



Meeting Minutes March 23, 2012, 2:00 PM Executive Committee Conference Call

Attendees: Andrew Duffell, Bob Swindell, Gary Margules, Heather Belmont, Ivan Baines, Linda Howdyshell, Mark Rosenberg, Mary Jane Saunders, Maurice Ferré, Rolando Montoya, Todd Holt, David Day, Jennifer Baker

Absent: Frank Nero, Jennifer Moore, Shawn Rowan, Divina Grossman

The meeting commenced at 2:03pm on March 23, 2012.

I. Welcome

Dr. Rosenberg welcomed the committee and guests and announced that Dr. Divina Grossman would not be attending the meeting because of prior travel plans.

Dr. Rosenberg opened by presenting David Day, Co-Chair for SEBIO Investor, and Dr. Maurice Ferré, from Mako Surgical, as industry speakers for the meeting. Dr. Rosenberg then asked Bob Swindell, President of the Greater Ft. Lauderdale Alliance Economic Development Organization, and Todd Holt, who helps support LSSF efforts for that organization, to introduce themselves.

II. New Business – Guest Speakers

David Day, from Southeast BIO (SEBIO), began by giving an overview of his company and explained that SEBIO Investor is a yearly investor forum that has existed for 14 years and is now taking place in 6 states: Alabama, Florida, Georgia, North Carolina, Tennessee and Virginia. The forum is a convocation for everyone in the Southeast region affiliated with Biotech and Bio Medical startup companies to participate. It is a 2-3 day event with an estimated attendance of about 400-500 individuals, including over 100 Venture Capitals companies. SEBIO has developed a 3 stage approach to help companies situate themselves. First comes the Bio Plan Stage: science projects still at a university laboratory level. Then we have the Early Stage: companies raising their first institutional round of financing. Third, we find the Main Stage: companies raising later rounds of capital. Mr. Day announced that this year's 14th Annual Southeast BIO Investor Forum will be hosted at The Breakers, in Palm Beach, on October 31st and November 1st, 2012. He encouraged all members not only to participate but to become sponsors as well. Website address: sebio.org

Mr. Day added that he is also a board member of the BIOFlorida forum. Dr. Rosenberg asked if there was a difference between BIOFlorida's and SEBIO's forums. Mr. Day responded that BioFlorida's forum is a mixture of executives, service providers, investors and scientists with educational seminars and panels with a few presentations. SEBIO Investor is specifically designed for investment purposes and draws the biggest venture capitalist firms to its forum. Dr. Ferré congratulated Mr. Day for all his hard work and concurred that the SEBIO forum was a pivotal event for the growth of his company, helping raise the company's capital by \$250 million dollars.

Dr. Maurice Ferré, President and Chief Executive Officer of Mako Surgical Corp, announced that his company recently won the South Florida Manufacturing Award for companies larger than 200 employees. The company now employs closer to 500 employees. Mako recently opened a second production for its robots line thus creating about 175 new jobs. He explained that Mako is also adding computer science and technology jobs with an average annual salary of about \$85,000. He mentioned that the recognition also came from Deloitte and Touche as the fastest growing technology company in North America. Mako is a robotic surgical company that utilizes about 300 patents from around the world and works very closely from a lot of technology transfer offices. Mako is currently focusing on restoring a range of motion for adults living with early to mid-stage osteoarthritis. Mako believes that treating the disease early enough could save billions of dollars for our healthcare system. Mako began by looking for novelties to deliver different types of implants or devices into the body that would allow treating the disease early, in the most minimalist way possible, and with accuracy and precision being a key factor in the success of the delivery. The placement of these materials (plastic and metal) is moving towards biologists as a key for treating this early to mid-stage diseases. Mako has been successful in developing a robotic system and has been able to place over 100 in most of the university and PG system. Mako has expanded to Europe and Asia to continue to see growth in these areas. Mako is all about looking to solve the disease and has been looking at expanding its expertise beyond the basis of technology, namely robotics. Mako has made investments in different types of cutting systems, delivery systems & materials. It has targeted the areas of the knee and hip for now. Out of its 500 employees, 100 are engineers with about 70 of them holding a Master's Degree and the majority of the students coming from local universities. Dr. Ferré wants to create more innovation and speed up the pace. The way to do that is with talent and universities consortium working hand in hand with industry and capital. He is currently working on a 10 year plan to build a robotic and computational institute in South Florida and is seeking funding for about \$100 million dollars for this project.

Dr. Margules asked if Mako's work is considered to be competitive or a complete market segment with other companies like Da Vinci who created hip transplants. Dr. Ferré replied that the difference is that the Da Vinci system focuses more on soft tissue and they have been working on prostate. Mako is currently working on computer vision, taking different parts of a CT or MR's scan and super imposing the images onto real time imaging that will happen in the operating room and then it will update the data sensors as they go on.

Mako has gone ahead and outlined the key area of core technology that needs to be developed in this sector. Dr. Rosenberg concurred and welcomed further discussion to play a role in this innovative market. Dr. Ferré continued to outline the progress that Mako has achieved, including the workflow.

Mako is tracking a patient's disease from cradle to grave so by the time the patient enters the operating room, there is a virtual cloud of information and database for that patient. This approach has enabled Mako to win an award from the Alberta government to deliver this type of technology into its closed data system. Computational systems are being worked on, along with sensors technology and robotics. There are training issues involved with the development of 6 sigma programs for hospitals and staff. Mako also has about 7 ongoing clinical studies across the country with an allocated research budget of \$250 million. Mako is interested in working with any university in this area, whether at the undergraduate or graduate level.

Dr. Rosenberg asked about the skill set of students that Mako hires, specifically students from FIU, FAU and Nova, and whether he foresees any need for improvement. Dr. Ferré replied that the best bio engineers, electrical and mechanical engineers he sees are coming from FIU. This observation came after he gave a speech at one of the engineering schools. Mako is looking for talent. The robotics team positions could not be filled fast enough with the talents Mako is looking for. Mako will be starting a collaboration with Stanford and its robotics labs and feels that there could be an opportunity to tie in some of the Florida universities. One of the things that Mako is working on, in Alberta, is live feeds of cameras into the labs to create virtual spaces. This is why Mako wants to invest in the creation of a robotic center but this center needs to be outside of the Mako campus and needs to be tied into universities and mentioned medical centers around the country.

Heather Belmont mentioned that there could be an opportunity for technician training as a career pathway in the Mako organization. Dr. Ferré added that Mako had opened a new building in the Dakota center for training and that it would fly 300-400 individuals to Ft. Lauderdale for a 2 day seminar. Mako needs to train more technicians so it can provide for local hospitals and partners. Mako is currently working on getting C&E certified for technicians. This is also an area for which Mako would welcome the universities collaboration. Dr. Rosenberg encouraged Heather to follow up with Dr. Ferré for further communication. Rolando Montoya asked if besides technicians already working in hospitals, Mako would accept students who are almost ready to graduate in technician programs. Dr. Ferré responded positively, adding that Mako would hire around 300 individuals this year alone, many of them clinical support people and technicians that they deploy from around the country.

Dr. Rosenberg added that he would get Divina Grossman to create a task force group to work with Mako and its staff and see what could be done. Conversations have taken place regarding getting R&D type supports from the State of Florida for the next round. They have been very careful not to ask the State of Florida and all efforts have been coming from their own initiative. The I-4 Corridor was able to take off from the ground up partly because of the strong partnership with the private sector in Tallahassee. Dr. Ferré extended an invitation to tour the Mako facilities either as a group or individually.

III – Old Business – Update on LSSF Webpage Launch

Dr. Rosenberg announced that the launch of the LSSF website took place on February 29th, 2012. Some members were concerned and said that the website was not easily searchable. Dr. Rosenberg explained that Google representatives said it would take up to 3 weeks to appear on a Google search, but that the

LSSF is on the mark of exposure and that when currently searched, it was already viewable on the third page. Additionally, the Office of Engagement has the LSSF link on the Engagement's website to further expose the Life Science initiative. This also will serve as a helpful solution to announce future events.

IV. Review of Meeting Minutes

Review and approval of the Minutes of January 23, 2012. Rolando Montoya moved for approval. Dr. Rosenberg seconded the motion.

V. Subcommittee Reports

a). Regional Conferences and Seminars - Dr. Rosenberg talked about the LSSF's first webinar, conducted on March 22nd at 3:30 pm by Dr. Ranu Jung and titled "Neural-Mediated Assistive Devices for Rehabilitation of Individuals with Disabilities." Dr. Rosenberg said it was very successful, asked the members if any had attended, and requested suggestions to improve future webinar events. Gary Margules commented on how successful the webinar went, but added that the short notice hampered the amount of people who were able to attend. Heather Belmont suggested that future webinars be lunch meetings thus allowing people, including students, to take the time off and phone in. Linda Howdyshell concurred. On this note, Dr. Rosenberg took the opportunity to announce that the next webinar is scheduled for June 7th, 2012 with guest speaker Dr. Joshua Hare, Chief of the Division of Cardiology and Director of the Miami University Interdisciplinary Stem Cell Research Institute. Dr. Hare is an expert on adult stem cells used to repair heart damage.

Linda Howdyshell added there is another webinar scheduled with Mark Thomas but no set date has been established and they are working on a date in about 3 months from now. With that amount of time, they will be able to advertise and more people can take advantage of the webinar.

Dr. Rosenberg encouraged the executive members to participate in the BioFlorida 14th Annual Conference at the Marriott Tampa Waterside Hotel, Tampa, Florida on October 23rd – 25th, 2012 and also encouraged the members to ask their companies to sponsor this conference since BioFlorida is still looking for sponsorship.

Dr. Rosenberg added that the LSSF executive members had approved sponsoring a Gold Membership of \$10,000 for this conference and reimbursing FIU \$666.66 to subsidize the cost. Dr. Rosenberg thanked the members whose checks have been received and encouraged others to send their checks.

b). Asset Map and Cluster Analysis – Dr. Ivan Baines talked about the Beacon Council's last meeting with CIOs from various institutions. He explained that two aspects need to be addressed and resolved. First, the online portal needs to be designed in a way that allows people to access and find out what assets, technology platform, scientific and facility resources exist at the different facilities. Also, expertise is needed to acquire and access the contact

information. CIOs would go back, review and check what would be the correct software backbone for the online portal.

The second issue relates to the content and how and who would collect the asset map. Many of the institutions have gone ahead and submitted excel spreadsheet with their assets that would be inserted into the database. They have been researching who they could partner with to collect the asset map information. Avalanche Consulting was recommended by the Beacon Council. Both BC and MDC have used that firm for other projects, including the One Community One Goal project. They established a telephone conference call with Avalanche's CEO and with Chris Engle, VP and Chief Analyst, and felt that this was a good fit. Avalanche is already engaged in South Florida and Jacksonville and seems interested in collecting the asset map end of it for our initiative. Overall, Avalanche would be the right partner to collect the assets map and cluster analysis of this project and feel the CIOs are engaged and working toward identifying the right technology and software background to support the online portal. More information is needed from Avalanche regarding partnering with them. It will be discussed during the April 18th meeting.

c). STEM K-20 and Workforce Development - Dr. Montoya updated the members about the work with MDCPS, which is progressing rapidly. A committee of faculty from FIU, MDC and MDCPS established a developmental curriculum that will be used in 12th grade for students who are not ready yet to come to college. There was a small ceremony during which faculty members officially presented the curriculum to the Chief Academic Officer, Millie Fornell. She accepted it and said that she will begin to use this and is required to offer this kind of remediation for seniors who are not college ready yet. This is within the STEM initiative because mathematics is a key factor for STEM students and they will continue to work with them. The next step will be to provide equivalent type of curriculum for reading and writing. Committees will be working on this with faculty realignment on the development of the program for 12th graders. If the program is successful, they will begin by piloting this in 3 high schools and if successful, they will possibly insert this into the school curriculum and maybe other counties in the state would be interested in adapting this into their system. A dialogue took place between FIU and MDC faculty in Biology, Chemistry, Physics, Mathematics, Nursing and Engineering, with an emphasis on STEM. FIU and MDC are working hard to increase their numbers of graduating students and maximizing the number of graduates of Associate Arts degree and encourage the students to transfer to a 4 year university. More than 70% of transfer students choose FIU.

The second element of progress is that Heather Belmont is collecting information regarding practices that take place in all colleges and universities in our corridor from kindergarten on. Belmont reported that she was asked to create an inventory of STEM initiatives and thanked the institutions that have forwarded the names of the individuals responsible for collecting the information. The following schools have forwarded their information: Miami Dade College, FIU, Florida Gulf Coast, and Palm Beach State College. The following universities have contacted Belmont and will forward their information at a later date: Broward College, University of Miami, Florida Atlantic and Indian River State College. The only school that has not contacted

Belmont is Nova Southeastern University.

Belmont asked Margules for his assistance with Patrick to get this information. Margules replied that he did have the inventory in an excel spreadsheet and will forward it to her. She added that she has seen a lot of commonality with the 4 institutions and there are events that could be sponsored as a group, i.e. an undergraduate research forum that can rotate between the groups. She has observed that every department at every institution has their own research forum. Perhaps having a single one that would rotate between institutions would have a larger impact on our students and would give them an opportunity to share across the region. Also, they could incorporate a career focus and have companies like MAKO and other potential employers come and see their work.

Dr. Rosenberg gave an update on what FIU is doing with MDC that builds in and overlaps with Life Sciences and is part of a larger articulation collaborative working effort that has been in the works for over 20 years. Dr. Rosenberg thanked Rolando Montoya and Heather Belmont in taking part of this.

d). Talent Recruitment – Dr. Saunders reported that she would forward some information on the College of Engineering working with Broward schools on STEM Education, but had no update on talent recruitment.

Closing Remarks:

Dr. Rosenberg noted that future agendas would be modified to reflect forthcoming meetings and conferences. He then added that follow up items have been noted and that the next meeting is scheduled for April 18th at 3:00 pm.

VI. Adjournment

The meeting adjourned at 2:58 pm on March 23, 2012.

Action Items

- 1). Dr. Ferré to meet with Dr. Mark Rosenberg for future collaboration
- 2). Change future webinars to lunch time for better attendance
- 3). David Day will present on the SENIO Investor forum during the next meeting
- 4). Heather Belmont to follow up on technician training that MAKO offers
- 5). Dr. Rosenberg will ask Divina Grossman to put a task group together with MAKO
- 6). Contact Divina Grossman on any update or changes to website