

Biomedical Engineering Institute
Biomedical Engineering Partnership Program
3rd Advisory Board Meeting Minutes

Date: February 26, 2002

Location & Time: Beckman Coulter; 9:30 am

Industry Attendees *: William M. Abraham – Mount Sinai Medical Center *
Thomas O. Bales - Synthecon
Michael Christie – Cordis Corp.
Simon J. Fuger – Medtronic Peripheral Vascular
Trevor Greenan – Medtronic Peripheral Vascular *
Dana Jacobs – Beckman-Coulter, Inc. *
Denise Jaques – Miami Children’s Hospital
Prasanna Jayakar – Miami Children’s Hospital *
Barry T. Katzen – Miami Cardiac & Vascular Institute *
Margaret Kovacs – Miami Cardiac & Vascular Institute *
Howard J. Leonhardt – Bioheart, Inc. *
Ernie Manzano – Scion Cardio-Vascular
Mario J. Martinez – TechGeorgia Nexus *
Suzana Otano-Lata – Boston Scientific Corp.
Matthew A. Palmer – Medcanica, Inc. *
John Roche – IDEXX *
Pierre-Henri Rolland – Universite de Marseilles
Hamid Shahrestani – Boston Scientific Corp. *
Rolando Sierra – Scion Cardiovascular
Kevin Smith – Syntheon, LLC
Michael J. Switzer – Beckman Coulter, Inc. *
Jack A. Ziffer – Baptist Health Systems *

BMEI Attendees *: Ofer Amit *
James Byrne *
Juan Franquiz *
James Moore *
Vish Prasad *
Mark B. Rosenberg *
Richard T. Schoephoerster *

Minutes by: Rosy Verona

- **Welcome**

Dr. Richard Schoephoerster began by welcoming everyone and expressed his appreciation for everyone's time. In addition, he thanked Beckman Coulter for hosting the meeting, and presented Michael Switzer, Dana Jacobs, and Marie Labousier with certificates of appreciation.

- **Adoption of Agenda**

Dr. Jacobs set the motion to approve the agenda, Dr. Jayakar seconded it, and all were in favor.

- **Adoption of Minutes**

Dr. Katzen set the motion to approve last meeting's minutes, Dr. Jacobs seconded it, and all were in favor.

- **State of the Program Review**

In the last two meetings, discussions occurred concerning two letters addressed to Dean Vish Prasad (Technology Transfer Office at FIU and Animal Research Facility at FIU) from the Advisory Board Members (see attached). Having these facilities available would allow FIU and BMEI to better serve industry and the research programs. Therefore, Dr. Schoephoerster asked the board members for any feedback and to ultimately sign-off on the agreement of these two letters. A discussion occurred concerning the funding of these facilities. Dr. Moore explained that funds for this type of activity generally comes from each grant's indirect costs. After the discussion ended, Ofer Amit passed both letters around for members to sign.

Dr. Schoephoerster gave an update on the Research Initiation Program (see attached). Five projects were awarded in December 2001 with the following matching organizations: Bioheart with Dr. Eric Crumpler, Miami Children's Hospital (2 projects) with Dr. Ilker Yaylali and Dr. Juan Franquiz, Miami Cardiac and Vascular Institute with Dr. James Moore, and Mount Sinai with Dr. Anthony McGoron. Dr. Schoephoerster thanked Mr. Sierra and Dr. Kovacs on helping in the selection of these projects. The projects are due in Aug/Sept, and the members will be updated as they progress.

In addition, the Internship Program began. Since most of our students are just starting their senior level, we currently have a project with Boston Scientific and in the process of beginning a project with Medtronic Peripheral Vascular. Hamid Shahrestani suggested allowing students time to get familiar with an organization's environment before starting the project. He noticed that students are busy working on their projects in addition to getting used to the environment. Dr. Schoephoerster agreed and added that students should provide the organization with a resume and for the organization to

conduct a formal interview as well.

Since the Research Initiation Program and the Internship Program are the most important programs that board members provide to BMEI, Dr. Schoepheorster expressed his appreciation for everyone's time and efforts. In addition, Dr. Schoepheorster is currently working with the College of Business and Mr. Leonhardt on creating a strong entrepreneurship program.

Dr. Schoepheorster then thanked those who have provided membership grants, which are extremely valuable to the Partnership Program. He would also like to continue working on creating a small executive committee to assist BMEI throughout the year, in addition to the board meetings twice per year.

Part of the Wallace H. Coulter Foundation grant will fund two endowed positions (see attached). Four candidates will be interviewed in March; 2 for the Professorship position and 2 for the Chair position. Dr. Schoepheorster invited the members to participate in the recruitment process.

- **BS Program in Biomedical Engineering**

Dr. Schoepheorster announced the new BS program in Biomedical Engineering, which is to start in Fall 2002 (see attached). He gave a short presentation on his views of the Biomedical Engineering Curriculum at the Bachelor's Degree level. The program is designed with a focus on tissue engineering, which Dr. Schoepheorster envisions as the future for the creation of a truly unique Biomedical Engineering Program. He feels that the tissue engineering industry is going to define how Biomedical Engineers are trained in the near future. This program has been designed to fit the needs of training and educating students with knowledge of engineering living systems at the cellular and molecular level. For example, one course that Dr. Schoepheorster teaches is Design of Biomedical Systems and Devices. In this course, he integrates the electronics and mechanics background along with physiology and biology.

To summarize, the Combined Programs will continue since there still is a strong need for them in the mechanical and instrumentation device industry. In addition, we are designing programs for the future market in medical schools and the tissue engineering industry.

- **Research Focus**

Dr. Schoepheorster announced the implementation of a PhD program that is to begin Fall 2003. The research focus areas are in Cardiovascular Engineering (BMEI), Neuroscience Engineering (Electrical Engineering Dept. and Miami Children's Hospital), Drug Delivery/Tissue Engineering (BMEI), Medical Physics/Nuclear Medicine (BMEI & Physics Dept and Baptist Hospital), and Cytometry (see attached).

- **Cardiovascular Engineering Center**

Dr. Moore gave a brief outline of the Center's history (see attached). The Cardiovascular Engineering Center (CVEC) was established in 1998 and began with the Quality Improvement Program funds (\$1 million from the State). Dr. Moore was appointed Director of the Center in March 2001. In addition to office and lab space in the EAS building (Flagler & 107 Ave), there is a cell culture lab in the main campus (University Park). He has collaborations with large and small companies from around the world. There are currently 13 ongoing funded research projects, as well as 5 peer-reviewed journal publications, 9 submitted manuscripts, and 2 books in preparation. Dr. Moore's goals for CVEC include increased research funding and publications and additional faculty and collaborations.

- **Whitaker Special Opportunity Proposal**

Dr. Schoephoerster announced a proposal submittal for the Whitaker Special Opportunity Award (see attached). The theme focused includes the expansion of the biomedical industry in South Florida in addition to the development of a Biomedical Engineering Department with the addition of the BS degree. The focus is to enhance academic programs in South Florida so as to stimulate the growth of industry. South Florida has the potential to increase in order to make a large impact. Dr. Schoephoerster also mentioned that he would be working with the Beacon Council on marketing biomedical engineering in South Florida.

In this pre-proposal, Dr. Schoephoerster would like to show, overall, that we can be the flagship institute for biomedical engineering industry for South Florida, the BS and PhD programs, unique course development in our research areas including entrepreneurship skills. In addition to enhancing BMEI's academic programs, he asked the members for input on enhancing the partnership activities. For example, expanding the Clinical Rotations course and internships within the BS and PhD programs.

A discussion began with Mr. Leonhardt's update on the enhancement of entrepreneurship education at FIU. He has been in conjunction with Dean Joyce Elam (College of Business at FIU) on setting up a task force in order to pursue a center for technology entrepreneurship that utilizes the strengths of BMEI, CVEC, and FIU's College of Business. Mr. Martinez commented on the fact that venture capital is the biggest missing component in a biomedical development entrepreneurship center, and offered his assistance in working with FIU's center. In addition, much needs to be done on the marketing side, particularly with local publications, and suggested advertising in public media particularly for venture capital. For example, investors are not reading academic publications; they are reading magazines that area readily available, "airplane reading".

Dr. Schoephoerster distributed a letter for the Whitaker proposal that supports BMEI's activities and asked the members to review and sign off on it (see attached). In addition, he will also be sharing the full proposal with the board members.

Mr. Martinez suggested that Dr. Schoephoerster attend industry conferences that are specific to the areas being targeted. A discussion occurred on networking with industry, and the members agreed that attending conferences and advertising in public media this would aid in industry relationships.

Furthermore, Dr. Schoephoerster spoke about his involvement in a Mayor's Summit meeting that he attended in January. Two of the most important areas that were focused on are to build up our academics in the biomedical area (i.e. Medical Schools, Biomedical Engineering Programs) and marketing our programs. Dr. Schoephoerster suggested working together, including the Beacon Council, and come up with a marketing campaign for South Florida. Mr. Leonhardt suggested that a task force be created that meets with members of the Beacon Council to discuss their thoughts on moving this forward. And, since all of the board members seem to be in agreement on the growth of South Florida's biomedical industry, a task force should be created. Therefore, Dr. Schoephoerster wrapped up by requesting volunteers for this task force (Mr. Leonhardt, Mr. Martinez, Dr. Katzen, and Dr. Schoephoerster).

- **Special Remarks by Dr. Mark Rosenberg, FIU Provost**

Dr. Schoephoerster introduced Dr. Mark Rosenberg, who has been a great supporter of the Biomedical Engineering Program. Dr. Rosenberg thanked the faculty and staff for being a part of this program. In addition, he expressed his appreciation to the Board Members for their valuable support to FIU's Biomedical Engineering Program. As the Chief Academic Officer, Dr. Rosenberg's focus is on Quality, Competitiveness, and Accountability. "Our vision as a university is to be a top urban public research university." Our new Board of Trustees has approved a strategic plan that confirms our vision and asks us to accelerate our pace. In addition, the Governor announced a \$100 million fund for public/private initiative in advanced biomedical technology issues. Therefore, Dr. Rosenberg encouraged the Board Members for their support in order to persuade the legislature and the Governor to move forward on this. FIU has accomplished a great deal in a short time, and with a bit more support, we can accomplish much more. This support is greatly needed, both intellectually as well as financially, in order to move to the next level. As a public institution, over the last few years, the public investment is a declining curve. Therefore, your interest and support is very much needed intellectually, creatively, and financially in terms of partnerships and jointly sponsored research. Once again, Dr. Rosenberg thanked Dr. Schoephoerster for his support with FIU and the community.

- **Closing**

The next meeting is tentatively scheduled for early fall (August/September) 2002. It will be hosted by Miami Cardiac and Vascular Institute.