Letter from the Chair

Welcome to our 2011 “Spring” newsletter! As you notice, we are distributing this edition of our newsletter a bit after the official end of Spring... Yet, we think the delay was well worth the wait as we are able to fill you in on the details about our students and focus on our first graduates from the undergraduate program!

The undergraduate BME program was approved in Autumn 2008 and we immediately admitted 17 members of the inaugural sophomore class, selected based on their academic achievements in high school and their first year in engineering at OSU. We were seeking true pioneers that could work with the faculty, staff, and each other as we unveiled each stage of the curriculum. Each member of the class of 2011 took courses that had been carefully planned as part of a distinctive curriculum, but not taught before. Imagine that -- each BME class they took was being offered for the very first time!

These students took full advantage of the high-quality, unique undergraduate experience that the faculty and staff had planned. They provided constructive feedback to faculty and staff and served as role models for the students entering the program. Each student has found a new path -- including medical school, graduate school, and jobs with industry -- as they complete our program. Our students have participated in winning multidisciplinary design teams (see page 3) with seniors from Mechanical Engineering and graduate students from Occupational Therapy and Physical Therapy. Most importantly, they have been able to help others by imagining, designing, and building devices to improve their lives. By doing so, they embody our mission of integrating engineering and life sciences for the advancement of human health.

Thank you for helping support our continued successes. Gifts targeted to the department can help us achieve our strategic goals, and could include opportunities to endow a named professorship, a named scholarship, or laboratories and facilities. More modest gifts help with our operations and events. (See the “Give to BME” button on our web site at http://bme.osu.edu)

In addition to financial support, I am hoping that the network of OSU alumni and friends continues to help our students find internship and employment opportunities. Please let us know of any opportunities as you find them.

I am always happy to meet with our alumni and friends. Please stop by and visit to get a firsthand look at our progress.

Richard T. Hart, Ph.D.
Edgar C. Hendrickson Professor and Department Chair
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Fellowships Abound for BME Students and Researchers

It has been a fruitful spring for Biomedical Engineering at The Ohio State University! Jacob Bender, Randy (Jimmy) Giedt, and Natalia Higuiga-Castro, all PhD candidates collaborating with faculty in Biomedical Engineering, will each receive an American Heart Association fellowships to support their research projects on MRI assessments of heart valve velocity, atherosclerosis, and the influences of mechanical forces in the lung on microRNAs. Dr. Yan Huang, a post-doctoral researcher collaborating with Dr. Samir Ghadiali, will receive an American Heart Association fellowship to support her work on the role of microRNAs in regulating pulmonary inflammation. PhD candidates James Reinhardt, Kang Wei, and Rachel Zielinski were selected to receive Howard Hughes Medical Institute fellowships to support their research efforts for the next academic year. Rachel Zielinski has also earned a Pelotonia Fellowship to continue her research on stiffness measurements of cancer cells to develop new diagnostic tools for assessing the optimal level of treatment.

Michael Wolfe Selected as 2011 Beckman Scholar

Michael Wolfe, a newly admitted student to the Biomedical Engineering major for the 2011-2012 academic year, has been selected as a 2011 OSU Beckman Scholar. His project, “The molecular mechanism of unique 3’-5’ addition reactions catalyzed by Thg1.” is one of two abstracts selected by the OSU Beckman Scholars Faculty Advisory Committee.

As a Beckman Scholar, Michael will receive $16,000 in support while conducting his own research under the guidance of his faculty mentor Dr. Jane Jackman from the Department of Biochemistry. In addition to full-time research, Michael will also participate in professional development programming and personal mentoring, as part of efforts to cultivate Beckman Scholars into role models for other undergraduate student researchers.
2011 BME Awards

On May 6, the Department of Biomedical Engineering and the Biomedical Engineering Society hosted its first annual BME Awards Picnic to celebrate the past year's accomplishments. Awards were presented to students and faculty members who had shown exemplary commitment to academics, research, service, and teaching.

As part of the ceremony, the seventeen members of the inaugural graduating class were recognized for their contributions through the newly established undergraduate program. As the first students to progress through the curriculum, they provided feedback, both formally in surveys and informally in conversations, that will have a long-lasting impact as the department continues to improve and enhance the program for future students.

In the arena of academic accolades, undergraduates Meagan Bechel and Emily Moore received top academic awards, earning the Senior Outstanding Scholar Award and the Junior Outstanding Scholar Award, respectively. Nominated by Dr. Doug Kniss and Dr. Gunjan Agarwal, Meagan Bechel and Suzanne Tabbaa were both recipients of the Research Achievement Award to recognize their impressive independent research projects.

The final award of the evening was the Herman R. Weed Excellence in Teaching Award. Established in 1996, the award recognizes faculty members who create a remarkable impact on his or her students in the areas of instruction and mentorship of students, qualities which Dr. Weed exhibited during his tenure at Ohio State. This year's award was presented to Dr. Keith Gooch. "There will still be pop quizzes in class," he assured the applauding students in attendance.

Congratulations to all of our winners on a wonderful academic year!

Cory Matyas Named 2011 ACADAOS Outstanding Advisor

On May 18th, Cory Matyas received the 2011 Outstanding Academic Advisor Award from the Academic Advising Association at Ohio State (ACADAOS). Handed out annually, the award recognizes excellence in academic advising by professionals at The Ohio State University as they help undergraduate students achieve academic success.

Cory Matyas, currently the BME Undergraduate Program Coordinator, has worked in the profession of academic advising for over ten years. Her nomination included fourteen letters of support from students, alumni, faculty, and colleagues, all of whom praised her talents, effervescent personality, and enthusiastic dedication to the student experience. One student wrote, "Cory has helped me in ways few people have, and she doesn't do it because it's her job, but because she cares about every student that comes into her office." A faculty member also noted her strong connection with the department's students: "The Parade of students in her office testifies to both her dedication and her availability. Cory is a large part of the success that our program and our students have achieved. She represents the best that the University has to offer."
Building Keys to Unlock Better Lives
2010-2011 Capstone Design

2011 marks the completion of the first year-long capstone design experience within Biomedical Engineering. Fifteen BME seniors collaborated with undergraduates from Mechanical Engineering as well as graduate students within Occupational Therapy and Physical Therapy to work on multidisciplinary teams and design devices to improve the lives of clients with physical challenges. The scope of projects ranged from wheelchairs mobility/transfer attachments, hip therapeutic apparatuses, and communication devices for clients with autism or visual impairments.

Through the three-quarter sequence, students experienced first-hand the engineering design process. Each team researched the needs and background of its assignment, interviewed clients and professionals to gain a wider perspective, designed and built a working prototype, and tested it to determine effectiveness and refinement. "Without exception, the student teams developed a positive connection with the clients," said Dr. Mark Ruegsegger, BME Undergraduate Studies Chair and coordinator of the BME capstone sequence. "The students showed great maturity in working with the clients and have a better appreciation of how engineering can change people’s lives."

After three quarters of design, testing, and redesigning, the hard work of the student paid off. On May 27, teams demonstrated their devices at the 4th Annual Engineering Capstone Design Showcase, which showcases senior design projects from all undergraduate disciplines. Judges from industry read abstracts and viewed informational posters for all of the projects featured at the showcase and selected the top three projects. In Biomedical Engineering’s first appearance, the multidisciplinary BME teams won all three awards:

2011 Engineering Capstone Design Showcase
1st Place: Low Vision Music Aid (Gunter Eickert)
2nd Place: Off-Road Wheelchair (Claire Parker)
3rd Place: Assistive Transfer Device for Adaptive Sports (Fawn Bradshaw, Grant Smucker)

The student project teams have continued to demonstrate their devices around the community. In June, BME hosted the first Rehabilitation Open House, allowing students, faculty, and members of the community to see the results of their design process. Four BME teams also participated in the Honda iDream Student Challenge this summer. This competition program partners Honda with Ohio State to support science and engineering students developing technologies that advance the quality of human life. All four teams either won or placed in their categories, bringing to a close a successful capstone design experience.

Impressive Past and Bright Future for BME Inaugural Class

The Department of Biomedical Engineering is pleased to announce the awarding of degrees to members of the program’s inaugural undergraduate class! This past March, OSU awarded its first three Bachelors of Science in Biomedical Engineering to graduates completing the curriculum a quarter early. On June 12, nine additional students received their degrees from Dr. Richard Hart, Department Chair, and Dr. Mark Ruegsegger, Director of BME Undergraduate Studies, who were in attendance at Spring Commencement.

These talented students and scholars are closing the book on an impressive college career. Collectively, the graduating class participated in internships with companies such as Nationwide Children's Hospital, the OSU Medical Center, Jarden Applied Materials, and the Cleveland Clinic. They took on leadership roles in organizations such as the National Society for Black Engineers, Mortarboard Honorary, Society of Women Engineers, Alpha Omicron Pi, and Engineers for Community Service. They committed their time to volunteering at the James Cancer Research Hospital and Alternative Winter Breaks, participating in Young Life and Leadershape, and serving as mentors for Women in Engineering. Oceans were crossed as students explored different countries and cultures by participating in study abroad programs in England and Ireland. They were even able to fit in a little fun through The Ohio State University Marching Band, science fiction creative writing, and intramural sports teams, ranging from volleyball and swimming to basketball and softball.

The future plans of the inaugural class are wide and varied, including medical school, graduate school, and moving directly into industry with companies such as Philips Healthcare, Genentech, Zimmer and Dow Chemical. One graduate offered this closing thought: "Thanks to all the professors and TAs who were responsible in helping me complete my degree. After passing the FE exam, I realized that the education gained from the BME program successfully prepared me for the majority of the material on that test. It was an honor to be a part of the inaugural class in Biomedical Engineering at Ohio State. It has been a rewarding and life changing experience."

On behalf of the faculty and staff of Biomedical Engineering, congratulations to the inaugural class! We look forward to the many successes of our alumni and the lasting impact you will have on the lives of others. It has been an honor for us to travel with you on your educational journey.
INTRODUCING OUR NEAREST ALUMNI

CLASS OF WINTER 2011
Elaina Christine Graeff, Bellbrook, OH
Eric Stanley Hojnacki, Temperance, MI
Raymond William Ratliff, Fairfield, OH

CLASS OF SPRING 2011
Meagan Amber Bechel, Beavercreek, OH
   Summa Cum Laude
   Honors Research Distinction
Corey Michael Best, Churctown, OH
   Cum Laude
Fawn Yan Bradshaw, Solon, OH
Taylor Nichole Emerson Ey, Charlotte, NC
   Cum Laude
Alexander David Hissong, Centerville, OH
   Cum Laude
Claire Elizabeth Parker, New Albany, OH
Ti’Air Enjoli Riggins, Akron, OH
Grant Smucker, Orrville, OH
Molly B. Sullivan, Mayfield Village, OH

Members of the Spring 2011 graduating class flanked by Prof. Mark Ruegsegger, Director of BME Undergraduate Studies, and Prof. Rich Hart, Chair of the Department of Biomedical Engineering.