



National News Letter

2010-2012 National Officers

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MESSAGE FROM THE E-BOARD

There is an air of excitement that can be felt, a gentle breeze that rings in our hearts and minds of fond memories and in excitement of anticipating what the near future holds for AEMB. As the fall approaches, we look forward to the National Alpha Eta Mu Beta activities, held in conjunction with the 2011 BMES conference from the 13th – 15th of October in Hartford, CT.

As we continue to grow steadily, every year our events have received significant attention. This year we are proud to be able to host the following events:

AEMB Annual Grand Meeting

AEMB Annual Banquet and Awards Ceremony

AEMB Special Session: Food Shortage Crisis in Sub-Saharan Africa

AEMB Annual Ethics session

Public Policy Session (joint program with AIMBE)

This is a really crucial time in the history of AEMB. The National Executive Council and National Advisory Board have been hard at work all year round in developing several key areas of interest to the organization. There will be significant matters that concern AEMB which will be presented and discussed at the Annual Grand Meeting.

Furthermore, this year, we are also proud to announce travel awards for our chapters. This was made possible by the generosity of our kind donors, Pat and Ken Horner through the establishment of the Patricia I. Horner memorial fund. This travel award is limited to one per chapter nationwide, and allows chapter officers or representatives the opportunity to attend the AEMB events. The application forms and further details of the travel awards can be found on the national website. In addition, it is also time to apply for the National Awards. Please take a moment to read the description of the National Awards that can be found on page 5 of this news letter and apply for them. There is no limit to how many National Awards each chapter can apply for.

Lastly, to help us better serve you and plan our Annual Banquet and Awards ceremony, please submit a head count to the National Student President, Dominic Nathan no later than the 20th of September 2011. Tickets will be made available on the day of the event. We have been working hard to plan and organize these events and would like to thank YOU, our active and dedicated members, faculty, alumni and generous donors in making these AEMB events possible. Thank you for helping grow OUR AEMB together.

The National AEMB E-Board.

ADVISOR FOCUS

Name : Anthony J. McGoron
Position : Associate
and Acting Chair,
Dept. Biomedical Eng.
Florida International
University



Education : **BS** Biomedical Engineering Wright State University
MS Biomedical/Systems Engineering, Wright State University.
PhD Biomedical Engineering, Louisiana Tech University
Post-Doc - University of Cincinnati, College of Medicine, Department of Pharmacology and Cell Biophysics

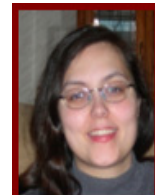
Dr Anthony McGoron joined FIU in 1999 in a newly formed Biomedical Engineering Institute. The primary focus of Dr McGoron's research is in the area of drug delivery and molecular imaging, primarily for cancer, and specifically the development of multimodal drugs that simultaneously image and provide therapy. Efforts include the development of tissue or cell specific contrast agents and probes (both optical and radioactive) for noninvasive molecular imaging of cellular and tissue characterization, for monitoring toxicity, for tracking the biodistribution of known toxins and drugs, and image guided therapy. Dr. McGoron has an active lab and he is currently supervising 6 PhD students and two MS students, in addition to a post-doctoral fellow. He regularly has undergraduate students in his lab and in the summers often mentors high school students.

Dr. McGoron served as the founding Advisor for the student chapter of BMES and as soon as the Bachelors of Science program in Biomedical Engineering at FIU received ABET accreditation in 2005 he helped to establish an AEMB student chapter. Through his dedication and leadership the AEMB chapter has developed a strong presence on campus by running a monthly journal club, started an Industry and research lecture Series, programs mentoring students in the Miami Dade Community College Biotech program and a local high school Biomedical Sciences Program and continued involvement with the BME department and local campus community. Under his leadership, the FIU AEMB chapter played an instrumental role in helping to organize and run the Southern Biomedical Engineering Conference in Miami in May 2009. In addition the FIU AEMB chapter continues to thrive and has received multiple National Awards consecutively in 2009 and 2010.

His zeal and enthusiasm were recognized and Dr. McGoron was awarded the Patricia I. Horner Outstanding Faculty award at the 2010 National AEMB Convention in Austin Texas. Currently, Dr. McGoron has the privilege of being elected to serve as the National President of the Society for the 2010 – 2012 term.

Graduate Student Focus

Name : Alicia Fernandez-Fernandez
School : Florida International University
Research : Cardiotoxicity of current and novel chemotherapy agents



Alicia Fernandez-Fernandez is a graduate student at the Florida International University under the guidance of Dr. Anthony McGoron. Originally a certified Physical Therapist, her passion for biomedical engineering led to the pursuit of a bachelors which then culminated with Alicia setting her sights on a PhD. She received the FIU Outstanding Graduate in Biomedical Engineering Award in the Fall of 2006, along with a departmental enhanced scholarship and an MBRS-RISE fellowship to support her PhD studies.

Alicia's research is focused on developing new therapies for cancer with the goal of reducing toxic side effects. This research is meaningful professionally and also at a personal level to her as her grandmother died from ovarian cancer when she was 27, Armed with sheer determination and dedication, Alicia would love to be able to make a difference as a cancer researcher someday, and to mentor others as a researcher, clinician and academic. Having advanced to candidacy with a proposal entitled "Cardiotoxicity assessment of new chemotherapy approaches and development of a fluorescent indicator dilution method to study cardiac capillary permeability" Alicia is close to completing her doctorate and maintains an excellent track record, of conference publications and peer reviewed journals. Her presentation at the SBEC 2009 conference was awarded second place in the doctoral competition.

Alicia had proudly served as the president of the Alpha Eta Mu Beta FIU chapter (2009-2010) and is currently a Student Advisor for the FIU AEMB chapter. She was one of the ten founding charter members of the FIU chapter in 2007, and she held the Vice President position from 2007 to 2009. She has actively promoted new initiatives such as the monthly journal club, as well as the upcoming industry lecture series. From 2007 to 2009, the AEMB FIU chapter has gone from a small starter society with 10 members and few activities to being the most active society in the entire FIU campus in 2010. Alicia is also a member of the BMES chapter at FIU, and she is the Graduate Student Representative for the Tau Beta Pi FIU chapter. She has promoted collaborations between the three societies in community and University events. Besides her society involvement, Alicia is also very active in the FIU community and the FIU BME department. She was the only student member in the Dean of Engineering Search and Screen Committee, which selected a Dean of Engineering for FIU after a nationwide search last year. She was also the leader of a 16-people student volunteer team who helped organize, coordinate and plan the 25th Southern Biomedical Engineering Conference hosted by the FIU BME Department in May 2009. For her continued dedication to AEMB, Alicia received the National AEMB award for Outstanding Chapter Officer in 2010. Alicia currently serves as the National AEMB Treasurer.

CHAPTER FOCUS FLORIDA INTERNATIONAL UNIVERSITY

Since its creation in 2007 with only 10 members, the FIU AEMB chapter has grown to have a significant presence on campus and in the local community.



The success of the FIU chapter lies in a strong bond between students (undergraduate and graduate) and their faculty advisor. This chapter has strived to nurture a culture that actively represents their student members, acknowledging them, and encouraging the sharing of activities.

The FIU Chapter of AEMB have planned a number of rich and diverse activities that span the areas of community service, development, networking and social events.

The FIU chapter strives to encourage its members to give back to the community, to FIU and to the Biomedical Engineering department. They have been actively involved in multiple community service projects such as the Susan G Komen Race to benefit cancer research, the Cystic Fibrosis Walk and Relay for Life. Further innovation in community service projects have seen the AEMB FIU chapter successfully established a strong collaboration with students and teachers at the TERRA Magnet High School (picture below). AEMB members assisted in developing new lab protocols, student projects and provided a summer mentoring program at FIU's research labs. Apart from community service,



the FIU AEMB chapter has played an active role within the department at every possible opportunity from participation in "Introduction to Engineering" classes consistently every semester to recruiting for new students. and even hosting a design competition for a new logo for the FIU BME department. The FIU AEMB chapter is constantly working with their advisor to identify ways in which they can actively meet the needs of their BME department and create opportunities for the students. They have successfully formed a monthly journal club that is entirely run by students and highlights cutting edge research in biomedical engineering areas such as nanotechnology, artificial muscles, diffusion tensor imaging, etc. Realizing that these were largely academic in nature, a separate series of lectures were established that focused on industry. Speakers from

leading biomedical companies were invited to interact with students and discuss the roles of biomedical engineers in industry.

Due to the rich and diverse cultural make up of their members, the AEMB FIU organized the "International Food Extravaganza, held once a semester. This event enabled members the opportunity to network and share different cuisine while learning about other cultures. Due to the overwhelmingly positive response, this event was opened to all students in the BME department (picture below).

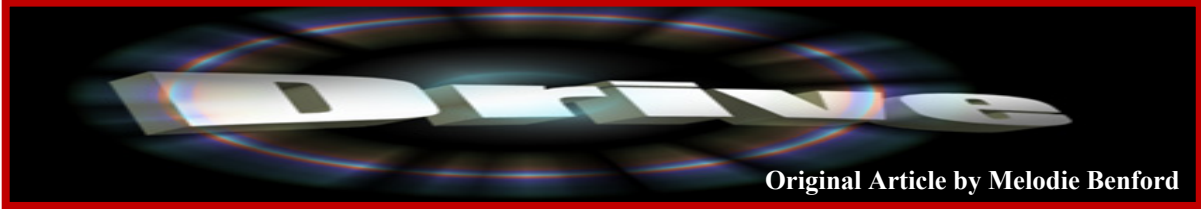


Recognizing that their members are constantly working very hard each semester to make the chapter a success, several social events were organized. Some of these recent events (figures below) include bowling, movie night, rock climbing and free coffee and bagels during finals week.



The level of the FIU AEMB chapter was not just limited to the BME department, but rather a strong presence is established on campus. This was achieved through the regular collaboration with other societies such as Tau Beta Pi, BMES and the Civil Engineering Society to name a few. Through these collaborations, these societies have successfully held numerous activities such as talks, welcoming of freshman, lab tours, friendly sporting games and even an Engineering Gala. For their efforts, the FIU AEMB chapter was recognized as the most active organization in the entire FIU campus, out of all 200 societies.

In recognition for their outstanding contributions to their department and location community, the FIU AEMB chapter was awarded the National AEMB Most Active Chapter award consecutively in 2009 and 2010.



What creates drive or motivation? Daniel Pink tries to answer this question in his new book, [Drive](#), the acclaimed author of [A Whole New Mind: Why Right-brainers will Rule the Future](#). The answer may be counterintuitive. He breaks the essentials down into three central areas: autonomy, mastery, and purpose.

The well-touted method of motivation, that of dangling carrots in front to entice action and punishing lack of action with sticks, does not work for all situations. Actually, this extrinsic method of motivation works well for linear, routine tasks. However, these nonlinear jobs are being outsourced and/or slowly replaced by software. As Pink outlined in his last book, for a job to stay relevant, it should answer these three questions:

1. Can a computer do it faster?
2. Is what I'm offering in demand in an age of abundance?
3. Can someone overseas do it cheaper?

As a result, the jobs of the future, the jobs we as biomedical engineers are in training for, are heuristic; they require creativity and encompass non-routine, non-linear elements. Assuming fair compensation, after a certain level of pay, the productivity levels gains does not correlate with pay increases, a surprising result, implying there's more to the science of motivation than meets the eye. In fact, psychologists have discovered another, more delicate motivating factor, called intrinsic motivation. This form of motivation occurs when performing a task because you want to, because you enjoy the work. Intrinsic motivation tends to have more sustained results and improvement in productivity in the long term. In the short term, extrinsic motivation actually works better, but readily leads to burn-out and compromising long term decisions in order to obtain short-term gain.

The task for us as future leaders is to intrinsically motivate people to perform tasks necessary to fulfill the mission of the organization or company. To tap into intrinsic desire, three things must be accomplished:

1. Allow autonomy.
2. Allow mastery.
3. Have purpose.

This new model suggests people intrinsically want to work and contribute to a cause. For instance, companies are starting to engage workers by implementing ROWE, results only work environment, in which employees no longer must punch a clock. In turn, their productivity is measured by accomplishing set tasks. To encourage mastery, employees require frequent feedback, not in the form of yearly reports. Plus, they are tapping into the principle of "flow" The phenomenon in which a person loses themselves in their work. If the work is too hard, anxiety occurs, if the work is too easy, then boredom.

As suggested in a later article in the newsletter, to revive ailing chapters, AEMB must work towards a purpose. Once that purpose is set forth, activities should be designed to encourage mastery of leadership principles and mastery within the realm of biomedical engineering. AEMB is also in a unique position to discuss ethics of biomedical research. As future researchers, employees, and entrepreneurs, we must embrace a culture of compliance with ethical and social concerns as a shared responsibility. Without integrity and professionalism in research, patients are put at risk, valuable resources wasted, careers jeopardized and the acceptance of valid research results or technologies delayed. Perhaps more importantly, the lack of integrity and professionalism in research undermines the public trust.

I encourage you to pick up Daniel Pink's new book, [Drive](#), along with Geoff Colvin's [Talent is Overrated: What Really Separates World-Class Performers from Everyone Else](#). I hope that these books can help provide answers and topics of discussion as you go forth honing and improving your leadership skills.

Melodie Benford, BS is currently a doctoral candidate in the department of Biomedical Engineering at Texas A&M. She served as the National Student Vice President from 2006 – 2008 and National Student President from 2008 – 2010. Currently Melodie serves as the past National Student President on the National AEMB Advisory Board and continues to play an active role in AEMB both nationally and within the Texas A&M chapter.

AWARDS

Do you know of an Alpha Eta Mu Beta event that caught your attention or made an impact on your campus? Is there a committee member who has truly impressed you by their involvement in your chapter? It is time to complete the Alpha Eta Mu Beta awards. The following are the award and their details :

MOST IMPROVED CHAPTER

This award is given to the chapter that has shown the most improvement in terms of membership, activities, funds and involvement on campus. An official report of the past and present is needed from the officers regarding the above mentioned activities, current status of the chapter and future plans. This report must also be signed by the chapter advisor.

MOST ACTIVE CHAPTER

This award is given to the chapter that has shown remarkable involvement in the department, on campus and within the community. An official report of all activities to be considered for this award is required from the officers and this report must also be signed by the chapter advisor.

OUTSTANDING CHAPTER OFFICER

This award recognizes a chapter officer who has given his/her utmost dedication and support toward advancing the goals and status of the chapter while maintaining strong leadership, academics and character. A formal letter for nomination shall be written by the chapter advisor highlighting the above mentioned traits and contributions of the respective chapter officer.

OUTSTANDING CHAPTER ADVISOR

This award recognizes a chapter advisor who has strived to be a strong mentor, given his/her utmost dedication and support while advancing the goals and status of the chapter and being instrumental growing and developing the chapter and its members. A formal letter for nomination should be written by the chapter president highlighting the above mentioned requirements and subsequently signed by all the chapter officers.

OUTSTANDING CHAPTER MEMBER

This award recognizes an AEMB chapter member who has had good involvement in chapter activities and events, and has served as a positive role model within the chapter and the department. A formal letter for nomination shall be written by the chapter president that highlights the above mentioned traits and the letter is subsequently signed by the chapter advisor.

OUTSTANDING CHAPTER ACTIVITY

This award recognizes an AEMB chapter that has presented a creative activity that maximizes the development and growth of its members. A formal letter for nomination shall be written by the chapter officers reporting on the activity, it's objectives, outcomes and participation and subsequently signed by the chapter advisor.

BEST WEBSITE

This award recognizes an AEMB chapter that has the most informative and updated website that balances utility and appearance. A formal letter for nomination shall be written by the chapter president highlighting the above mentioned traits. The letter should be signed by all officers and the chapter advisor.

BEST COMMUNITY SERVICE EVENT

This award recognizes an AEMB chapter that has been actively involved in their department, school or community through a significant event that brings about positive change and contribution to their community. A formal letter for nomination shall be written by the chapter president reporting on the activity, it's objectives, outcomes and participation. The letter is to be signed by all the officers and the chapter advisor.

PLEASE DO NOT DELAY !

Please send in all documents no later than September the 25th, 2011 to the National Secretary, Ms Stefanie Gonzalez via email at gonzalez.stefanie@gmail.com. If you have any questions or concerns, please do not hesitate to contact Ms. Stefanie Gonzalez. Awards will be presented at the Annual AEMB Banquet held in conjunction with the 2011 fall BMES conference in Hartford, Connecticut.

Just for Fun

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Word Search

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A G E N E T I C S N

CELL BIOMED RESISTOR THERAPY
GENETICS EEG MRI PROSTHESES REHAB
ROBOT PETRI



Would you like to contribute an article to any of our sections?

Please feel free to contact the editor
Mr. Dominic E. Nathan via email
dominic.nathan@mu.edu

We are always looking for articles for each of the focus columns and also the main content.



Do you have a question or concern about AEMB ?

Please feel free to contact the National Student President Mr. Dominic E. Nathan via email
dominic.nathan@mu.edu
Our response is a promise.

REMEMBER TO CHECK THE WEBSITE !

Please remember to check the national website
www.alphaetamubeta.org
for important information relating to award applications, upcoming AEMB Events and other important topics.