Letter from the Chair

Dear Biomedical Engineering Alumni and Friends:

In this issue of the newsletter we focus on our history, our future, and a series of special events for Biomedical Engineering that will be held on Friday January 23 and Saturday January 24, 2004. You are all invited to attend any or all of the three special events that we have planned, detailed on the next page.

One of the distinctive features of Tulane’s undergraduate program is the requirement that all students participate in year-long individual research projects (in addition to the team design projects, aimed at designing a device or process to aid a disabled client from the local community).

The year-long research projects now begin in the Spring of the Junior year (the selection of projects having taken place during the Fall of the Junior year), and are completed at the end of the Fall Semester in the Senior year. All students write a full thesis, supervised by their advisor and coordinated by Professor Ronald C. Anderson in his 2-semester course entitled “Research and Professional Practice,” and make an oral presentation of the results in the Spring semester. Last year we began a new tradition of having all of the projects presented during a day-long undergraduate Research Day Conference, and it was a great success. All faculty, current students, and alumni are invited to attend this year’s conference on Saturday, January 24, 2004. The conference proceedings with abstracts will be available at the meeting, and will be posted at http://www.bmen.tulane.edu/research_new/reports/indep_index.html. I hope to see many of you there!

Again, I solicit your assistance as the faculty and students strive to achieve our vision of being a “global leader in biomedical engineering scholarship.” If you have a potential summer internship or other employment opportunity, please e-mail me (rthart@tulane.edu) and I will post it onto our intranet newsgroup, tulane.bmen, for students to see. I’d like to build a robust network of Tulane connections to help our students and alumni.

In order to achieve our vision of excellence, we also need to build upon the financial base – provided by tuition and research – by adding additional support from alumni giving. I am working with the Department’s Board of Advisors in order to increase the level of alumni participation. Not only does this provide needed financial help for the department, but the percentage of alumni participation is one of the measures used by US News and World Report in setting the University’s ranking. The most significant financial help for the department is in the form of targeted contributions to the Department’s endowment, and I ask you to consider such a contribution using the enclosed return envelope. Note that a list of previous contributors to the endowment is on-line at: http://www.bmen.tulane.edu/endowment_fund.html – I’d like to add your names to the list!

I hope you enjoy reading about our efforts and successes, that you will take the opportunity to keep current via the network (websites for the School http://www.eng.tulane.edu and the Department http://www.bmen.tulane.edu have been revamped this Fall) and e-mail, and that you’ll stop by to visit us when you are in town.

Thanks, in advance, for your help and interest in the department – and keep in touch!

Sincerely yours,

Richard T. Hart, Ph.D.
Department Chair

Inside this issue:

Letter from the Chair 1
Faculty Recognition and Awards 1
Invitations and Events, Two Former Deans 2–3
Student Achievements and Recognition 4

Faculty Recognition and Awards:

Professor Kirk J. Bundy has been invited to give a talk at the Inorganic Materials in Medicine session of the Metals in Medicine Gordon Research Conference to be held at Colby College, Maine, June 13–18, 2004. The title of his talk is “Corrosion of Metallic Biomaterials: Measurements and Consequences.”

Professor Kay C. Dee was a Teaching Fellow at the National Effective Teaching Institute, June 2003. The National Effective Teaching Institute is sponsored by the Educational Research and Methods Division of the American Society for Engineering Education. In 2003 it was held in Nashville, TN.

Professor Dee also received the 2003 Tulane Alpha Eta Mu Beta Biomedical Engineering “Teacher of the Year” Award.

Professor David A. Rice was one of 22 companies and individuals named by New Orleans City Business as 2003 Innovator of the Year. Now in its second year, the Innovator the Year recognizes individuals who succeed by operating in new and exciting ways or by creating unique products.

Professor Rice was cited for having students design a variety of devices to help disabled people lead more independent lives.

Professor Natalia Trayanova has been awarded the Astor Visiting Lectureship at Oxford University, U.K.

Professor Trayanova will be expected to give at least one well-publicized lecture and to contribute to college and departmental activities, including teaching and research. She will be at Oxford in June.

Professor Paul L. Nunez, Ph.D., will be retiring from Tulane at the end of June 2004. Paul received his Ph.D. in Engineering Physics from the University of California at San Diego in 1969. He has a record of outstanding achievements in industry and academia, and following service on the faculty in Electrical Engineering and Computer Science at San Diego State University; Paul joined the Tulane faculty in the Department of Biomedical Engineering in 1985. He has served as the Director of the Brain Physics Group, and served on the editorial boards of Brain Topography and Human Brain Mapping, as a referee for a large number of scientific journals, and has received extramural funding from NSF and NIH. In addition to seminal manuscripts in the literature, he is particularly well known for his books Electric Fields of the Brain: The Neurophysics of EEG (1981) and Neocortical Dynamics and Human EEG Rhythms (1995). After retirement Paul plans to continue his collaborative work on brain research with colleagues in California and Australia and complete the second edition of his 1981 book. We are planning for a special seminar for the end of the Spring Semester for Paul to describe his academic career – details about the seminar will be posted on the web once plans have been finalized. If you’d like to join us in wishing him all the best during an active retirement, he may be reached at pnunez@tulane.edu, and I’m sure would be pleased to hear from former students!
You are invited to the Uptown Campus for a series of three special events:

Friday, January 23, 2004 and Saturday, January 24, 2004

Celebrate the School of Engineering
Portraits will be unveiled for former Deans:

Samuel F. Hulbert (1973-1976)
and

Unveiling and Reception:
Friday, January 23 12:30-2:00 PM
Boggs Center, Room 600

Celebrate Biomedical Engineering

BMEN Seniors (class of 2004) will present results of their yearlong independent research projects

Saturday, January 24 9AM-3PM
Coffee at 8:30; Reception at 4:30PM
Room 100 and 110, Business School

Two former Deans of the School of Engineering at Tulane—both legends in their own time—were among the many individuals responsible for establishing Biomedical Engineering at Tulane, and we hope you will be able to join us as their portraits are unveiled in January.

A fascinating history of Biomedical Engineering at Tulane highlighting their contributions was written in 1995 by one of our students, Jennifer Stearns-Drake and is now available on-line (http://bmen.tulane.edu/info/biomedattulane.pdf). The report makes an excellent complement to the School’s Centennial history (1884-1994), written by Professor Robert N. Bruce, Jr., also available at: http://www.eng.tulane.edu/Book/Title/Book_Intro.htm.

You may be surprised to know that the bioengineering story really begins with Dr. Warren Stone—one of the four founding physicians of the medical school in 1834—who was a pioneer in vascular surgery, in part due to his use of biomaterials (in 1859 he used a silver wire for iliac artery ligation, with a resultant decreased incidence in infection).

There were other significant advances in medical technology at Tulane—including advances in microscope design in the 1850’s, and development of artificial respiration with the Matas-Smyth Positive Pressure Pump in 1902. In the mid-1900’s there were several collaborations that pioneered Biomedical Engineering: Professor Jim Cronvich (School of Engineering) and Dr. George Burch (School of Medicine) worked on projects in electrocardiology from 1944-1970’s; Professor Jack Sperry (Electrical Engineering) and Dr. Matthew Bach (School of Medicine) collaborated on research including measurement of blood flow from 1949-69, and in 1952 Dr. Bach taught a course in “Human Engineering” that included topics in electronic applications in medicine, prosthetic design, and feedback theory in nervous system function. Throughout much of the 1960’s and 70’s, Professor John Martinez (Mechanical Engineering) and Dr. Jack Wickstrom (Orthopaedics) studied trauma, with a focus on whiplash.
Both histories vividly demonstrate that there were many individuals – between founding of the medical school in 1834 to the 1977 founding of the Department of Biomedical Engineering – who did research in medical engineering and/or who taught bioengineering content in their courses at Tulane. But it was Samuel F. Hulbert, Dean of Engineering from 1973-1976 and currently the President of Rose-Hulman Institute of Technology, who authorized starting a Program in Biomedical Engineering.

Professor Hulbert’s doctoral degree, earned in 1964 from Alfred University, was in Ceramic Science, and when he joined the faculty of Clemson University he helped develop one of the very early biomedical engineering programs. His specialization was in biomaterials. Just nine years later he was appointed as Dean of Engineering at Tulane (he was only 36 years old), and he immediately developed three new programs at Tulane during his first year here: Engineering Management, Biomedical Engineering, and Computer and Information Systems. He recruited new Heads for Chemical Engineering (Duane Bruley) and Mechanical Engineering (David Witlow), both of whom had biomedical engineering research interests. During this time, several other faculty members with interests in biomedical engineering were also appointed in the Department of Mechanical Engineering, including Jerry Klawitter, who did his doctoral research with Professor Hulbert at Clemson, and Allan Weinstein whom Professor Hulbert had first recruited to Clemson from the University of Pennsylvania. This ‘critical mass’ of expertise in biomaterials was well complemented by existing Mechanical Engineering faculty members with research interests in biomechanics, including Stephen C. Cowin and William C. Van Buskirk.

Rapid progress was achieved in biomedical engineering from 1973-1976, but Dean Hulbert – during his very first faculty meeting – had announced that he would be the Dean of Engineering at Tulane for three years, and that’s exactly what transpired. In 1976 he became, at age 39, President of Rose-Hulman Institute of Technology. He will step down as President, after 28 years there, in June 2004.

His achievements at Tulane, although brief, were essential for establishing biomedical engineering, and he has been quoted as saying that “I don’t know all the secrets of happiness, but I do know that one of the secrets is to know when the good times are occurring and to savor the event.” We are glad to welcome President Hulbert back to Tulane, confident that his visit will be worth savoring!

William C. Van Buskirk received his B.S. from the United States Military Academy at West Point, New York, and his M.S. and Ph.D. in Aeronautical and Astronautical Engineering from Stanford University. He arrived at Tulane in January 1970 with a 9-month appointment as an Instructor in the Department of Orthopaedics. During the busy and productive 28 years that followed, he joined the faculty of the Department of Mechanical Engineering as an Assistant Professor, and in 1974 was promoted to Associate Professor of Mechanical Engineering. 1974 also saw the establishment of a Biomedical Engineering Program, and he served as its Head. In 1977, he became the first Head of the newly created Department of Biomedical Engineering, and was promoted to full professor the following year. He served as Department Head for 14 years, until assuming the role of Dean of the School of Engineering in 1991, a post he held for 7 years, until he became the Provost of the New Jersey Institute of Technology in 1998.

Among his many professional accomplishments, I believe that there are two of which he is most proud. The first must be the success he has achieved in his role as an educator. He embodies the ideal of a university professor, committed to teaching engineering students so that they can gain a fundamental understanding of difficult material. Further, his scholarship of research and discovery has given him and his students the opportunities to apply and broaden their knowledge to help humankind. Second, I know that he is proud of his role in helping to establish and build the Department of Biomedical Engineering at Tulane. The foundation he established by hiring promising young faculty members with fundamental interests both in quality teaching and in the performance of innovative research has allowed the department to prosper. His leadership and example have built a tradition of departmental excellence, and Tulane’s Department of Biomedical Engineering has been well regarded and nationally ranked almost since its inception.

While serving as Dean of the School, he saw dramatic increases in student enrollments and quality, in extramural research conducted by the faculty and graduate students, and in fund raising efforts that led to renovation of facilities, new endowed chairs and a professorship, and a number of new endowed scholarships.

-Richard T. Hart

Please join us to honor both men when their portraits are unveiled in January in the Boggs Center!
BMEN STUDENT ACHIEVEMENTS AND RECOGNITION

Justin A. Guay, Meghana B. Kamath, and Megan M. Mickal have passed the Fundamentals of Engineering exam and are now Engineering Interns.

Joe Olberding (5th year BMEN student, class of ’02 and ’04) has been awarded a Rita Schaffer Award from the national Biomedical Engineering Society (BMES). A nominee from the Tulane BMEN faculty was forwarded to the national society, and Joe has received a certificate and a check. The citation for Joe’s award is “In recognition for outstanding scholastic achievements and service to his department and university, and his devotion to critical, creative, and analytical thinking.”


Recent Presentations by Students


