



Biomedical Engineering Division

Fall 2000

A Message from the Chair

Jack Winters
Marquette University

On behalf of the Biomedical Engineering Division, it is my pleasure to thank Willis Tompkins (University of Wisconsin, Madison), our past Division Chair, for his leadership skills and dedication to biomedical engineering education. Of note is that he also served as Co-President for the very successful World Congress of Medical Physics and Biomedical Engineering, which convened this past July and included a strong track on education. When added to his role in past and emerging BME textbooks, it's quite a contribution.

Our annual meeting in June included six informative, well-attended sessions and a strong turnout for our luncheons and annual banquet. Several photos from the banquet are included in this issue. Enjoy.

I now have the pleasure of addressing what promises to be the most intriguing year in the history of biomedical engineering education. This is a year that finds an unprecedented number of new undergraduate programs being formed, including at many institutions with existing graduate programs. After a 10-year period in which the number of ABET-accredited programs grew at a modest rate (from roughly 18 to

Chair continued on page 4

INSIDE THIS ISSUE

- 1 A Message From the Chair
- 1 ASEE BED Conference Call for Papers
- 2 Whitaker Foundation Educational Summit
- 2 Call for nominations for 2001 Pilkington Award
- 3 2000 Theo C. Pilkington Award Winner
- 3 Photos from ASEE 2000 Conference in St. Louis
- 5 Officers 1999-2000

Call for Papers

ASEE Annual Conference
"Peppers, Papers, Pueblos, and Professors"
Albuquerque, New Mexico
June 24 - June 27, 2001

<http://www.asee.org/conferences/annual2001/>

The Biomedical Engineering Division invites papers for the 2001 ASEE Annual Conference. The Program Committee has identified the following focus topics, however papers on other topics will also be considered:

- Design in the Biomedical Engineering Curriculum.
- Laboratories for Biomedical Engineering Education.
- Integrating Biology and Physiology into the Biomedical Engineering Curricula.
- Curriculum Development in Biomedical Engineering.
- Learning Science and Learning Technology – Their Applications in Biomedical Engineering Education.

Please submit a 200-300 word abstract by November 1, 2000 to the conference [website](#). Authors should direct their submissions to the BIO Division. Abstracts should not be sent directly to the Bio Program Chair.

Abstracts will be judged based on the level of innovation, technical merit, demonstrated outcomes, and relevance to engineering, science and technology education. Authors will be notified of abstract acceptance or rejection in mid-November. Draft manuscripts for full paper submission will be due (electronically) no later than January 8, 2001. Final electronic manuscripts, incorporating reviewer comments, must be submitted to the ASEE website by March 15, 2001 and the ASEE publication fee must be paid in order for the paper to appear in the Annual Conference Proceedings CD-ROM. All presenters are expected to register for and attend the conference.

For more information, contact the BIO Program Chair:
[John D Gassert](#), Milwaukee School of Engineering.

Whitaker Foundation to Host Biomedical Engineering Educational Summit

The Whitaker Foundation will hold a Biomedical Engineering Educational Summit meeting December 7-10 at the Lansdowne Resort in Virginia outside Washington D.C. The purpose of the summit is to help universities design and modify biomedical engineering educational programs to meet future needs.

To provide background information for the meeting, more than 80 institutions have contributed to an extensive database that is now available to anyone on the Internet at summit.whitaker.org. The database contains requirements for undergraduate and graduate degrees in biomedical engineering, with curricula, course lists, syllabi, and detailed course descriptions for required BME courses.

The meeting will be comprised of talks, workshops, and posters. All of these activities will culminate in a meeting report dealing with the future of biomedical engineering education in the United States. The report will focus on educational approaches to biomedical engineering that work and those that are expected to be successful in the future. The goal is not to be prescriptive, but to offer reasoned considerations for future programs.

The summit is being organized on the premise that biomedical engineering curricula should meet the following requirements. These are:

1. A thorough understanding of the life sciences, with the life sciences a critical component of the curriculum.
2. Mastery of advanced engineering tools and approaches.
3. Familiarity with the unique problems of making and interpreting quantitative measurements in living systems.
4. The ability to use modeling techniques as a tool for integrating knowledge.
5. The ability to formulate and solve problems with medical relevance, including the design of devices, systems, and processes to improve human health.

The meeting is intended to provide a forum where biomedical engineering educators motivated by these requirements can develop curriculum for a stimulating intellectual environment that prepares students for their future careers.

The final meeting report will elaborate the intellectual content of curriculum and address the educational process itself. The report will be widely disseminated to universities, industry and other interested groups and be available on the Internet.

Attendance will be by invitation only. The invitation list of 300 includes senior and junior biomedical engineering faculty members involved in developing biomedical engineering educational programs.

Since biomedical engineering educational programs are developing internationally as well as in the United States, the workshops will include members of the international biomedical engineering community.

Input from industry is also considered essential. Invitees from industry will be selected based on their depth of understanding of biomedical engineering and its role in their industry.

The foundation leadership anticipates that the summit meeting may be the start of an ongoing national discussion among biomedical engineering leaders that will continue to enhance the field's curriculum well into the future.

Call for Nominations

The Theo T. Pilkington Outstanding Educator Award is given each year in recognition of exceptional contribution to biomedical engineering education and teaching. Nominations are due by December 1, and should include a cover letter from the nominator that outlines the nominee's contribution, the nominee's CV, and three letters of support (to be collected by the nominator and attached to the nomination materials). The award is presented during the ASEE-BED annual Awards Banquet during the June conference.

Send nominations to Mary Verstraete, Department of Biomedical Engineering, 301-H Olson Research Center, University of Akron, Akron, OH 44325, 330-972-7691, mary@brain.biomed.uakron.edu.



The 2000 Theo C. Pilkington Outstanding Educator Award was awarded to Gerald Miller from Texas A&M University. The presentation was made by BED Awards Chair Ron Fournier (left) at the 2000 ASEE Conference.



ASEE 2000
Conference Dinner,
St. Louis, MO

Above (L-R): Mary Verstraete, Ron Fournier, unidentified, Diane Dalecki.

Below (L-R): Art Overholser, Paul Hale.



Above (L-R): Willis Tompkins, John Enderle, Jack Winters, Gerald Miller.



More conference photos available at [Willis Tompkins' web site](http://www.engr.wisc.edu/bme/faculty/tompkins_willis/ASEEBEDBanquetPhotos-2000.pdf) (http://www.engr.wisc.edu/bme/faculty/tompkins_willis/ASEEBEDBanquetPhotos-2000.pdf).

22), it appears certain that the next 10 year period will culminate in well over 30 (and probably more like 40) ABET-accredited programs. And the strong job market for our bachelor's students has created a new discussion item during Bio/Medical Engineering Council of Chairs and AIMBE Academic Council meetings: setting up mechanisms to enable the 80 graduate programs to have better access to recruiting BME undergraduates, before industry grabs them. Here at Marquette, for instance, the vast majority of our recent graduates with GPAs over 3.8 had accepted jobs in industry well before they graduated. Adding to this are several recurring themes related to programmatic evolution. For instance, biology is commonly referred to as the "science of the 21st century" and biotechnology an economic engine, and many programs have created new courses – or even tracks – to target emerging areas of expected opportunity. Others have dramatically revamped their lower division curriculum. There is a new focus on innovation within the BME classroom, facilitated by the new NSF-sponsored Engineering Research Center (ERC) centered at Vanderbilt University that targets the learning process, and Whitaker's solicitation for proposals targeting distance education and industrial relations. And new textbooks for BME are slowly but surely emerging, as will a set of educational modules that are associated with the ERC.

But the most notable reason for this being a unique year for BME education is, of course, our first-ever Biomedical Engineering Educational Summit, being organized by The Whitaker Foundation (with guidance from its Teaching Materials Editorial Board) and spearheaded by the vision and coordination skills of Jack Linehan. Jack provides a summary of the plan for the Summit within this newsletter, and you are strongly encouraged to visit [Whitaker's web page](#) for more information. Of special note is a byproduct of Summit planning: the Summit's web site includes descriptions, within a structured format, for all of the roughly 80 BME programs in the US and Canada that will be represented at the Summit. Such systematic documentation of BME educational undergraduate and graduate courses and tracks is unprecedented, and quite a resource. This resource is being used by the co-chairs of the various Summit workshops to develop white papers that will be available before the Summit; whether or not you are able to attend the Summit (generally only 2 are allowed per institution), you may want to revisit Whitaker's web site as December approaches.

Within this issue is the call for papers and plan for our 2001 ASEE-BED conference program. Given that this

program is in the able hands of John Gassert (Milwaukee School of Engineering),¹ my primary agenda as Division Chair is to help make the ASEE-BED a 12-month society, and to use the Summit as a tool to make this so. Expect to receive a few emails during January that relate to the Summit. Also expect another issue of this newsletter in a timely fashion early in 2001 that, in addition to disseminating the 2001 ASEE-BED program, will target key outcomes of the Summit and plans for effective follow-up. The latter is critical to the success of the Summit, which is best viewed as a key part of an evolving process rather than an end in itself. One mechanism for helping make this happen is ASEE-BED, and in addition to planned discussion during at least one session during our 2001 annual meeting, this could mean a set of ad hoc working subcommittees, etc. At the AIMBE Academic Council earlier this year, Tom Harris (Vanderbilt), Director of the new ERC, initiated a discussion that set in place a number of subcommittees to address aspects of BME education. It seems to make sense to have ASEE-BED and the AIMBE Academic Council, and perhaps BMES, coordinate continued dialog. While the best mechanism still needs to evolve, at least I'm excited about the possibilities. Hopefully you are too.

¹You might be noticing a trend here ... It seems that the ASEE-BED leadership – past, present and future – is all from the humble state of Wisconsin. And joining Willis Tompkins as Co-President of the recent World Congress was William Hendee (who is the most recent past-president of AIMBE) from the Medical College of Wisconsin and Marquette University...

Newsletter

If you have suggestions or submissions for the ASEE Biomedical Engineering Division newsletter, please submit them to:

Joseph M. Reinhardt
Biomedical Engineering
University of Iowa
Iowa City, IA 52242

319-335-5634
319-335-5631 (FAX)
joe-reinhardt@uiowa.edu

Thanks to everyone who had contributions and suggestions on content for this issue.

ASEE BED 2000–2001 Officers

CHAIR (2001): Jack Winters, Department of Biomedical Eng., Marquette University, P.O. Box 1881, Milwaukee WI 53201-1881, jack.winters@marquette.edu

CHAIR-ELECT and PROGRAM CHAIR (2001): John Gassert, Biomedical Eng. Program, Milwaukee School of Eng., 1025 N. Broadway St., Milwaukee WI 53202-3109, 414-277-7167, fax 414-277-7465, gassert@msoe.edu

PROGRAM CHAIR-ELECT (2002): Gerald Coté, Bioengineering Program, Texas A&M University, 233 Zachary Engineering Center, Mail Stop 3120, College Station TX 77843, fax 409-845-4450, cote@tamu.edu

PROGRAM CHAIR-ELECT (2003): Ron Fournier, Bioengineering Department, University of Toledo, Toledo OH, 419-530-8035, fax 419-530-8076; rfournie@eng.utoledo.edu

VICE-CHAIR, CAREER DEVELOPMENT AND AWARDS: Mary Verstraete, Department of Biomedical Engineering, 301-H Olson Research Center, University of Akron, Akron, Akron OH 44325, 330-972-7691, mary@brain.biomed.uakron.edu

VICE-CHAIR, CURRIC. DEVELOPMENT: Krishnan B. Chandran, Department of Biomedical Engineering, 1402 SC, University of Iowa, Iowa City IA 52242, 319-335-5640, fax 319-335-5631; KBChandran@engineering.uiowa.edu

VICE-CHAIR, PROF. DEVELOPMENT: Wolf W. von Maltzahn, Whitaker Foundation, 1700 North Moore Street, Suite 2200, Rosslyn VA 22209, 703-528-2430, wvm@whitaker.org

SECRETARY-TREASURER: John W. Steadman, Department of Electrical Engineering, University of Wyoming, Box 3295, University Station, Laramie WY 82071, 307-766-2240, jwstead@uwyo.edu

MEMBER-AT-LARGE (TERM ENDS 2001): Robert Peura, Biomedical Engineering, Worcester Polytechnic Institute, 100 Institute Road, Worcester MA 01609-2280, 508-831-5447; fax 508-831-5541, rapeura@wpi.edu

MEMBER-AT-LARGE (Term Ends 2002): Edwin L. Dove, Biomedical Engineering, College of Engineering, University of Iowa, Iowa City IA 52242, 319-335-5635, fax 319-335-5631, Edwin-Dove@uiowa.edu

MEMBER-AT-LARGE (TERM ENDS 2003): Michele Grimm, College of Engineering, Wayne State University, 313-577-8395, fax 313-577-8333, grimm@rb.eng.wayne.edu

NEWSLETTER EDITOR: Joseph Reinhardt, Biomedical Engineering, College of Engineering, University of Iowa, Iowa City IA 52242, 319-335-5634, fax 319-335-5631, Joe-Reinhardt@uiowa.edu

PAST CHAIR & CHAIR OF NOMINATING COMMITTEE: Willis J. Tompkins, Dept. of Biomedical Engineering, 1410 Engineering Drive, Madison WI 53706, 608- 263-1581, fax 608-265-9239, tompkins@enr.wisc.edu

▲

Joseph M. Reinhardt
Newsletter Editor
Biomedical Engineering
University of Iowa
Iowa City, IA 52242

ADDRESS CORRECTION REQUESTED