



# Alpha Eta Mu Beta

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NATIONAL BIOMEDICAL ENGINEERING HONOR SOCIETY

## National News Letter

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**Herbert F. Voigt, PhD**  
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### **Alpha Eta Mu Beta**

Official website  
[www.ahmb.org](http://www.ahmb.org)

Official Email  
[aemb@mail.com](mailto:aemb@mail.com)

## Patricia I. Horner



### Alpha Eta Mu Beta

The National Biomedical Engineering Honor Society

Mourns the loss of our National Executive Director

## Mrs. Patricia I. Horner

Who departed from us on the 30<sup>th</sup> of October, 2009

# *Ode to Pat Horner*

- Herbert Voigt -

*On this very special day,  
There is one to whom we say,  
Thank-you for your grace and style;  
Thank-you for your wit and wile.*

*You came to us just-in-time;  
Bit by bit, in a way so fine,  
You helped a struggling BMES;  
For BMES was in a mess.*

*A towering figure of sheer delight,  
You managed your presidents with aplomb.  
You are BMES's biggest cheerleader,  
When it comes to beating the drum.*

*"Professional" - that word comes to our mind,  
Describing your effective working style.  
We will surely miss our one-of-a-kind,  
For a triple-very long while.*

*Website is up;  
Newsletters are out;  
Oversee move to D.C.*

*Membership is up;  
Missing dues are down  
Meetings are really great.*

*On and on and on we can go.  
And at the end of the day,  
Nothing is really warmer,  
Than a hug from Pat Horner.*

*What you really need to know,  
What we really need to say,  
Is thank-you dear Pat Horner  
From the cardiac tissue of our loving hearts  
And the neural nets of our thinking brains.*

# My Personal BME Journey

By Pat Horner

I began work in 1965 at the American Institute of Biological Sciences with the BioInstrumentation Advisory Council (**BIAC**) which was funded jointly by NASA and the Office of Naval Research to bring Technology utilization to the space program. The BioInstrumentation Advisory Council had some of our early pioneers as members; in fact Otto Schmitt, the first BMES president, was a member and a world renowned physicist. He built one of the first digital computers using scraps that the University of Minnesota discarded. He also placed transmitters on several different animals and tracked their every move at a preserve at the University of Minnesota and I had the pleasure of seeing rooms full of tracking data.

Bill Cochran was also a member of the BIAC Council and I spent several nights tracking thrushes over hundreds of miles on their southern migration with the truck built by the Illinois Natural History survey. The thrushes would land at daybreak and they were caught and transmitters attached to a collar and when they took off at dusk, we tracked their movements through the night and in some instances across two states.

I visited with other members of the BIAC Council as well: Ken Norris in California was working with porpoises and killer whales; Stu Mackay wrote the first book on biotelemetry and we held several workshops with him across the country; and Howard Baldwin at his lab in Tucson tracking coyotes. I was able to see one of the early space shots at Cape Kennedy and have breakfast with the astronauts and Verner von Braun. One of our technology utilization projects was to create a machine that would feed the monkey strapped in the space capsule; the biologists told engineers what they wanted and six months later the engineers built the better mousetrap, the only problem was that the food went over the monkey's head instead of in his mouth.

For the Office of **Naval Research**, we helped to develop the first coaxial cable from the island of Bimini to show the ocean floor at the National Aquarium in Washington, DC.

And then we founded the Alliance for Engineering in Medicine and Biology (**AEMB**). There existed a Joint Committee on Engineering in Medicine and Biology with representatives from several societies—the IEEE, ASME, AIChE, and the ISA that pooled their resources and each year conducted the Joint Conference on Engineering in Medicine and Biology (**JCEMB**). This group decided to create a new federation of organizations. It began with 20 societies, ten engineering and 10 medical, and we took over the JCEMB and it became the Annual Conference on Engineering in Medicine and Biology (**ACEMB**). Lester Goodman, then at the BioEngineering Instrumentation Branch (**BEIB**) at the National Institutes of Health (**NIH**), was the Founding President of this new organization. At his laboratory I was able to observe a calf with the first blood pump. They were having difficulty in these early days with the body rejecting materials for anything implantable and one evening as Lester was sitting at his kitchen table watching his wife wash her lingerie it occurred to him that spandex Lycra was pure and maybe he should try using it for the blood pump. It turned out that it only came by the train carload in liquid form, but he arranged with the company to send him a small supply and was able to patent the first blood pump. I also saw one of the first medical lasers used at **NIH** and a mouse milking machine.

Lester was my mentor in AEMB and then he moved to Medtronic where they were working on neuromuscular pulse stimulators. Alan Kahn was also at Medtronic and later became president of AEMB and he and Lester provided me with the prototype NeuroMod for my muscle spasms. I also visited Case Western Reserve University where Wen Ko was implanting pacemakers.



The AEMB Council enabled me to meet many of the future leaders of the Biomedical Engineering Society (BMES): Art Johnson, currently Secretary of **BMES**, was also Treasurer & President of AEMB; Eric Guilbeau, Herb Lipowsky, Bob Plonsey, Morton Friedman, Larry Katz, Jack Linehan, John Lyman, and Peter Katona were all presidents of BMES; and Paul Hale with whom I also worked with in RESNA and now BMES. I was also present when BMES was founded in Atlantic City in 1968.

It was during this time that **Dan Reneau**, then Chair of the BME Department at Louisiana Tech (now President of Louisiana Tech) and Treasurer of AEMB, founded Alpha Eta Mu Beta, the National Biomedical Engineering Honor Society, and we provided the secretariat for the organization. Stan Napper was then the student representative to the AEMB Council and later the National Executive Director along with Paul as National President of AEMB. You will notice that is how we came up with Alpha Eta Mu Beta (AEMB) because the acronym matched the Alliance for Engineering in Medicine and Biology.

When I joined BMES, Herb Voigt suggested that we bring AEMB to BMES and there I was looking at the files from Stan Napper with certificates that still had my signature on from the late sixties. BMES began with AEMB in 1999 at the Atlanta meeting with ten chapters and we meet here today with twenty chapters.

Thanks to the Alliance for Engineering in Medicine and Biology, I was able to attend several International Conferences in Dresden, East Germany; in London; and two in Canada. National Science Foundation (**NSF**) funding also took me to Egypt for a 5-year program where we set-up an Ultrasound Center at Cairo University with two workshops each year in Cairo and post-workshop critiques in Luxor, Abu Simble, and Aswan; a 2-year program in Yugoslavia in Dubrovnik where the meetings were held in a palace overlooking the island of Locrum where Richard the Lion Hearted was washed ashore during the Crusades. The NSF funding was made possible with the assistance of Gil Devey and Lester Goodman, both of whom I consider among my mentors in Biomedical Engineering. I also provided management, along with AAPM, for the World Congress on Medical Physics and Biomedical Engineering in 1988 in San Antonio with Bob Nerem as Chair.

I was able to meet Alan Carmack, Nobel Laureate for the CAT scan; Alvin Toffler, author of Future Shock; Michael DeBakey, the famous cardiac surgeon; the first bioengineer astronaut; Jarvik with Barney Clark's heart, and Les Geddes.

During my tenure with the Alliance I produced the first newsletter for EMBS and managed their first six meetings with the **ACEMB** before they decided to hold separate meetings. I also provided secretariat services for several Alliance member societies including the Society for Advanced Medical Systems, the Rehabilitation Engineering Society of North America, and the **IEEE-EMBS**.

And finally, NSF also funded the founding of the American Institute for Medical and Biological Engineering (AIMBE). Several workshops brought together the leaders working in biomedical engineering to decide the future of our field. The main focus was to create more funding for BME and AIMBE achieved that goal at the end of Clinton's presidency when he signed the legislation creating the newest institute at the National Institutes of Health—the National Institute of Biomedical Imaging and Bioengineering (NIBIB). The AEMB closed its doors and turned its assets and non-profit status over to AIMBE and I was one of the founders.



I served as Executive Director of the Rehabilitation Engineering Society of North America (now **RESNA**, Rehabilitation Engineering & Assistive Technology Society of North America) for 10 years and during that time we worked in areas such as standing wheelchairs, sip and puff systems for quads, parabikes for paraplegics, and talking computers. The Veterans Administration (VA) provided support along with the National Institute on Disability & Rehabilitation Research (NIDRR).

We helped to write the Americans with Disabilities Act (ADA) and the Technical Assistance Act (TAA) and worked on renovating hotels so they were accessible. I was elected an Honorary Fellow of RESNA At the same time as Senator Tom Harkin who introduced the ADA & TAA legislation.

I also served as Executive Director of the Society for Advanced Medical Systems (**SAMS**) which later merged with the Society for Computer Medicine and subsequently became the American Medical Informatics Association (**AMIA**). SAMS had contracts with the Department of Labor to produce training materials for healthcare assistants for nursing homes. They were also involved with the problem-oriented medical record, artificial intelligence, and telemedicine. I am an Honorary Member of AMIA.

My last position was with the Society of Vascular Technology (**SVT**), now the Society of Vascular Ultrasound (**SVU**). They measure blood flow in veins and arteries and are involved with certification of vascular technologists and accreditation of vascular laboratories. It was at an SVT Board meeting that I discovered I had a tumor in my right kidney and subsequently lost it to cancer. SVT elected me an Honorary Member.

And now to the Biomedical Engineering Society (BMES): I knew Rita Schaffer, the BMES Executive Director, and we corresponded while I was Executive Director of the Alliance for Engineering in Medicine & Biology and I also worked with Kay Lyou, BMES's first director, as well as John Lyman and Fred Weibel, on one of our ACEMB conferences. Eric Guilbeau called me as I was retiring from SVT and said that RITA had died and they wanted to move the BMES office to Washington. The Whitaker Foundation awarded a 5-year grant to expand and grow BMES. In fact, Herb Voigt, our AEMB National President, wrote the Whitaker proposal when he was BMES president-elect, and he has been one of my mentors in BMES, along with Herb Lipowsky and Eric Guilbeau. Paul Hale enabled us to achieve membership in **ABET**, the American Board for Engineering & Technology, to become the lead society for accreditation of U.S. Biomedical Engineering and Bioengineering programs.

*It has been an enlightening journey, a challenge at times, a privilege to have worked with some amazing and talented people, and to have made a small contribution to the success of our biomedical engineering community.*

*I've loved every minute of it.*

*As I said in 1999 at my first BMES meeting,*

*This is my home.*



The original article was published in the 2006 AEMB Newsletter and was delivered by Mrs. Pat Horner at the Third Annual AEMB Luncheon, September 30, 2005

# Patricia I Horner

- A Professional Biography -

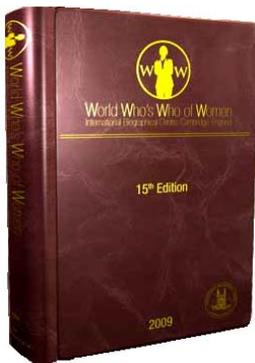
Pat had served as our Executive Director since the early beginnings of Alpha Eta Mu Beta. She has over 35 years experience in association management. The majority of the 35 years has been devoted to professional associations and societies in the biomedical engineering field.

She served as Executive Director of the Alliance for Engineering in Medicine and Biology from its inception in 1968 until the American Institute for Medical and Biological Engineering was founded in 1992.

Previous positions as Executive Director include the following organizations:

- Society for Advanced Medical Systems,
- American Association for Medical Systems & Informatics  
(now the American Medical Informatics Association),
- Society of Prospective Medicine,
- American Association for Continuity of Care,
- Rehabilitation Engineering Society of North America  
(now RESNA, the Association for Assistive Technology),
- Society for Cardiovascular Management,
- Society of Vascular Technology  
(now the Society of Vascular Ultrasound)
- Biomedical Engineering Society (BMES)
- Alpha Eta Mu Beta (AEMB).

In addition, Pat served as the first Conference Director for the Engineering in Medicine and Biology Society of the IEEE, as Conference Coordinator for the second international meeting of the International Society for Artificial Organs, and as conference manager for the 1988 World Congress on Medical Physics and Biomedical Engineering. Her conference management experience is extensive and she has lectured on meeting planning and conference management at Montgomery College.



She served as Project Manager and Project Director on a series of studies performed under grants with the National Science Foundation, the Department of Education, the Department of Labor, and the National Institute for Disability Research.

Pat is a Fellow of RESNA, and an Honorary Member of the American Medical Informatics Association and the Society of Vascular Technology. She received a Distinguished Service Award from the Alliance for Engineering in Medicine and Biology, a Dedicated Service Award from the American Institute for Medical and Biological Engineering, and a certificate for Excellence in Conference Planning from the Engineering in Medicine and Biology Society of the IEEE.

Her professional affiliations include the American Society of Association Executives, American Association of Medical Society Executives, and the Professional Convention Management Association. She holds a certificate in Convention Management from the American Society of Association Executives.

She is listed in the World Who's Who of Women.

# Pat - A Testimonial

BY  
PAUL FAGETTE

*The* Biomedical Engineering Society faced a traumatic crisis when its first Executive Director, Rita Schaffer, passed away in May, 1998. She had single-handedly and ably run the Society since its inception in 1968. Without any preparation or direction, President Herb Lipowsky, President-elect Eric Guilbeau, and Treasurer Fred Weibell stepped in to keep the Society functioning. They succeeded admirably as custodians until Pat Horner assumed the Executive Directorship. Pat's excellent administrative skills derived from her long tenure in the professional biomedical society venue provided a solid foundation and allowed BMES to recover and, importantly, set the stage for the Society to make the move to the next level of service for the community.

Amidst the swirling chaos and a myriad of duties at that time, Pat found time to shepherd in the newly appointed historian for the Society. Nobody seemed quite sure exactly what a historian was to do. As my new duties and role were being determined, Pat gave important support and advice. She was determined that I would have the opportunity to prove my value and worth to the Society. It was up to me after that. Whatever I have achieved it is due to the support of Pat through the years.

Pat has given guided, steady direction to the Society. As the debates about the future of the Society progressed through the 1990s, Pat always provided reference and input based on her years of experience. In another vein, Pat has been dealing with generations of Board members and presidents for more years than she probably wants to recall. Everyone in turn has been initiated, trained, and anointed for Society service. The Society is indebted to her for her leadership and devotion. We simply could not have done it without her.



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**This article was contributed by Paul Fagette who had served as the BMES Historian and is currently the Historian in Residence and Senior Lecturer at the Illinois Institute of Technology.**

# Message from the E-board

This year we would like to develop the character of Alpha Eta Mu Beta. We have a well-developed base of active chapters. In order to increase sustainability and expand our influence, we would like to develop programs specific to Alpha Eta Mu Beta. Standing alongside previously established honor societies, AEMB enters a unique position, as the newest engineering discipline, we can stand at the forefront of interpreting the newest technologies and establishing a code of ethics and issues that we stand by. We would like AEMB to be more than a resume stuffer, however, for this organization to help with the development of biomedical professional and leadership skills, participation of the members is essential. Student development must first start with the student's participation. Some of the issues we need your help are in:

- (1) Initiation ceremonies, share stories of how each chapter initiates members towards a more centralized, unique experience for AEMB
- (2) Sustainability: Since the organization is only open to highly motivated upper classmen, there ensues an inherent knowledge gap each year, and also issues with inducting enough members each year to ensure active chapter status with the university. We have found that the induction of graduate students helps tremendously in bridging the knowledge gap of graduating seniors with newly inducted juniors. Plus, updating chapter information with nationals. We would like to set up an online database to digitize records and update information online.
- (3) Student development activities: Similar to (1), please share your stories with us in order to spread ideas to other chapters and vice-versa. We do this via the student activities form we ask you to fill out each year. You may also submit an article for the newsletter (contact Dominic Nathan).
- (4) Fundraising: Each year we fund 1 or 2 students from each chapter to come to the national AEMB meeting held at BMES the past few years. To enable this, we need fundraising and we would also like to help local chapters with fundraising to fund activities and increase sustainability of the local chapters.
- (5) AEMB National meeting: Over the past years, we have considered hosting the national meeting at various biomedical national meeting locations to expand the view of the students, lending them a unique experience to attend meetings that are not traditionally open to students, such as the International Federation of Medical and Biological Engineering, Dr. Herbert Voigt, past national president of AEMB president, which is held at various international locations and also American Institute for Medical and Biological Engineering, AIMBE, which is held in Washington DC.

To end this discussion on a somber note, we mourn the passing of Pat Horner, our national executive director. She signed the original charter of Alpha Eta Mu Beta. Many of you only know her as the entity that hands out your pins and stoles upon induction, however, she has been a vital part of the organization. After retiring as executive director of BMES several years ago, she gladly came on as our executive director. During her term we have seen a revitalization of AEMB and establishment of our status as a non-profit organization. Her spirit will live on through our memory of her spunk and kindness.

## 2009 AEMB MEETING IN PITTSBURGH

The fall BMES conference is one of the most anticipated annual events by Alpha Eta Mu Beta (AEMB), The National Biomedical Engineering Honor Society. This year the BMES conference was held at the David L. Lawrence Convention Center in Pittsburgh, Pennsylvania. It has been an AEMB tradition to host an ethics session and also the AEMB Annual Grand Meeting during the conference. The Ethics session this year focused upon providing attendees with a framework and tools that will enable the identification of professional ethics and its importance within the Biomedical Engineering field. This is important due to the diverse options that individuals post graduation with a BME degree tend to pursue such as careers in industry, graduate, medical or law school, etc. The key speaker this year was Dr. Rosa Lynn Pinkus, a professor in the department of Medicine and Neurological Surgery and Bioengineering at the Pittsburgh School of Medicine and director of the Consortium Ethics program. The session was very engaging and made good use of case studies to accentuate the application of the ethics identification tools and framework. A digital copy of her presentation is available on the National AEMB website. The ethics session was made possible through the very generous financial support received from the American Association of

Physicists in Medicine (AAPM).

The AEMB luncheon this year was held at Mark's Grille located on Penn Ave, a short walk from the convention center. Over a sumptuous entrée of chicken marsala and Pittsburgh Cheese cake for desert, there were attendees that represented over 20 schools nationwide present at the luncheon. The guest of honor at the luncheon was Dr. George Truskey, President of BMES. This year, the keynote speaker was Ms. Charla Triplett, the president of the BME career Alliance. Ms. Triplett's speech centered upon career opportunities post graduation with a BME degree and was very well received by the audience who consisted of undergraduate and graduate students and also faculty and administrators from various BME departments.



Dr. Rosa Pinkus being presented an Honorarium by the National AEMB president, Dr. Brent Vernon.

The luncheon concluded with the presentation of awards by Dr. Eric Gilbeau, a AEMB Advisory Board member. The award recipients were announced by the national student president, Ms. Melodie Benford and are as follows :

**Most Improved Chapter** - Texas A&M

**Most Active Chapter** - Florida International University

**Patricia I. Horner Outstanding Chapter Advisor Award** –  
Dean C. Jeutter, Marquette University.

**Outstanding Chapter Member** – Ms. Kellene Buchwald,  
Marquette University.

**Outstanding Chapter Activity** - Marquette University

**Best Website** - Texas A&M

**Best Community Service Event** - Florida International University



AEMB National President, Dr. Brent Vernon, AEMB National Student President, Melodie Benford and keynote speaker Charla Triplett

As a way to honor our executive director Mrs. Patricia Horner for her selfless dedication toward the success of the National AEMB organization, The Outstanding Chapter Advisor Award was named after her. The first recipient of this award was Dr. Dean C. Jeutter from Marquette University.

After the presentation of awards, several mini development workshops were held to touch upon the history of AEMB, leadership development and chapter financial management and fundraising. The presenters for each of these mini workshops were Dr. Herb Voigt, Dominic Nathan and Shawn Carey. The goal of these workshops were to bring about a sense of the origin of AEMB, its objectives and also to exchange and present ideas for effective chapter recruitment, management and sustenance.

In addition to the luncheon and ethics session, Alpha Eta Mu Beta increased its efforts this year at the BMES conference and hosted two additional sessions consisting of an orientation session for first-time attendees of the BMES conference and a devices forum for faculty student discussion of medical devices and the roles that biomedical engineers play in their design, testing, manufacturing and use. The orientation session was led by Melodie Benford who thoroughly described the different sections within the BMES conference booklet and also on how to select and attend sessions that are of interest.

The devices session had a panel of 5 faculty members from 3 different institutions and was chaired by Terri Murray. There was an area pertaining to medical devices that was covered ranging from cardiopulmonary research to tissue engineering. Overall the session was a very informative yet informal and allowed students to freely mingle with the faculty panelists.

Overall the 2009 BMES conference was a great experience and AEMB is looking forward to the 2010 BMES conference in Austin, Texas.



Presentation of awards to FIU. From L to R Melodie Benford, Dr. Eric Gilbeau, Alicia Fernandez and Dr. Brent Vernon



Guests waiting patiently for their turn at the lunch buffet



AEMB Devices Session Discussion Forum



AEMB Conference Orientation Session

## A HUGE THANK YOU TO OUR SPONSORS



Alpha Eta Mu Beta is sincerely grateful to the American Association of Physicists in Medicine in particular Dr. Maryellen L. Giger, AAPM president for the generous support of the 2009 Alpha Eta Mu Beta ethics session held during the 2009 BMES conference in Pittsburgh Pennsylvania (October 8<sup>th</sup> – 10<sup>th</sup>). Fruthermore, AEMB is very grateful for the financial support provided for the ethics session, its speaker and the student cochairs.



Alpha Eta Mu Beta would like to thank the BMES administration, in particular Dr. George Truskey, Mr Edward Schilling, Mrs. Deborah Tucker, Mrs. Regina Borkoski and Dr. AJ Almarza who were very instrumental in assisting AEMB with logistics for the AEMB hosted sessions. AEMB is also very grateful to BMES for the 10 registration discounts for AEMB student attendees.

