

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

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of
the Securities Exchange Act of 1934 (Amendment No. 1)

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

- Preliminary Proxy Statement
- Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))**
- Definitive Proxy Statement
- Definitive Additional Materials
- Soliciting Material Pursuant to §240.14a-12

MACROPORE BIOSURGERY, INC.

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

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**MACROPORE BIOSURGERY, INC.
6740 TOP GUN STREET
SAN DIEGO, CALIFORNIA 92121**

**NOTICE OF 2005 ANNUAL MEETING OF STOCKHOLDERS
TO BE HELD ON JUNE 28, 2005**

Dear MacroPore Biosurgery, Inc. Stockholder:

You are cordially invited to attend the 2005 Annual Meeting of the stockholders of MacroPore Biosurgery, Inc. The Annual Meeting will be held in the United States, at the Country Inn & Suites by Carlson (formerly Prime Hotel & Suites) located at 5975 Lusk Blvd., San Diego, California 92121 on June 28, 2005, commencing at 9:00 a.m., San Diego local time, and at 6:00 p.m., Frankfurt local time. I look forward to meeting with as many of our stockholders as possible. The meeting will be webcast live for those who are unable to attend in person.

To access the webcast of the meeting please visit our website at www.macropore.com and follow the link on our Investor Relations section. An audio presentation of the Annual Meeting will also be available via telephone 6:00 p.m. (CEST) / 9:00 a.m. (PDT): Dial-In Number USA: +1 303-262-2130 and Dial-In Number Europe: +49 (0) 61 03-4 85 30 01. A telephone replay will be available for 24 hours. To access the replay please call from the USA: +1 303-

590-3000; (PIN-Number: 11027446) and from Europe: +49 (0) 69-5 89 99 05 68; (PIN-Number: 133087). The access information can also be obtained by calling our San Diego office during regular business hours at (858) 458-0900. You will not be able to place your vote over the Internet. The only authorized voting will be in person at the meeting or by completing and returning the enclosed proxy card.

At the meeting, you will be asked to vote upon the election of our Board of Directors and to ratify our Audit Committee's selection of the Independent Registered Public Accounting Firm. There will also be a report on our business, and those who attend in person will have the opportunity to ask questions about us. In addition, we will address any other business properly brought before the meeting.

We have attached a Proxy Statement that contains more information about these items and the meeting. Stockholders that own stock at the close of business on May 2, 2005, can vote at the meeting. A list of our stockholders allowed to vote will be available for inspection by any stockholder at our offices in San Diego, during normal business hours for the ten business days before the meeting. This list will also be available at the Country Inn & Suites by Carlson during the meeting.

We hope that you will find it convenient to attend the meeting in person. **Whether or not you expect to attend, please complete, date, sign, and mail the enclosed proxy card to ensure your representation at the meeting and the presence of a quorum.** If your address is on our stockholder list a return envelope is provided for you and no postage need to be affixed to the proxy card when it is mailed. **If you decide to attend the meeting and wish to change your proxy vote, you may do so by voting in person at the meeting.**

By Order of the Board of Directors,

/s/ Christopher J. Calhoun
CHRISTOPHER J. CALHOUN
Chief Executive Officer

San Diego, California, USA
May 18, 2005

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PROXY STATEMENT

MacroPore Biosurgery, Inc.
6740 Top Gun Street
San Diego, CA 92121
(858) 458-0900

INFORMATION CONCERNING SOLICITATION AND VOTING

This Proxy Statement is being furnished in connection with the solicitation of proxies by and on behalf of our Board of Directors to be used at our Annual Meeting of stockholders to be held on June 28, 2005, and at any postponement or adjournment of the Annual Meeting, for the purposes set forth in the accompanying notice of Annual Meeting. Our annual report for the year ended December 31, 2004 accompanies this Proxy Statement. This Proxy Statement and accompanying materials are expected to be first sent or given to our stockholders on or about May 18, 2005.

We have fixed the close of business on May 2, 2005 as the record date for the determination of the stockholders entitled to notice of and to vote at the Annual Meeting. Only holders of record of shares of our common stock on that date are entitled to notice of and to vote at the Annual Meeting. Each share of our common stock entitles the holder to one vote on each matter presented to stockholders for approval at the Annual Meeting. On April 1, 2005, there were 13,972,184 shares of our common stock outstanding.

Questions and Answers about the Meeting and Voting

1. *What is a Proxy Statement and why has this Proxy Statement been sent to me?*

A Proxy Statement is a document that Securities and Exchange Commission regulations require us to give you when we ask you to sign a proxy card with regard to voting on proposals at the Annual Meeting. Among other things, a Proxy Statement describes those proposals and provides information about the Company. The Board of Directors of MacroPore Biosurgery, Inc. is soliciting the enclosed proxy to be used at the Annual Meeting and at any adjournment or postponement of the Annual Meeting. The Annual Meeting will be held at the Country Inn & Suites by Carlson (formerly Prime Hotel & Suites) located at 5975 Lusk Blvd., San Diego, California 92121. We will use the proxies received to:

- Elect directors;
- Ratify the Audit Committee's selection of KPMG LLP as our independent registered public accounting firm for the 2005 fiscal year; and
- Transact any other business that is proposed in accordance with our by-laws before the meeting is finally adjourned.

2. *What is a proxy?*

A proxy is your legal designation of another person to vote the stock you own. That other person is called a proxy holder. Designation of a particular proxy holder can be effected by completion of a written proxy card, such as the one attached to this Proxy Statement. Our Chief Executive Officer and Vice-Chairman of the Board of Directors, Christopher J. Calhoun, and our President and Member of the Board of Directors, Marc H. Hedrick, MD, have been designated the proxy holders for the 2005 Annual Meeting.

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3. *What is the difference between a stockholder of record and a stockholder who holds stock in street name?*

Essentially all of our issued and outstanding shares of common stock are represented by global stock certificates deposited with the German securities depository, Clearstream Banking AG. Clearstream has provided us with the names of the beneficial owners of our shares from its records for this proxy solicitation. If you hold your shares in your own name or Clearstream identifies you on its records as a beneficial owner of your shares, you are a stockholder of record for purposes of this proxy solicitation. If your broker or bank holds your shares and Clearstream's records indicate that your broker or bank is the beneficial owner of your shares, then you hold your shares in street name.

4. *What different methods can I use to vote?*

Stockholders can vote by written proxy card, or stockholders may vote in person at the meeting (unless they are street name/beneficial-owner holders without a legal proxy).

5. *What is the record date and what does it mean?*

The record date for the 2005 Annual Meeting is May 2, 2005. The record date is established by our Board of Directors as required by Delaware law. Owners of common stock at the close of business on the record date are entitled to receive notice of the meeting and to vote at the meeting and any adjournments or postponements of the meeting.

6. *How can I revoke a proxy?*

A stockholder can revoke a proxy by giving written notice or revocation to our corporate secretary, delivering a later-dated proxy, or voting in person at the meeting. Attendance at the Annual Meeting will not, by itself, constitute revocation of a proxy.

7. *What are my voting choices when voting for director nominees, and what vote is needed to elect directors?*

In voting on the election of director nominees to serve until the 2006 Annual Meeting, stockholders may vote in favor of all nominees, may withhold votes as to all nominees, or may withhold votes as to specific nominees while voting in favor of all others. In addition, if any other candidates are properly nominated at the meeting, stockholders of record who attend the meeting could vote for the other candidates. Directors will be elected by a plurality. The Board recommends a vote "FOR" each of the nominees identified in this proxy statement.

8. *What are my voting choices when voting to ratify the selection of our independent registered public accounting firm?*

In voting on the ratification of the selection of our independent registered public accounting firm, stockholders may vote in favor of the selection or against the selection, or may abstain from voting on the selection. The affirmative vote of a majority of the shares of common stock present or represented by proxy and voting at the meeting is required to approve this proposal. Abstentions are counted as votes cast and have the same effect as votes against the proposal. Broker non-votes have no effect on the outcome of the voting on this proposal.

9. *How will a proxy get voted?*

If you properly fill in and return the enclosed proxy card, the designated proxy holders (the individuals named on your proxy card) will vote your shares as you have directed. If you sign the proxy

card but do not make specific choices, the designated proxy holders will vote your shares as recommended by the Board of Directors as follows:

- "FOR" the election of each listed nominee for director; and
- "FOR" ratification of KPMG LLP as our independent registered public accounting firm for the 2005 fiscal year.

If necessary, and unless you have indicated on your proxy card that you wish to vote against any of the proposals, the individuals named on your proxy card may vote in favor of a proposal to adjourn the meeting to a later date in order to obtain additional votes with respect to any of the proposals.

10. *How are abstentions and broker non-votes counted?*

Broker non-votes will not be included in vote totals and will not affect the outcome of the vote. In all matters other than the election of directors, abstentions will have the same effect as a vote against a specified proposal.

11. *Who pays for the solicitation of proxies?*

We pay the entire cost of the solicitation of proxies. This includes preparation, assembly, printing, and mailing of this Proxy Statement and any other information we send to stockholders. We may supplement our efforts to solicit your proxy in the following ways:

- We may contact you using the telephone or electronic communication;
- Directors, officers, or other regular employees of MacroPore Biosurgery may contact you personally; or
- We may hire agents for the sole purpose of contacting you regarding your proxy.

If we hire soliciting agents, we will pay them a reasonable fee for their services. We will not pay directors, officers, or other regular employees any additional compensation for their efforts to supplement our proxy solicitation.

We anticipate that banks, brokerage houses and other custodians, nominees, and fiduciaries will forward soliciting material to the beneficial owners of shares of common stock entitled to vote at our Annual Meeting and that we will reimburse those persons for their out-of-pocket expenses incurred in this connection.

12. *What constitutes a quorum?*

In order for business to be conducted at the meeting, a quorum must be present. A quorum exists when at least 33 1/3 % of the holders of shares of common stock issued, outstanding and entitled to vote are represented at the meeting. Shares of common stock represented in person or by proxy (including broker non-votes and shares that abstain or do not vote with respect to one or more of the matters to be voted upon) will be counted for the purpose of determining whether a quorum exists. If a quorum is not present, the meeting will be adjourned until a quorum is obtained.

13. *How will voting on "any other business" be conducted?*

Although we do not know of any business to be considered at the Annual Meeting other than the proposals described in this Proxy Statement, if any additional business is presented at the Annual

Meeting, your signed proxy card gives authority to the designated proxy holders to vote on such matters at their discretion.

PROPOSAL #1. ELECTION OF DIRECTORS

Our Board of Directors is composed of seven members. The names of the seven nominees for election as directors are set forth below. Each of the nominees is currently serving as a member of our Board of Directors. All directors are elected annually and serve a one-year term until the next Annual Meeting or until their respective successors are duly elected. All of the nominees listed below are expected to serve as directors if they are elected. If any nominee should decline or be unable to accept such nomination or to serve as a director, an event which our Board of Directors does not now expect, our Board of Directors reserves the right to nominate another person or to vote to reduce the size of our Board of Directors. If another person is nominated, the proxy holders intend to vote the shares to which the proxy relates for the election of the person nominated by our Board of Directors.

Nominees and Business Experience

Name	Age	Position(s)
Marshall G. Cox	69	Chairman of the Board and Director
Christopher J. Calhoun	39	Chief Executive Officer, Vice-Chairman of the Board, and Director
Marc H. Hedrick, MD	42	President and Director
Ronald D. Henriksen	65	Director
David M. Rickey	49	Director
E. Carmack Holmes, MD	67	Director
Paul W. Hawran	53	Director

Marshall G. Cox has served as Chairman of the Board of Directors since May 1997. He founded Western Micro Technology, Inc. and from 1977 to 1995 served as its Chairman and Chief Executive Officer. He is now a private investor, and serves as the Managing Director of the Saratoga Boys' Club, the Honorary Chairman of Internix, Inc., and the Chairman/CEO of the Marshall G. Cox Family Foundation. Mr. Cox holds a B.S. from the University of California, Los Angeles. Mr. Cox is Mr. Calhoun's father-in-law.

Christopher J. Calhoun is a co-founder of MacroPore Biosurgery and has served as Chief Executive Officer, Vice-Chairman of the Board and Director since 1997. Mr. Calhoun has also served as the President of the Company from April 2002 to May 2004 and from 1996 to 1998. Mr. Calhoun is a co-inventor on multiple US and International patents used for our bioresorbable implant technology. These inventions include bioresorbable polymers for skeletal repair and regeneration, implant surfaces for tissue guidance, and postsurgical scar tissue reduction. Mr. Calhoun received a BA from the University of California, San Diego and an MBA from the University of Phoenix. Mr. Calhoun is Mr. Cox's son-in-law.

Marc H. Hedrick, MD, President of MacroPore Biosurgery since May 2004, joined the Company as Chief Scientific Officer, Medical Director and Director in November 2002. In December 2000 Dr. Hedrick co-founded, and served as President and Chief Executive Officer of StemSource, Inc., a company specializing in tissue bioengineering and regenerative cell technology. We acquired StemSource in November 2002. Dr. Hedrick is a General and Plastic Surgeon, and has been an Associate Professor of Surgery and Pediatrics at the University of California, Los Angeles (UCLA) since 1998, and has directed the Laboratory of Regenerative Bioengineering and Repair for the Department of Surgery at UCLA since 1998. Dr. Hedrick obtained his MD degree from the University of Texas Southwestern Medical School, Dallas.

Ronald D. Henriksen joined MacroPore Biosurgery as Director in October 2002. Mr. Henriksen has served as Chief Investment Officer and Partner of Twilight Ventures, LLC (a venture capital company) since 2002. From 1988 to 2002, Mr. Henriksen served as President of the Advanced Research & Technology Institute of Indiana University, and from 1996 through 1998 as CEO of Itasca Ventures, LLC (a venture capital company), and from 1993 to 1995 as President/CEO of Khepri Pharmaceuticals, Inc. (a biotechnology company). For twenty-three years previous to 1994 he held various managerial and executive positions with Eli Lilly and Company (a US healthcare company), including Managing Director for Brazil, Mexico and Central America. He is also a board member of QLT, Inc., Canada's largest biopharmaceutical company. Mr. Henriksen received his B.S. in Industrial Administration from Iowa State University and an MBA from Harvard Business School. He also served as an officer for four years in the US Navy.

David M. Rickey has served as Director of MacroPore Biosurgery since November 1999. From 1996 to March 2005 Mr. Rickey was President and Chief Executive Officer of Applied Micro Circuits Corporation, which provides high-performance, high-bandwidth silicon solutions for optical networks.

Mr. Rickey also served as a Director and Chairman of the Board of Applied Micro Circuits Corporation and a Director of AMI Semiconductor, Inc. and currently serves as a Director of Netlist. He holds a B.S. from Marietta College, a B.S. from Columbia University and an M.S. from Stanford University.

E. Carmack Holmes, MD joined MacroPore Biosurgery as Director in August 2003. Since 1994, Dr. Holmes has served as the Surgeon-in-Chief of the University of California Los Angeles (UCLA) Medical Center and holds the position of William P. Longmire, Jr. Professor and Chairman, Department of Surgery, UCLA School of Medicine. He joined UCLA in 1973 and has held professorial positions in the Divisions of Cardiothoracic Surgery and Surgical Oncology for over 30 years. His surgical training was conducted at Johns Hopkins University and the National Cancer Institute at the National Institutes of Health (NIH). Dr. Holmes graduated from Duke University and holds an MD from the University of North Carolina Medical School.

Paul W. Hawran joined MacroPore Biosurgery as Director in February 2005. Mr. Hawran has served as Executive Vice President and Chief Financial Officer of Neurocrine Biosciences, Inc. since January 2001. Prior to that, he served as Senior Vice President and Chief Financial Officer of Neurocrine Biosciences, Inc. from 1996 to 2001 and Vice President and Chief Financial Officer from 1993 to 1996. Mr. Hawran was employed by SmithKline Beecham (now Glaxo SmithKline) from July 1984 to May 1993, most recently as Vice President and Treasurer. Prior to joining SmithKline in 1984, he held various financial positions at Warner Communications (now Time Warner) involving corporate finance, financial planning and domestic and international budgeting and forecasting. Mr. Hawran received a B.S. in finance from St. John's University and an M.S. in taxation from Seton Hall University. He is a Certified Public Accountant and a member of the American Institute of Certified Public Accountant.

Meetings and Committees of the Board of Directors

The Board of Directors held five meetings during 2004. Each of our directors attended 75% or more of the total number of meetings of the Board of Directors and the Board Committee meetings of which they were a member (during the period that they served).

The Board of Directors has established a Compensation Committee to handle compensation matters and administer our Amended and Restated 1997 Stock Option and Stock Purchase Plan and the 2004 Equity Incentive Plan. The committee consists of Mr. Rickey and Mr. Henriksen. The committee determines the compensation received by directors and reviews and approves the compensation and benefits for executive officers. The committee held four meetings during 2004.

Mr. Henriksen (chairman) and Mr. Rickey are the members of our Audit Committee. Both Mr. Henriksen and Mr. Rickey are independent as that term is defined by Rule 4200(a) of the National

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Association of Securities Dealers, Inc.'s NASDAQ listing standards. The committee selects our auditors, reviews the scope of the annual audit, approves the audit fees and non-audit fees to be paid to our auditors, and reviews our financial accounting controls with the staff and the auditors. The committee held four meetings during 2004.

Our Audit Committee currently has one member who qualifies as an "audit committee financial expert," as defined in Securities and Exchange Commission regulations, and our Board has at least one additional member who could serve in this role.

Our Board of Directors does not have a Nominating Committee. The Board's view is that for a company of our size to have one would constitute unnecessary bureaucracy; every director participates in the consideration of director nominees.

Our entire Board of Directors considers director nominees; it does not have a charter which governs that process. Of our directors, Messrs. Henriksen, Rickey, Hawran, and Dr. Holmes are "independent" as defined by Rule 4200(a) of the National Association of Securities Dealers, Inc.'s NASDAQ listing standards, and Messrs. Cox and Calhoun and Dr. Hedrick are not. The Board does not have a policy with regard to the consideration of any director candidates recommended by security holders, because no such candidates have ever been proposed and the Board does not expect any to be proposed in the foreseeable future. If any were proposed, they would be evaluated by the Board in the same manner as other nominees. The Board's strategy is for the Board as a whole to include a range of expertise and skills, and accordingly there are no pre-established qualifications, qualities or skills that any particular director must possess. The Board's process for identifying and evaluating director nominees is informal; generally a director will raise the name of a potential nominee known to him, and the name will be considered first by the Chairman and Vice-Chairman and then if they believe consideration by the entire Board would be indicated, by the Board as a whole.

Stockholder Communication with the Board

The Board of Directors has appointed Ronald D. Henriksen as Chairman of the Audit Committee. In addition, he is responsible for facilitating compliance with the Corporate Code of Conduct and Ethics. Stockholders and other parties interested in communicating directly with Mr. Henriksen or with the non-management directors as a group may do so by writing to Ronald D. Henriksen, 6642 E. CR 200 N., Avon, IN 46123, USA. If the communication so requests and Mr. Henriksen determines that it is appropriate to do so, he will share the communication with the entire Board of Directors.

Annual Meeting Attendance

We do not have a policy regarding attendance by Board members of our annual meetings of stockholders. All six of the then-serving Board members attended the 2004 Annual Meeting of Stockholders held in August 2004.

Director Compensation

Each non-employee director and Mr. Cox receive a \$5,000 quarterly retainer, a fee of \$2,000 per quarterly meeting attended, and a fee of \$2,000 per special meeting attended in person. Attendance of telephonic meetings or special meetings via telephone are compensated at \$500 per meeting.

Compensation Committee members receive \$1,000 per meeting attended and Audit Committee members receive \$2,000 per meeting attended. The Chairman of the Audit Committee receives an

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additional annual stipend of \$5,000. In addition, each such Board member is compensated for his travel expenses related to attendance at Board meetings.

Our directors are also eligible to receive options under our Amended and Restated 1997 Stock Option and Stock Purchase Plan, and our 2004 Equity Incentive Plan.

Mr. Cox is employed by us in his capacity of Chairman of the Board. His 2004 salary was \$60,000. We granted Mr. Cox 50,000 stock options in 2004, and he will receive 50,000 stock options in 2005.

Our non-employee directors, Mr. Henriksen, Dr. Holmes and Mr. Rickey, were each granted 35,000 stock options in 2004, and will be granted 35,000 stock options in 2005. Their options vest monthly over four years. Mr. Hawran will be granted 50,000 stock options in 2005. Mr. Hawran's options vest as to 25% on the first anniversary date of the grant and monthly thereafter over the next three years.

YOUR BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS A VOTE "FOR" THE NOMINEES TO THE BOARD OF DIRECTORS.

PROPOSAL #2. RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Our Audit Committee has selected KPMG LLP ("KPMG") as our independent registered public accounting firm for the fiscal year ending December 31, 2005, and has further directed that we submit the selection of the independent registered public accounting firm for ratification by our stockholders at the Annual Meeting. The selection of the independent registered public accounting firm is not required to be submitted for stockholder approval. However, if the stockholders do not ratify this selection, the Audit Committee will reconsider its selection of KPMG. Even if the selection is ratified, our Audit Committee may direct the appointment of a different independent accounting firm at any time during the year if the Audit Committee determines that the change would be in our best interests.

The Audit Committee reviews and must pre-approve all audit and non-audit services performed by KPMG as well as the fees charged by KPMG for such services. In its review of non-audit service fees, the Audit Committee considers, among other things, the possible impact of the performance of such services on the accounting firm's independence.

KPMG was our principal accountant during our fiscal years ended December 31, 2003 and December 31, 2004. For our 2003 and 2004 fiscal years, they consulted with us on various matters and performed services for us, and billed us for fees and expenses, as follows:

Audit Fees: Audit fees billed to us by KPMG for the audit of our financial statements for the fiscal year ended December 31, 2003 and for the quarterly reviews of our financial statements included in our fiscal year 2003 quarterly reports on Form 10-Q totaled \$180,220. Audit fees billed or expected to be billed to us by KPMG for the audit of our financial statements for the fiscal year ended December 31, 2004 and for the quarterly reviews of our financial statements included in our fiscal year 2004 quarterly reports on Form 10-Q totaled \$229,450, which amount will be adjusted upon our receipt of a final invoice of audit overage charges from this period.

Audit Related Fees: There were no fees billed or expected to be billed to us by KPMG for services provided during 2003 or 2004 for assurance and related services that are reasonable related to the audits or reviews and are not reported under Audit Fees above.

Tax Fees: Fees billed to us by KPMG for tax compliance, tax advice and tax planning (specifically the preparation of tax returns, tax advice regarding the sale of assets to Medtronic, and FAS 109 training) in 2003 totaled \$52,466. Fees billed or expected to be billed to us by KPMG for tax compliance, tax advice and tax planning (specifically, preparation of tax returns in the United States, research related to tax withholdings in

Germany, and consultation related to the tax consequences of the sale of the Thin Film business and the Senko distribution agreement) in 2004 totaled \$57,132.

All Other Fees: There were no other fees billed or expected to be billed to us by KPMG for all other non-audit/tax services provided during 2003 and/or 2004.

Representatives of KPMG will be present at the Annual Meeting, will have an opportunity to make a statement if they desire to do so and will be available to respond to appropriate questions from stockholders.

Additional information concerning the Audit Committee and our Independent Registered Public Accounting Firm can be found in the "Audit Committee Report" section of this Proxy Statement.

YOUR BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS A VOTE "FOR" THE RATIFICATION OF THE SELECTION OF KPMG LLP AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR FISCAL YEAR 2005.

COMPENSATION AND OTHER INFORMATION CONCERNING DIRECTORS AND EXECUTIVE OFFICERS

Biographical Information

The following table sets forth biographical information regarding our executive officers as of April 20, 2005 (the ages shown are as of June 28, 2005).

Name	Age	Position(s)
Marshall G. Cox	69	Chairman of the Board of Directors
Christopher J. Calhoun	39	Chief Executive Officer

Marc H. Hedrick, MD	42	President
Sharon V. Schulzki	47	Chief Operating Officer
Mark E. Saad	35	Chief Financial Officer
Charles E. Galetto	54	Senior Vice President — Finance and Administration, and Treasurer
Bruce A. Reuter	56	Senior Vice President — Business Development
John K. Fraser, PhD	44	Vice President — Research & Technology — Regenerative Cell Technology
Elizabeth A. Scarbrough	47	Vice President — Marketing & Development — Regenerative Cell Technology
Seijiro Shirahama	51	Vice President — Asia Pacific
Douglas Arm, PhD	36	Vice President – Development – Regenerative Cell Technology

See “Proposal No. 1 Election of Directors” for biographical information regarding Messrs. Cox and Calhoun, and Dr. Hedrick.

Sharon V. Schulzki was appointed Chief Operating Officer in January 2004. Ms. Schulzki had served as Senior Vice President of Marketing & Development - Biomaterials since September 2002. She served as Senior Vice President and General Manager - Spine & Orthopedics from November 2001 until September 2002, and as Vice President and General Manager - Spine & Orthopedics from July 2000 until November 2001. Prior to joining us, Ms. Schulzki was with Howmedica, Inc., Division of Pfizer, Inc., a manufacturer of medical devices, from 1983 to 1998, where she served in various positions, including Vice President. During that time she also served as Senior Vice President of Worldwide Marketing and Product Development with Howmedica Leibinger, Inc. Ms. Schulzki holds a BS from Loyola College in Baltimore, MD.

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Mark E. Saad joined MacroPore Biosurgery as Chief Financial Officer June 2004. Previously, Mr. Saad served as Chief Operating Officer of UBS, Healthcare Investment Banking, New York, where he was responsible for global investment banking operations. Upon joining UBS in 1999, Mr. Saad served as Director/Executive Director covering life sciences sectors - biotechnology and medical devices. Mr. Saad held a significant role in building the UBS franchise to become the largest healthcare group on Wall Street. Prior to joining UBS, Mr. Saad held the position of Financial Analyst/Associate with Salomon, Smith Barney, Healthcare Investment Banking, New York, where he managed public and private transactions. Mr. Saad holds a BA from Villanova University, Philadelphia, PA.

Charles E. Galetto has served as the Company’s Senior Vice President - Finance and Administration and Treasurer since April 2000. From August 1997 to January 2000, Mr. Galetto served in various positions with PMR Corporation, a company specializing in mental health care programs, including service as Senior Vice President - Finance and Treasurer. Mr. Galetto is a certified public accountant and holds a BS from Wayne State University.

Bruce A. Reuter was appointed Senior Vice President of Business Development in January 2004. Mr. Reuter had served as Senior Vice President International Business since September 2002. From September 2001 to September 2002 he served as Vice President and General Manager of Bone Fixation Products, and from January 2001 to September 2001, he served as Vice President – Market Development. Prior to joining us, from January 1990 to October 2000, Mr. Reuter served as the Vice President and Managing Director of Mentor Corporation, a multi-national marketer of medical devices. He holds a BA from the University of Rhode Island and an MBA from Memphis State University.

John K. Fraser, PhD was appointed Vice President Research & Technology - Regenerative Cell Technology (formerly “Biologics”) in November 2002. From August 2001 to November 2002, Dr. Fraser was Chief Scientific Officer, and Director of Research, Stem Cell Services at StemSource, Inc., a company specializing in tissue bioengineering and regenerative cell technology. Dr. Fraser has served as an Adjunct Associate Professor, Division of Hematology-Oncology, Department of Medicine, UCLA School of Medicine, since July 2001, in which department he had served as an Assistant Professor from July 1994 to July 2001. Dr. Fraser has also served as the Director of the UCLA Umbilical Cord Blood Bank since 1995. Dr. Fraser received his BSc from Victoria University of Wellington, New Zealand and his PhD from University of Otago, New Zealand.

Elizabeth A. Scarbrough has served as Vice President of Marketing & Development - Regenerative Cell Technology (formerly “Biologics”), since November, 2002. From December 2001 to November 2002 she held the position of Executive Vice President of Sales & Marketing for StemSource, Inc., a company specializing in tissue bioengineering and regenerative cell technology. From February 1994 to October 2000, Ms. Scarbrough served as Vice President of Mentor Corporation, a medical device company with global marketing and distribution. She holds a BS degree from Pennsylvania State University.

Seijiro Shirahama has served as Vice President - Asia Pacific, since September 2002. Prior to that, from May 1999 to August 2002, he was President of Touchmetrics K.K., a diagnostic ultrasound firm. Mr. Shirahama held executive positions with Bristol-Myers Squibb K.K from April 1997 to October 1998. He holds a BA from Kanagawa University in Yokohama, Japan and an MA from the University of San Francisco.

Douglas Arm, PhD has served as Vice President of Development – Regenerative Cell Technology since February 2005. Prior to joining MacroPore Biosurgery, Dr. Arm spent more than eight years at Interpore Cross International, the last several years as Director of Biologics Research. Before joining Interpore, Dr. Arm completed a post-doctoral fellowship with Dr. Arnold Caplan at the Skeletal Research Center at Case Western Reserve University examining various aspects of mesenchymal stem cells. Dr. Arm obtained his B.S. in Biomedical Engineering from the Johns Hopkins University in 1990, followed by his PhD in Bioengineering from the University of Washington in 1995.

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Executive Compensation

The following table sets forth summary information concerning compensation of our Chief Executive Officer and our four other most highly-compensated executive officers as of December 31, 2004 (collectively, the “Named Executive Officers”), for services rendered to us in all capacities for the years ended December 31, 2004, 2003 and 2002.

SUMMARY COMPENSATION TABLE

Long Term
Compensation

Name and Principal Position	Year	Annual Compensation		Awards Securities Underlying Options/SARs (#)	All Other Compensation(2)
		Salary	Bonus(1)		
Christopher J. Calhoun Chief Executive Officer	2004	\$ 345,001	\$ 135,000	75,000	\$ 19,801
	2003	\$ 240,000	\$ 120,600	200,000	\$ 20,858
	2002	\$ 190,000	\$ 40,000	205,000	\$ 15,200
Marc H. Hedrick, MD President	2004	\$ 253,750	\$ 60,000	50,000	\$ 15,632
	2003	\$ 200,000	\$ 26,800	25,000	\$ 135,781
	2002	\$ 25,000	—	—	\$ 1,500
Sharon V. Schulzki Chief Operating Officer	2004	\$ 235,391	\$ 37,750	50,000	\$ 13,507
	2003	\$ 180,000	\$ 30,150	35,000	\$ 273,426
	2002	\$ 163,334	\$ 30,000	25,000	\$ 11,600
Bruce A. Reuter Senior Vice President — Business Development	2004	\$ 182,443	\$ 30,938	25,000	\$ 13,898
	2003	\$ 165,000	\$ 27,638	35,000	\$ 14,590
	2002	\$ 152,500	\$ 25,000	30,000	\$ 11,600
Charles E. Galetto Senior Vice President — Finance and Administration, and Treasurer	2004	\$ 180,004	\$ 30,938	25,000	\$ 11,600
	2003	\$ 165,000	\$ 27,638	35,000	\$ 15,628
	2002	\$ 152,500	\$ 26,000	30,000	\$ 12,740

(1) Management bonuses are paid in the year reflected.

(2) The amounts in this column represent an auto allowance, medical and life insurance, tax return preparation fees and relocation expense reimbursement.

Option Grants in 2004

The following table sets forth, as to the Named Executive Officers, information concerning stock options granted during the year ended December 31, 2004. We did not grant any stock appreciation rights in 2004. The exercise prices are in each case equal to the last reported sale price per share of our common stock as reported by the German Stock Exchange on the day immediately preceding the grant date.

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Name	Individual Grants			Exercise Price Per Share (\$/share)	Expiration Date	Grant Date Present Value (\$)(1)
	Number Of Securities Underlying Options/SAR Granted (#)	Percent Of Total Options/SARs Granted to Employees in 2004				
Christopher J. Calhoun	75,000	11.0%	\$ 4.16	6/2/2014	\$ 242,250	
Marc H. Hedrick, MD	50,000	7.3%	\$ 4.16	6/2/2014	\$ 163,500	
Sharon V. Schulzki	50,000	7.3%	\$ 4.16	6/2/2014	\$ 163,500	
Bruce A. Reuter	25,000	3.7%	\$ 4.16	6/2/2014	\$ 81,750	
Charles E. Galetto	25,000	3.7%	\$ 4.16	6/2/2014	\$ 81,750	

(1) We used the Black-Scholes option-pricing model to determine the grant date present value of the options set forth in this table. Use of this model should not be construed as an endorsement of its accuracy at valuing options. The real value of the options depends upon the actual changes in the market price of our common stock during the applicable period.

All stock option valuation models, including the Black-Scholes model, require a prediction about the future movement of the stock price. The following facts and assumptions were used in calculating grant date present value: exercise prices as indicated in the table above, which represented the fair market value of each option on the date of grant, June 2, 2004, based on the best information available, a dividend yield of 0.0%, an expected stock option term of 7.0 years, and a stock price volatility of 87.0% based on the market performance of our common stock. We used an assumed risk-free interest rate in our calculations equivalent to the yield of a zero-coupon, seven-year Treasury bond on the date of the grants. The risk-free interest rate was 4.35%. No other discounts or restrictions related to vesting or the likelihood of vesting of the stock options were applied.

Aggregated Option Exercises in 2004 and Year-End Option Values

The following table sets forth information concerning options to purchase our common stock held as of December 31, 2004 by each of the Named Executive Officers. None of the Named Executive Officers exercised any stock options in 2004.

Name	Shares Acquired on Exercise (#)	Value Realized (\$)	Number of Securities Underlying Unexercised Options/SARs as of December 31, 2004		Value of Unexercised in-the-money Options/SARs as of December 31, 2004(1)	
			Exercisable	Unexercisable	Exercisable	Unexercisable
Christopher J. Calhoun	—	—	664,992	233,758	\$ 364,063	—
Marc H. Hedrick, MD	—	—	96,350	128,650	—	—
Sharon V. Schulzki	—	—	216,973	93,027	—	—
Bruce A. Reuter	—	—	167,495	57,505	—	—

(1) Based on our closing sale price of \$2.48 on December 31, 2004.

Compensation Committee Interlocks and Insider Participation

The Compensation Committee consists of Messrs. Rickey (Chair) and Henriksen, each of whom is an independent director, and neither is a current or former employee of MacroPore Biosurgery. During 2004, none of our executive officers served as a director or member of the Compensation Committee or any Board committee performing equivalent functions for another entity that has one or more executive officers serving on the Board of Directors of MacroPore Biosurgery.

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Equity Compensation Plan Information

The following table summarizes information, as of December 31, 2004, relating to our equity compensation plans pursuant to which grants of options, restricted stock or other rights to acquire shares may be granted from time to time.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	5,023,796	\$ 3.91	466,000
Equity compensation plans not approved by security holders	None	None	3,000,000
Total	5,023,796	\$ 3.91	3,466,000

Certain Relationships and Related Transactions

Mark E. Saad, our Chief Financial Officer, joined the Company in June 2004. Mr. Saad is to receive an annual salary of \$300,000. Additionally, he is eligible for an annual bonus targeted at 25% of base salary. Mr. Saad is also entitled to a maximum of \$125,000 stipend for relocation expenses, an auto allowance of \$800 per month, and an annual reimbursement of \$2,000 for tax return preparation fees. Mr. Saad was granted an option to purchase 190,000 shares of our common stock, with 25% vesting on the first anniversary of the grant, and monthly vesting for the remaining three years.

On November 18, 2004 Mark E. Saad, Chief Financial Officer, purchased a total of 50,000 shares of common stock at a price of \$3.00 per share from Christopher J. Calhoun, Chief Executive Officer and Director.

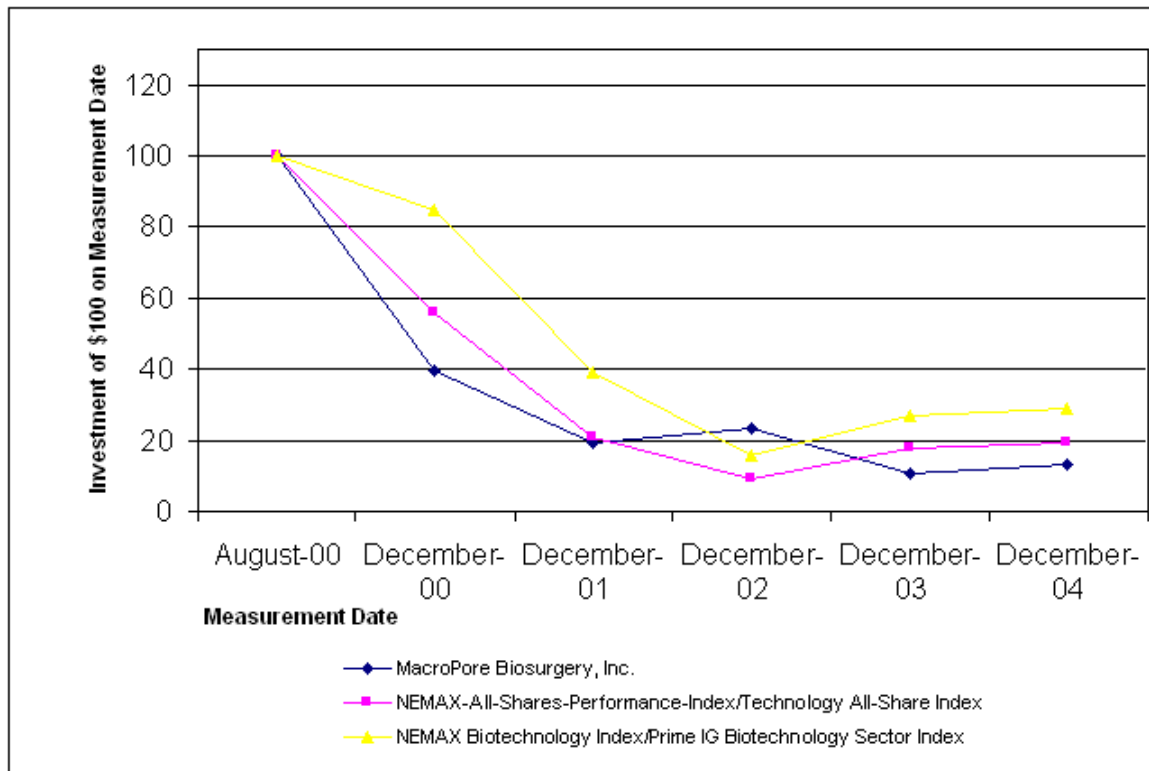
Code of Business Conduct and Ethics

In March 2004, the Board adopted a Code of Business Conduct and Ethics for all employees, officers and directors.

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COMPARATIVE STOCK PERFORMANCE GRAPH

The following graph shows how (assuming reinvestment of all dividends) an initial investment of \$100 in our common stock would have compared to an equal investment in the NEMAX-All-Share-Performance-Index* and the NEMAX Biotechnology Index (Performance)* during the period from August 10, 2000, when our stock was first traded publicly, through December 31, 2004. The graph reflects closing prices reported on Xetra, an electronic trading system for stock listed on the German Stock Exchange. "NEMAX" refers to the German Neuer Markt Aktien (Stock) Index.



* With the abolition of the Neuer Markt Segment and the index changeover in March 2003, the NEMAX All-Share Index and the NEMAX Biotechnology Sector Index are no longer being calculated and their historical index data were continued by the German Stock Exchange's Technology All-Share Index and the Prime IG Biotechnology Sector Index, respectively. We have continued the trend lines from that point by using proportionally adjusted data from the Technology All Share Index, which is an index of 155 companies ranking below the DAX (which is the German equivalent of the Dow Jones Industrial Average) and belonging to various technology sectors, and the Prime IG Biotechnology Sector Index.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table provides certain information regarding beneficial ownership of our common stock as of April 1, 2005 by each stockholder known by us to own beneficially more than 5% of our outstanding shares, our directors and director nominees, the Named Executive Officers, and our current directors and executive officers as a group.

The amounts and percentages of common stock beneficially owned are reported on the basis of regulations of the Securities and Exchange Commission governing the determination of beneficial ownership of securities. Under the rules of the Commission, a person is deemed to be a "beneficial owner" of a security if that person has or shares "voting power," which includes the power to vote or to direct the voting of such security, or "investment power," which includes the power to dispose of or to direct the disposition of such security. A person is also deemed to be a beneficial owner of any securities for which that person has a right to acquire beneficial ownership within 60 days. Under these rules, more than one person may be deemed a beneficial owner of the same securities and a person may be deemed to be the beneficial owner of securities as to which that person has no economic interest.

Unless otherwise indicated, the address for each person or entity named below is c/o MacroPore Biosurgery, Inc., 6740 Top Gun Street, San Diego, California 92121, and each person or entity named below has (subject to applicable community-property laws) full beneficial ownership of all shares listed.

Name of Beneficial Owner	Number of shares of common stock beneficially owned	Percentage of outstanding shares
5% Stockholders:		
Neil Gagnon (1)	1,572,201	11.25%
Medtronic Asset Management, Inc. (2)	1,000,000	7.2%
Directors and Named Executive Officers:		
Christopher J. Calhoun (3)	825,409	5.6%
Marshall G. Cox (4)	822,716	5.8%
Marc H. Hedrick, MD (5)	534,688	3.8%
Sharon V. Schulzki (6)	247,389	1.7%
Bruce A. Reuter (7)	188,252	1.3%
Charles E. Galetto (8)	172,706	1.2%
David M. Rickey (9)	87,294	*
Ronald D. Henriksen (10)	87,950	*
E. Carmack, Holmes, MD (11)	45,242	*
Paul W. Hawran	-0-	-0-
All current directors and executive officers as a group (15 persons) (12)	3,292,159	20.4%

* Less than one percent.

- (1) The address for Neil Gagnon is 1370 Avenue of the Americas, Suite 2002, New York, NY 10019.
- (2) The address for Medtronic Asset Management, Inc. is Medtronic, Inc. Corporate Center, 7000 Central Avenue, N.E., Minneapolis, Minnesota 55432.
- (3) Includes 725,409 shares issuable upon the exercise of stock options. Also includes a total of 100,000 shares held by TTMC Investments, Inc. Mr. Calhoun has sole voting and investment power with respect to the shares of our common stock held by TTMC Investments. Mr. Calhoun disclaims beneficial ownership of these securities, except to the extent he has a pecuniary interest in the securities, and this report shall not be deemed an admission that Mr. Calhoun is the beneficial owner of such securities for any other purpose.

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- (4) Includes 304,476 shares issuable upon the exercise of stock options and 22,223 shares issuable upon exercise of warrants. Also includes 5,334 shares held of record by his spouse. Mr. Cox disclaims beneficial ownership of shares held by his spouse.
- (5) Includes 124,163 shares issuable upon the exercise of stock options.
- (6) Includes 247,389 shares issuable upon the exercise of stock options.
- (7) Includes 184,059 shares issuable upon the exercise of stock options.
- (8) Includes 172,706 shares issuable upon the exercise of stock options.
- (9) Includes 59,685 shares issuable upon the exercise of stock options.
- (10) Includes 74,789 shares issuable upon the exercise of stock options.
- (11) Includes 32,081 shares issuable upon the exercise of stock options.
- (12) Includes all shares and options exercisable within 60 days owned by all current directors and executive officers and their spouses.

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COMPENSATION COMMITTEE REPORT ON EXECUTIVE COMPENSATION

The Compensation Committee provided the following report:

“Our compensation program for senior management including all “Named Executive Officers” is comprised of the following:

The Compensation Committee assists the Board in discharge of the Board’s responsibilities relating to compensation of the directors, officers and executives of the Company, including all “Named Executive Officers” and oversight and evaluation of management.

The Compensation Committee is comprised of the directors named below, each of whom have been determined by the Board to be independent based upon applicable requirements of Rule 16b-3(b)(3)(i) of the Securities Exchange Act of 1934, Section 162(m) of the Internal Revenue Code, and the NASDAQ listing standards. The Committee has the authority to engage the services of outside advisers, experts and others to assist the Committee. The Board recommends the compensation to be paid to executive officers based upon the Company’s performance evaluation policies and procedures, and final determination of the amount of compensation rests with the Compensation Committee.

Compensation Philosophy

Our compensation philosophy is to provide pay commensurate with the level of the Company’s performance of its objectives. If our performance is average, our pay should be average relative to our peers. If our performance is exemplary, our pay should also be exemplary. Our executive compensation program is designed to (a) align the financial interests of the Company’s executives with those of its stockholders, (b) attract, motivate and retain the executive talent required to successfully implement our business strategy, and (c) provide incentives for achieving the Company’s short-term and long-term goals.

The Company’s executive compensation pay levels are targeted to approximate the market median for individuals in similar positions in peer companies in the biotechnology industry and in companies of similar scope in general industry. Executive salary progression is based upon individual performance. Incentive compensation is based upon the financial and market performance of the Company as well as on individual performance. The Committee relies upon information provided in annual Radford Biotechnology Compensation Reports to determine market competitive pay levels for executives.

In 2005 and beyond, it is our intention to modestly increase the equity based portion of compensation as a total percentage of overall compensation to further align our executives long term interests with those of our shareholders, and to reduce somewhat our reliance on (and our executives expectations regarding) increases in the shorter term financial incentives (such as the annual bonus).

The Components of Compensation

There are four major components of the Company’s executive compensation: base salary, annual incentives, long-term incentives, and other benefits such as health insurance and retirement programs.

It is the Company's objective to maintain base salaries that are competitive with salaries paid to senior executives with comparable qualifications, experience and responsibilities at other companies engaged in the same or similar business, and to provide for pay progression opportunities based on

individual performance evaluations. Salary ranges are set with a midpoint at the market median and individual salaries for executives are reviewed and may be adjusted semiannually. In approving individual salaries, the Committee considers job responsibilities, individual performance, business results, labor market conditions, the Company's budget guidelines and current compensation as compared to market practice. In fact, in 2004, after we originally set base salary levels, management requested that we reconsider the salary levels and we did so, re-setting them at somewhat higher levels.

Annual Incentive

The purpose of the Company's annual incentive bonuses is to encourage high levels of performance and the loyalty of senior executives, by providing annual incentives which are aligned with Company performance and qualify as performance-based compensation within the meaning of Section 162(m) of the Internal Revenue Code. Executive officers and other key employees are eligible to receive an annual cash bonus based on a percentage of base salary (determined by the executive officer's position) and the Company's achievement of performance goals and, for most participants, division and individual performance.

Annual incentive goals for senior executives are established at the beginning of the year, and include targets for progress in research and development, clinical activities, development of sales, marketing and investor relations programs and organizational developments and share price. Based on Company and individual performance during 2004, annual cash bonuses were paid against bonus targets of up to 40% of base salary.

For 2004, our plan was for bonuses to be based 50% on achievement of Company goals and 50% on achievement of individual goals. In fact, we awarded bonuses on a somewhat more subjective and holistic basis. We recognized that the Company's performance in 2004 in its biomaterials operations was well below expectations. On the other hand, scientific progress in our regenerative cell business was satisfactory, the sale of the (non-Japan) Thin Film business was favorable – although it reflected the failure of that business to fully achieve prior-year expectations, the Thin Film strategic partnership in Japan with Senko Medical Trading Co. was favorable, and various important business initiatives were undertaken that appear to have good prospects to become major successes in 2005. We also recognized that the weakness in biomaterials operations, while in the end accountable to the officers, was in large part due to factors outside the officers' control and did not reflect their high level of effort. Finally, we concluded that there was value under the circumstances in reinforcing the team aspects of management by awarding most officers the same percentage level of their respective target bonuses, and we concluded that awarding any or all of the officers bonuses equal to less than 50% of their respective target bonuses would harm morale and hinder the Company's future progress.

Accordingly, we awarded each officer a cash bonus equal to 50% of his or her respective target bonus, except for awards at the 65% level to John Fraser and Seijihiro Shirahama in recognition of their excellent individual performance.

We intend, in 2005, to conform more rigorously to the original planned linkage of Company and individual goals to percentage-point tranches of the total target bonus amount. However, for officers whose own performance is not closely tied to the Company's 2005 financial results, such as certain scientific personnel working in the regenerative cell program, we would intend to lower the overall Company performance aspect of the bonuses objectives from 50% to 25%.

Long-Term Incentive Compensation

Stock options are granted to certain senior executives on an annual basis. The Compensation Committee approves the amount of each grant. All options are granted at 100% of the closing market price of the Company's common stock on the date of grant. Options generally vest and become exercisable at 25% each year, over a period of four years, as set forth in the award agreement. Vesting is

accelerated for termination due to retirement eligibility, total and permanent disability and death. Normal terminations allow for 90 days to exercise the options or the options are cancelled. The options granted to the Named Executive Officers in fiscal 2004 are described as required, in the stock option tables on the Company proxy statement in which this report will be printed.

The size of the stock option grants to officers was based on our understanding of the incentivization power of stock options in companies such as this one, as well as our understanding of total and annual stock option grants by similarly situated companies to their own executives. In the future, we will obtain and utilize more formal benchmarking data and possibly independent compensation consultants in making these grants.

In January 2005, at the same time as we awarded cash bonuses for 2004, we awarded a total of 485,000 nonqualified stock options to the officers, including 100,000 to Mr. Calhoun and 70,000 to each of Dr. Hedrick, Mr. Saad and Ms. Schulzki. These option grants were related, in part, to the factors we considered in awarding the cash bonuses. In addition, as noted, we intend in 2005 and thereafter to be increasing the equity-based component of overall compensation of senior executives.

In January 2005 we set executive base salaries for 2005, awarding only nominal or no base salary increases for the 2004 Named Executive Officers.

Section 162(m)

Compensation decisions for executive officers are made with full consideration of the Internal Revenue Code ("IRC") Section 162(m) implications. Section 162(m) of the IRC limits the deductibility of compensation paid to certain executive officers in excess of \$1.0 million, but excludes "performance-based" compensation from this limit. The Company's compensation of each of its executive officers—including base salary, annual incentives, long-term

incentives, and other benefits—currently does not exceed \$1.0 million per year, and therefore the Company does not seek performance-based compensation exclusions under Section 162(m) of the IRC.

Other Benefits

In keeping with its philosophy to provide total compensation that is competitive with other companies in the biotechnology industry, the Company provides senior executives with a limited level of perquisites. The Company provides a monthly car allowance, company-paid term life and disability insurance, supplemental disability insurance for the company's Vice Presidents, supplemental life insurance for the Chief Executive Officer, and tax preparation fee reimbursements. We expect our officers to be role models under our Code of Business Conduct and Ethics, which is applicable to all employees, and officers are not entitled to operate under lesser standards.

CEO Compensation

A substantial portion of the CEO's compensation is at risk and is tied to company performance results. The CEO does not participate in discussions about his compensation matters.

Mr. Calhoun has been Chief Executive Officer and Vice-Chairman of the Board of Directors since 1997. Mr. Calhoun's compensation targets for fiscal 2004 were established by the Compensation Committee at the median of the comparison group. His base salary for 2004 was originally set at \$324,000. His bonus received in fiscal 2004 was \$135,000, which was related to his performance in 2003. This bonus was based in part on Company performance relative to the goals established at the beginning of that fiscal year. His base salary as of June 1, 2004, was increased to \$360,000.

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In 2004, the Committee awarded Mr. Calhoun 75,000 incentive stock options under the Company's Amended and Restated 1997 Stock Option and Stock Purchase Plan, which become exercisable 25% annually in each of 2006 through 2009.

Although Mr. Calhoun is not a member of the Committee, he occasionally attends Committee meetings as a guest for the purpose of providing continuity and detailed information about employees and compensation policies. Mr. Calhoun does not participate in any option grant or incentive award decision or any decision of the Committee that might affect him personally.

Factors described earlier in this report regarding 2004 base salaries, bonus awards and stock option grants for the officers generally also apply to Mr. Calhoun's case specifically. In addition, statements earlier in this report regarding our policy intentions for 2005 and thereafter with regard to the officers generally also apply to Mr. Calhoun specifically.

Respectfully submitted,

Compensation Committee of the Board of Directors
Mr. David Rickey, Chair
Mr. Ronald Henriksen

March 17, 2005"

This report is not deemed to be incorporated by reference in any filing by the Company under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that the Company specifically incorporates this report by reference.

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AUDIT COMMITTEE REPORT

The Audit Committee provided the following report:

"The Audit Committee has reviewed and discussed the Company's audited financial statements for the year ended December 31, 2004 with management. The Audit Committee has discussed with KPMG LLP ("KPMG") the matters required to be discussed by Statement on Auditing Standards No. 61. The Audit Committee has received the written disclosures and the letter from KPMG required by Independence Standards Board Standard No. 1, and has discussed KPMG's independence with KPMG.

Based upon the Audit Committee's review and discussions as noted above, the Audit Committee recommended to the Board of Directors that the Company's audited financial statements be included in the Company's Annual Report on Form 10-K for the year ended December 31, 2004 for filing with the Securities and Exchange Commission.

Respectfully submitted,

Audit Committee
Ronald D. Henriksen
David Rickey

March 31, 2005"

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SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 16(a) of the Securities Exchange Act of 1934 requires our directors, executive officers, and persons or entities who own more than ten percent of our common stock, to file with the Securities and Exchange Commission reports of beneficial ownership and changes in beneficial ownership of our common stock. Those directors, officers, and stockholders are required by regulations to furnish us with copies of all forms they file under Section 16(a). Based solely upon a review of the copies of such reports furnished to us and written representations from such directors, officers, and stockholders, we believe that all such required reports were filed on a timely basis.

STOCKHOLDER PROPOSALS FOR THE 2006 MEETING

Stockholders are hereby notified that, if they intend to submit proposals for inclusion in our Proxy Statement and proxy for our 2006 Annual Meeting of stockholders, such proposals must be received by us no later than January 25, 2006 and must otherwise be in compliance with applicable Securities and Exchange Commission regulations. If our annual meeting date is substantially earlier or later in 2006 than in 2005, we have the right to change this deadline and give notice of the new deadline in a report filed with the Securities and Exchange Commission.

MISCELLANEOUS

Our Board of Directors knows of no other business to be presented at our Annual Meeting. If other matters properly come before our Annual Meeting, it is intended that the proxies in the accompanying form will be voted thereon in accordance with the judgment of the person or persons holding such proxies.

By Order of the Board of Directors,

/s/ Christopher J. Calhoun
CHRISTOPHER J. CALHOUN
Vice-Chairman of the Board of Directors
and Chief Executive Officer

**MACROPORE BIOSURGERY, INC.
Annual Meeting of Stockholders—June 28, 2005**

The undersigned hereby appoints Christopher J. Calhoun and Marc H. Hedrick, MD, or either of them, as proxy holders, with full power of substitution, to appear on behalf of the undersigned and to vote all shares of common stock (par value \$.001) of MacroPore Biosurgery, Inc. (the "Company") that the undersigned is entitled to vote at the Annual Meeting of Stockholders of the Company to be held on June 28, 2005, and at any postponement or adjournment thereof.

When properly executed, this proxy will be voted as directed. If properly executed and no instructions are specified, this proxy will be voted FOR the election of the listed Nominees as Directors and FOR the ratification of the selection of KPMG LLP to function as the Company's Independent Registered Public Accounting Firm.

THIS PROXY IS SOLICITED BY THE BOARD OF DIRECTORS

Please mark box in blue or black ink.

- 1. Election of Directors:**
FOR all nominees listed below
WITHHOLD AUTHORITY as to all nominees listed below
WITHHOLD AUTHORITY as to some nominees listed below, and FOR all others

Nominees: **CHRISTOPHER J. CALHOUN, MARSHALL G. COX, MARC H. HEDRICK, RONALD D. HENRIKSEN, E. CARMACK HOLMES, DAVID M. RICKEY, AND PAUL W. HAWRAN**

To withhold authority to vote for any one or more Nominees, line through or otherwise strike out the name of the Nominee or Nominees for whom you withhold authority to vote.

- 2. Ratification of Selection of KPMG LLP to Serve as the Company's Independent Registered Public Accounting Firm for 2005.**
FOR AGAINST ABSTAIN

In their discretion, the proxy holders are authorized to vote upon such other business as may properly come before the Annual Meeting and any postponement or adjournment thereof.

Please check here if you plan to attend the Annual Meeting on June 28, 2005

Please sign exactly as your name appears below. When signing as an attorney, executor, administrator, trustee or guardian, please give your full title. If shares are held jointly, each holder should sign.

Signature

Date, 2005

Date, 2005

Signature

In order for your vote to count, please sign, date, and return this PROXY FORM using the enclosed envelope. Please keep in mind, for your vote to count we must receive your properly executed PROXY FORM prior to the meeting date.