

August 2004

Volume 3, Issue 1

# AEMB National Newsletter

*Alpha Eta Mu Beta*

*National Biomedical Engineering Honor Society*

## *2002-2004 National Officers*

### *National President*

Herbert Voigt, Ph.D.  
Boston University  
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### *National Student President*

Teresa Murray  
Arizona State University  
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### *National Student Vice President*

Michael Cobb  
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### *National Student Treasurer*

John LaDisa  
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### *National Student Secretary*

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### *Executive Director*

Patricia I. Horner  
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### *Alpha Eta Mu Beta*

c/o Biomedical Engineering Society  
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Landover, MD 20785-2224  
301-459-1999, fax 301-459-2444  
[www.bmes.org](http://www.bmes.org)

## ● *Attention Officers*

### **Note to 2003-2004 Officers – Please forward this newsletter to your new chapter officers**

Welcome new AEMB chapter officers. We hope you will have a fun and productive year. The list below contains a few items that concern you and your chapter and should help you get off to a good start.

Make plans to attend the BMES Fall Meeting in Philadelphia, October 13-16, 2004. Why?

- AEMB Fundraising Dinner - Thurs Oct 14
- AEMB Business Meeting - TBA
- AEMB Officer Elections at Business Meeting
- BMES Research Presentations and much more

Fill out a student travel award application to pay for two officers (*only if your chapter dues are current*). Find registration and grant forms, plus meeting information at [www.bmes.org](http://www.bmes.org).

Please tell us who your new officers are this year so we can communicate with you.

- Send your officer's e-mail addresses to by [teresa.murray@asu.edu](mailto:teresa.murray@asu.edu) September 1<sup>st</sup>.
- Fill out the chapter status form (online at [AHMB.org](http://AHMB.org)) and mail to the address listed.
- Find the initiate form (online at [AHMB.org](http://AHMB.org)) and send it with the one-time dues to the address listed. Submit dues and names each time you do initiations. If this was not submitted last year, please do so by Sept. 6<sup>th</sup>.

Please supply articles for our next newsletter. Here are a few topic ideas to get you started.

- Service or social event
- Successful fundraising activity
- Bioengineering department news
- Keeping track of alumni members

Send them via e-mail to [teresa.murray@asu.edu](mailto:teresa.murray@asu.edu)

## ***Attend Our Second Annual AEMB Fundraising Dinner Oct 14, 2004***

Please join us for our second annual Alpha Eta Mu Beta (AEMB) fundraising dinner. AEMB, the National Biomedical Engineering Honor Society, will host the dinner on Thursday evening, from 7 to 9 pm, on October 14<sup>th</sup> at the BMES 2004 Fall Meeting in Philadelphia, PA. The society is asking faculty and industry representatives, as well as members of AEMB, to join them in an evening celebrating excellence in biomedical engineering education and professional development. The event will feature a motivating industry speaker.

Last year Daniel Reneau, President of Louisiana Tech University and the founder of the first AEMB chapter in 1979 was our honored guest and speaker. Dr. Reneau gave an exciting talk about biomedical engineering, sharing his experience from the past and describing what it holds in store for students about to enter the field. Many students commented that they were very inspired by his talk and requested that we get another encouraging speaker for next year.

The purpose of our society is to honor and bring together outstanding biomedical engineering students who have demonstrated a deep interest and marked ability in bioengineering. Our further aim is to promote a deeper understanding of our profession and help our members develop professionally. In short, AEMB nurtures and encourages outstanding students to become future leaders in our industry. This dinner is planned to help facilitate this goal.

You will have a chance to meet talented students, energetic faculty and involved industry representatives. Last year, 67 people attended the event including representatives from the Whitaker and the Coulter Foundations; AIMBE President, Art Coury; BMES President, Kyriacos Athanasiou, and BMES Past-President John Tarbell; Pat Horner, the BMES Executive Director along with several BMES Headquarters staff; numerous Bioengineering Department Chairs and faculty; and Herb Voigt, AEMB President and student officers of AEMB. Prices for AEMB student members will be \$40 (our cost) and faculty and industry prices will be \$75 (proceeds to benefit AEMB).

Last year several BMES professional members purchased student tickets as donations so that a larger number of students could attend. Please suggest this to your faculty this year as well. To order tickets, fax your name, organization name, phone number, credit card number (with expiration date and exact spelling of your name), your signature and how many faculty/industry and student tickets you are ordering to BMES at 301-459-2444 before Sept 15<sup>th</sup>.

To pay by check, please mail the same information and your check to BMES, Attn: AEMB Ticket Order Desk, 8401 Corporate Dr., Suite 225, Landover MD, 20785-2224. 301-459-2444 (fax). Your ticket(s) will be included in your BMES registration packet



### ***AEMB Induction at Boston University***

From left to right: Herb Voigt, AEMB President and Professor of Biomedical Engineering at Boston University; Eric Guilbeau, Chair of the Harrington Department of Bioengineering at Arizona State University; and Ken Lutchen, Professor of Biomedical Engineering at Boston University. Dr Guilbeau was the guest speaker at this year's AEMB induction ceremony at Boston University.

## ***Are You Looking for a New Challenge?***

- ❖ ***Are you a local leader who wants to step up to the next level?***
- ❖ ***Are you interested in helping AEMB grow in size, influence and prestige?***

If you answered ‘yes,’ there may be a spot for you on our Executive Board.

We will elect new national officers for 2004-2006 at this year’s annual meeting in Philadelphia (concurrent with the BMES Fall Meeting). To become an officer you must be a member of Alpha Eta Mu Beta. Don’t worry if you won’t be at your current school throughout this time period. We have board members who have gotten jobs or gone onto grad school during their term of office.

You will have two national meetings to attend, which occur conveniently at the same as the BMES Fall Meeting at their convention center. Travel grants have been provided in the past to allow each officer to attend.

We will be electing officers for the following board positions:

- President
- Student President
- Vice President
- Secretary
- Treasurer

The current officers are listed on the front page of the bulletin along with their e-mail addresses. We invite you to contact any officer to ask what a particular position has entailed in terms of a time commitment.

The numbers of ABET-accredited Biomedical Engineering programs is growing substantially. With this growth, we have an unparalleled opportunity to increase the number of AEMB chapters, to hopefully represent the outstanding students at each ABET-accredited program, improving our sphere of influence, and increasing awareness of the prestige of membership in Alpha Eta Mu Beta.

## ***From the Student President***

***Alpha Eta Mu Beta is on the way ...***

In the past 2 years we have grown from 10 chapters to 15 – a **50%** increase.

In the next 2 years we can **DOUBLE** in size.

In the past 2 years we have planned and established the Annual AEMB Banquet.

In the next 2 years we can establish our own professional development series or other program of worth to our members.

In the past 2 years we have increased awareness of AEMB with faculty and industry.

In the next 2 years we can become a respected group whose members’ contributions to our schools and industry in our field.

One of our goals for the past 2 years was to establish AEMB as a well-known and respected honor society in our industry. Like a toddler, we have taken the first few unsteady steps in that direction. Are you now ready to run with it?

*Terri Murray*

AEMB National Student President

**PLEASE SEND US YOUR NEW OFFICERS NAMES AND E-MAIL ADDRESSES**

**Alpha Eta Mu Beta Chapter (Year Chartered)  
Advisor, Title and E-mail Address  
Department Address  
Chapter President and E-mail Address  
Chapter Web Site**

***Arizona State University 1994***

Eric Guilbeau, PhD  
Chair, Harrington Dept of Bioengineering  
Arizona State University  
P.O. Box 879709  
Tempe AZ 85287-9709  
480-965-3028  
eric.guilbeau@asu.edu  
Anusuya Das, Co-President  
Anusuya.das@asu.edu  
Terri Murray, Co-President  
teresa.murray@asu.edu  
<http://www.asu.edu/clubs/aemb>

***Boston University 1994***

Herbert F Voigt, PhD  
Professor  
Dept of Biomedical Engineering  
Boston University  
44 Cummington St  
Boston MA 02215  
617-353-2817  
hfv@bu.edu  
Dominic Fullenkamp, President  
dominic@bu.edu  
<http://people.bu.edu/aemb>

***Johns Hopkins University 1996***

Aleksander Popel, PhD  
Professor, Dept of Biomedical Engineering  
Johns Hopkins University  
720 Rutland Ave  
Baltimore MD 21205  
410-955-6419  
apopel@bme.jhu.edu  
Akhil Seth, President  
aseth@jhu.edu  
<http://www.bme.jhu.edu/~bmehs/>

***Louisiana Tech University 1979***

Steven A Jones, PhD  
Professor  
Biomedical Engineering  
Louisiana Tech University  
PO Box 10348  
Ruston LA 71272  
318-257-2288  
sajones@coes.latech.edu  
Issam Eid  
ine001@latech.edu  
<http://www.latech.edu/tech/engr/bme>

***Marquette University 1993***

Jack M Winters, PhD  
Professor  
Biomedical Engineering Dept  
Marquette University  
PO Box 1881  
Milwaukee WI 53201-1881  
414-288-5575  
jack.winters@marquette.edu  
Paul Bergl, President  
paul.bergl@mu.edu  
<http://www.eng.mu.edu/aemb>

***Milwaukee School of Engineering 1994***

Vincent R Canino, PhD  
Biomedical Engineering  
Milwaukee School of Engineering  
1025 N Broadway St  
Milwaukee WI 53202  
414-277-7331  
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unknown, President  
e-mail  
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## Alpha Eta Mu Beta Chapters - continued

### ***Rensselaer Polytechnic Institute 2002***

Rena Bizios, PhD  
Professor, Dept of Biomedical Engineering  
Jonsson Engineering Center 7049  
Rensselaer Polytechnic Institute  
110 8<sup>th</sup> Street  
Troy NY 12180-3590  
518-276-6964  
bizios@rpi.edu  
Ming De Lin, President  
mingde.lin@duke.edu  
518-852-4437

### ***Texas A&M University 1998***

William A Hyman, PhD  
Professor & Chair  
Biomedical Engineering Program  
Texas A&M University  
233 Zachry Eng Ctr  
MS 3120  
College Station TX 77843-3120  
979-845-5532  
w-hyman@tamu.edu  
Valory Wangler, President  
val@tamu.edu  
<http://biomed.tamu.edu>

### ***Tulane University 1997***

J-K. Francis Suh, PhD  
Professor  
Dept of Biomedical Engineering  
Tulane University  
Lindy Boggs Center, Suite 500  
New Orleans LA 70118-5674  
504-865-5852  
fsuh@tulane.edu  
Heather Miller, President  
hmiller2@tulane.edu  
<http://www.bmen.tulane.edu>

### ***University of Illinois Chicago 2003***

John Hetling, PhD  
Dept of Bioengineering MIC 063  
University of Illinois at Chicago  
Science and Eng Offices  
851 S Morgan St., Rm 218  
Chicago IL 60607-7052  
312-996-2335

jhetli1@uic.edu  
Kimberly Olson-Wheeler, President  
kolson6@uic.edu

### ***University of Iowa 1988***

Edwin Dove, PhD  
College of Engineering  
1402 Seamans Center  
University of Iowa  
Iowa City IA 52245  
319-335-5640  
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Karsten Temme, Vice President  
kltemme@engineering.uiowa.edu  
<http://www.bme.engineering.uiowa.edu>

### ***University of Miami 2002***

Weiyong Gu, PhD  
Assoc Professor  
Dept of Biomedical Engineering  
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University of Miami  
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### ***University of Pittsburgh 2003***

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sshroff@pitt.edu  
Lauren Kokai, President  
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### ***Vanderbilt University 1998***

Jerry C Collins, PhD  
Res Assoc Professor  
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## Alpha Eta Mu Beta Chapters - continued

### *Washington University St Louis 2003*

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Stuart P Rosenberg, President  
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http://biomed.wustl.edu

***We Need YOUR Help  
To Update Our Contact List To  
Enable Effective Communication This Year***

**Please send us your list of 2004-2005 Officers.  
Include their name, title and e-mail address.**

**Also, if any of your school information listed  
above is inaccurate, please send us a  
correction.**

**Please send your updates to [Teresa.Murray@asu.edu](mailto:Teresa.Murray@asu.edu)  
AND to [Diane.Solomon@bmes.org](mailto:Diane.Solomon@bmes.org)**

**Or, you may mail or fax the information to  
Alpha Eta Mu Beta  
c/o Biomedical Engineering Society  
8401 Corporate Drive, Suite 225  
Landover, MD 20785-2224  
Phone 301-459-1999; Fax 301-459-2444**

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## QPEC and TaDa

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By Herbert F. Voigt, Ph.D.

The taste of barbecue potato chips inevitably brings to my mind a vivid 30-year-old memory – The Queen of Peace Electronics Club or QPEC (pronounced “Quapick” by its members). QPEC consisted of my father and several teenage boys, including myself, from our neighborhood. We would get together every Friday evening of the late summer and fall of 1969 in a basement room at the Queen of Peace Elementary School in Flushing Queens, New York to build things electronic. The idea for this club came from my father, after several discussions at the school of what to do with the local “problem” teenagers. My father is a natural teacher (just ask any one of his nine children, grandchildren, or great grandchildren, who are required to sit with him to discuss math, physics or whatever topic that comes up at least once during each visit).

My father, an engineer who had previously worked for the Otis Elevator Company, asked Otis’s Electronic Division for a donation of a handful of transistors and other electronic components to get the club started. They were generous, indeed, insisting that we take much of their excess inventory (several truckloads of materials) or nothing. I will never forget the boxes and boxes of components (resistors, capacitors, etc.) that arrived home with him that day. Each box contained a variety of items. He would pick up an item, look at it, and declare it a 2.2 k Ohm resistor or a 10-kOhm resistor. There were no numbers on the little cylinders of ceramic connected on both sides by 2 cm length wires, so how did he know its value? That day I learned about the secret color code of resistor values that electrical engineers know. Several bands of color circled the otherwise grey/black resistors; the position and color of which indicated the value of resistance to expect, as well as its tolerance. That was just one of many secrets my father shared with those of us in QPEC.

Although supportive, all the boxes in our apartment dismayed my mother and another location would be required to store them. The Queen of Peace Parish Priest graciously allowed us the use of a small room in the basement of the school.

Each Friday evening, after dinner, my father would begin collecting the club members for the half-mile walk from 72<sup>nd</sup> Avenue, Flushing to the QPEC meeting place. Joey Comunale (my uncle two years my senior), Richie Wishner (a friend from a few doors down), the McGrath brothers (my grammar school mates), the von Thenen boy and I formed the core. Occasionally, some other neighborhood kids would join us, mainly, I suspect, to see what we were really doing. Along the way, we would stop at a small shop for snacks – BBQ potato chips and soda.

At first, we knew nothing. The meetings would start with a lesson – the resistor code, the diode, the photodiode, the transistor, the logic gates, the Ohm meter, the Oscilloscope, etc. Then we would build a circuit – a power supply, a “one-shot,” etc. We learned to solder components together using soldering guns. We learned about cold solder joints. The smell of the burning resin that helped the hot solder to flow, thus joining together the twisted wires, to this day has the same power over me as does the taste of BBQ chips!

The lessons were going well. One night, over chips and solder, the group decided to take on a challenging project. We decided to design and build an electronic toy. (I’m sure electronic arcade games were already common at the time, but that didn’t stop us.) We huddled and thought; we brainstormed; being guided gently, no doubt, by my engineering dad.

To build a shooting gallery game – one that used light instead of pellets – became our goal. The target would be a small photodiode that changes resistance when illuminated. The photodiode was positioned on the nose of a rather sorry looking, stationary monster to be drawn by Joey, who was also interested in art. Above the face were to be a line of small bulbs. When the target was hit with light, the left-most bulb would illuminate indicating a hit. With each subsequent hit, the next bulb to the right would turn on and the original one would turn off. In this way, one kept track of the number of hits.

My old beloved cadet rifle was modified in two ways: a flashlight was mounted to the barrel and wired to the trigger, so when pulled a light would flash. A solenoid was then attached to the rifle butt and also wired to the trigger, so that when activated the shooter would feel a small jolt.

We broke down the design into subprojects and researched special circuits we would need. Dad assigned various subprojects to individuals; Joey got the logic design (and the monster/clown face); I got the ring counter design to keep track of hits; Richie got the solenoid, flashlight and photodiode circuitry.

Weeks went by. Slowly, but surely, our design took shape. We learned first hand that “suggested circuits” in design handbooks were sometimes wrong. Chips, both logic and BBQ, were consumed. Wood was bought and cut to specifications to hold the electronics and support the target face. The tempo increased and we found ourselves meeting nightly; we ignited with a passion to succeed that we had never felt before. Subprojects were completed and integrated into a system. And in the end, it worked!

What a marvel, a masterpiece, and what a complete triumph. Standing between 10 and 20 meters away from the meter tall box, one could clearly see the target. Holding the modified rifle, one could aim and pull the trigger, which would recoil and send a flash of light in the direction aimed. If the photons found their mark, instantly a bell would clang and a bulb, indicating a hit,

would light. We could set the number of shots that made up a round and we had lots of fun with our “toy.” We named the game “TaDa.”

About a month later, we set up the game at a fund-raiser at the Queen of Peace School and charged 10 cents for a round of 10 shots; free games went to those with perfect scores within a specified time. We made about \$1,000 for the school over the three day event.

Unfortunately, space at the school was tight, and soon after the Queen of Peace Woman’s Guild requested that the Electronic Club and all its gear find another home. The components, tools, and TaDa settled in my family’s basement and got some occasional use, but not at all like before. As quickly as QPEC came together, QPEC came apart. However, what an impact it had (BBQ and logic chips and the smell of hot solder aside) on a group of teenage boys over thirty years ago.

I think I’ll give my Dad a call...

*This article was previously published in “Scientifically Speaking,” a column in the Milton Times, Milton MA, and it was reprinted with the author’s permission. Herbert F. Voigt is a Professor of Biomedical Engineering at Boston University and the AEMB National President. The column, “Scientifically Speaking” covers topics related to science and technology and their relationships to society. You can reach Dr. Voigt at [hfv@bu.edu](mailto:hfv@bu.edu). Look for more interesting and thought provoking articles in future issues of the AEMB National Newsletter.*

## **Chapter Members:**

***We need your contribution here for our next issue of the AEMB Newsletter!***

**Share a brief account of one of your service or social events, a successful fundraising activity, department news, or how you keep track of alumni members. Please send a photo with your article if you have one to share.**

Send your articles to [teresa.murray@asu.edu](mailto:teresa.murray@asu.edu)