

AEMB National Newsletter

Alpha Eta Mu Beta

National Biomedical Engineering Honor Society

2002-2004 National Officers

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Alpha Eta Mu Beta

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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.

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 September 1st.
- Fill out the chapter status form (online at AHMB.org) and mail to the address listed.
- Find the initiate form (online at 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. 6th.

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

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 14th 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 15th.

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**

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Milwaukee School of Engineering 1994

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Alpha Eta Mu Beta Chapters - continued

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Alpha Eta Mu Beta Chapters - continued

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***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
AND to Diane.Solomon@bmes.org**

**Or, you may mail or fax the information to
Alpha Eta Mu Beta
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QPEC and TaDa

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 72nd 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. 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