary for the lawful issuance and sale of stock under the Plan, the Company shall be relieved from any liability for failure to issue and sell stock upon exercise of such rights unless and until such authority is obtained.

10. USE OF PROCEEDS FROM STOCK.

Proceeds from the sale of stock pursuant to rights granted under the Plan shall constitute general funds of the Company.

11. RIGHTS AS A STOCKHOLDER.

A participant shall not be deemed to be the holder of, or to have any of the rights of a holder with respect to, any shares subject to rights granted under the Plan unless and until the participant's stockholdings acquired upon exercise of rights under the Plan are recorded in the books of the Company.

12. ADJUSTMENTS UPON CHANGES IN STOCK.

(a) If any change is made in the stock subject to the Plan, or subject to any rights granted under the Plan (through merger, consolidation, reorganization, recapitalization, stock dividend, dividend in property other than cash, stock split, liquidating dividend, combination of shares, exchange of shares, change in corporate structure or otherwise), the Plan and outstanding rights will be appropriately adjusted in the class(es) and maximum number of shares subject to the Plan and the class(es) and number of shares and price per share of stock subject to outstanding rights.

(b) In the event of: (1) a dissolution or liquidation of the Company; (2) a merger or consolidation in which the Company is not the surviving corporation; (3) a reverse merger in which the Company is the surviving corporation but the shares of the Company's Common Stock outstanding immediately preceding the merger are converted by virtue of the merger into other property, whether in the form of securities, cash or otherwise; or (4) any other capital reorganization in which more than fifty percent (50%) of the shares of the Company entitled to vote are exchanged, then, as determined by the Board in its sole discretion (i) any surviving corporation may assume outstanding rights or substitute similar rights for those under the Plan, (ii) such rights may continue in full force and effect, or (iii) participants' accumulated payroll deductions may be used to purchase Common Stock immediately prior to the transaction described above and the participants' rights under the ongoing Offering terminated.

13. AMENDMENT OF THE PLAN.

(a) The Board at any time, and from time to time, may amend the Plan. However, except as provided in paragraph 12 relating to adjustments upon changes in stock, no amendment shall be effective unless approved by the stockholders of the Company within twelve (12) months before or after the adoption of the amendment, where the amendment will:

(i) Increase the number of shares reserved for rights under the Plan;

(ii) Modify the provisions as to eligibility for participation in the Plan (to the extent such modification requires stockholder approval in order for the Plan to obtain employee stock purchase plan treatment under Section 423 of the Code or to comply with the requirements of Rule 16b-3 promulgated under the Securities Exchange Act of 1934, as amended ("Rule 16b-3")); or

(iii) Modify the Plan in any other way if such modification requires stockholder approval in order for the Plan to obtain employee stock purchase plan treatment under Section 423 of the Code or to comply with the requirements of Rule 16b-3.

It is expressly contemplated that the Board may amend the Plan in any respect the Board deems necessary or advisable to provide eligible employees with the maximum benefits provided or to be provided under the provisions of the Code and the regulations promulgated thereunder relating to employee stock purchase plans and/or to bring the Plan and/or rights granted under it into compliance therewith.

(b) Rights and obligations under any rights granted before amendment of the Plan shall not be impaired by any amendment of the Plan, except with the consent of the person to whom such rights were granted or except as necessary to comply with any laws or governmental regulation.

14. DESIGNATION OF BENEFICIARY.

(a) A participant may file a written designation of a beneficiary who is to receive any shares and cash, if any, from the participant's account under the Plan in the event of such participant's death subsequent to the end of an Offering but prior to delivery to him of such shares and cash. In addition, a participant may file a written designation of a beneficiary who is to receive any cash from the participant's account under the Plan in the event of such participant's death during an Offering.

(b) Such designation of beneficiary may be changed by the participant at any time by written notice. In the event of the death of a participant and in the absence of a beneficiary validly designated under the Plan who is living at the time of such participant's death, the Company shall deliver such shares and/or cash to the executor or administrator of the estate of the participant, or if no such executor or administrator has been appointed (to the knowledge of the Company), the Company, in its discretion, may deliver such shares and/or cash to the spouse or to any one or more dependents or relatives of the participant, or if no spouse, dependent or relative is known to the Company, then to such other person as the Company may designate.

15. TERMINATION OR SUSPENSION OF THE PLAN.

(a) The Board may suspend or terminate the Plan at any time. No rights may be granted under the Plan while the Plan is suspended or after it is terminated.

(b) Rights and obligations under any rights granted while the Plan is in effect shall not be impaired by suspension or termination of the Plan, except as expressly provided in the Plan or with the consent of the person to whom such rights were granted or except as necessary to comply with any laws or governmental regulation.

16. EFFECTIVE DATE OF PLAN.

The Plan shall become effective upon the effectiveness of the Company's initial public offering of shares of common stock, but no rights granted under the Plan shall be exercised unless and until the Plan has been approved by the stockholders of the Company.

AURORA BIOSCIENCES CORPORATION

EMPLOYEE STOCK PURCHASE PLAN OFFERING,

AS AMENDED BY THE BOARD OF DIRECTORS ON APRIL 28, 2001

1. GRANT; OFFERING DATE.

(a) The Board of Directors of Aurora Biosciences Corporation (the "Company"), pursuant to the Company's Employee Stock Purchase Plan (the "Plan"), hereby authorizes the grant of rights to purchase shares of the common stock of the Company ("Common Stock") to all Eligible Employees, as defined below (an "Offering"). The first Offering shall begin simultaneously with the initial public offering of the Company's Common Stock, or the effective date of such initial public offering (the "Effective Date") and end on April 30, 1999 (the "Initial Offering"). Thereafter, for Offerings commencing before March 21, 2001, an Offering shall begin on May 1st and November 1st, every year, beginning with November 1, 1997, and shall end on the day prior to the second annual anniversary of each respective Offering Date and, for the Offering commencing after March 21, 2001, such Offering shall not commence on May 1, 2001 but, rather, shall commence on June 1, 2001 and shall end on March 31, 2002. "Offering Date" shall be defined as follows: (i) with respect to an Offering commencing prior to March 21, 2001, each of May 1 and November 1, as the case may be for each respective Offering or (ii) with respect to the Offering commencing after March 21, 2001, then June 1, 2001.

(b) Prior to the commencement of any Offering, the Board of Directors (or the Committee described in subparagraph 2(c) of the Plan, if any) may change any or all terms of such Offering and any subsequent Offerings. The granting of rights pursuant to each Offering hereunder shall occur on each respective Offering Date unless, prior to such date (a) the Board of Directors (or such Committee) determines that such Offering shall not occur, or (b) no shares remain available for issuance under the Plan in connection with the Offering.

2. ELIGIBLE EMPLOYEES.

(a) All employees of the Company and each of its Affiliates (as defined in the Plan) incorporated in the United States shall be granted rights to purchase Common Stock under each Offering on the Offering Date of such Offering (an "Eligible Employee"); provided, however, that an Eligible Employee shall not be entitled to participate in more than one (1) Offering at any time. Notwithstanding the foregoing, no employee who is disqualified by subparagraph 5(c) or 5(d) of the Plan shall be an Eligible Employee or be granted rights under an Offering. To be an Eligible Employee granted rights under an Offering, an employee need NOT be in the employ of the Company for any continuous period, but such employ must be customarily employed by the Company for at least twenty (20) hours per week and at least five (5) months per calendar year.

(b) Each person who, with respect to any Offering, first becomes an Eligible Employee subsequent to the Offering Date of such Offering, shall not receive any right under such Offering.

3. RIGHTS.

(a) Subject to the limitations contained herein and in the Plan, on each Offering Date each Eligible Employee shall be granted the right to purchase the number of shares of Common Stock purchasable with up to fifteen percent (15%) of such employee's Earnings paid during the period of such Offering beginning after such Eligible Employee first commences participation; provided, however, that no employee may purchase Common Stock in a particular year with more than fifteen percent (15%) of such employee's Earnings in such year under all ongoing Offerings under the Plan and all other Company plans intended to qualify as "employee stock purchase plans" under Section 423 of the Internal Revenue Code of 1986, as amended (the "Code"). "Earnings" for this purpose means an employee's regular salary or wages (including amounts the employee elected to defer, but which would otherwise have been paid under a 401(k) plan or similar arrangement), commissions and overtime pay. The maximum number of shares of Common Stock an Eligible Employee may purchase on any Purchase Date, as defined in Section 6 below, in an Offering shall be such number of shares as has a fair market value (determined as of the Offering Date

for such Offering) equal to (x) \$25,000 multiplied by the number of calendar years in which the right under such Offering has been outstanding at any time, minus (y) the fair market value of any other shares of Common Stock (determined as of the relevant Offering Date with respect to such shares) which, for purposes of the limitation of Section 423(b)(8) of the Code, are attributed to any of such calendar years in which the right is outstanding. The amount in clause (y) of the previous sentence shall be determined in accordance with regulations applicable under Section 423(b)(8) of the Code based on (i) the number of shares previously purchased with respect to such calendar years pursuant to such Offering or any other Offering under the Plan, or pursuant to any other Company plans intended to qualify as "employee stock purchase plans" under Section 423 of the Code, and (ii) the number of shares subject to other rights outstanding on the Offering Date for such Offering pursuant to the Plan or any other such Company plan.

(b) The maximum aggregate number of shares available to be purchased by all Eligible Employees under an Offering on any Purchase Date shall be the number of shares remaining available under the Plan on the applicable Purchase Date. If the aggregate purchase of shares of Common Stock upon exercise of rights granted under the Offering would exceed the maximum aggregate number of shares available, the Board shall make a pro rata allocation of the shares available in a uniform and equitable manner.

4. PURCHASE PRICE.

The purchase price of the Common Stock under the Offering shall be the lesser of eighty-five percent (85%) of the fair market value of the Common Stock on the Offering Date or eighty-five percent (85%) of the fair market value of the Common Stock on the Purchase Date, in each case rounded up to the nearest whole cent per share. For the Initial Offering, the fair market value of the Common Stock at the time when the Offering commences shall be the price per share at which shares of Common Stock are first sold to the public in the Company's initial public offering as specified in the final prospectus with respect to that offering. As otherwise used herein, "fair market value" means, as of any date, the value of the Common Stock of the Company determined as follows:

(i) If the Common Stock is listed on any established stock exchange or a national market system, including without limitation the Nasdaq National Market, the fair market value of a share of Common Stock shall be the closing sales price for such stock (or the closing bid, if no sales were reported) as quoted on such system or exchange (or the exchange with the greatest volume of trading in Common Stock) on the last market trading day prior to the day of determination, as reported in the Wall Street Journal or such other source as the Board deems reliable;

(ii) If the Common Stock is quoted on Nasdaq (but not on the National Market thereof) or is regularly quoted by a recognized securities dealer but selling prices are not reported, the fair market value of a share of Common Stock shall be the mean between the bid and asked prices for the Common Stock on the last market trading day prior to the day of determination, as reported in the Wall Street Journal or such other source as the Board deems reliable;

(iii) In the absence of an established market for the Common Stock, the fair market value shall be determined in good faith by the Board.

5. PARTICIPATION.

(a) An Eligible Employee may elect to participate in an Offering on the Offering Date; provided, however, that the Company may determine a later time for filing the enrollment form for all Eligible Employees with respect to a given Offering Date. An Eligible Employee shall become a participant in an Offering by delivering an agreement authorizing payroll deductions. Such deductions may be in whole percentages only, with a minimum percentage of one percent (1%), and a maximum percentage of fifteen percent (15%). A participant may not make additional payments into his or her account. The agreement shall be made on such enrollment form as the Company provides, and must be delivered to the Company before the Offering Date to be effective for that Offering, unless a later time for filing the enrollment form is set by the Board for all Eligible Employees with respect to a given Offering Date. As to the Initial Offering, the time for filing an enrollment form and commencing participation for individuals who are Eligible Employees on the Offering Date for the Initial Offering shall be determined by the Company and communicated to such Eligible Employees.

(b) A participant may increase his or her participation level during the course of an Offering, but only effective as of the day immediately following the next Purchase Date occurring after the requested increase (i.e., either (i) for Offerings commencing before March 21, 2001, May 1 or November 1 or (ii) for the Offering commencing after March 21, 2001, then December 1, 2001. A participant may reduce (including to zero) his or her participation level only once during any six-month period ending on a Purchase Date by delivering a notice to the Company in such form and at such time as the Company provides. Notwithstanding the foregoing, a participant may make a second reduction during such six-month period if such second reduction is to zero. A participant may withdraw from an Offering and receive his or her accumulated payroll deductions from the Offering (reduced to the extent, if any, such deductions have been used to acquire Common Stock for the participant on any prior Purchase Dates), without interest, at any time prior to the end of the Offering by delivering a withdrawal notice to the Company in such form as the Company provides. A reduction of payroll deductions to zero shall not, by itself, constitute a withdrawal from an Offering.

6. PURCHASES.

Subject to the limitations contained herein, on each Purchase Date, each participant's accumulated payroll deductions (without any increase for interest) shall be applied to the purchase of whole shares of Common Stock, up to the maximum number of shares permitted under the Plan and the Offering. "Purchase Date" shall be defined as (i) with respect to an Offering commencing prior to March 21, 2001, each of April 30 (excluding April 30, 1997) and October 31 or (ii) with respect to the Offering commencing after March 21, 2001, each of November 30, 2001 and March 31, 2002.

7. TERMINATION.

Rights granted under the Offering shall terminate immediately upon cessation of any participating employee's employment with the Company and any designated Affiliate, for any reason, and the Company shall distribute to such terminated employee all of his or her accumulated payroll deductions (reduced to the extent, if any, such deductions have been used to acquire stock for the terminated employee), under the Offering, without interest.

8. NOTICES AND AGREEMENTS.

Any notices or agreements provided for in an Offering or the Plan shall be given in writing, in a form provided by the Company, and unless specifically provided for in the Plan or this Offering shall be deemed effectively given upon receipt or, in the case of notices and agreements delivered by the Company, five (5) days after deposit in the United States mail, postage prepaid.

9. EXERCISE CONTINGENT ON STOCKHOLDER APPROVAL.

The rights granted under an Offering are subject to the approval of the Plan by the stockholders as required for the Plan to obtain treatment as a tax-qualified employee stock purchase plan under Section 423 of the Code and to comply with the requirements of the exemption from potential liability under Section 16(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), set forth in Rule 16b-3 promulgated under the Exchange Act.

10. OFFERING SUBJECT TO PLAN.

Each Offering is subject to all the provisions of the Plan, and its provisions are hereby made a part of the Offering, and is further subject to all interpretations, amendments, rules and regulations which may from time to time be promulgated and adopted pursuant to the Plan. In the event of any conflict between the provisions of an Offering and those of the Plan (including interpretations, amendments, rules and regulations which may from time to time be promulgated and adopted pursuant to the Plan), the provisions of the Plan shall control.

1993 STOCK OPTION PLAN

OF

PANVERA CORPORATION

I. PURPOSE AND SCOPE

1.1. Purpose. The purpose of this Plan is to advance the interests of PanVera Corporation (the "Company") and its shareholders by providing a means for attracting and retaining key employees of the Company who are critical to its continuance and future success, to provide additional incentive compensation to such personnel and to encourage such personnel to acquire or increase their proprietary interests in the Company. Stock options granted under this Plan may constitute incentive stock options under Section 422 of the Internal Revenue Code of 1986, as amended (the "Code"), or stock options which are not qualified as incentive stock options under the Code ("nonqualified stock options"). Each stock option granted under this Plan shall be clearly identified as either an incentive stock option or a non-qualified stock option at the time of grant.

1.2. Eligible Employees. Options to purchase Common Stock of the Company under this Plan may be granted to employees of the Company or its subsidiaries who are either officers of the Company or its subsidiaries, or whose principal duties are administrative or consist of supervising the work of other employees, or who are professionals, or who are otherwise key employees. For this purpose, and for all purposes under this Plan, a subsidiary of the Company shall be any "subsidiary corporation" of the Company as defined in Section 424(f) of the Code. An employee who is a member of the class of employees eligible to receive an option under this Plan shall hereinafter sometimes be referred to as an "eligible employee" and an eligible employee who has been granted an option shall hereinafter be referred to as a "Participant."

1.3. Shares Available for Options. There shall be available for purchase under options granted under this Plan a total of 36,000 shares of the Common Stock of the Company, subject to adjustment as provided in Paragraph 5.1 hereof. In the event that options which have been granted under this Plan lapse or expire, options for an equivalent number of shares may be granted hereunder; provided, however, in no event shall the number of shares purchased through the exercise of options granted under this Plan and the number of shares subject to options at any time exceed in the aggregate more than 36,000 shares of the Common Stock of the Company.

1.4. Maximum Calendar Year Grant to Any Employee. The aggregate fair market value (determined at the time the option is granted) of the Common Stock with respect to which incentive stock options are exercisable by any Participant during any calendar year under this Plan (and under all other plans of the Company or any parent or subsidiary of the Company) shall not exceed \$100,000, and/or any other limit as may be prescribed by the Code from time to time.

II. ADMINISTRATION

2.1. Committee. The Plan shall be administered by a Committee, hereinafter referred to as the "Committee," of not less than one (1)

disinterested person or persons, each of whom shall be a person who is not eligible to participate in the Plan at the time he exercises his discretion in administering the Plan and who has not, at any time within one year prior to his exercise of discretion in administering the Plan, been eligible for selection as a participant in the Plan or any other similar plan of the Company. None of the members of the Committee shall be eligible to participate in the Plan. The members of the Committee shall be appointed by the Board of Directors of the Company and shall serve at its pleasure. A majority of the Committee shall constitute a quorum at any meeting thereof and the acts of a majority of members present at any meeting of the Committee at which a quorum is present, or acts approved in writing by a majority of the Committee shall be the acts of the Committee.

2.2. Responsibility of Committee. The Committee shall have the sole responsibility for granting options under the Plan. Subject to the express provisions of the Plan, the Committee, in its sole discretion, may grant options to eligible employees to purchase such number of shares of the Common Stock of the Company on such terms as it deems advisable and in the best interest of the Company. An eligible employee who has been granted an option under the Plan may be granted additional options under the Plan if the Committee shall so determine. Options shall be evidenced by Stock Option Agreements in such form not inconsistent with this Plan as the Committee shall from time to time determine.

2.3. Rule Making Authority. Subject to the express provisions of the Plan, the Committee is authorized to interpret, prescribe, amend and rescind rules and regulations relating to the Plan and to make all other determinations necessary or advisable for its administration. The Committee's determinations and interpretations shall be final, conclusive, and binding on all persons.

III. TERMS AND CONDITIONS OF OPTIONS

3.1. Option Price. The per share purchase price of the Common Stock under each incentive stock option granted pursuant to this Plan shall be determined by the Committee but shall not be less than the fair market value per share of such stock at the date of grant of such option, unless the Participant owns (within the meaning of the Code) more than ten percent (10%) of the total combined voting power of all classes of stock of the Company or of any subsidiary or parent of the Company (hereinafter referred to as a "10% Shareholder"), in which case the per share price shall be at least one hundred ten percent (110%) of the fair market value per share of the Common Stock of the Company at the date of grant of such option. The fair market value of the Common Stock shall be as determined in good faith by the Committee in conformity with pertinent law and applicable regulations and rulings of the United States Treasury Department.

3.2. Exercise Period. An option granted to a Participant must be exercised within ten (10) years (five (5) years if the Participant holds an incentive stock option and is a 10% Shareholder) of the date of grant or it shall lapse upon the expiration of said ten-year period (or five-year period, as the case may be) unless it shall lapse at an earlier date by reason of termination of employment as provided in Paragraph 3.3. The Committee may, in its discretion, require that a Participant be employed by the Company or a subsidiary of the Company for a designated number of years prior to the exercise by him of any option or options or portions of options granted under this Plan, and may, in its sole discretion, determine the exercise dates on

which options or portions of options may be exercised by a Participant. Any such requirements may subsequently be reduced or waived by the Committee in its discretion.

3.3. Termination of Employment.

(a) Any Participant whose employment with the Company or any of its subsidiaries is terminated due to retirement on such Participant's normal retirement date shall have three (3) months from the date of such termination of employment to exercise any option granted hereunder as to all or part of the shares under such option, subject to the condition that no option shall be exercisable subsequent to ten (10) years (five (5) years if the Participant holds an incentive stock option and is a 10% shareholder) after the date of grant and provided that at the time of termination the Participant had a present right to exercise such option. To the extent an option is not exercised within such period, it shall lapse. For this purpose, "normal retirement date" shall mean the Participant's 65th birthday. Any employee who continues his employment with the Company beyond his normal retirement date shall continue to be an eligible employee so long as he otherwise continues to qualify to participate hereunder.

(b) If termination is due to permanent and total disability (as defined in Section 22(e) of the Code), the Participant shall have one (1) year from the date of termination of employment to exercise any option granted hereunder as to all or part of the shares under such option, subject to the condition that no option shall be exercisable subsequent to ten (10) years (five (5) years if the Participant holds an incentive stock option and is a 10% Shareholder) after the date of grant and provided that at the time of termination the Participant had a present right to exercise such option. To the extent an option is not exercised within such period, it shall lapse.

(c) If termination is due to death, the personal representative, administrator or other representative of the estate of the deceased Participant, as the case may be, or the person or persons to whom the deceased Participant's rights under the option shall pass by will or the laws of descent and distribution, as the case may be, shall have the right to exercise any option granted hereunder as to all or part of the shares under such option to the extent exercisable at the date of the Participant's death. Such option must be exercised within one (1) year after the date of the Participant's death, subject to the condition that no option shall be exercisable subsequent to ten (10) years (five (5) years if the Participant holds an incentive stock option and was a 10% Shareholder) after the date of grant. To the extent an option is not exercised within such period, it shall lapse.

(d) If a Participant's employment is terminated for any reason other than those specified above, to the extent an option is not effectively exercised prior to such termination, it shall lapse one (1) month after the date of termination, unless a Participant's employment with the Company is terminated for Cause (as hereinafter defined), in which event the option shall lapse immediately upon termination. For purposes hereof, termination for "Cause" shall be defined as the termination of a Participant's employment as a result of (i) deliberate, willful or gross misconduct as determined by the Board of Directors of the Company, including any action of malfeasance or

wrongdoing affecting the Company and any subsidiary of the Company, (ii) a breach of any covenant not to compete or confidentiality agreement with the Company or any subsidiary of the Company, or (iii) the commission of a felony or serious misdemeanor which adversely affects the Participant's ability to perform his duties on behalf of the Company. The transfer of employment from one subsidiary to another subsidiary of the Company or from the Company to a subsidiary or a subsidiary to the Company shall not be considered to constitute a termination of employment by a Participant.

(e) the Committee may in its sole discretion increase the periods permitted for exercise of an option following termination of employment as provided in subparagraphs 3.3(a), (b), (c) and (d), above, if allowable under applicable law; provided, however, in no event shall an option be exercisable subsequent to ten (10) years after its date of grant.

3.4. Transferability of Options. During his lifetime a Participant may not transfer any option granted to him under this Plan and such options shall be exercisable only by the Participant. Upon his death a Participant shall have the right to transfer the option or options granted to him either by the terms of his will or under the laws of intestate succession, subject to the limitations set forth in Paragraph 3.3, and all such distributees shall be subject to the same terms and conditions of this Plan as would the Participant.

3.5. Exercise of Option. Subject to the limitations stated elsewhere in this Plan, options granted under this Plan will be exercisable on such dates and during such periods and for such number of shares as shall be determined by the Committee. A Participant may exercise an option granted hereunder by delivering to the chief financial officer of the Company at its principal business office a written notice designating the number of shares for which it is being exercised. Payment in full in cash for the number of shares for which the option has been exercised must accompany said written notice. At the time of exercise, the Participant shall, if he has not previously done so, enter into an Incentive Stock Option Agreement or a Non-Qualified Stock Option Agreement, as the case may be, described in Article IV, below. Such agreements shall contain such representations, warranties and conditions as shall be necessary in the opinion of counsel to the Company to comply with all applicable state and federal securities laws.

IV. RESTRICTIONS ON TRANSFER

Any shares purchased pursuant to options granted hereunder may be subject to certain restrictions on the transferability thereof which restrictions are contained in Article VIII of the Company's By-Laws (or any successor thereto). A copy of the applicable restrictions will be delivered to the Participant upon execution of the Incentive Stock Option Agreement or Nonqualified Stock Option Agreement to be executed by and between the Participant and the Company at the time such option is granted. There shall be stamped on the certificates representing shares purchased upon the exercise of any option granted pursuant to the Plan an appropriate legend giving notice of the By-Laws, the acquisition of such shares for investment and the restrictions on their transfer by reason thereof.

V. COVENANT NOT TO COMPETE

5.1 Covenant. Each Participant agrees that he shall not, at any time during the term of his employment by the Company and any Related Entity (as hereinafter defined) and for a six (6) month period immediately following termination of his employment with all of the Related Entities, directly or indirectly, as a proprietor, officer, employee, partner, stockholder, consultant, owner or otherwise:

(a) Divert or attempt to divert, any business from any Related Entity, or contact, solicit or entice, or attempt to contact, solicit or entice, any present or future customer of any Related Entity or any person with whom any Related Entity is conducting negotiations or to whom any Related Entity has submitted a bid so as to cause, or attempt to cause, any of said customers or persons not to do business with such Related Entity or to purchase products or services sold by such Related Entity from any source other than such Related Entity;

(b) Induce, or attempt to induce, any person who is or has been an employee of any Related Entity to terminate his employment by any of the Related Entities or accept employment with a business which sells products or services which are competitive with those products or services offered by any of the Related Entities.

5.2. Definition. For purposes of the Plan, the term "Related Entity" shall be defined as the Company, any subsidiary, parent or affiliate of the Company, or any partnership or other form of business organization in which the shareholders of the Company directly or indirectly own a controlling (i.e., more than fifty percent (50%)) interest).

5.3. Expiration. Notwithstanding anything contained herein to the contrary, the provisions of Paragraph 5.1 shall terminate with respect to a Participant at such time as such Participant's options granted hereunder are fully vested pursuant to the terms of the initial Incentive Stock Option Agreement or Nonqualified Stock Option Agreement, as the case may be, entered into between the Company and the Participant.

5.4. Enforcement. In addition to all of the legal remedies available to the Company for enforcement of the covenant of this Article V, each Participant shall acknowledge in his Option Agreement that the Company shall be entitled to an injunction by any court of competent jurisdiction to prevent or restrain any breach or threatened breach hereof. The Participant acknowledges that his obligations set forth in this Article V shall survive the termination of his employment and continue thereafter for the periods stated herein.

VI. MISCELLANEOUS

6.1. Fractional Shares. No fractional shares of stock shall be issued upon the exercise of any option and the Company shall not be under any obligation to compensate any Participant in any way for such fractional share.

6.2. Reservation of Shares. The Company shall at all times reserve and keep available such number of shares of its Common Stock as shall be sufficient for the grant of options for all shares available for options

pursuant to Paragraph 1.3 hereof. Said shares may be either in the form of treasury shares or authorized but previously unissued shares. If in the opinion of its counsel the issue or sale of any shares of its stock hereunder shall not be lawful for any reason, including the inability of the Company to obtain from any regulatory body having jurisdiction authority deemed by such counsel to be necessary to such issuance or sale, the Company shall not be obligated to issue or sell any such shares.

6.3. No Obligation for Employment. The Plan shall not confer upon any Participant or eligible employee any right with respect to continuation of employment by the Company or a subsidiary, nor shall it interfere in any way with the right of the Company or such subsidiary to terminate the employment of any participant or eligible employee at any time.

6.4. Indemnification of Committee. Each person who is a member of the Committee shall be indemnified and held harmless by the Company against and for any loss, liability, or expense that may be imposed upon or be reasonably incurred by him in connection with or resulting from any claim, action, suit or proceeding to which he may be a party or in which he may be involved by reason of any action taken or failure to act under the Plan and against and from any and all amounts paid by him in settlement thereof, with the Company's approval, or paid by him in satisfaction of judgment in any such action, suit or proceeding against him. Each such person shall give the Company an opportunity, at its own expense, to handle and defend the same before he undertakes to handle and defend it on his own behalf. The foregoing right of indemnification shall not be exclusive of any other rights of indemnification to which such person may be entitled under the Company's Certificate of Incorporation or By-Laws, as a matter of law, or otherwise, or any power that the Company may have to indemnify him and hold him harmless.

6.5. Rights as a Shareholder. No holder of an option granted hereunder shall have any rights as a shareholder of the Company with respect to any shares covered by his option until the date of the issuance of a stock certificate to him for such shares.

6.6. Taxes. The Company shall be entitled to pay or withhold the amount of any tax which it believes is required as a result of the grant or exercise of any option under the Plan, and the Company may defer making delivery with respect to shares of common stock obtained pursuant to the exercise of any option until arrangements satisfactory to it have been made with respect to any such withholding obligations.

6.7. Adjustments. In the event there is any increase or decrease in the number of issued and outstanding shares of any class of common stock of the Company, or in the number of issued and outstanding shares of any class of stock of the Company convertible into shares of any class of common stock of the Company, by reason of a stock dividend, stock split, reverse stock split, or similar adjustment or in the event of any change in the Company or in the issued and outstanding shares of the Common Stock of the Company by reason of a recapitalization, merger, consolidation, acquisition of stock or property, reorganization, liquidation or other significant event affecting the Company or the issued and outstanding shares of its Common Stock, the number of shares of Common Stock available for options provided in Paragraph 1.3 hereof, the number of shares subject to each outstanding option, the purchase price per share under each outstanding option, and/or the consideration to be received upon the exercise of each option shall be

correspondingly adjusted as deemed equitable by the Committee or each outstanding option may be converted, at the sole discretion of the Committee, into a new option to purchase such number or kind of shares of stock or other securities with such adjustment of the purchase price per share as the Committee deems appropriate to reflect such change. In addition, the Committee shall, in its sole discretion, have authority to provide, in appropriate cases, for (i) waiver in whole or in part of any remaining restrictions or vesting requirements in connection with any option and/or (ii) the conversion of any outstanding options into cash or other property to be received in certain of the transactions specified above. Any adjustment, waiver, conversion or the like carried out by the Committee under this Paragraph 6.7 shall be conclusive and binding for all purposes of the Plan. In no event shall the aggregate fair market value (determined at the time the option is granted) of the stock with respect to which incentive stock options are exercisable for the first time during any calendar year under this Plan (and under all plans of the Company or any parent or subsidiary of the Company) exceed \$100,000 per employee as a result of adjustments made under this Paragraph 6.7.

VII. TERMINATION AND AMENDMENT

Unless previously terminated by the Board of Directors, this Plan shall continue until ten years following the date of its initial approval by the Board of Directors, when it shall terminate and no options shall be granted under the Plan after that date. Options may be granted under the Plan subject to the approval of the Plan by the Company's shareholders. The Plan may at any time and from time to time be terminated, modified, or amended by the Board of Directors of the Company in its sole discretion. However, no modification or amendment which would increase the maximum number of shares for which incentive stock options may be granted under the Plan or change the class of employees eligible to receive incentive stock options shall be made unless shareholder approval required pursuant to Section 422 of the Code is obtained. In no event shall the termination or any modification or amendment of the Plan, without the consent of a Participant, adversely affect his rights under an option theretofore granted to him.

The Board of Directors may amend, modify or terminate an outstanding option, including, but not limited to, substituting another award of the same or of a different type, changing the date of exercise, or converting an incentive stock option into a nonqualified stock option; provided, however, that the Participant's consent to such action shall be required unless the Board of Directors determines that the action, taking into account any related action, would not materially adversely affect the Participant.

QUORUM SCIENCES, INC.

NONQUALIFIED STOCK OPTION AGREEMENT

THIS AGREEMENT dated as of April 18, 2000 (the "Date of Grant") by and between QUORUM SCIENCES, INC., a Delaware corporation, 129-8 West Patrick Street, Frederick, Maryland 21701 (the "Company"), and UTE MUH, c/o 3403 Bowen Science Building, University of Iowa, Iowa City, IA 52242 (the "Optionee").

1. DEFINITIONS. For the purposes of this Agreement, except where the context otherwise indicates, the following definitions shall be applicable.

SECTION 1.1 AGREEMENT. "Agreement" shall mean this Nonqualified Stock Option Agreement and shall include the applicable provisions of the Plan, which is hereby incorporated into and made a part of the Agreement.

SECTION 1.2 CHANGE IN CONTROL TRANSACTION. "Change in Control" shall mean either of the following in which a majority of the shares or interests in the acquiring or surviving entity immediately after the transaction is not owned directly or indirectly by holders of the shares of the Common Stock of the Company immediately prior to the transaction: (i) any sale, exchange or other disposition to an entity of substantially all of the Company's assets or over 50% of its Common Stock; or (ii) any merger, share exchange, consolidation or other reorganization or business combination with another entity in which the Company is not the surviving or continuing corporation, or in which the Company's stockholders become entitled to receive cash or securities of another issuer.

SECTION 1.3 CODE. "Code" shall mean the Internal Revenue Code of 1986, Title 26 of the United States Code, as amended, and any regulations issued thereunder.

SECTION 1.4 EXCHANGE ACT. "Exchange Act" shall mean the Securities Exchange Act of 1934, as amended, Chapter 2B of Title 15 of the United States Code.

SECTION 1.5 EXERCISE DATE. "Exercise Date" shall mean the date on which the Company receives the written notice required under Section 3.1 of this Agreement that Optionee has exercised the Option.

SECTION 1.6 IPO. "IPO" shall mean the occurrence of any public offering of any class of equity securities of the Company.

SECTION 1.7 PLAN. "Plan" shall mean the Quorum Sciences, Inc. Nonqualified Stock Option Plan.

2. GRANT OF OPTION. Pursuant to our letter to you dated July 1, 2000, the Company hereby grants to the Optionee, subject to the terms and conditions set forth

herein, the right and option (the "Option") to purchase from the Company all or any part of an aggregate of Ten Thousand (10,000) shares of Common Stock, par value \$0.001 per share, of the Company ("Stock") at the purchase price of \$0.50 per share ("Exercise Price"). This Option is not intended to qualify as an incentive stock option within the meaning of Section 422 of the Internal Revenue Code.

3. EXERCISE OF OPTION. Optionee shall be entitled to first exercise this Option with respect to the following percentages of the shares of Stock subject to this Option on the dates listed in the vesting schedule below, provided the Optionee remains an employee of the Company on any such date:

Percentage of Shares of Stock Subject to this Option	First Exercisable
25%	1st Anniversary of Optionee's date of employment with the Company
25%	2nd Anniversary of Optionee's date of employment with the Company
25%	3rd Anniversary of Optionee's date of employment with the Company.
25%	4th Anniversary of Optionee's date of employment with the Company

After shares of Stock are subject to exercise in accordance with the above schedule, Optionee may exercise this Option with respect to those shares in whole or in part at any time or times prior to the expiration date as defined in Section 4 hereof.

4. TERM OF OPTION. The Option granted pursuant to Section 2 shall expire on the first to occur of (i) the tenth (10th) anniversary of the Date of Grant of the Option, or (ii) ninety (90) days after the date of termination of the Employee's employment with the Company (the "Expiration Date").

5. LIMITATION ON EXERCISE. This Option may not be exercised in whole or in part by Optionee for less than 100 shares of Stock unless only less than 100 shares of Stock remain subject to the Option.

6. METHOD OF EXERCISE. This Option shall be exercisable by a written notice which shall:

- (i) State the election to exercise the Option, the number of shares of Stock with respect to which it is being exercised, the person in whose name the stock certificate or certificates for such shares of Stock is to be registered, his or her address and Social Security

Number (or if more than one, the names, addresses and Social Security Numbers of such persons);

- (ii) Be signed by the person or persons entitled to exercise the Option and, if the Option is being exercised by any person or persons other than the Optionee, be accompanied by proof, satisfactory to counsel for the company, of the right of such person or persons to exercise the Option;
- (iii) Be delivered in person or by registered or certified mail to the President of the Company; and
- (iv) Be accompanied by signed written instructions acceptable to the Company in the event that Optionee desires the Company to deliver the Stock to Optionee's broker or to any party other than Optionee.

Such notice shall be accompanied by payment of the full purchase price of the shares of Stock with respect to which the Option is being exercised. Payment shall be by certified or bank cashier's check, by the surrender and delivery to the Company of certificates representing shares of its Stock duly endorsed for transfer or accompanied by a duly executed assignment, or by an agreement signed by the Optionee to surrender and deliver to the Company certificates representing shares of its Stock duly endorsed for transfer, which may be effected by means of a duly executed assignment, transferring to the Company shares of Stock acquired through the exercise of the Option, or by a combination of such methods of payment. The certificate or certificates for shares of Stock as to which the Option shall be exercised shall be registered in the name of the person or persons exercising the Option.

7. LOCK-UP PROVISION. In connection with any underwritten public offering by the Company of its equity securities pursuant to an effective Registration Statement filed under the 1933 Act, including the Company's initial public offering, Optionee shall not sell, make any short sale of, loan, hypothecate, pledge, grant any option for the purchase of, or otherwise dispose or transfer for value or otherwise agree to engage in any of the foregoing transactions with respect to, any shares of Stock without the prior written consent of the Company. Such restriction (the "Market Stand-Off") shall be in effect for such period of time from and after the effective date of the final prospectus for the offerings as may be requested by the Company or the underwriters. In no event, however, shall such period exceed one hundred eighty (180) days after the effective date of the Company's Registration Statement with respect to such offering. Optionee shall be subject to the Market Stand-Off provided and only if the officers and directors of the Company holding common stock of the Company are also subject to similar restrictions.

8. NON-TRANSFERABILITY OF OPTION. This Option may not be transferred in any manner other than by will or the laws of descent and distribution and may be exercised during the period that the Optionee is an employee of the Company, and only by the

Optionee. The terms of this Option shall be binding upon the executors, administrators, heirs, successors and assigns of the Optionee.

9. REPRESENTATIONS AND WARRANTIES. The Optionee represents and warrants to the Company, upon which representations and warranties the Company is relying in entering into this Agreement, as follows:

(a) The Optionee has been afforded the opportunity by the Company to ask questions and request information to acquire detailed knowledge and information concerning the business affairs and operations of the Company and its financial condition and prospects. As a result of such opportunity to ask questions and review information and the business background, training, and expertise of the Optionee (and/or of the advisors with whom the Optionee has consulted), the Optionee is capable of evaluating the merits and risks of an investment in the Stock and is in a position to comprehend, weigh, and assess such knowledge and information in a meaningful fashion.

(b) The Optionee acknowledges and agrees that, in entering into this Agreement and in exercising the Option, the Optionee is not relying upon, and will not rely upon, any statements, representations, or warranties, whether oral or written, made by any stockholder, officers, director, representative, agent, or employee of the Company, or any affiliate thereof, except for those set forth in any historic financial statements provided to the Optionee by the Company. Further, the Optionee acknowledges and agrees that any business and financial projections of the Company that may be provided by the Company are solely for purposes of describing the Company's future business and financial goals and are not intended to be, nor are they, representations or guaranties of the Company's future performance. Accordingly, the Optionee is not relying upon, and will not rely upon, any such projections in entering into this Agreement or in exercising the Option.

(c) The address set forth above is the true and correct residence of the Optionee, and the Optionee has no present intention of becoming a resident of any other state or jurisdiction.

(d) The Optionee understands that neither the Option nor the Stock subject to the Option may have been registered under the Securities Act, or any state securities laws and that there is no present intention to so register them.

(e) The Option is being acquired by the Optionee solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization of the Stock that is permitted to be acquired by the Optionee thereunder. At such times as the

Optionee may exercise the Option, unless the Stock has been registered under the Securities Act, the Stock so acquired will be acquired solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization thereof.

(f) The Optionee acknowledges and is aware that (i) there are substantial restrictions on the transferability of the Stock, (ii) the Stock will not be, and investors in the Company have no rights to require that the Company be, registered under the Securities Act or any state securities law, (iii) there will be no public market for the Stock and accordingly, if the Option is exercised, the Optionee may have to hold the Stock indefinitely without the possibility of liquidating the Optionee's investment in the Company, and (iv) any shares received through exercise of the Option will bear legends restricting the transfer of such shares.

(g) As of the date of this Agreement and at such time(s) as the Optionee may exercise the Option, the Optionee has and will have (i) adequate means of providing for Optionee's needs and possible personal and family contingencies and (ii) the ability to bear the economic risk of an investment in the Stock.

(h) The Optionee has entered into this Agreement voluntarily.

10. NON-MARKETABILITY OF STOCK. No representations or promises have been made to the Optionee concerning the present or future marketability or value of the Stock. The Optionee agrees that, unless the Stock is registered under the Securities Act or relevant state securities laws, the Stock cannot be resold or transferred unless (a) (i) they are subsequently registered thereunder or exemptions from such registrations are available or (ii) the Company receives an opinion of counsel satisfactory (both as to counsel and opinion) to the Company that such transfer complies with federal and state securities laws, including but not limited to Section 701 of the Securities Act of 1933, as amended, and (b) the applicable restrictions on transfer contained in Section 11 of this Agreement have been complied with.

11. TRANSFER RESTRICTIONS. The Optionee acknowledges that he will be required to offer any shares of Stock obtained upon exercise of this Option to the Company at the price and terms offered to him by a proposed transferee for a period of 30 days prior to transferring such shares. In the event the Company elects not to exercise its right of first refusal, the Optionee will be permitted to transfer his shares at such price and upon such terms to the proposed transferee during the 60-day period following expiration of the 30-day period described above provided that the transferee agrees to be bound by the provisions of this Section.

12. ADJUSTMENTS. In the event of any change in the Stock of the Company by reason of any stock dividend, recapitalization, reorganization, merger, consolidation, split-up, combination or exchange of shares, or of any similar change affecting the

common Stock, then in any such event the number and kind of shares subject to this Option and their purchase price per share shall be appropriately adjusted consistent with such change in such manner as the committee appointed by the Company may deem equitable to prevent substantial dilution or enlargement of the rights granted to Optionee hereunder. Any adjustment so made shall be final and binding upon Optionee.

13. NO RIGHTS AS STOCKHOLDER. Optionee shall have no rights as a stockholder with respect to any shares of Stock subject to this Option prior to the date of issuance to him of a certificate or certificates for such shares. Optionee agrees to execute, deliver and perform any stockholders agreement that may then be in force by and among the Company and its stockholders.

14. NO RIGHTS TO CONTINUED EMPLOYMENT. This Option shall not confer upon Optionee any right with respect to continuance of employment.

15. COMPLIANCE WITH LAW AND REGULATIONS.

(a) This Option and the obligation of the Company to sell and deliver shares hereunder, shall be subject to all (i) applicable federal and state laws, rules and regulations, (ii) such approvals by any government or regulatory agency as may be required, and (iii) applicable rules and regulations of any stock exchange or Nasdaq on which the Stock may be listed from time to time. The Company shall not be obligated to issue any shares of Stock issuable under this Agreement until such time as such shares of Stock have been registered under the Securities Act, and all applicable state securities laws or until the Company receives an opinion of counsel satisfactory (both as to opinion and counsel) to the Company that such issuance is exempt from registration under said laws. Moreover, this Option may not be exercised if its exercise, or the receipt of shares of Stock pursuant thereto, would be contrary to applicable law.

(b) The inability of the Company to obtain approval from any regulatory body having authority deemed by the Company to be necessary to the lawful issuance and sale of any Common Stock pursuant to this option shall relieve the Company of any liability with respect to the non-issuance or sale of the Common Stock as to which such approval shall not have been obtained. The Company, however, shall use its best efforts to obtain all such approvals.

16. WITHHOLDING OF TAXES. The Company or any affiliate shall have the right to deduct from any compensation or any other payment of any kind (including withholding the issuance of shares of Common Stock) due Grantee the amount of any federal, state or local taxes required by law to be withheld as the result of the exercise of the Option or the disposition (as that term is defined in ss.424(c) of the Code) of shares of Common Stock acquired pursuant to the exercise of the Option; provided, however, that the value of the shares of Common Stock withheld may not exceed the statutory minimum withholding amount required by law. In lieu of such deduction, the Committee may require Grantee to make a cash payment to the Company or an affiliate equal to the amount required to be withheld. If Grantee does not make such payment when requested,

the Company may refuse to issue any Common Stock certificate under the Agreement until arrangements satisfactory to the Company or the committee of the Company for such payment have been made.

17. COVENANTS AS TO STOCK. The Company has taken all action necessary and appropriate to grant to Optionee the Option. The Company covenants and agrees that the Stock issuable on the exercise of the Option shall, at delivery, be fully paid and non-assessable, free from taxes, liens and charges with respect to its purchase. The Stock subject to the Option has not been and for the Exercise Period will not be transferred, assigned, pledged or otherwise encumbered in any way by the Company, and no other person or entity has or during the Exercise Period, will have any rights, direct or indirect, in the Stock subject to this Agreement or the rights of the Optionee hereunder.

18. EXCHANGE FOR OTHER DENOMINATIONS. The Option shall be exchangeable for new instruments of like tenor and date representing in the aggregate the right to exercise the Option in denominations designated by the Holder at the time of surrender.

19. LOSS, THEFT, DESTRUCTION OR MUTILATION OF OPTION. Upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Option, and, in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it, and upon reimbursement to the Company of all reasonable expenses incidental thereto, and upon surrender and cancellation of the Option, if mutilated, the Company will make and deliver a new option of like tenor and date, in lieu of the Option.

20. MISCELLANEOUS.

(a) This Agreement has been executed in two counterparts each of which shall constitute one and the same instrument.

(b) In case any provision of this Agreement shall be invalid, illegal or unenforceable, or partially invalid, illegal or unenforceable, the provision shall be enforced to the extent, if any, that it may legally be enforced and the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

(c) This Agreement and any term hereof may be changed, waived, discharged or terminated only by a statement in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

(d) Any covenants, representations, warranties and agreements made by the parties shall be deemed to have been relied upon by the parties, shall survive this Agreement, shall continue until the applicable statute of limitations bars any claim thereon, and shall be effective regardless of any investigation which may have been made at any time by or on behalf of a party.

(e) This Agreement shall be binding upon the heirs, personal representatives, and permitted successors and assigns of the parties hereto.

(f) This Agreement is made, is entered into, and is to be performed in, and shall be governed by and construed in accordance with, the laws of the State of Delaware without regard to principles of conflict of laws.

(g) Any notices required to be given or delivered to the Company under the terms of this Agreement shall be in writing and addressed to the Company at its principal corporate offices. Any notice required to be given or delivered to Optionee shall be in writing and addressed to Optionee at the address indicated below Optionee's signature line on this Agreement. All notices shall be deemed effective upon personal delivery or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

(h) This Agreement constitutes and contains the entire agreement and understanding of the parties, and shall supersede any and all prior negotiations, correspondence, understandings and agreements between the parties respecting the subject matter hereof.

IN WITNESS WHEREOF, Quorum Sciences, Inc. has caused this Agreement to be executed by its President and Optionee has executed this Agreement, both as of the day and year first above written.

QUORUM SCIENCES, INC.

/s/ Steven L. Pevenstein

Witness
STEVEN L. PEVENSTEIN

/s/ Stephen Turner

Name:
Title: President

/s/ Doug Bartels

Witness
Doug Bartels

/s/ Ute Muh

UTE MUH

QUORUM SCIENCES, INC.

NONQUALIFIED STOCK OPTION AGREEMENT

THIS AGREEMENT dated as of September 1, 1999 (the "Date of Grant") by and between QUORUM SCIENCES, INC., a Delaware corporation, 129-8 West Patrick Street, Frederick, Maryland 21701 (the "Company"), and DOUGLAS JOHN BARTELS, who resides at 140 Shannon Lane, North Liberty, IA 52317 (the "Optionee").

1. DEFINITIONS. For the purposes of this Agreement, except where the context otherwise indicates, the following definitions shall be applicable.

SECTION 1.1 AGREEMENT. "Agreement" shall mean this Nonqualified Stock Option Agreement and shall include the applicable provisions of the Plan, which is hereby incorporated into and made a part of the Agreement.

SECTION 1.2 CHANGE IN CONTROL TRANSACTION. "Change in Control" shall mean either of the following in which a majority of the shares or interests in the acquiring or surviving entity immediately after the transaction is not owned directly or indirectly by holders of the shares of the Common Stock of the Company immediately prior to the transaction: (i) any sale, exchange or other disposition to an entity of substantially all of the Company's assets or over 50% of its Common Stock; or (ii) any merger, share exchange, consolidation or other reorganization or business combination with another entity in which the Company is not the surviving or continuing corporation, or in which the Company's stockholders become entitled to receive cash or securities of another issuer.

SECTION 1.3 CODE. "Code" shall mean the Internal Revenue Code of 1986, Title 26 of the United States Code, as amended, and any regulations issued thereunder.

SECTION 1.4 EXCHANGE ACT. "Exchange Act" shall mean the Securities Exchange Act of 1934, as amended, Chapter 2B of Title 15 of the United States Code.

SECTION 1.5 EXERCISE DATE. "Exercise Date" shall mean the date on which the Company receives the written notice required under Section 3.1 of this Agreement that Optionee has exercised the Option.

SECTION 1.6 IPO. "IPO" shall mean the occurrence of any public offering of any class of equity securities of the Company.

SECTION 1.7 PLAN. "Plan" shall mean the Quorum Sciences, Inc. Nonqualified Stock Option Plan.

2. GRANT OF OPTION. Pursuant to our letter to you dated July 7, 2000, the Company hereby grants to the Optionee, subject to the terms and conditions set forth herein, the right and option (the "Option") to purchase from the Company all or any part of an aggregate of Fifteen Thousand (15,000) shares of Common Stock, par value \$0.001 per share, of the Company ("Stock") at the purchase price of \$0.50 per share ("Exercise Price"). This Option is not intended to qualify as an incentive stock option within the meaning of Section 422 of the Internal Revenue Code.

3. EXERCISE OF OPTION. Optionee shall be entitled to first exercise this Option with respect to the following percentages of the shares of Stock subject to this Option on the dates listed in the vesting schedule below, provided the Optionee remains an employee of the Company on any such date:

Percentage of Shares of Stock Subject to this Option	First Exercisable
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25%	As of Optionee's date of employment with the Company
25%	1(st) Anniversary of Optionee's date of employment with the Company
25%	2(nd) Anniversary of Optionee's date of employment with the Company
25%	3(rd) Anniversary of Optionee's date of employment with the Company

After shares of Stock are subject to exercise in accordance with the above schedule, Optionee may exercise this Option with respect to those shares in whole or in part at any time or times prior to the expiration date as defined in Section 4 hereof.

4. TERM OF OPTION. The Option granted pursuant to Section 2 shall expire on the first to occur of (i) the tenth (10th) anniversary of the Date of Grant of the Option, or (ii) ninety (90) days after the date of termination of the Employee's employment with the Company (the "Expiration Date").

5. LIMITATION ON EXERCISE. This Option may not be exercised in whole or in part by Optionee for less than 100 shares of Stock unless only less than 100 shares of Stock remain subject to the Option.

6. METHOD OF EXERCISE. This Option shall be exercisable by a written notice which shall:

- (i) State the election to exercise the Option, the number of shares of Stock with respect to which it is being exercised, the person in whose name the stock certificate or certificates for such shares of

Stock is to be registered, his or her address and Social Security Number (or if more than one, the names, addresses and Social Security Numbers of such persons);

- (ii) Be signed by the person or persons entitled to exercise the Option and, if the Option is being exercised by any person or persons other than the Optionee, be accompanied by proof, satisfactory to counsel for the company, of the right of such person or persons to exercise the Option;
- (iii) Be delivered in person or by registered or certified mail to the President of the Company; and
- (iv) Be accompanied by signed written instructions acceptable to the Company in the event that Optionee desires the Company to deliver the Stock to Optionee's broker or to any party other than Optionee.

Such notice shall be accompanied by payment of the full purchase price of the shares of Stock with respect to which the Option is being exercised. Payment shall be by certified or bank cashier's check, by the surrender and delivery to the Company of certificates representing shares of its Stock duly endorsed for transfer or accompanied by a duly executed assignment, or by an agreement signed by the Optionee to surrender and deliver to the Company certificates representing shares of its Stock duly endorsed for transfer, which may be effected by means of a duly executed assignment, transferring to the Company shares of Stock acquired through the exercise of the Option, or by a combination of such methods of payment. The certificate or certificates for shares of Stock as to which the Option shall be exercised shall be registered in the name of the person or persons exercising the Option.

7. LOCK-UP PROVISION. In connection with any underwritten public offering by the Company of its equity securities pursuant to an effective Registration Statement filed under the 1933 Act, including the Company's initial public offering, Optionee shall not sell, make any short sale of, loan, hypothecate, pledge, grant any option for the purchase of, or otherwise dispose or transfer for value or otherwise agree to engage in any of the foregoing transactions with respect to, any shares of Stock without the prior written consent of the Company. Such restriction (the "Market Stand-Off") shall be in effect for such period of time from and after the effective date of the final prospectus for the offerings as may be requested by the Company or the underwriters. In no event, however, shall such period exceed one hundred eighty (180) days after the effective date of the Company's Registration Statement with respect to such offering. Optionee shall be subject to the Market Stand-Off provided and only if the officers and directors of the Company holding common stock of the Company are also subject to similar restrictions.

8. NON-TRANSFERABILITY OF OPTION. This Option may not be transferred in any manner other than by will or the laws of descent and distribution and may be exercised

during the period that the Optionee is an employee of the Company, and only by the Optionee. The terms of this Option shall be binding upon the executors, administrators, heirs, successors and assigns of the Optionee.

9. REPRESENTATIONS AND WARRANTIES. The Optionee represents and warrants to the Company, upon which representations and warranties the Company is relying in entering into this Agreement, as follows:

(a) The Optionee has been afforded the opportunity by the Company to ask questions and request information to acquire detailed knowledge and information concerning the business affairs and operations of the Company and its financial condition and prospects. As a result of such opportunity to ask questions and review information and the business background, training, and expertise of the Optionee (and/or of the advisors with whom the Optionee has consulted), the Optionee is capable of evaluating the merits and risks of an investment in the Stock and is in a position to comprehend, weigh, and assess such knowledge and information in a meaningful fashion.

(b) The Optionee acknowledges and agrees that, in entering into this Agreement and in exercising the Option, the Optionee is not relying upon, and will not rely upon, any statements, representations, or warranties, whether oral or written, made by any stockholder, officers, director, representative, agent, or employee of the Company, or any affiliate thereof, except for those set forth in any historic financial statements provided to the Optionee by the Company. Further, the Optionee acknowledges and agrees that any business and financial projections of the Company that may be provided by the Company are solely for purposes of describing the Company's future business and financial goals and are not intended to be, nor are they, representations or guaranties of the Company's future performance. Accordingly, the Optionee is not relying upon, and will not rely upon, any such projections in entering into this Agreement or in exercising the Option.

(c) The address set forth above is the true and correct residence of the Optionee, and the Optionee has no present intention of becoming a resident of any other state or jurisdiction.

(d) The Optionee understands that neither the Option nor the Stock subject to the Option may have been registered under the Securities Act, or any state securities laws and that there is no present intention to so register them.

(e) The Option is being acquired by the Optionee solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization of the Stock that is

permitted to be acquired by the Optionee thereunder. At such times as the Optionee may exercise the Option, unless the Stock has been registered under the Securities Act, the Stock so acquired will be acquired solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization thereof.

(f) The Optionee acknowledges and is aware that (i) there are substantial restrictions on the transferability of the Stock, (ii) the Stock will not be, and investors in the Company have no rights to require that the Company be, registered under the Securities Act or any state securities law, (iii) there will be no public market for the Stock and accordingly, if the Option is exercised, the Optionee may have to hold the Stock indefinitely without the possibility of liquidating the Optionee's investment in the Company, and (iv) any shares received through exercise of the Option will bear legends restricting the transfer of such shares.

(g) As of the date of this Agreement and at such time(s) as the Optionee may exercise the Option, the Optionee has and will have (i) adequate means of providing for Optionee's needs and possible personal and family contingencies, and (ii) the ability to bear the economic risk of an investment in the Stock.

(h) The Optionee has entered into this Agreement voluntarily.

10. NON-MARKETABILITY OF STOCK. No representations or promises have been made to the Optionee concerning the present or future marketability or value of the Stock. The Optionee agrees that, unless the Stock is registered under the Securities Act or relevant state securities laws, the Stock cannot be resold or transferred unless (a) (i) they are subsequently registered thereunder or exemptions from such registrations are available or (ii) the Company receives an opinion of counsel satisfactory (both as to counsel and opinion) to the Company that such transfer complies with federal and state securities laws, including but not limited to Section 701 of the Securities Act of 1933, as amended, and (b) the applicable restrictions on transfer contained in Section 11 of this Agreement have been complied with.

11. TRANSFER RESTRICTIONS. The Optionee acknowledges that he will be required to offer any shares of Stock obtained upon exercise of this Option to the Company at the price and terms offered to him by a proposed transferee for a period of 30 days prior to transferring such shares. In the event the Company elects not to exercise its right of first refusal, the Optionee will be permitted to transfer his shares at such price and upon such terms to the proposed transferee during the 60-day period following expiration of the 30-day period described above provided that the transferee agrees to be bound by the provisions of this Section.

12. ADJUSTMENTS. In the event of any change in the Stock of the Company by reason of any stock dividend, recapitalization, reorganization, merger, consolidation,

split-up, combination or exchange of shares, or of any similar change affecting the common Stock, then in any such event the number and kind of shares subject to this Option and their purchase price per share shall be appropriately adjusted consistent with such change in such manner as the committee appointed by the Company may deem equitable to prevent substantial dilution or enlargement of the rights granted to Optionee hereunder. Any adjustment so made shall be final and binding upon Optionee.

13. NO RIGHTS AS STOCKHOLDER. Optionee shall have no rights as a stockholder with respect to any shares of Stock subject to this Option prior to the date of issuance to him of a certificate or certificates for such shares. Optionee agrees to execute, deliver and perform any stockholders agreement that may then be in force by and among the Company and its stockholders.

14. NO RIGHTS TO CONTINUED EMPLOYMENT. This Option shall not confer upon Optionee any right with respect to continuance of employment.

15. COMPLIANCE WITH LAW AND REGULATIONS.

(a) This Option and the obligation of the Company to sell and deliver shares hereunder, shall be subject to all (i) applicable federal and state laws, rules and regulations, (ii) such approvals by any government or regulatory agency as may be required, and (iii) applicable rules and regulations of any stock exchange or Nasdaq on which the Stock may be listed from time to time. The Company shall not be obligated to issue any shares of Stock issuable under this Agreement until such time as such shares of Stock have been registered under the Securities Act, and all applicable state securities laws or until the Company receives an opinion of counsel satisfactory (both as to opinion and counsel) to the Company that such issuance is exempt from registration under said laws. Moreover, this Option may not be exercised if its exercise, or the receipt of shares of Stock pursuant thereto, would be contrary to applicable law.

(b) The inability of the Company to obtain approval from any regulatory body having authority deemed by the Company to be necessary to the lawful issuance and sale of any Common Stock pursuant to this option shall relieve the Company of any liability with respect to the non-issuance or sale of the Common Stock as to which such approval shall not have been obtained. The Company, however, shall use its best efforts to obtain all such approvals.

16. WITHHOLDING OF TAXES. The Company or any affiliate shall have the right to deduct from any compensation or any other payment of any kind (including withholding the issuance of shares of Common Stock) due Grantee the amount of any federal, state or local taxes required by law to be withheld as the result of the exercise of the Option or the disposition (as that term is defined in ss.424(c) of the Code) of shares of Common Stock acquired pursuant to the exercise of the Option; provided, however, that the value of the shares of Common Stock withheld may not exceed the statutory minimum withholding amount required by law. In lieu of such deduction, the Committee may require Grantee to make a cash payment to the Company or an affiliate equal to the

amount required to be withheld. If Grantee does not make such payment when requested, the Company may refuse to issue any Common Stock certificate under the Agreement until arrangements satisfactory to the Company or the committee of the Company for such payment have been made.

17. COVENANTS AS TO STOCK. The Company has taken all action necessary and appropriate to grant to Optionee the Option. The Company covenants and agrees that the Stock issuable on the exercise of the Option shall, at delivery, be fully paid and non-assessable, free from taxes, liens and charges with respect to its purchase. The Stock subject to the Option has not been and for the Exercise Period will not be transferred, assigned, pledged or otherwise encumbered in any way by the Company, and no other person or entity has or during the Exercise Period, will have any rights, direct or indirect, in the Stock subject to this Agreement or the rights of the Optionee hereunder.

18. EXCHANGE FOR OTHER DENOMINATIONS. The Option shall be exchangeable for new instruments of like tenor and date representing in the aggregate the right to exercise the Option in denominations designated by the Holder at the time of surrender.

19. LOSS, THEFT, DESTRUCTION OR MUTILATION OF OPTION. Upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Option, and, in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it, and upon reimbursement to the Company of all reasonable expenses incidental thereto, and upon surrender and cancellation of the Option, if mutilated, the Company will make and deliver a new option of like tenor and date, in lieu of the Option.

20. MISCELLANEOUS.

(a) This Agreement has been executed in two counterparts each of which shall constitute one and the same instrument.

(b) In case any provision of this Agreement shall be invalid, illegal or unenforceable, or partially invalid, illegal or unenforceable, the provision shall be enforced to the extent, if any, that it may legally be enforced and the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

(c) This Agreement and any term hereof may be changed, waived, discharged or terminated only by a statement in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

(d) Any covenants, representations, warranties and agreements made by the parties shall be deemed to have been relied upon by the parties, shall survive this Agreement, shall continue until the applicable statute of limitations bars any claim thereon, and shall be effective regardless of any investigation which may have been made at any time by or on behalf of a party.

(e) This Agreement shall be binding upon the heirs, personal representatives, and permitted successors and assigns of the parties hereto.

(f) This Agreement is made, is entered into, and is to be performed in, and shall be governed by and construed in accordance with, the laws of the State of Delaware without regard to principles of conflict of laws.

(g) Any notices required to be given or delivered to the Company under the terms of this Agreement shall be in writing and addressed to the Company at its principal corporate offices. Any notice required to be given or delivered to Optionee shall be in writing and addressed to Optionee at the address indicated below Optionee's signature line on this Agreement. All notices shall be deemed effective upon personal delivery or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

(h) This Agreement constitutes and contains the entire agreement and understanding of the parties, and shall supersede any and all prior negotiations, correspondence, understandings and agreements between the parties respecting the subject matter hereof.

IN WITNESS WHEREOF, Quorum Sciences, Inc. has caused this Agreement to be executed by its President and Optionee has executed this Agreement, both as of the day and year first above written.

QUORUM SCIENCES, INC.

/s/ Stephen L. Pevenstein

Witness
STEPHEN L. PEVENSTEIN

/s/ Stephen Turner

Name: S. Turner
Title: President

/s/ Ute Muh

Witness
Ute Muh

/s/ Douglas John Bartels

DOUGLAS JOHN BARTELS

QUORUM SCIENCES, INC.

NONQUALIFIED STOCK OPTION AGREEMENT

THIS AGREEMENT dated as of March 14, 2000 (the "Date of Grant") by and between Quorum Sciences, Inc., a Delaware corporation (the "Company"), and Steve Winans, Ph.D. (the "Optionee").

1. GRANT OF OPTION. Pursuant to the Science Advisor Agreement, dated as of July 16, 1999 ("Advisor Agreement"), by and between the Company and the Optionee the Company hereby grants to the Optionee, subject to the terms and conditions set forth herein, the right and option (the "Option") to purchase from the Company all or any part of an aggregate of Twenty Thousand (20,000) shares of Common Stock, par value \$0.001 per share, of the Company ("Stock") at the purchase price of \$0.50 per share ("Exercise Price"). This Option is not intended to qualify as an incentive stock option within the meaning of Section 422 of the Internal Revenue Code.

2. EXERCISE OF OPTION. Optionee shall be entitled to first exercise this Option with respect to the following percentages of the shares of Stock subject to this Option on the dates listed in the vesting schedule below, provided the Optionee remains an Advisor of the Company on any such date pursuant to the Advisor Agreement:

Percentage of Shares of Stock Subject to This Option -----	First Exercisable -----
35%	at the Date of Grant
35%	1 year after Date of Grant
30%	2 years after the Date of Grant

After shares of Stock are subject to exercise in accordance with the above schedule, Optionee may exercise this Option with respect to those shares in whole or in part at any time or times prior to the expiration date as defined in Section 3 hereof.

Notwithstanding any provision of this Agreement to the contrary, no part of this Option may be exercised if the Stock to be purchased is not subject to exercise in accordance with the above schedule.

3. EXPIRATION DATE. This Option may not be exercised more than 10 years from the Date of Grant specified in Section 1 hereof and shall expire at the end of such 10-year period. Additionally, this Option shall expire when the Optionee terminates engagement with the Company or a subsidiary of the Company as an advisor pursuant to the Advisor Agreement. The Option shall expire at the close of business on such any such expiration date. This Option may be exercised during such period only in accordance with the applicable provisions of this Agreement.

4. LIMITATION ON EXERCISE. This Option may not be exercised in whole or in part by Optionee for less than 100 shares of Stock unless only less than 100 shares of Stock remain subject to the Option.

5. METHOD OF EXERCISE. This Option shall be exercisable by a written notice which shall:

- (i) State the election to exercise the Option, the number of shares of Stock with respect to which it is being exercised, the person in whose name the stock certificate or certificates for such shares of Stock is to be registered, his or her address and Social Security Number (or if more than one, the names, addresses and Social Security Numbers of such persons);
- (ii) Be signed by the person or persons entitled to exercise the Option and, if the Option is being exercised by any person or persons other than the Optionee, be accompanied by proof, satisfactory to counsel for the company, of the right of such person or persons to exercise the Option;
- (iii) Be delivered in person or by registered or certified mail to the President of the Company; and
- (iv) Be accompanied by signed written instructions acceptable to the Company in the event that Optionee desires the Company to deliver the Stock to Optionee's broker or to any party other than Optionee.

Such notice shall be accompanied by payment of the full purchase price of the shares of Stock with respect to which the Option is being exercised. Payment shall be by certified or bank cashier's check, by the surrender and delivery to the Company of certificates representing shares of its Stock duly endorsed for transfer or accompanied by a duly executed assignment, or by an agreement signed by the Optionee to surrender and deliver to the Company certificates representing shares of its Stock duly endorsed for transfer, which may be effected by means of a duly executed assignment, transferring to the Company shares of Stock acquired through the exercise of the Option, or by a combination of such methods of payment. The certificate or certificates for shares of Stock as to which the Option shall be exercised shall be registered in the name of the person or persons exercising the Option.

6. LOCK-UP PROVISION. In connection with any underwritten public offering by the Company of its equity securities pursuant to an effective Registration Statement filed under the 1933 Act, including the Company's initial public offering, Optionee shall not sell, make any short sale of, loan, hypothecate, pledge, grant any option for the purchase of, or otherwise dispose or transfer for value or otherwise agree to engage in any of the foregoing transactions with respect to, any shares of Stock without the prior

written consent of the Company. Such restriction (the "Market Stand-Off") shall be in effect for such period of time from and after the effective date of the final prospectus for the offerings as may be requested by the Company or the underwriters. In no event, however, shall such period exceed one hundred eighty (180) days after the effective date of the Company's Registration Statement with respect to such offering. Optionee shall be subject to the Market Stand-Off provided and only if the officers and directors of the Company holding common stock of the Company are also subject to similar restrictions.

7. NON-TRANSFERABILITY OF OPTION. This Option may not be transferred in any manner otherwise than by will or the laws of descent and distribution and may be exercised during the period that the Optionee is an advisor to the Company pursuant to the Advisor Agreement, and only by the Optionee. The terms of this Option shall be binding upon the executors, administrators, heirs, successors and assigns of the Optionee.

8. REPRESENTATIONS AND WARRANTIES. The Optionee represents and warrants to the Company, upon which representations and warranties the Company is relying in entering into this Agreement, as follows:

(a) The Optionee has been afforded the opportunity by the Company to ask questions and request information to acquire detailed knowledge and information concerning the business affairs and operations of the Company and its financial condition and prospects. As a result of such opportunity to ask questions and review information and the business background, training, and expertise of the Optionee (and/or of the advisors with whom the Optionee has consulted), the Optionee is capable of evaluating the merits and risks of an investment in the Stock and is in a position to comprehend, weigh, and assess such knowledge and information in a meaningful fashion.

(b) The Optionee acknowledges and agrees that, in entering into this Agreement and in exercising the Option, the Optionee is not relying upon, and will not rely upon, any statements, representations, or warranties, whether oral or written, made by any stockholder, officers, director, representative, agent, or employee of the Company, or any affiliate thereof, except for those set forth in any historic financial statements provided to the Optionee by the Company. Further, the Optionee acknowledges and agrees that any business and financial projections of the Company that may be provided by the Company are solely for purposes of describing the Company's future business and financial goals and are not intended to be, nor are they, representations or guaranties of the Company's future performance. Accordingly, the Optionee is not relying upon, and will not rely upon, any such projections in entering into this Agreement or in exercising the Option.

(c) The address set forth above is the true and correct residence of the Optionee, and the Optionee has no present intention of becoming a resident of any other state or jurisdiction.

(d) The Optionee understands that neither the Option nor the Stock subject to the Option may have been registered under the Securities Act, or any state securities laws and that there is no present intention to so register them.

(e) The Option is being acquired by the Optionee solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization of the Stock that is permitted to be acquired by the Optionee thereunder. At such times as the Optionee may exercise the Option, unless the Stock has been registered under the Securities Act, the Stock so acquired will be acquired solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization thereof.

(f) The Optionee acknowledges and is aware that (i) there are substantial restrictions on the transferability of the Stock, (ii) the Stock will not be, and investors in the Company have no rights to require that the Company be, registered under the Securities Act or any state securities law, (iii) there will be no public market for the Stock and accordingly, if the Option is exercised, the Optionee may have to hold the Stock indefinitely without the possibility of liquidating the Optionee's investment in the Company, and (iv) any shares received through exercise of the Option will bear legends restricting the transfer of such shares.

(g) As of the date of this Agreement and at such time(s) as the Optionee may exercise the Option, the Optionee has and will have (i) adequate means of providing for Optionee's needs and possible personal and family contingencies, and (ii) the ability to bear the economic risk of an investment in the Stock.

(h) The Optionee has entered into this Agreement voluntarily.

9. NON-MARKETABILITY OF STOCK. No representations or promises have been made to the Optionee concerning the present or future marketability or value of the Stock. The Optionee agrees that, unless the Stock is registered under the Securities Act or relevant state securities laws, the Stock cannot be resold or transferred unless (a) (i) they are subsequently registered thereunder or exemptions from such registrations are available or (ii) the Company receives an opinion of counsel satisfactory (both as to counsel and opinion) to the Company that such transfer complies with federal and state securities laws, including but not limited to Section 701 of the Securities Act of 1933, as amended, and (b) the applicable restrictions on transfer contained in Section 10 of this Agreement have been complied with.

10. ADJUSTMENTS. In the event of any change in the Stock of the Company by reason of any stock dividend, recapitalization, reorganization, merger, consolidation, split-up, combination or exchange of shares, or of any similar change affecting the common Stock, then in any such event the number and kind of shares subject to this Option and their purchase price per share shall be appropriately adjusted consistent with such change in such manner as the committee appointed by the Company may deem equitable to prevent substantial dilution or enlargement of the rights granted to Optionee hereunder. Any adjustment so made shall be final and binding upon Optionee.

11. NO RIGHTS AS STOCKHOLDER. Optionee shall have no rights as a stockholder with respect to any shares of Stock subject to this Option prior to the date of issuance to him of a certificate or certificates for such shares. Optionee agrees to execute, deliver and perform any stockholders agreement that may then be in force by and among the Company and its stockholders.

12. NO RIGHTS TO CONTINUED EMPLOYMENT. This Option shall not confer upon Optionee any right with respect to continuance of employment or directorship, or engagement as an advisor, nor shall it interfere in any way with the right of any party to terminate Optionee's engagement as an advisor, except pursuant to the terms of the Advisor Agreement.

13. COMPLIANCE WITH LAW AND REGULATIONS. (a) This Option and the obligation of the Company to sell and deliver shares hereunder, shall be subject to all (i) applicable federal and state laws, rules and regulations, (ii) such approvals by any government or regulatory agency as may be required, and (iii) applicable rules and regulations of any stock exchange or Nasdaq on which the Stock may be listed from time to time. The Company shall not be obligated to issue any shares of Stock issuable under this Agreement until such time as such shares of Stock have been registered under the Securities Act, and all applicable state securities laws or until the Company receives an opinion of counsel satisfactory (both as to opinion and counsel) to the Company that such issuance is exempt from registration under said laws. Moreover, this Option may not be exercised if its exercise, or the receipt of shares of Stock pursuant thereto, would be contrary to applicable law.

(b) The inability of the Company to obtain approval from any regulatory body having authority deemed by the Company to be necessary to the lawful issuance and sale of any Common Stock pursuant to this option shall relieve the Company of any liability with respect to the non-issuance or sale of the Common Stock as to which such approval shall not have been obtained. The Company, however, shall use its best efforts to obtain all such approvals.

14. WITHHOLDING OF TAXES. The Company or any affiliate shall have the right to deduct from any compensation or any other payment of any kind (including withholding the issuance of shares of Common Stock) due Grantee the amount of any federal, state or local taxes required by law to be withheld as the result of the exercise of

the Option or the disposition (as that term is defined in ss.424(c) of the Code) of shares of Common Stock acquired pursuant to the exercise of the Option; provided, however, that the value of the shares of Common Stock withheld may not exceed the statutory minimum withholding amount required by law. In lieu of such deduction, the Committee may require Grantee to make a cash payment to the Company or an affiliate equal to the amount required to be withheld. If Grantee does not make such payment when requested, the Company may refuse to issue any Common Stock certificate under the Agreement until arrangements satisfactory to the Company or the committee of the Company for such payment have been made.

15. COVENANTS AS TO STOCK. The Company has taken all action necessary and appropriate to grant to Optionee the Option. The Company covenants and agrees that the Stock issuable on the exercise of the Option shall, at delivery, be fully paid and non-assessable, free from taxes, liens and charges with respect to its purchase. The Stock subject to the Option has not been and for the Exercise Period will not be transferred, assigned, pledged or otherwise encumbered in any way by the Company, and no other person or entity has or during the Exercise Period, will have any rights, direct or indirect, in the Stock subject to this Agreement or the rights of the Optionee hereunder.

16. EXCHANGE FOR OTHER DENOMINATIONS. The Option shall be exchangeable for new instruments of like tenor and date representing in the aggregate the right to exercise the Option in denominations designated by the Holder at the time of surrender.

17. LOSS, THEFT, DESTRUCTION OR MUTILATION OF OPTION. Upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Option, and, in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it, and upon reimbursement to the Company of all reasonable expenses incidental thereto, and upon surrender and cancellation of the Option, if mutilated, the Company will make and deliver a new option of like tenor and date, in lieu of the Option.

18. MISCELLANEOUS.

(a) This Agreement has been executed in two counterparts each of which shall constitute one and the same instrument.

(b) In case any provision of this Agreement shall be invalid, illegal or unenforceable, or partially invalid, illegal or unenforceable, the provision shall be enforced to the extent, if any, that it may legally be enforced and the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

(c) This Agreement and any term hereof may be changed, waived, discharged or terminated only by a statement in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

(d) Any covenants, representations, warranties and agreements made by the parties shall be deemed to have been relied upon by the parties, shall survive this Agreement, shall continue until the applicable statute of limitations bars any claim thereon, and shall be effective regardless of any investigation which may have been made at any time by or on behalf of a party.

(e) This Agreement shall be binding upon the heirs, personal representatives, and permitted successors and assigns of the parties hereto.

(f) This Agreement is made, is entered into, and is to be performed in, and shall be governed by and construed in accordance with, the laws of the State of Delaware without regard to principles of conflict of laws.

(g) Any notices required to be given or delivered to the Company under the terms of this Agreement shall be in writing and addressed to the Company at its principal corporate offices. Any notice required to be given or delivered to Optionee shall be in writing and addressed to Optionee at the address indicated below Optionee's signature line on this Agreement. All notices shall be deemed effective upon personal delivery or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

(h) This Agreement and the Advisor Agreement constitutes and contains the entire agreement and understanding of the parties, and shall supersede any and all prior negotiations, correspondence, understandings and agreements between the parties respecting the subject matter hereof. To the extent of any conflict between the terms of this Agreement and the Advisor Agreement, this Agreement shall control in all respects.

IN WITNESS WHEREOF, Quorum Sciences, Inc. has caused this Agreement to be executed by its President and Optionee has executed this Agreement, both as of the day and year first above written.

QUORUM SCIENCES, INC.

/s/ Steven L. Pevenstein

Witness

/s/ Stephen Turner

Name: Stephen Turner
Title: CEO

/s/ Shirley Cramer

Witness

/s/ Stephen C. Winans

Optionee

Name: Stephen C. Winans
Address: 112 Homestead Circle

Ithaca, NY 14850

QUORUM SCIENCES, INC.

NONQUALIFIED STOCK OPTION AGREEMENT

THIS AGREEMENT dated as of March 14, 2000 (the "Date of Grant") by and between Quorum Sciences, Inc., a Delaware corporation (the "Company"), and Michael Welsh, M.D. (the "Optionee").

1. GRANT OF OPTION. Pursuant to the Science Advisor Agreement, dated as of 3/29/00 ("Advisor Agreement"), by and between the Company and the Optionee the Company hereby grants to the Optionee, subject to the terms and conditions set forth herein, the right and option (the "Option") to purchase from the Company all or any part of an aggregate of Twenty Thousand (20,000) shares of Common Stock, par value \$0.001 per share, of the Company ("Stock") at the purchase price of \$0.50 per share ("Exercise Price"). This Option is not intended to qualify as an incentive stock option within the meaning of Section 422 of the Internal Revenue Code.

2. EXERCISE OF OPTION. Optionee shall be entitled to first exercise this Option with respect to the following percentages of the shares of Stock subject to this Option on the dates listed in the vesting schedule below, provided the Optionee remains an Advisor of the Company on any such date pursuant to the Advisor Agreement:

Percentage of Shares of Stock Subject to this Option -----	First Exercisable -----
35%	at the Date of Grant
35%	1 year after Date of Grant
30%	2 years after the Date of Grant

After shares of Stock are subject to exercise in accordance with the above schedule, Optionee may exercise this option with respect to those shares in whole or in part at any time or times prior to the expiration date as defined in Section 3 hereof.

Notwithstanding any provision of this Agreement to the contrary, no part of this Option may be exercised if the Stock to be purchased is not subject to exercise in accordance with the above schedule.

3. EXPIRATION DATE. This Option may not be exercised more than 10 years from the Date of Grant specified in Section 1 hereof and shall expire at the end of such 10-year period. Additionally, this Option shall expire when the Optionee terminates engagement with the Company or a subsidiary of the Company as an advisor pursuant to the Advisor Agreement. The Option shall expire at the close of business on such any such expiration date. This Option may be exercised during such period only in accordance with the applicable provisions of this Agreement.

4. LIMITATION ON EXERCISE. This Option may not be exercised in whole or in part by Optionee for less than 100 shares of Stock unless only less than 100 shares of Stock remain subject to the Option.

5. METHOD OF EXERCISE. This Option shall be exercisable by a written notice which shall:

- (i) State the election to exercise the Option, the number of shares of Stock with respect to which it is being exercised, the person in whose name the stock certificate or certificates for such shares of Stock is to be registered, his or her address and Social Security Number (or if more than one, the names, addresses and Social Security Numbers of such persons);
- (ii) Be signed by the person or persons entitled to exercise the Option and, if the Option is being exercised by any person or persons other than the Optionee, be accompanied by proof, satisfactory to counsel for the company, of the right of such person or persons to exercise the Option;
- (iii) Be delivered in person or by registered or certified mail to the President of the Company; and
- (iv) Be accompanied by signed written instructions acceptable to the Company in the event that Optionee desires the Company to deliver the Stock to Optionee's broker or to any party other than Optionee.

Such notice shall be accompanied by payment of the full purchase price of the shares of Stock with respect to which the Option is being exercised. Payment shall be by certified or bank cashier's check, by the surrender and delivery to the Company of certificates representing shares of its Stock duly endorsed for transfer or accompanied by a duly executed assignment, or by an agreement signed by the Optionee to surrender and deliver to the Company certificates representing shares of its Stock duly endorsed for transfer, which may be effected by means of a duly executed assignment, transferring to the Company shares of Stock acquired through the exercise of the Option, or by a combination of such methods of payment. The certificate or certificates for shares of Stock as to which the Option shall be exercised shall be registered in the name of the person or persons exercising the Option.

6. LOCK-UP PROVISION. In connection with any underwritten public offering by the Company of its equity securities pursuant to an effective Registration Statement filed under the 1933 Act, including the Company's initial public offering, Optionee shall not sell, make any short sale of, loan, hypothecate, pledge, grant any option for the purchase of, or otherwise dispose or transfer for value or otherwise agree to engage in any of the foregoing transactions with respect to, any shares of Stock without the prior

written consent of the Company. Such restriction (the "Market Stand-Off") shall be in effect for such period of time from and after the effective date of the final prospectus for the offerings as may be requested by the Company or the underwriters. In no event, however, shall such period exceed one hundred eighty (180) days after the effective date of the Company's Registration Statement with respect to such offering. Optionee shall be subject to the Market Stand-Off provided and only if the officers and directors of the Company holding common stock of the Company are also subject to similar restrictions.

7. NON-TRANSFERABILITY OF OPTION. This Option may not be transferred in any manner otherwise than by will or the laws of descent and distribution and may be exercised during the period that the Optionee is an advisor to the Company pursuant to the Advisor Agreement, and only by the Optionee. The terms of this Option shall be binding upon the executors, administrators, heirs, successors and assigns of the Optionee.

8. REPRESENTATIONS AND WARRANTIES. The Optionee represents and warrants to the Company, upon which representations and Warranties the Company is relying in entering into this Agreement, as follows:

(a) The Optionee has been afforded the opportunity by the Company to ask questions and request information to acquire detailed knowledge and information concerning the business affairs and operations of the Company and its financial condition and prospects. As a result of such opportunity to ask questions and review information and the business background, training, and expertise of the Optionee (and/or of the advisors with whom the Optionee has consulted), the Optionee is capable of evaluating the merits and risks of an investment in the Stock and is in a position to comprehend, weigh, and assess such knowledge and information in a meaningful fashion.

(b) The Optionee acknowledges and agrees that, in entering into this Agreement and in exercising the Option, the Optionee is not relying upon, and will not rely upon, any statements, representations, or warranties, whether oral or written, made by any stockholder, officers, director, representative, agent, or employee of the Company, or any affiliate thereof, except for those set forth in any historic financial statements provided to the Optionee by the Company. Further, the Optionee acknowledges and agrees that any business and financial projections of the Company that may be provided by the Company are solely for purposes of describing the Company's future business and financial goals and are not intended to be, nor are they, representations or guaranties of the Company's future performance. Accordingly, the Optionee is not relying upon, and will not rely upon, any such projections in entering into this Agreement or in exercising the Option.

(c) The address set forth above is the true and correct residence of the Optionee, and the Optionee has no present intention of becoming a resident of any other state or jurisdiction.

(d) The Optionee understands that neither the Option nor the Stock subject to the Option may have been registered under the Securities Act, or any state securities laws and that there is no present intention to so register them.

(e) The Option is being acquired by the Optionee solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization of the Stock that is permitted to be acquired by the Optionee thereunder. At such times as the Optionee may exercise the Option, unless the Stock has been registered under the Securities Act, the Stock so acquired will be acquired solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization thereof.

(f) The Optionee acknowledges and is aware that (i) there are substantial restrictions on the transferability of the Stock, (ii) the Stock will not be, and investors in the Company have no rights to require that the Company be, registered under the Securities Act or any state securities law, (iii) there will be no public market for the Stock and accordingly, if the Option is exercised, the Optionee may have to hold the Stock indefinitely without the possibility of liquidating the Optionee's investment in the Company, and (iv) any shares received through exercise of the Option will bear legends restricting the transfer of such shares.

(g) As of the date of this Agreement and at such time(s) as the Optionee may exercise the Option, the Optionee has and will have (i) adequate means of providing for Optionee's needs and possible personal and family contingencies, and (ii) the ability to bear the economic risk of an investment in the Stock.

(h) The Optionee has entered into this Agreement voluntarily.

9. NON-MARKETABILITY OF STOCK. No representations or promises have been made to the Optionee concerning the present or future marketability or value of the Stock. The Optionee agrees that, unless the Stock is registered under the Securities Act or relevant state securities laws, the Stock cannot be resold or transferred unless (a) (i) they are subsequently registered thereunder or exemptions from such registrations are available or (ii) the Company receives an opinion of counsel satisfactory (both as to counsel and opinion) to the Company that such transfer complies with federal and state securities laws, including but not limited to Section 701 of the Securities Act of 1933, as amended, and (b) the applicable restrictions on transfer contained in Section 10 of this Agreement have been complied with.

10. ADJUSTMENTS. In the event of any change in the Stock of the Company by reason of any stock dividend, recapitalization, reorganization, merger, consolidation, split-up, combination or exchange of shares, or of any similar change affecting the common Stock, then in any such event the number and kind of shares subject to this Option and their purchase price per share shall be appropriately adjusted consistent with such change in such manner as the committee appointed by the Company may deem equitable to prevent substantial dilution or enlargement of the rights granted to Optionee hereunder. Any adjustment so made shall be final and binding upon Optionee.

11. NO RIGHTS AS STOCKHOLDER. Optionee shall have no rights as a stockholder with respect to any shares of Stock subject to this Option prior to the date of issuance to him of a certificate or certificates for such shares. Optionee agrees to execute, deliver and perform any stockholders agreement that may then be in force by and among the Company and its stockholders.

12. NO RIGHTS TO CONTINUED EMPLOYMENT. This Option shall not confer upon Optionee any right with respect to continuance of employment or directorship, or engagement as an advisor, nor shall it interfere in any way with the right of any party to terminate Optionee's engagement as an advisor, except pursuant to the terms of the Advisor Agreement.

13. COMPLIANCE WITH LAW AND REGULATIONS. (a) This Option and the obligation of the Company to sell and deliver shares hereunder, shall be subject to all (i) applicable federal and state laws, rules and regulations, (ii) such approvals by any government or regulatory agency as may be required, and (iii) applicable rules and regulations of any stock exchange or Nasdaq on which the Stock may be listed from time to time. The Company shall not be obligated to issue any shares of Stock issuable under this Agreement until such time as such shares of Stock have been registered under the Securities Act, and all applicable state securities laws or until the Company receives an opinion of counsel satisfactory (both as to opinion and counsel) to the Company that such issuance is exempt from registration under said laws. Moreover, this Option may not be exercised if its exercise, or the receipt of shares of Stock pursuant thereto, would be contrary to applicable law.

(b) The inability of the Company to obtain approval from any regulatory body having authority deemed by the Company to be necessary to the lawful issuance and sale of any Common Stock pursuant to this option shall relieve the Company of any liability with respect to the non-issuance or sale of the Common Stock as to which such approval shall not have been obtained. The Company, however, shall use its best efforts to obtain all such approvals.

14. WITHHOLDING OF TAXES. The Company or any affiliate shall have the right to deduct from any compensation or any other payment of any kind (including withholding the issuance of shares of Common Stock) due Grantee the amount of any federal, state or local taxes required by law to be withheld as the result of the exercise of

the Option or the disposition (as that term is defined in ss.424(c) of the Code) of shares of Common Stock acquired pursuant to the exercise of the Option; provided, however, that the value of the shares of Common Stock withheld may not exceed the statutory minimum withholding amount required by law. In lieu of such deduction, the Committee may require Grantee to make a cash payment to the Company or an affiliate equal to the amount required to be withheld. If Grantee does not make such payment when requested, the Company may refuse to issue any Common Stock certificate under the Agreement until arrangements satisfactory to the Company or the committee of the Company for such payment have been made.

15. COVENANTS AS TO STOCK. The Company has taken all action necessary and appropriate to grant to Optionee the Option. The Company covenants and agrees that the Stock issuable on the exercise of the Option shall, at delivery, be fully paid and non-assessable, free from taxes, liens and charges with respect to its purchase. The Stock subject to the Option has not been and for the Exercise Period will not be transferred, assigned, pledged or otherwise encumbered in any way by the Company, and no other person or entity has or during the Exercise Period, will have any rights, direct or indirect, in the Stock subject to this Agreement or the rights of the Optionee hereunder.

16. EXCHANGE FOR OTHER DENOMINATIONS. The Option shall be exchangeable for new instruments of like tenor and date representing in the aggregate the right to exercise the Option in denominations designated by the Holder at the time of surrender.

17. LOSS, THEFT, DESTRUCTION OR MUTILATION OF OPTION. Upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Option, and, in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it, and upon reimbursement to the Company of all reasonable expenses incidental thereto, and upon surrender and cancellation of the Option, if mutilated, the Company will make and deliver a new option of like tenor and date, in lieu of the Option.

18. MISCELLANEOUS.

(a) This Agreement has been executed in two counterparts each of which shall constitute one and the same instrument.

(b) In case any provision of this Agreement shall be invalid, illegal or unenforceable, or partially invalid, illegal or unenforceable, the provision shall be enforced to the extent, if any, that it may legally be enforced and the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

(c) This Agreement and any term hereof may be changed, waived, discharged or terminated only by a statement in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

(d) Any covenants, representations, warranties and agreements made by the parties shall be deemed to have been relied upon by the parties, shall survive this Agreement, shall continue until the applicable statute of limitations bars any claim thereon, and shall be effective regardless of any investigation which may have been made at any time by or on behalf of a party.

(e) This Agreement shall be binding upon the heirs, personal representatives, and permitted successors and assigns of the parties hereto.

(f) This Agreement is made, is entered into, and is to be performed in, and shall be governed by and construed in accordance with, the laws of the State of Delaware without regard to principles of conflict of laws.

(g) Any notices required to be given or delivered to the Company under the terms of this Agreement shall be in writing and addressed to the Company at its principal corporate offices. Any notice required to be given or delivered to Optionee shall be in writing and addressed to Optionee at the address indicated below Optionee's signature line on this Agreement. All notices shall be deemed effective upon personal delivery or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

(h) This Agreement and the Advisor Agreement constitutes and contains the entire agreement and understanding of the parties, and shall supersede any and all prior negotiations, correspondence, understandings and agreements between the parties respecting the subject matter hereof. To the extent of any conflict between the terms of this Agreement and the Advisor Agreement, this Agreement shall control in all respects.

IN WITNESS WHEREOF, Quorum Sciences, Inc. has caused this Agreement to be executed by its President and Optionee has executed this Agreement, both as of the day and year first above written.

QUORUM SCIENCES, INC.

/s/ Stephen L. Pevenstein

Witness

/s/ Stephen Turner

Name: Stephen Turner
Title: CEO

/s/ Theresa Mayhew

Witness

/s/ Michael J. Welsh

Optionee

Name: Michael J. Welsh

Address: 500 EMRB

HHMI

Univ of Iowa College of Medicine

Iowa City, IA 52242

QUORUM SCIENCES, INC.

NONQUALIFIED STOCK OPTION AGREEMENT

THIS AGREEMENT dated as of March 14, 2000 (the "Date of Grant") by and between Quorum Sciences, Inc., a Delaware corporation (the "Company"), and Paul Dunlap, Ph.D. (the "Optionee").

1. GRANT OF OPTION. Pursuant to the Science Advisor Agreement, dated as of July 16, 1999 ("Advisor Agreement"), by and between the Company and the Optionee the Company hereby grants to the Optionee, subject to the terms and conditions set forth herein, the right and option (the "Option") to purchase from the Company all or any part of an aggregate of Twenty Thousand (20,000) shares of Common Stock, par value \$0.001 per share, of the Company ("Stock") at the purchase price of \$0.50 per share ("Exercise Price"). This Option is not intended to qualify as an incentive stock option within the meaning of Section 422 of the Internal Revenue Code.

2. EXERCISE OF OPTION. Optionee shall be entitled to first exercise this Option with respect to the following percentages of the shares of Stock subject to this Option on the dates listed in the vesting schedule below, provided the Optionee remains an Advisor of the Company on any such date pursuant to the Advisor Agreement:

Percentage of Shares of Stock Subject to This Option -----	First Exercisable -----
35%	at the Date of Grant
35%	1 year after Date of Grant
30%	2 years after the Date of Grant

After shares of Stock are subject to exercise in accordance with the above schedule, Optionee may exercise this Option with respect to those shares in whole or in part at any time or times prior to the expiration date as defined in Section 3 hereof.

Notwithstanding any provision of this Agreement to the contrary, no part of this Option may be exercised if the Stock to be purchased is not subject to exercise in accordance with the above schedule.

3. EXPIRATION DATE. This Option may not be exercised more than 10 years from the Date of Grant specified in Section 1 hereof and shall expire at the end of such 10-year period. Additionally, this Option shall expire when the Optionee terminates engagement with the Company or a subsidiary of the Company as an advisor pursuant to the Advisor Agreement. The Option shall expire at the close of business on such any such expiration date. This Option may be exercised during such period only in accordance with the applicable provisions of this Agreement.

4. LIMITATION ON EXERCISE. This Option may not be exercised in whole or in part by Optionee for less than 100 shares of Stock unless only less than 100 shares of Stock remain subject to the Option.

5. METHOD OF EXERCISE. This Option shall be exercisable by a written notice which shall:

- (i) State the election to exercise the Option, the number of shares of Stock with respect to which it is being exercised, the person in whose name the stock certificate or certificates for such shares of Stock is to be registered, his or her address and Social Security Number (or if more than one, the names, addresses and Social Security Numbers of such persons);
- (ii) Be signed by the person or persons entitled to exercise the Option and, if the Option is being exercised by any person or persons other than the Optionee, be accompanied by proof, satisfactory to counsel for the company, of the right of such person or persons to exercise the Option;
- (iii) Be delivered in person or by registered or certified mail to the President of the Company; and
- (iv) Be accompanied by signed written instructions acceptable to the Company in the event that Optionee desires the Company to deliver the Stock to Optionee's broker or to any party other than Optionee.

Such notice shall be accompanied by payment of the full purchase price of the shares of Stock with respect to which the Option is being exercised. Payment shall be by certified or bank cashier's check, by the surrender and delivery to the Company of certificates representing shares of its Stock duly endorsed for transfer or accompanied by a duly executed assignment, or by an agreement signed by the Optionee to surrender and deliver to the Company certificates representing shares of its Stock duly endorsed for transfer, which may be effected by means of a duly executed assignment, transferring to the Company shares of Stock acquired through the exercise of the Option, or by a combination of such methods of payment. The certificate or certificates for shares of Stock as to which the Option shall be exercised shall be registered in the name of the person or persons exercising the Option.

6. LOCK-UP PROVISION. In connection with any underwritten public offering by the Company of its equity securities pursuant to an effective Registration Statement filed under the 1933 Act, including the Company's initial public offering, Optionee shall not sell, make any short sale of, loan, hypothecate, pledge, grant any option for the purchase of, or otherwise dispose or transfer for value or otherwise agree to engage in any of the foregoing transactions with respect to, any shares of Stock without the prior

written consent of the Company. Such restriction (the "Market Stand-Off") shall be in effect for such period of time from and after the effective date of the final prospectus for the offerings as may be requested by the Company or the underwriters. In no event, however, shall such period exceed one hundred eighty (180) days after the effective date of the Company's Registration Statement with respect to such offering. Optionee shall be subject to the Market Stand-Off provided and only if the officers and directors of the Company holding common stock of the Company are also subject to similar restrictions.

7. NON-TRANSFERABILITY OF OPTION. This Option may not be transferred in any manner otherwise than by will or the laws of descent and distribution and may be exercised during the period that the Optionee is an advisor to the Company pursuant to the Advisor Agreement, and only by the Optionee. The terms of this Option shall be binding upon the executors, administrators, heirs, successors and assigns of the Optionee.

8. REPRESENTATIONS AND WARRANTIES. The Optionee represents and warrants to the Company, upon which representations and warranties the Company is relying in entering into this Agreement, as follows:

(a) The Optionee has been afforded the opportunity by the Company to ask questions and request information to acquire detailed knowledge and information concerning the business affairs and operations of the Company and its financial condition and prospects. As a result of such opportunity to ask questions and review information and the business background, training, and expertise of the Optionee (and/or of the advisors with whom the Optionee has consulted), the Optionee is capable of evaluating the merits and risks of an investment in the Stock and is in a position to comprehend, weigh, and assess such knowledge and information in a meaningful fashion.

(b) The Optionee acknowledges and agrees that, in entering into this Agreement and in exercising the Option, the Optionee is not relying upon, and will not rely upon, any statements, representations, or warranties, whether oral or written, made by any stockholder, officers, director, representative, agent, or employee of the Company, or any affiliate thereof except for those set forth in any historic financial statements provided to the Optionee by the Company. Further, the Optionee acknowledges and agrees that any business and financial projections of the Company that may be provided by the Company are solely for purposes of describing the Company's future business and financial goals and are not intended to be, nor are they, representations or guaranties of the Company's future performance. Accordingly, the Optionee is not relying upon, and will not rely upon, any such projections in entering into this Agreement or in exercising the Option.

(c) The address set forth above is the true and correct residence of the Optionee, and the Optionee has no present intention of becoming a resident of any other state or jurisdiction.

(d) The Optionee understands that neither the Option nor the Stock subject to the Option may have been registered under the Securities Act, or any state securities laws and that there is no present intention to so register them.

(e) The Option is being acquired by the Optionee solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization of the Stock that is permitted to be acquired by the Optionee thereunder. At such times as the Optionee may exercise the option, unless the Stock has been registered under the Securities Act, the Stock so acquired will be acquired solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization thereof.

(f) The Optionee acknowledges and is aware that (i) there are substantial restrictions on the transferability of the Stock, (ii) the Stock will not be, and investors in the Company have no rights to require that the Company be, registered under the Securities Act or any state securities law, (iii) there will be no public market for the Stock and accordingly, if the Option is exercised, the Optionee may have to hold the Stock indefinitely without the possibility of liquidating the Optionee's investment in the Company, and (iv) any shares received through exercise of the Option will bear legends restricting the transfer of such shares.

(g) As of the date of this Agreement and at such time(s) as the Optionee may exercise the Option, the Optionee has and will have (i) adequate means of providing for Optionee's needs and possible personal and family contingencies, and (ii) the ability to bear the economic risk of an investment in the Stock.

(h) The Optionee has entered into this Agreement voluntarily.

9. NON-MARKETABILITY OF STOCK. No representations or promises have been made to the Optionee concerning the present or future marketability or value of the Stock. The Optionee agrees that, unless the Stock is registered under the Securities Act or relevant state securities laws, the Stock cannot be resold or transferred unless (a) (i) they are subsequently registered thereunder or exemptions from such registrations are available or (ii) the Company receives an opinion of counsel satisfactory (both as to counsel and opinion) to the Company that such transfer complies with federal and state securities laws, including but not limited to Section 701 of the Securities Act of 1933, as amended, and (b) the applicable restrictions on transfer contained in Section 10 of this Agreement have been complied with.

10. ADJUSTMENTS. In the event of any change in the Stock of the Company by reason of any stock dividend, recapitalization, reorganization, merger, consolidation, split-up, combination or exchange of shares, or of any similar change affecting the common Stock, then in any such event the number and kind of shares subject to this Option and their purchase price per share shall be appropriately adjusted consistent with such change in such manner as the committee appointed by the Company may deem equitable to prevent substantial dilution or enlargement of the rights granted to Optionee hereunder. Any adjustment so made shall be final and binding upon Optionee.

11. NO RIGHTS AS STOCKHOLDER. Optionee shall have no rights as a stockholder with respect to any shares of Stock subject to this Option prior to the date of issuance to him of a certificate or certificates for such shares. Optionee agrees to execute, deliver and perform any stockholders agreement that may then be in force by and among the Company and its stockholders.

12. NO RIGHTS TO CONTINUED EMPLOYMENT. This Option shall not confer upon Optionee any right with respect to continuance of employment or directorship, or engagement as an advisor, nor shall it interfere in any way with the right of any party to terminate Optionee's engagement as an advisor, except pursuant to the terms of the Advisor Agreement.

13. COMPLIANCE WITH LAW AND REGULATIONS. (a) This Option and the obligation of the Company to sell and deliver shares hereunder, shall be subject to all (i) applicable federal and state laws, rules and regulations, (ii) such approvals by any government or regulatory agency as may be required, and (iii) applicable rules and regulations of any stock exchange or Nasdaq on which the Stock may be listed from time to time. The Company shall not be obligated to issue any shares of Stock issuable under this Agreement until such time as such shares of Stock have been registered under the Securities Act, and all applicable state securities laws or until the Company receives an opinion of counsel satisfactory (both as to opinion and counsel) to the Company that such issuance is exempt from registration under said laws. Moreover, this Option may not be exercised if its exercise, or the receipt of shares of Stock pursuant thereto, would be contrary to applicable law.

(b) The inability of the Company to obtain approval from any regulatory body having authority deemed by the Company to be necessary to the lawful issuance and sale of any Common Stock pursuant to this option shall relieve the Company of any liability with respect to the non-issuance or sale of the Common Stock as to which such approval shall not have been obtained. The Company, however, shall use its best efforts to obtain all such approvals.

14. WITHHOLDING OF TAXES. The Company or any affiliate shall have the right to deduct from any compensation or any other payment of any kind (including withholding the issuance of shares of Common Stock) due Grantee the amount of any federal, state or local taxes required by law to be withheld as the result of the exercise of

the Option or the disposition (as that term is defined in ss.424(c) of the Code) of shares of Common Stock acquired pursuant to the exercise of the Option; provided, however, that the value of the shares of Common Stock withheld may not exceed the statutory minimum withholding amount required by law. In lieu of such deduction, the Committee may require Grantee to make a cash payment to the Company or an affiliate equal to the amount required to be withheld. If Grantee does not make such payment when requested, the Company may refuse to issue any Common Stock certificate under the Agreement until arrangements satisfactory to the Company or the committee of the Company for such payment have been made.

15. COVENANTS AS TO STOCK. The Company has taken all action necessary and appropriate to grant to Optionee the Option. The Company covenants and agrees that the Stock issuable on the exercise of the Option shall, at delivery, be fully paid and non-assessable, free from taxes, liens and charges with respect to its purchase. The Stock subject to the Option has not been and for the Exercise Period will not be transferred, assigned, pledged or otherwise encumbered in any way by the Company, and no other person or entity has or during the Exercise Period, will have any rights, direct or indirect, in the Stock subject to this Agreement or the rights of the Optionee hereunder.

16. EXCHANGE FOR OTHER DENOMINATIONS. The Option shall be exchangeable for new instruments of like tenor and date representing in the aggregate the right to exercise the Option in denominations designated by the Holder at the time of surrender.

17. LOSS, THEFT, DESTRUCTION OR MUTILATION OF OPTION. Upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Option, and, in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it, and upon reimbursement to the Company of all reasonable expenses incidental thereto, and upon surrender and cancellation of the Option, if mutilated, the Company will make and deliver a new option of like tenor and date, in lieu of the Option.

18. MISCELLANEOUS.

(a) This Agreement has been executed in two counterparts each of which shall constitute one and the same instrument.

(b) In case any provision of this Agreement shall be invalid, illegal or unenforceable, or partially invalid, illegal or unenforceable, the provision shall be enforced to the extent, if any, that it may legally be enforced and the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

(c) This Agreement and any term hereof may be changed, waived, discharged or terminated only by a statement in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

(d) Any covenants, representations, warranties and agreements made by the parties shall be deemed to have been relied upon by the parties, shall survive this Agreement, shall continue until the applicable statute of limitations bars any claim thereon, and shall be effective regardless of any investigation which may have been made at any time by or on behalf of a party.

(e) This Agreement shall be binding upon the heirs, personal representatives, and permitted successors and assigns of the parties hereto.

(f) This Agreement is made, is entered into, and is to be performed in, and shall be governed by and construed in accordance with, the laws of the State of Delaware without regard to principles of conflict of laws.

(g) Any notices required to be given or delivered to the Company under the terms of this Agreement shall be in writing and addressed to the Company at its principal corporate offices. Any notice required to be given or delivered to Optionee shall be in writing and addressed to Optionee at the address indicated below Optionee's signature line on this Agreement. All notices shall be deemed effective upon personal delivery or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

(h) This Agreement and the Advisor Agreement constitutes and contains the entire agreement and understanding of the parties, and shall supersede any and all prior negotiations, correspondence, understandings and agreements between the parties respecting the subject matter hereof. To the extent of any conflict between the terms of this Agreement and the Advisor Agreement, this Agreement shall control in all respects.

IN WITNESS WHEREOF, Quorum Sciences, Inc. has caused this Agreement to be executed by its President and Optionee has executed this Agreement, both as of the day and year first above written.

QUORUM SCIENCES, INC.

/s/ Steven L. Pevenstein

Witness

/s/ Stephen Turner

Name: Stephen Turner
Title: CEO

/s/ [ILLEGIBLE]

Witness

/s/ Paul V. Dunlap

Optionee

Name: PAUL V. DUNLAP
###-##-####
Address: CENTER OF MARINE BIOTECHNOLOGY

UNIVERSITY OF MARYLAND BIOTECHNOLOGY
INSTITUTE

701 EAST PRATT STREET

BALTIMORE, MD 21202

QUORUM SCIENCES, INC.

NONQUALIFIED STOCK OPTION AGREEMENT

THIS AGREEMENT dated as of March 14, 2000 (the "Date of Grant") by and between Quorum Sciences, Inc., a Delaware corporation (the "Company"), and J. Woodland Hastings, Ph.D. (the "Optionee").

1. GRANT OF OPTION. Pursuant to the Science Advisor Agreement, dated as of July 16, 1999 ("Advisor Agreement"), by and between the Company and the Optionee the Company hereby grants to the Optionee, subject to the terms and conditions set forth herein, the right and option (the "Option") to purchase from the Company all or any part of an aggregate of Twenty Thousand (20,000) shares of Common Stock, par value \$0.001 per share, of the Company ("Stock") at the purchase price of \$0.50 per share ("Exercise Price"). This Option is not intended to qualify as an incentive stock option within the meaning of Section 422 of the Internal Revenue Code.

2. EXERCISE OF OPTION. Optionee shall be entitled to first exercise this Option with respect to the following percentages of the shares of Stock subject to this Option on the dates listed in the vesting schedule below, provided the Optionee remains an Advisor of the Company on any such date pursuant to the Advisor Agreement:

Percentage of Shares of Stock Subject to this Option -----	First Exercisable -----
35%	at the Date of Grant
35%	1 year after Date of Grant
30%	2 years after the Date of Grant

After shares of Stock are subject to exercise in accordance with the above schedule, Optionee may exercise this Option with respect to those shares in whole or in part at any time or times prior to the expiration date as defined in Section 3 hereof.

Notwithstanding any provision of this Agreement to the contrary, no part of this Option may be exercised if the Stock to be purchased is not subject to exercise in accordance with the above schedule.

3. EXPIRATION DATE. This Option may not be exercised more than 10 years from the Date of Grant specified in Section 1 hereof and shall expire at the end of such 10-year period. Additionally, this Option shall expire when the Optionee terminates engagement with the Company or a subsidiary of the Company as an advisor pursuant to the Advisor Agreement. The Option shall expire at the close of business on such any such expiration date. This Option may be exercised during such period only in accordance with the applicable provisions of this Agreement.

4. LIMITATION ON EXERCISE. This Option may not be exercised in whole or in part by Optionee for less than 100 shares of Stock unless only less than 100 shares of Stock remain subject to the Option.

5. METHOD OF EXERCISE. This Option shall be exercisable by a written notice which shall:

- (i) State the election to exercise the Option, the number of shares of Stock with respect to which it is being exercised, the person in whose name the stock certificate or certificates for such shares of Stock is to be registered, his or her address and Social Security Number (or if more than one, the names, addresses and Social Security Numbers of such persons);
- (ii) Be signed by the person or persons entitled to exercise the Option and, if the Option is being exercised by any person or persons other than the Optionee, be accompanied by proof, satisfactory to counsel for the company, of the right of such person or persons to exercise the Option;
- (iii) Be delivered in person or by registered or certified mail to the President of the Company; and
- (iv) Be accompanied by signed written instructions acceptable to the Company in the event that Optionee desires the Company to deliver the Stock to Optionee's broker or to any party other than Optionee.

Such notice shall be accompanied by payment of the full purchase price of the shares of Stock with respect to which the Option is being exercised. Payment shall be by certified or bank cashier's check, by the surrender and delivery to the Company of certificates representing shares of its Stock duly endorsed for transfer or accompanied by a duly executed assignment, or by an agreement signed by the Optionee to surrender and deliver to the Company certificates representing shares of its Stock duly endorsed for transfer, which may be effected by means of a duly executed assignment, transferring to the Company shares of Stock acquired through the exercise of the Option, or by a combination of such methods of payment. The certificate or certificates for shares of Stock as to which the Option shall be exercised shall be registered in the name of the person or persons exercising the Option.

6. LOCK-UP PROVISION. In connection with any underwritten public offering by the Company of its equity securities pursuant to an effective Registration Statement filed under the 1933 Act, including the Company's initial public offering, Optionee shall not sell, make any short sale of, loan, hypothecate, pledge, grant any option for the purchase of, or otherwise dispose or transfer for value or otherwise agree to engage in any of the foregoing transactions with respect to, any shares of Stock without the prior

written consent of the Company. Such restriction (the "Market Stand-Off") shall be in effect for such period of time from and after the effective date of the final prospectus for the offerings as may be requested by the Company or the underwriters. In no event, however, shall such period exceed one hundred eighty (180) days after the effective date of the Company's Registration Statement with respect to such offering. Optionee shall be subject to the Market Stand-Off provided and only if the officers and directors of the Company holding common stock of the Company are also subject to similar restrictions.

7. NON-TRANSFERABILITY OF OPTION. This Option may not be transferred in any manner otherwise than by will or the laws of descent and distribution and may be exercised during the period that the Optionee is an advisor to the Company pursuant to the Advisor Agreement, and only by the Optionee. The terms of this Option shall be binding upon the executors, administrators, heirs, successors and assigns of the Optionee.

8. REPRESENTATIONS AND WARRANTIES. The Optionee represents and warrants to the Company, upon which representations and warranties the Company is relying in entering into this Agreement, as follows:

(a) The Optionee has been afforded the opportunity by the Company to ask questions and request information to acquire detailed knowledge and information concerning the business affairs and operations of the Company and its financial condition and prospects. As a result of such opportunity to ask questions and review information and the business background, training, and expertise of the Optionee (and/or of the advisors with whom the Optionee has consulted), the Optionee is capable of evaluating the merits and risks of an investment in the Stock and is in a position to comprehend, weigh, and assess such knowledge and information in a meaningful fashion.

(b) The Optionee acknowledges and agrees that, in entering into this Agreement and in exercising the Option, the Optionee is not relying upon, and will not rely upon, any statements, representations, or warranties, whether oral or written, made by any stockholder, officers, director, representative, agent, or employee of the Company, or any affiliate thereof except for those set forth in any historic financial statements provided to the Optionee by the Company. Further, the Optionee acknowledges and agrees that any business and financial projections of the Company that may be provided by the Company are solely for purposes of describing the Company's future business and financial goals and are not intended to be, nor are they, representations or guaranties of the Company's future performance. Accordingly, the Optionee is not relying upon, and will not rely upon, any such projections in entering into this Agreement or in exercising the Option.

(c) The address set forth above is the true and correct residence of the Optionee, and the Optionee has no present intention of becoming a resident of any other state or jurisdiction.

(d) The Optionee understands that neither the Option nor the Stock subject to the Option may have been registered under the Securities Act, or any state securities laws and that there is no present intention to so register them.

(e) The Option is being acquired by the Optionee solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization of the Stock that is permitted to be acquired by the Optionee thereunder. At such times as the Optionee may exercise the Option, unless the Stock has been registered under the Securities Act, the Stock so acquired will be acquired solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization thereof.

(f) The Optionee acknowledges and is aware that (i) there are substantial restrictions on the transferability of the Stock, (ii) the Stock will not be, and investors in the Company have no rights to require that the Company be, registered under the Securities Act or any state securities law, (iii) there will be no public market for the Stock and accordingly, if the Option is exercised, the Optionee may have to hold the Stock indefinitely without the possibility of liquidating the Optionee's investment in the Company, and (iv) any shares received through exercise of the Option will bear legends restricting the transfer of such shares.

(g) As of the date of this Agreement and at such time(s) as the Optionee may exercise the Option, the Optionee has and will have (i) adequate means of providing for Optionee's needs and possible personal and family contingencies, and (ii) the ability to bear the economic risk of an investment in the Stock.

(h) The Optionee has entered into this Agreement voluntarily.

9. NON-MARKETABILITY OF STOCK. No representations or promises have been made to the Optionee concerning the present or future marketability or value of the Stock. The Optionee agrees that, unless the Stock is registered under the Securities Act or relevant state securities laws, the Stock cannot be resold or transferred unless (a) (i) they are subsequently registered thereunder or exemptions from such registrations are available or (ii) the Company receives an opinion of counsel satisfactory (both as to counsel and opinion) to the Company that such transfer complies with federal and state securities laws, including but not limited to Section 701 of the Securities Act of 1933, as amended, and (b) the applicable restrictions on transfer contained in Section 10 of this Agreement have been complied with.

10. ADJUSTMENTS. In the event of any change in the Stock of the Company by reason of any stock dividend, recapitalization, reorganization, merger, consolidation, split-up, combination or exchange of shares, or of any similar change affecting the common Stock, then in any such event the number and kind of shares subject to this Option and their purchase price per share shall be appropriately adjusted consistent with such change in such manner as the committee appointed by the Company may deem equitable to prevent substantial dilution or enlargement of the rights granted to Optionee hereunder. Any adjustment so made shall be final and binding upon Optionee.

11. NO RIGHTS AS STOCKHOLDER. Optionee shall have no rights as a stockholder with respect to any shares of Stock subject to this Option prior to the date of issuance to him of a certificate or certificates for such shares. Optionee agrees to execute, deliver and perform any stockholders agreement that may then be in force by and among the Company and its stockholders.

12. NO RIGHTS TO CONTINUED EMPLOYMENT. This Option shall not confer upon Optionee any right with respect to continuance of employment or directorship, or engagement as an advisor, nor shall it interfere in any way with the right of any party to terminate Optionee's engagement as an advisor, except pursuant to the terms of the Advisor Agreement.

13. COMPLIANCE WITH LAW AND REGULATIONS. (a) This Option and the obligation of the Company to sell and deliver shares hereunder, shall be subject to all (i) applicable federal and state laws, rules and regulations, (ii) such approvals by any government or regulatory agency as may be required, and (iii) applicable rules and regulations of any stock exchange or Nasdaq on which the Stock may be listed from time to time. The Company shall not be obligated to issue any shares of Stock issuable under this Agreement until such time as such shares of Stock have been registered under the Securities Act, and all applicable state securities laws or until the Company receives an opinion of counsel satisfactory (both as to opinion and counsel) to the Company that such issuance is exempt from registration under said laws. Moreover, this Option may not be exercised if its exercise, or the receipt of shares of Stock pursuant thereto, would be contrary to applicable law.

(b) The inability of the Company to obtain approval from any regulatory body having authority deemed by the Company to be necessary to the lawful issuance and sale of any Common Stock pursuant to this option shall relieve the Company of any liability with respect to the non-issuance or sale of the Common Stock as to which such approval shall not have been obtained. The Company, however, shall use its best efforts to obtain all such approvals.

14. WITHHOLDING OF TAXES. The Company or any affiliate shall have the right to deduct from any compensation or any other payment of any kind (including withholding the issuance of shares of Common Stock) due Grantee the amount of any federal, state or local taxes required by law to be withheld as the result of the exercise of

the Option or the disposition (as that term is defined in ss.424(c) of the Code) of shares of Common Stock acquired pursuant to the exercise of the Option; provided, however, that the value of the shares of Common Stock withheld may not exceed the statutory minimum withholding amount required by law. In lieu of such deduction, the Committee may require Grantee to make a cash payment to the Company or an affiliate equal to the amount required to be withheld. If Grantee does not make such payment when requested, the Company may refuse to issue any Common Stock certificate under the Agreement until arrangements satisfactory to the Company or the committee of the Company for such payment have been made.

15. COVENANTS AS TO STOCK. The Company has taken all action necessary and appropriate to grant to Optionee the Option. The Company covenants and agrees that the Stock issuable on the exercise of the Option shall, at delivery, be fully paid and non-assessable, free from taxes, liens and charges with respect to its purchase. The Stock subject to the Option has not been and for the Exercise Period will not be transferred, assigned, pledged or otherwise encumbered in any way by the Company, and no other person or entity has or during the Exercise Period, will have any rights, direct or indirect, in the Stock subject to this Agreement or the rights of the Optionee hereunder.

16. EXCHANGE FOR OTHER DENOMINATIONS. The Option shall be exchangeable for new instruments of like tenor and date representing in the aggregate the right to exercise the Option in denominations designated by the Holder at the time of surrender.

17. LOSS, THEFT, DESTRUCTION OR MUTILATION OF OPTION. Upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Option, and, in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to IT, and upon reimbursement to the Company of all reasonable expenses incidental thereto, and upon surrender and cancellation of the Option, if mutilated, the Company will make and deliver a new option of like tenor and date, in lieu of the Option.

18. MISCELLANEOUS.

(a) This Agreement has been executed in two counterparts each of which shall constitute one and the same instrument.

(b) In case any provision of this Agreement shall be invalid, illegal or unenforceable, or partially invalid, illegal or unenforceable, the provision shall be enforced to the extent, if any, that it may legally be enforced and the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

(c) This Agreement and any term hereof may be changed, waived, discharged or terminated only by a statement in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

(d) Any covenants, representations, warranties and agreements made by the parties shall be deemed to have been relied upon by the parties, shall survive this Agreement, shall continue until the applicable statute of limitations bars any claim thereon, and shall be effective regardless of any investigation which may have been made at any time by or on behalf of a party.

(e) This Agreement shall be binding upon the heirs, personal representatives, and permitted successors and assigns of the parties hereto.

(f) This Agreement is made, is entered into, and is to be performed in, and shall be governed by and construed in accordance with, the laws of the State of Delaware without regard to principles of conflict of laws.

(g) Any notices required to be given or delivered to the Company under the terms of this Agreement shall be in writing and addressed to the Company at its principal corporate offices. Any notice required to be given or delivered to Optionee shall be in writing and addressed to Optionee at the address indicated below Optionee's signature line on this Agreement. All notices shall be deemed effective upon personal delivery or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

(h) This Agreement and the Advisor Agreement constitutes and contains the entire agreement and understanding of the parties, and shall supersede any and all prior negotiations, correspondence, understandings and agreements between the parties respecting the subject matter hereof. To the extent of any conflict between the terms of this Agreement and the Advisor Agreement, this Agreement shall control in all respects.

IN WITNESS WHEREOF, Quorum Sciences, Inc. has caused this Agreement to be executed by its President and Optionee has executed this Agreement, both as of the day and year first above written.

QUORUM SCIENCES, INC.

/s/ Stephen L. Pevenstein

Witness

/s/ Hanna Hastings

Witness

/s/ Stephen Turner

Name: STEPHEN TURNER
Title: CEO

/s/ J. Woodland Hastings 4/11/2000

Optionee

Name: J. Woodland Hastings

Address: 16 Divinity Ave

Cambridge MA 02138

QUORUM SCIENCES, INC.

NONQUALIFIED STOCK OPTION AGREEMENT

THIS AGREEMENT dated as of March 14, 2000 (the "Date of Grant") by and between Quorum Sciences, Inc., a Delaware corporation (the "Company"), and Ute Muh, Ph.D. (the "Optionee").

1. GRANT OF OPTION. Pursuant to the Employment Agreement, dated as of August 10, 1998, by and between the Company and the Optionee the Company hereby grants to the Optionee, subject to the terms and conditions set forth herein, the right and option (the "Option") to purchase from the Company all or any part of an aggregate of Twenty Five Thousand (25,000) shares of Common Stock, par value \$0.001 per share, of the Company ("Stock") at the purchase price of \$0.50 per share ("Exercise Price").

2. EXERCISE OF OPTION. Optionee shall be entitled to first exercise this Option with respect to the following percentages of the shares of Stock subject to this Option on the dates listed in the vesting schedule below, provided the Optionee remains an Advisor of the Company on any such date pursuant to the Advisor Agreement:

Percentage of Shares of Stock Subject to this Option -----	First Exercisable -----
25%	At the Date of employment
25%	1 year after the Date of employment
25%	2 years after the Date of employment
25%	3 years after the Date of employment

After shares of Stock are subject to exercise in accordance with the above schedule, Optionee may exercise this Option with respect to those shares in whole or in part at any time or times prior to the expiration date as defined in Section 3 hereof.

Notwithstanding any provision of this Agreement to the contrary, no part of this Option may be exercised if the Stock to be purchased is not subject to exercise in accordance with the above schedule.

3. EXPIRATION DATE. This Option may not be exercised more than 10 years from the Date of Grant specified in Section 1 hereof and shall expire at the end of such 10-year period. Additionally, this Option shall expire when the Optionee terminates engagement with the Company or a subsidiary of the Company as an advisor pursuant to the Advisor Agreement. The Option shall expire at the close of business on such any such expiration date. This Option may be exercised during such period only in accordance with the applicable provisions of this Agreement.

4. LIMITATION ON EXERCISE. This Option may not be exercised in whole or in part by Optionee for less than 100 shares of Stock unless only less than 100 shares of Stock remain subject to the Option.

5. METHOD OF EXERCISE. This Option shall be exercisable by a written notice which shall:

- (i) State the election to exercise the Option, the number of shares of Stock with respect to which it is being exercised, the person in whose name the stock certificate or certificates for such shares of Stock is to be registered, his or her address and Social Security Number (or if more than one, the names, addresses and Social Security Numbers of such persons);
- (ii) Be signed by the person or persons entitled to exercise the Option and, if the Option is being exercised by any person or persons other than the Optionee, be accompanied by proof, satisfactory to counsel for the company, of the right of such person or persons to exercise the Option;
- (iii) Be delivered in person or by registered or certified mail to the President of the Company; and
- (iv) Be accompanied by signed written instructions acceptable to the Company in the event that Optionee desires the Company to deliver the Stock to Optionee's broker or to any party other than Optionee.

Such notice shall be accompanied by payment of the full purchase price of the shares of Stock with respect to which the Option is being exercised. Payment shall be by certified or bank cashier's check, by the surrender and delivery to the Company of certificates representing shares of its Stock duly endorsed for transfer or accompanied by a duly executed assignment, or by an agreement signed by the Optionee to surrender and deliver to the Company certificates representing shares of its Stock duly endorsed for transfer, which may be effected by means of a duly executed assignment, transferring to the Company shares of Stock acquired through the exercise of the Option, or by a combination of such methods of payment. The certificate or certificates for shares of Stock as to which the Option shall be exercised shall be registered in the name of the person or persons exercising the Option.

6. LOCK-UP PROVISION. In connection with any underwritten public offering by the Company of its equity securities pursuant to an effective Registration Statement filed under the 1933 Act, including the Company's initial public offering, Optionee shall not sell, make any short sale of, loan, hypothecate, pledge, grant any option for the purchase of, or otherwise dispose or transfer for value or otherwise agree to engage in any of the foregoing transactions with respect to, any shares of Stock without the prior written consent of the Company. Such restriction (the "Market Stand-Off") shall be in effect for such period of time from and after the effective date of the final prospectus for the offerings as may be requested by the Company or the underwriters. In no event, however, shall such period exceed one hundred eighty (180) days after the effective date of the Company's Registration Statement with respect to such offering.

Optionee shall be subject to the Market Stand-Off provided and only if the officers and directors of the Company holding common stock of the Company are also subject to similar restrictions.

7. NON-TRANSFERABILITY OF OPTION. This Option may not be transferred in any manner otherwise than by will or the laws of descent and distribution and may be exercised during the period that the Optionee is an advisor to the Company pursuant to the Advisor Agreement, and only by the Optionee. The terms of this Option shall be binding upon the executors, administrators, heirs, successors and assigns of the Optionee.

8. REPRESENTATIONS AND WARRANTIES. The Optionee represents and warrants to the Company, upon which representations and warranties the Company is relying in entering into this Agreement, as follows:

(a) The Optionee has been afforded the opportunity by the Company to ask questions and request information to acquire detailed knowledge and information concerning the business affairs and operations of the Company and its financial condition and prospects. As a result of such opportunity to ask questions and review information and the business background, training, and expertise of the Optionee (and/or of the advisors with whom the Optionee has consulted), the Optionee is capable of evaluating the merits and risks of an investment in the Stock and is in a position to comprehend, weigh, and assess such knowledge and information in a meaningful fashion.

(b) The Optionee acknowledges and agrees that, in entering into this Agreement and in exercising the Option, the Optionee is not relying upon, and will not rely upon, any statements, representations, or warranties, whether oral or written, made by any stockholder, officers, director, representative, agent, or employee of the Company, or any affiliate thereof, except for those set forth in any historic financial statements provided to the Optionee by the Company. Further, the Optionee acknowledges and agrees that any business and financial projections of the Company that may be provided by the Company are solely for purposes of describing the Company's future business and financial goals and are not intended to be, nor are they, representations or guaranties of the Company's future performance. Accordingly, the Optionee is not relying upon, and will not rely upon, any such projections in entering into this Agreement or in exercising the Option.

(c) The address set forth above is the true and correct residence of the Optionee, and the Optionee has no present intention of becoming a resident of any other state or jurisdiction.

(d) The Optionee understands that neither the Option nor the Stock subject to the Option may have been registered under the Securities Act, or any state securities laws and that there is no present intention to so register them.

(e) The Option is being acquired by the Optionee solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization of the Stock that is permitted to be acquired by the Optionee thereunder. At such times as the Optionee may exercise the Option, unless the Stock has been registered under the Securities Act, the Stock so acquired will be acquired solely for the Optionee's own account, for investment, and not with a view to or for the resale, distribution, subdivision, or fractionalization thereof.

(f) The Optionee acknowledges and is aware that (i) there are substantial restrictions on the transferability of the Stock, (ii) the Stock will not be, and investors in the Company have no rights to require that the Company be, registered under the Securities Act or any state securities law, (iii) there will be no public market for the Stock and accordingly, if the Option is exercised, the Optionee may have to hold the Stock indefinitely without the possibility of liquidating the Optionee's investment in the Company, and (iv) any shares received through exercise of the Option will bear legends restricting the transfer of such shares.

(g) As of the date of this Agreement and at such time(s) as the Optionee may exercise the Option, the Optionee has and will have (i) adequate means of providing for Optionee's needs and possible personal and family contingencies, and (ii) the ability to bear the economic risk of an investment in the Stock.

(h) The Optionee has entered into this Agreement voluntarily.

9. NON-MARKETABILITY OF STOCK. No representations or promises have been made to the Optionee concerning the present or future marketability or value of the Stock. The Optionee agrees that, unless the Stock is registered under the Securities Act or relevant state securities laws, the Stock cannot be resold or transferred unless (a) (i) they are subsequently registered thereunder or exemptions from such registrations are available or (ii) the Company receives an opinion of counsel satisfactory (both as to counsel and opinion) to the Company that such transfer complies with federal and state securities laws, including but not limited to Section 701 of the Securities Act of 1933, as amended, and (b) the applicable restrictions on transfer contained in Section 10 of this Agreement have been complied with.

10. ADJUSTMENTS. In the event of any change in the Stock of the Company by reason of any stock dividend, recapitalization, reorganization, merger, consolidation, split-up, combination or exchange of shares, or of any similar change affecting the common Stock, then in any such event the number and kind of shares subject to this Option and their purchase price per share shall be appropriately adjusted consistent with such change in such manner as the committee appointed by the Company may deem equitable to prevent substantial dilution or enlargement of the rights granted to Optionee hereunder. Any adjustment so made shall be final and binding upon Optionee.

11. NO RIGHTS AS STOCKHOLDER. Optionee shall have no rights as a stockholder with respect to any shares of Stock subject to this Option prior to the date of issuance to him of a certificate or certificates for such shares. Optionee agrees to execute, deliver and perform any stockholders agreement that may then be in force by and among the Company and its stockholders.

12. NO RIGHTS TO CONTINUED EMPLOYMENT. This Option shall not confer upon Optionee any right with respect to continuance of employment or directorship, or engagement as an advisor, nor shall it interfere in any way with the right of any party to terminate Optionee's engagement as an advisor, except pursuant to the terms of the Advisor Agreement.

13. COMPLIANCE WITH LAW AND REGULATIONS. (a) This Option and the obligation of the Company to sell and deliver shares hereunder, shall be subject to all (i) applicable federal and state laws, rules and regulations, (ii) such approvals by any government or regulatory agency as may be required, and (iii) applicable rules and regulations of any stock exchange or Nasdaq on which the Stock may be listed from time to time. The Company shall not be obligated to issue any shares of Stock issuable under this Agreement until such time as such shares of Stock have been registered under the Securities Act, and all applicable state securities laws or until the Company receives an opinion of counsel satisfactory (both as to opinion and counsel) to the Company that such issuance is exempt from registration under said laws. Moreover, this Option may not be exercised if its exercise, or the receipt of shares of Stock pursuant thereto, would be contrary to applicable law.

(b) The inability of the Company to obtain approval from any regulatory body having authority deemed by the Company to be necessary to the lawful issuance and sale of any Common Stock pursuant to this option shall relieve the Company of any liability with respect to the non-issuance or sale of the Common Stock as to which such approval shall not have been obtained. The Company, however, shall use its best efforts to obtain all such approvals.

14. WITHHOLDING OF TAXES. The Company or any affiliate shall have the right to deduct from any compensation or any other payment of any kind (including withholding the issuance of shares of Common Stock) due Grantee the amount of any federal, state or local taxes required by law to be withheld as the result of the exercise of the Option or the disposition (as that term is defined in ss.424(c) of the Code) of shares of Common Stock acquired pursuant to the exercise of the Option provided, however, that the value of the shares of Common Stock withheld may not exceed the statutory minimum withholding amount required by law. In lieu of such deduction, the Committee may require Grantee to make a cash payment to the Company or an affiliate equal to the amount required to be withheld. If Grantee does not make such payment when requested, the Company may refuse to issue any Common Stock certificate under the Agreement until arrangements satisfactory to the Company or the committee of the Company for such payment have been made.

15. COVENANTS AS TO STOCK. The Company has taken all action necessary and appropriate to grant to Optionee the Option. The Company covenants and agrees that the Stock issuable on the exercise of the Option shall, at delivery, be fully paid and non-assessable, free from taxes, liens and charges with respect to its purchase. The Stock subject to the Option has

not been and for the Exercise Period will not be transferred, assigned, pledged or otherwise encumbered in any way by the Company, and no other person or entity has or during the Exercise Period, will have any rights, direct or indirect, in the Stock subject to this Agreement or the rights of the Optionee hereunder.

16. EXCHANGE FOR OTHER DENOMINATIONS. The Option shall be exchangeable for new instruments of like tenor and date representing in the aggregate the right to exercise the Option in denominations designated by the Holder at the time of surrender.

17. LOSS, THEFT, DESTRUCTION OR MUTILATION OF OPTION. Upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Option, and, in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it, and upon reimbursement to the Company of all reasonable expenses incidental thereto, and upon surrender and cancellation of the Option, if mutilated, the Company will make and deliver a new option of like tenor and date, in lieu of the Option.

18. MISCELLANEOUS.

(a) This Agreement has been executed in two counterparts each of which shall constitute one and the same instrument.

(b) In case any provision of this Agreement shall be invalid, illegal or unenforceable, or partially invalid, illegal or unenforceable, the provision shall be enforced to the extent, if any, that it may legally be enforced and the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

(c) This Agreement and any term hereof may be changed, waived, discharged or terminated only by a statement in writing signed by the party against which enforcement of such change, waiver, discharge or termination is sought.

(d) Any covenants, representations, warranties and agreements made by the parties shall be deemed to have been relied upon by the parties, shall survive this Agreement, shall continue until the applicable statute of limitations bars any claim thereon, and shall be effective regardless of any investigation which may have been made at any time by or on behalf of a party.

(e) This Agreement shall be binding upon the heirs, personal representatives, and permitted successors and assigns of the parties hereto.

(f) This Agreement is made, is entered into, and is to be performed in, and shall be governed by and construed in accordance with, the laws of the State of Delaware without regard to principles of conflict of laws.

(g) Any notices required to be given or delivered to the Company under the terms of this Agreement shall be in writing and addressed to the Company at its principal corporate offices. Any notice required to be given or delivered to Optionee shall be in writing

and addressed to Optionee at the address indicated below Optionee's signature line on this Agreement. All notices shall be deemed effective upon personal delivery or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

(h) This Agreement and the Advisor Agreement constitutes and contains the entire agreement and understanding of the parties, and shall supersede any and all prior negotiations, correspondence, understandings and agreements between the parties respecting the subject matter hereof. To the extent of any conflict between the terms of this Agreement and the Advisor Agreement, this Agreement shall control in all respects.

IN WITNESS WHEREOF, Quorum Sciences, Inc. has caused this Agreement to be executed by its President and Optionee has executed this Agreement, both as of the day and year first above written.

QUORUM SCIENCES, INC.

/s/ Stephen L. Pevenstein

Witness

/s/ Stephen Turner

Name: Stephen Turner
Title: CEO

/s/ [Illegible]

Witness

/s/ Ute Muh

Optionee

Name: Ute Muh, Ph.D.

Address: 410 N 7th Ave

Iowa City, IA 52245

STOCK OPTION AGREEMENT

IT IS HEREBY AGREED AS FOLLOWS:

1. GRANT OF OPTION. Quorum Sciences, Inc. (the "Corporation") hereby grants to Jim Romesser, Ph.D. ("Optionee") an option to purchase up to the number of Option Shares specified. The Option Shares shall be purchasable during the option term specified in Paragraph 2 at the Exercise Price.
2. OPTION TERM. This option shall have a term of ten years measured from the Grant Date and shall accordingly expire at the close of business on the Expiration Date, unless sooner terminated in accordance with this agreement.
3. LIMITED TRANSFERABILITY. This option shall be neither transferable nor assignable by Optionee other than by will or by the laws of descent and distribution following Optionee's death and may be exercised, during Optionee's lifetime, only by Optionee.
4. STOCKHOLDER RIGHTS. The holder of this option shall not have any stockholder rights with respect to the Option Shares until such person shall have exercised the option, paid the Exercise Price and become a holder of record of the purchased shares.
5. DATES OF EXERCISE. The Grant Date of the option is March 1, 1999. This option is exercisable for the Option Shares as specified below.

March 1, 1999	25,000 shares
---------------	---------------
6. MANNER OF EXERCISING OPTION.
 - (a) In order to exercise this option with respect to all or any part of the Option Shares for which this option is at the time exercisable, Optionee (or any other person or persons exercising the option) must take the following actions:
 - (i) Execute and deliver to the Corporation a Notice of Exercise for the Option Shares for which the option is exercised (Exhibit 1 attached).
 - (ii) Pay the aggregate Exercise Price for the purchased shares by cash or check made payable to the Corporation.
7. LOCK-UP PROVISION.
 - (a) In connection with any underwritten public offering by the Corporation of its equity securities pursuant to an effective Registration Statement filed under the 1933 Act, including the Corporation's initial public offering, Optionee shall not sell, make any short sale of, loan, hypothecate, pledge, grant any option for the purchase of, or otherwise dispose or transfer for

value or otherwise agree to engage in any of the foregoing transactions with respect to, any Option Shares without the prior written consent of the Corporation or its underwriters. Such restriction (the "Market Stand-Off") shall be in effect for such period of time from and after the effective date of the final prospectus for the offerings may be requested by the Corporation or such underwriters. In no event, however, shall such period exceed one hundred eighty (180) days after the effective date of the Corporation's initial public offering.

(b) Optionee shall be subject to the Market Stand-Off provided and only if the officers and directors of the Corporation are also subject to similar restrictions.

8. COMPLIANCE WITH LAWS AND REGULATIONS.

(a) The exercise of this option and the issuance of the Option Shares upon such exercise shall be subject to compliance by the Corporation and Optionee with all applicable requirements of law relating thereto and with all applicable regulations of any stock exchange (or the NASDAQ National Market if applicable) on which the Common Stock may be listed for trading at the time of such exercise and issuance.

(b) The inability of the Corporation to obtain approval from any regulatory body having authority deemed by the Corporation to be necessary to the lawful issuance and sale of any Common Stock pursuant to this option shall relieve the Corporation of any liability with respect to the non-issuance or sale of the Common Stock as to which such approval shall not have been obtained. The Corporation, however, shall use its best efforts to obtain all such approvals.

9. NOTICES. Any notice required to be given or delivered to the Corporation under the terms of this Agreement shall be in writing and addressed to the Corporation at its principal corporate offices. Any notice required to be given or delivered to Optionee shall be in writing and addressed to Optionee at the address indicated below Optionee's signature line on the Grant Notice. All notices shall be deemed effective upon personal delivery or upon deposit in the U.S. mail, postage prepaid and properly addressed to the party to be notified.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date set forth below:

Date: March 4, 1999

On behalf of the Company:

Optionee:

/s/ Stephen Turner

Signature

/s/ James A. Romesser

Signature

Stephen Turner

Printed Name

James A. Romesser

Printed Name

Chairman

Title

Address

18710 Mountain Spring Drive

Spring, TX 77379

EXHIBIT 1

NOTICE OF EXERCISE

I hereby notify Quorum Sciences, Inc. (the "Corporation") that I elect to purchase _____ shares of the Corporation's Common Stock (the "Purchased Shares") at the Option Exercise Price of \$0.50 per share (the "Exercised Price") pursuant to that certain option (the "Option") granted to me under the Stock Option Agreement dated _____, 1999.

Concurrently with the delivery of this Exercise Notice to the Corporation. I shall hereby pay to the Corporation the Exercise Price for the Purchased Shares in accordance with the provisions of my agreement with the corporation (or other documents) evidencing the Option and shall deliver whatever additional documents may be required by such agreement as a condition for exercise.

Date: _____, 19__.

OPTIONEE

ADDRESS: _____

Print name in exact manner
It is to appear on the
Stock certificate:

Address to which certificate
is to be sent, if different from
address above:

Social Security Number:

Employee Number:
