Welcome
Welcome again to the Undergraduate Program in Biomedical Engineering at Wayne State. In order to make sure everyone has received all of the details sent out in a myriad of emails this summer, we are sending out one final communication to all new students in a condensed format.

This is an exciting year as we welcome our 3rd cohort of students. The Department has a new chair, Dr. Juri Gelovani, who has just joined the University. We also welcome Prof. Heather Lai as our new Lecturer in BME Design. She will work with Dr. Grimm to continue to develop the leading program in undergraduate biomedical engineering design in the State of Michigan – where students get the opportunity to design systems for actual clients starting in their freshman year.

Please read through the complete Newsletter, even if you think you’ve seen this information before, to make certain that you are ready for classes next week. And as always, if you have any questions, please contact Dr. Grimm or Namrata Murthy for assistance.

New Student Orientation
Program Orientation for new BME students (both freshmen and transfer) and their parents will be held on Tuesday, August 28, at 3:30 pm in the Marvin I Danto Engineering Development Center Auditorium. This is the same day as the University’s New Student Convocation, Meet the Dean events, and Honors Induction – and will take place after all of those activities. New students will have a chance to go over the program requirements, including how to satisfy Honors requirements, meet current students, tour facilities, join BMES, and ask any questions before classes start on Wednesday.

A map of all building locations is available at maps.wayne.edu. Parking for the day will be available at Structure 2, on Anthony Wayne Drive.

Please RSVP (mgrimm@wayne.edu) to confirm your attendance at the BME Orientation and to provide the number of guests that you will be bringing to allow us to plan appropriately.

Schedule of Events
August 28
10 am New Student Convocation
McGregor Conf Center
11:30 am Festi-Fall Picnic
Gullen Mall
1:30 pm Meet the Engineering Dean
Danto EDC
2:30 pm Honors Induction
DeRoy Auditorium
3:30 pm BME Orientation
Danto EDC
REGISTRATION
All students should now be registered for their full fall schedule of classes. The standard set of courses for students is given below. If your transfer or AP credit satisfies some of these requirements, please contact an advisor to discuss best options.

Freshmen (15 cr)
- BE 5995 – New MATLAB course
- BME 1910 – BME Design Lab I
- MAT 2XXX - First Math Course
- CHM 1225/1230 – General Chem w/Lab
- HON 1000 – The City

Transfer into 2nd Year (15 cr)
- BME 2910 – BME Design Lab III
- ME 2410 – Statics
- MAT 2030 or MAT 2150 – Calc III or DiffEq
- CHM 1240 – Organic Chemistry
- ENG 3050 – Technical Communication I

Only students invited by the Honors College will register for HON 1000. Others will have the opportunity to complete their degree with University and College Honors based on later class choices.

Students with AP credit for Chemistry have the option of taking their first Physics course or a General Education course. Please contact an advisor to discuss options.

LAPTOP REQUIREMENTS
Computers have become such an important tool for engineers that they have essentially replaced scientific calculators and (from the previous generation) slide rules. The more an engineering student can easily reach for the various software tools needed to support their design and analysis, the more comfortable they will become with them. This also provides students with even better preparation to enter the world of engineering after graduation.

Because of this, all BME undergraduate students are required to have a laptop computer that they can regularly bring with them to class. Because we work on projects during class time, access to a desktop computer at home or in the PC lab will unfortunately not be sufficient. Either a PC or a Macintosh is acceptable. For a Macintosh, any MacBook capable of running OS 10.6 or higher should do the trick. For a PC, please obtain a computer with the following minimum specifications:

- Processor: 2.4 GHz or higher
- Hard Drive: 500 GB
- Video Card: nVidia only (512 MB GDDR3)
- Internet: Gigabit Ethernet and wireless 802.11 a/g/n
- Recommended: Web Cam and Microphone, 1 TB External USB back-up drive

Software needs and will be discussed in class, but expect to use MS Office, MATLAB, NX (CAD), and EndNote in the first year of the program. Most software will be available using College licenses or with a student discount through the University.
WELCOME TO JURI GELOVANI, NEW DEPARTMENT CHAIR
Dr. Gelovani joined the BME Department as Professor and Chair on August 20. He comes from the University of Texas’ M.D. Anderson Cancer Center in Houston, where he had served as Chairman and Director of the Imaging Center. Dr. Gelovani earned his MD and PhD in Neurosurgery from the University of Tartu in Estonia. His research interests focus on molecular imaging, adoptive immunotherapy, genomics and proteomics for cancer therapy, and drug response/prognosis in breast cancer. His research has been funded by industry as well as the NIH and the Department of Defense. Dr. Gelovani hopes to increase the already strong connections between the College of Engineering and the School of Medicine through the bridge of biomedical engineering.

WELCOME TO HEATHER LAI, BME DESIGN LECTURER
As the undergraduate program has continued to grow over the past two years, the importance of the emphasis on BME Design throughout the curriculum became apparent to the leadership of the Department and of the College. The Department thanks the College for securing funding for a full-time lecturer position in the area of Biomedical Engineering Design to support the undergraduate program. Prof. Heather Lai joins the Department in this role as of August 15. Prof. Lai earned her BS in Mechanical Engineering at Case Western Reserve University and her MS in Mechanical Engineering at the University of Illinois. She worked for 5 years for Motorola on system design and testing. She is currently completing her PhD in Mechanical Engineering at Wayne State, where she has been researching the use of novel piezoelectric materials to generate energy for prosthetics during normal gait. In addition to her scientific research, Prof. Lai has developed a focused interest in the area of engineering education. She has completed a Graduate Certificate in College and University Teaching at Wayne, a Future Faculty Fellowship at Lawrence Tech, and was the recipient of the Wayne State University’s Excellence in Teaching Award for Graduate Students in 2012. Prof. Lai hopes to further strengthen the design laboratory components of the undergraduate curriculum, including the bridges to clients and clinical medicine.

WHO ARE THE CLASS OF 2016
The 30 students who make up the matriculating Class of 2016 are the strongest group joining the program to date. The Classes of 2014 and 2015 have set the bar very high – and it is anticipated that the incoming class will continue to demonstrate high levels of achievement and success. The following provides a brief snapshot of the incoming class:

- Average HS Math/Science gpa: 3.95
- Average Math ACT score: 32.1
- Number of Presidential Scholars: 23
- Number of National Merit Finalists: 2
- Number of Med Start Scholars: 2
- Percentage of Eligible Students with a University-Funded Scholarship: 100%
- Number of AP Credits Earned*: 320
  (*Only credits applying to overall program requirements)
- Number of High Schools Represented: 20
CELEBRATING OUR CURRENT STUDENTS

Paradimensional Engineering Recognized for Innovative Design and Entrepreneurship: This team of Class of 2014 students, Ali Abdallah (Fordson HS), Brandon Heid (Dakota HS), Hajra Khan (V. Massey HS, Ontario), and Nigil Valikodath (Carlson HS), has been recognized for their design of a system to allow an individual with the use of only one arm to independently test his blood glucose levels. The team was a finalist in the 2011 ASME Summer Bioengineering Conference Undergraduate Design Competition, presenting their work amongst a group of senior design teams from across the US. They received $2500 in funds from ASME to develop a prototype and assist with travel to the conference. In addition, the Blackstone LaunchPad awarded the team $600 to jumpstart their entrepreneurial efforts.

BME Design Team Places 2nd in International Design Competition: An additional team of Class of 2014 students, Stan Marek (Walled Lake Western HS), Zahraa Bazzi (American Muslim Academy), and Abrar Wazir (Andover HS), won 2nd place in the 2012 Extreme Redesign 3D Printing Challenge, sponsored by Dimension 3D Printing. This international competition challenges students to submit an innovative product design. The team, which refers to themselves as Bio-Tech Innovations (BTI), developed a simple diabetic testing station for independent blood glucose testing. The team was awarded scholarships from Dimension 3D Printing as well as a prototype of their device using rapid prototyping technology. The 1st place team was from India, the 3rd place team from Sweden.

Rising Sophomore Wins Research Award: Amelia Zelenak (Marian HS), Class of 2015, received 3rd place for her presentation on “Facet Joint Ratios” at the Minimally Invasive Neurosurgical Society Conference, held on Mackinac Island this summer. This work was part of a summer project conducted under the direction of Beaumont Hospital Neurosurgeon, Dr. Mick Perez-Curet.

Biomedical Engineering Students Recognized at Annual Honors Convocation: The 2012 BMES T-shirts refer to the fact that BME students are “Taking Over” at the College of Engineering. The representation of BME students among those recognized at the College’s Honors Convocation support this claim. From the Classes of 2014 and 2015, the following students were acknowledged for their academic achievements:

- Engineering Alumni Association Outstanding Freshman/Sophomore Award: Hajra Khan
- Tau Beta Pi Freshman/Sophomore Scholarships: Hamzeh Omar and Hajra Khan
- Tau Beta Pi (Engineering Honor Society) Inductees: Zahraa Bazzi, Abigail Davidson, Preston Lemanski, and Stanley Marek (Previously Inducted: Amani Alkayyali, Aliya Jawad, and Nigil Valikodath)
- ESFB Community Service Awards: Amani Alkayyali and Nigil Valikodath
- Engineering Scholarships: Ali Abdallah, Amani Alkayyali, Aliya Jawad, Hajra Khan, Tyler May, Hamzeh Omar, Katrina Radzioch, Ryan Scott, and Christina Wong. (NOTE: Presidential Scholars are not normally eligible for College Scholarships. 24 additional members of these classes are recipients of Presidential or National Merit Scholarships.)
- Engineering Dean’s List: 32 out of 40 BME students were named to the Dean’s List for earning a 3.5 or higher term gpa in either the Fall 2011 or Winter 2012 semester, or both.
University and College Governance: BME Students are involved throughout the College of Engineering and the University. Outside of leadership roles within BMES, the following undergraduates hold elected offices on University (Student Senate) or College (Engineering Student Faculty Board - ESFB) councils:

- Maha Fakherdine
  - WSU Student Senate
  - Parliamentarian
  - Engineering Senator

- Karthik Rameseshan
  - WSU Student Senate
  - Senator-at-Large

- Nigil Valikodath
  - ESFB
  - Secretary

- Hamzeh Omar
  - ESFB
  - Treasurer

- Brandon Heid
  - ESFB
  - Web Master

Goals for Incoming BME Students
(See How Many You Can Meet Before May 2013)

- Develop an innovative solution to a real world medical challenge
- Explore opportunities to get involved with research
- Do your best academically
- Get to know your classmates
- Join BMES
- Discover Detroit
- Get involved in the College and the University
- Become comfortable talking to your professors and asking questions
- Prepare to mentor the next class of BME students
- HAVE A GREAT TIME IN COLLEGE!