Lawrence Tech
THEORY AND PRACTICE 1932
Volume 5, Issue 1 Welcome Back

Lawrence Technological University
College of Engineering

Biomedical Engineering News:
October 21, 2014
Welcome Back
Biomedical Engineering Students!

J Notes:
Meet The New Director of Biomedical Engineering

Dr. Gerald L. LeCarpentier

Greetings all. It has been my distinct pleasure to accept the role of BME Program Director as of August 2014. Dr. Elin Jensen has served in this capacity since 2008, and she has continued to mentor me in the operations of the program since I joined LTU. I am truly grateful to her for structuring the program and shaping a very creative and relevant curriculum for BME students. She and the College of Engineering have extended to me a very warm welcome. I offer my thanks. These are exciting times for BMEs. According to the CNN money website figures for 2012 and 2013, BME was ranked the number one "best job" in the US. With the oldest "baby-boomers" in the US now approaching 70 years of age with a life expectancy exceeding 85 years of age, it is natural to assume that BMEs will play a very large part in the fabric of healthcare and quality of life in our aging society. I believe the key to this success is the natural collaborative efforts and multi-disciplinary approach inherent in our BME curriculum.

Our BME faculty and extended faculty offer tremendous expertise in our educational process.
On a personal and introductory note, I grew up in New Orleans, and earned my BS in BME from Tulane University, when BME was not exactly popular. In the midst of my doctoral work at the University of Texas at Austin, I relocated to Michigan where I've held positions in and collaborated with both academic and industrial institutions.
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O'MALLEY FAMILY GENEROUS GIFT

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BME Seniors to make a splash at the Biomedical Engineering Society 2014 Annual Conference

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Coulter College Workshop

Dr. Mansoor Nasir

A team of six biomedical engineering students from Lawrence Technological University finished third among 19 universities and also won the People's Choice Award at the fifth Coulter College workshop for the development of biomedical devices.

Coulter College is a training program for the process of translating biomedical innovations into viable products. Collegiate design teams are guided by faculty and clinical experts through a highly dynamic process that helps them better understand how to identify innovations that can meet clinical needs and then gain financial support for the product development process.

The program was held Aug. 14-17 in Coral Gables, FL, by the Biomedical Engineering Society with support from the Wallace H. Coulter Foundation.

Topics covered at the workshop included intellectual property protection, regulatory strategy, reimbursement codes, and working with technology transfer offices and funding sources.

The workshop gives teams of students the opportunity to experience the entire process of finding an unmet clinical need to formulating a solution and then pitching it in front of venture capitalists.

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Inside this issue

The passing of the baton as Dr. Jensen welcomes our new Director Gerald LeCarpentier. Dr. Elin Jensen (former interim Program Director of BME) returns to her primary position as Dean of Graduate Studies for the College of Engineering.
Congratulations on a job well done Dr. Elin Jensen. The Biomedical Engineering Program wishes you continued success!

Ode to Dr. Elin Jensen

We cannot thank her enough for her diligence, dedication and passion.
She returns to COE Graduate Studies, as was her usual fashion.

Her presence, nothing less than endearing.
She will always be a friend to Biomedical Engineering.

There is not enough room to list her contribution,
So we will simply say, she is a gift to our institution.

Her Leadership and innovation truly set the pace,
Authoring standards of excellence since the year 2008.

She exemplifies *advising savvy, solution mastering, get it done, I shall take the reign and lead,*
Was she a catalyst? Was she effective? Yes in deed.

BME, the first Baccalaureate Biomedical Engineering program in Michigan,
Has truly benefited and flourished under the guidance of this academician.

J Notes:
Meet The New Director of Biomedical Engineering

Dr. Gerald L. LeCarpentier

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My experiences include finite element modeling, ergonomics and motion analysis, laser-tissue interactions, electrophysiology and implantable devices, and various multi-modality medical imaging analyses and device development. I believe these experiences complement our BME faculty well, and I look forward to our continued collaborative efforts.

I have had the pleasure to meet a number of you face-to-face, and I look forward to our future encounters. To the newcomers, I extend the warm welcome that was given to me. To the "old-timers," I'm glad I have the chance to work with you during your final phase in the program. My door is always open (well -- almost always).
I will be accompanying the LTU cohort to San Antonio for the BMES conference (see Dr. Meyer's article). This is a tremendous opportunity for students of all levels to participate in contributing to the BME culture. I encourage each student and faculty to be engaged in BMES.

In the next semester, I am happy to join the BME faculty in teaching core and elective BME courses. In the Spring semester, I will meet many of you in the "Introduction to Biomedical Engineering" course and hope to see a number of you in the 5000 level BME special topics course which will integrate computer fundamentals, signal processing, and device interfacing.

Looking forward, we will be rolling out our Master's Program in BME in the Fall of 2015. I am hopeful that some of you will consider it. For current BME students, with the appropriate course selection now, it will be doable in 1.5 years or so. We'll be posting more on the MS program soon, and all of our faculty will be happy to engage in this conversation.
Again, I'm looking forward to meeting each of you in the near future.

JLeC

"Be Engaged in BMES"

Gerald L. LeCarpentier

Biomedical Engineering Society.

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BME Seniors to make a splash at the Biomedical Engineering Society 2014 Annual Conference

Dr. Eric Meyer

Five LTU students are headed to San Antonio, Texas for the Biomedical Engineering Society (BMES) 2014 Annual Conference, October 22-25. This is a great opportunity to learn from the top professionals, see the most advanced biomedical engineering developments, and to network with colleagues and companies from around the world. Best of all, the students will also be presenting their own work during the conference. Last spring, two BME Senior Projects groups decided to go above and beyond the academic requirements for the class and submitted extended abstracts of their work to the Undergraduate Student Poster Competition. Both submissions were accepted for poster presentations on Thursday, October 23, 2014.
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Phone: (248) 204-2600
http://www.ltu.edu/engineering/biomed.asp

Coulter College Workshop

Dr. Mansoor Nasir

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Representing Lawrence Tech at the Coulter College competition in Florida were (L-R) LTU faculty advisor Mansoor Nasir, Danielle Manley, Akram AlSamarae, Kaitlyn Tingley, Mateusz Koper, Amanda Bukhtia, and Stephen Krammin. At right is faculty advisor Molly McClelland, an assistant professor at the University of Detroit Mercy.

The workshop gives teams of students the opportunity to experience the entire process of finding an unmet clinical need to formulating a solution and then pitching it in front of venture capitalists.

The Coulter College workshop was attended by a number of major American universities, including Syracuse, Columbia, Georgia Tech, the University of North Carolina at Chapel Hill, and the University of Illinois at Champaign-Urbana, which took first place in the competition.

This was LTU students' first year at the competition, but they had a head start thanks to LTU's entrepreneurial engineering education made possible by grants from the Kern Family Foundation through the Kern Entrepreneurship Education Network. They were better prepared for brainstorming new ideas because problem-based learning and active and collaborative learning methodologies have been incorporated into many courses in the engineering curriculum, according to faculty advisor Dr. Mansoor Nasir.

The teams were given advance assignments and were asked to identify three unmet medical needs. LTU's team toured an acute care unit for the elderly at Beaumont Hospital in Royal Oak and interviewed medical practitioners about what would make their work easier.

Subsequent market research revealed that the original idea the students were planning to present, a walking aid device for low light conditions, was not unique. So they modified their idea during the workshop to a device to provide walking assistance to patients with Parkinson's disease.

"At a critical time in the competition the team decided to mold a different 'needs statement' while battling [against] time," "said team member Amanda Bukhtia, a senior in Biomedical Engineering .

We ultimately found a need that every group member was confident [in] and passionate about pursuing."

The team is not publicizing the exact details because some members may pursue the idea as a senior project and may ultimately apply for a patent. "I am proud of the students. Their idea was elegant and the presentation was clear, confident and articulate." Nasir said. "Competition aside, I think the experience the students got through Coulter College will really help them during their senior projects and their professional careers."

Biomedical Engineering Society News

Dear BME Students,
I hope your semester is going well. The BMES organization has planned a few great events for this semester. We offer several ways to get involved with networking, learning, and volunteering. Here is an overview of past and current events for the 2014-2015 school year.

BMES Barbecue - held Thursday, September 4th
11:30am - 1:30pm
The BMES officers provided a meet and greet for the newly appointed officers and other BME students. BME students of all classes were able to introduce and interact with each other while enjoying a free lunch.

MichBio Conference Wednesday, October 1st
9:30am – 12:00pm
This conference is a great resource for students that gives you access to the largest gathering of bioscience professionals in Michigan.

World Medical Relief – Saturday, October 18th 8:45am – 11:30am
This is a volunteer opportunity where your efforts can have a global impact. Students will help technician and engineer volunteers get medical equipment in working order so it can be shipped to third world countries needing aid.

BMES Career Fair – Friday, November 7th 8:00am – 5:30pm
The BMES Midwest Career Conference is geared toward upperclassmen interested in future career opportunities within the industry.

BMES meetings are also held every 4 to 6 weeks discussing events and looking for participants. To Join, go to: **BMES.org**

"Friend" BMES LTU on Facebook:

https://www.facebook.com/bmes.ltu?fref=ts

We hope you can take advantage of these upcoming event! Please feel free to contact us for more information.
Sincerely,

Patty Nahas
Biomedical Engineering Society President
Lawrence Technological University

Contact info:
Patty: pnahas@ltu.edu

Kevin: kmozurkew@ltu.edu

Kaitlyn: ktingley@ltu.edu

Muntha: missa1@ltu.edu

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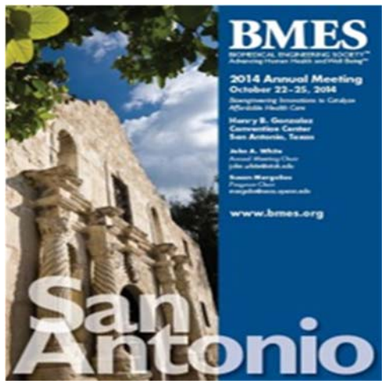


Dan Greenshields, Rachael Porter, and Justin Killewald, who worked with BME faculty advisor Dr. Meyer, will present their project "Novel Design of an Anterior Cruciate Ligament for an Injury Prevention Brace" in the Orthopaedic and Rehabilitation Engineering session for Technology, Computer Interfaces and Wearable Devices. In addition to being accepted for the conference, their extended abstract also won an Undergraduate Student Award that included a cash prize and free registration for the conference!

Akram Alsamarae and Lindsay Petku who worked with BME faculty advisor Dr. Nasir, will present their project "Gait Analysis for Early Fall Prevention" in the session for Clinical, Rehabilitation and Sports Biomechanics. In addition, Lindsay Petku submitted a second abstract during the summer that was based on an Undergraduate Research project she completed in the Experimental Biomechanics Laboratory with Dr. Meyer and a clinical dentist, Dr. John Knapp. This abstract titled, "Finite Element Analysis Comparison of Two Types of Removable Partial Denture Designs" will be presented as a poster in the Device Technologies and Biomedical Robotics session on Saturday, October 25, 2014.

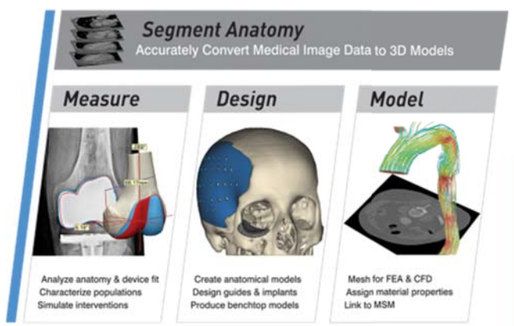
This is the second year in a row that multiple groups from the BME Senior Projects class have submitted abstracts and presented posters of their work at biomedical engineering conferences. The BME Department and College of Engineering express their congratulations to all these students for their great work and effort, and have agreed to provide support for their travel and registration costs to attend the conference. Thank You!

O'Malley family's gift is put to use supporting technology and research for BME students

Dr. Eric Meyer

Two new projects were recently made possible by a generous alumni gift from the O'Malley family to the BME Department at LTU. The intention of the gift was to provide new opportunities for undergraduate students, especially women in biomedical engineering.

The first part of the funds was used this summer to expand the simulation capabilities in BME and for the whole University with particular focus on processing and editing anatomical data from CT and MRI scans for use in CAD, FEM and 3D printing. The software program, MIMICS® is familiar to many BME students through their ongoing use of the Student Edition in a variety of courses. LTU now has a site license for the entire Mimics® Innovation Suite so that custom projects can be completed by students in classes like BME Senior Projects and for research projects with LTU professors.



http://biomedeng.ltu.edu/

Please remember that the BME BLOG is working to inform you. Engage, be apart of the contribution. Visit your BME Blog often.

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