Announcements

Call for Presentation - IEM Annual Conference and Retreat

September 21, 2015
McNamara Alumni Center
Minneapolis, MN
Cost: Free

This year’s Institute for Engineering in Medicine (IEM) Annual Conference and Retreat will take place on September 21, 2015 from 8:00 AM – 5:30 PM at the McNamara Alumni Center on the University of Minnesota’s Twin Cities Campus. The event will open with plenary keynote talks by nationally recognized leaders in biomedical technology research and policy, followed by lunch. In the afternoon there will be breakout sessions for IEM faculty members and industrial colleagues to discuss opportunities for research collaborations relating to Cardiovascular Engineering, Neuroengineering, Cellular and Molecular Bioengineering, Medical and Biological Imaging, and Medical Devices. From mid-afternoon, a poster/networking session will be held highlighting IEM faculty members’ research, to be presented by faculty and their students/postdocs. The retreat and conference will offer rich opportunities to develop collaborations and how to responsively apply for IEM seed grants. New this year, the 2015 IEM Industrial Fellows will be inducted during the morning plenary session.

The confirmed keynote speakers for the IEM Annual Conference and Retreat include:

Ravi V. Bellamkonda, Ph.D.
Wallace H Coulter Professor & Chair
Wallace H Coulter Department of Biomedical Engineering
Georgia Institute of Technology and Emory School of Medicine
President, American Institute of Medical and Biological Engineering

William J. Heetderks, Ph.D.
Director, Extramural Science Programs
National Institute of Biomedical Imaging and Bioengineering
National Institutes of Health
Breaking Out Oral Session:
IEM faculty members / industrial colleagues are invited to give a 3 min presentation on one of the break-out oral sessions on Cardiovascular Engineering, Neuroengineering, Cellular and Molecular Bioengineering, Medical and Biological Imaging, and Medical Devices. The intent of such short oral presentation is to present the R & D program of the presenters facilitating building collaborations using one slide. E-mail to iem@umn.edu ASAP by August 31, 2015 to secure your space for presentation with subject heading of “IEM Conference/Retreat Presentation” and indicate your preference of session in which you would like to present.

Poster Session:
From mid-afternoon, there will be a poster/networking session highlighting IEM research as well as other University faculty and their lab groups. An award of $300 for 1st place, $200 for 2nd place, and $100 for 3rd place will be presented to the top student poster presentations in each of the five IEM research themes: Cardiovascular Engineering, Neuroengineering, Cellular and Molecular Bioengineering, Medical and Biological Imaging, and Medical Devices. The second category for post-doc researchers with a $300 1st, $200 2nd, and $100 3rd place will be awarded for top presentations across themes at the conference. There will be 18 poster awards!

In order to secure a spot in this year’s program, we ask you to submit your intent to participate by Midnight, Monday August 17, 2015. In addition, this year IEM will print your poster free of charge if we receive a PDF of your presentation by August 31, 2015. Details on PDF submission will be sent at a later date.

IEM Conference and Retreat | Registration | Poster Session Registration

News

Victor Barocas Named College of Science & Engineering Distinguished Professor
Dr. Victor Barocas, Professor of Biomedical Engineering, and IEM Member, was named a College of Science and Engineering Distinguished Professor, which honors an outstanding faculty member for his or her, “Efforts in and contributions to teaching and scholarly research, and for their genuine commitment to the College of Science and Engineering and its activities.” Speaking about his distinction, Dr. Barocas said, “The award is a great honor, and it’s particularly gratifying because the U and CSE have been such a vital part of my education and career over the years.” Included with this recognition is a one-time award of $15,000 to be used for professional development or research. College of Science & Engineering Distinguished Professorships
Paul Iaizzo and John Bischof Receive Minnesota Partnership Grant for Collaboration with Mayo Clinic

Dr. Paul A. Iaizzo, Professor of Surgery, IEM Associate Director for Education and Outreach, and Director of the Visible Heart Laboratory, and Dr. John C. Bischof, Professor of Mechanical Engineering and Biomedical Engineering, and IEM Associate Director for Development, recently received a grant from the Minnesota Partnership for Biotechnology and Medical Genomics focused on “Electroporation for Selective, Non-thermal, Reversible and Irreversible Tissue Ablation.” The primary goal of this collaboration is to investigate and apply refined electroporation protocols to selectively ablate tissues, while at the same time, minimizing undesired destruction or collateral damage to associated tissues. Dr. Iaizzo will oversee in vitro tissue dose titration experiments, and Dr. Bischof will perform cellular and ex vivo tissue assessments to determine the highest-possible efficacy of non-thermal ablation in cardiovascular systems. As an outcome of this work, the findings will then be leveraged into new clinical approaches with collaborators at the Mayo Clinic. Minnesota Partnership Announces Scientific Infrastructure Awards

IEM Members Featured for their Precision Treatment of Movement Disorders, Including Parkinson’s Tremors

Multiple IEM Members were featured in the July 15th issue of the University of Minnesota’s Discover publication for their interdisciplinary work in Deep Brain Stimulation (DBS) to more precisely treat patients with movement disorders, including tremors associated with Parkinson’s disease. Featured in the article were Drs. Jerrold Vitek, Professor and Chair of the Department of Neurology; Kenneth Baker, Assistant Professor of Neurology; Noam Harel, Associate Professor of Radiology and Neurosurgery; Matthew Johnson, Assistant Professor of Biomedical Engineering; and Timothy Church, Professor of Environmental Health Sciences. The team takes a multidisciplinary approach to map electrical signals of neurons and use MR and CT imaging. Efforts are being made to increase this precision with a new type of DBS lead, which would allow for a more-controlled delivery of electrical current to a patients’ brain than it is possible with existing leads. Discover: Taming Tremors

New Smithsonian Exhibit Features Minnesota’s “Medical Alley”

The Smithsonian’s National Museum of American History is prominently featuring the heritage of Minnesota’s medical technology community in its new “Places of Invention” exhibit that opened on July 1st. As reported in the Star Tribune, the “Medical Alley” section focuses on the community’s beginnings in the 1950’s with the risky, innovative pursuits of University of Minnesota surgeon Dr. C. Walton Lillehei, and eventual Medtronic founder Earl Bakken. Those beginnings, which were the result of strong collaborations between the University of Minnesota and industry, have since evolved into a community of “more than 500 small and large businesses and more than 36,000 employees.” The Smithsonian sought to highlight technology clusters that have a compelling story of innovation, sense of community and “critical mass of people and resources and ideas.” “Medical Alley’s” importance to our nation’s innovative heritage is made clear by its placement next to a section highlighting Silicon Valley. Medical Technology Heritage Featured at Smithsonian

University’s Medical School Utilizing 3-D Printing to Produce Models of Body Parts for the Training of Students

As reported by the Star Tribune, the University of Minnesota’s Medical School is using 3-D printers from Twin Cities-based Stratasys to make 3-D models of human body parts to train medical students, part of an increasing application of 3-D printing in medicine. IEM Member Dr. Robert M. Sweet, Associate Professor of Urology and Director of the university’s Center for Research in Education and Simulation Technologies (CREST), is using 3-D printouts of kidneys to train students at the University of Minnesota and other
institutions, including hospitals, nursing schools and military medical training facilities. In addition to producing models of organs, the printers are used to replicate a patient’s specific anatomy in preparation for surgery.

The Department of Defense has partnered with the University of Minnesota and Stratasys to produce realistic head, tongue and trachea models in which the 3-D-printed body parts are further enhanced with silicone molds, hand-painting and water sealants, making them more realistic for the training of Army physicians and first responders. The tracheas, in particular, are realistic enough to be sold on the open market. More recently, the Defense Department has partnered with the university and Stratasys to produce a “modular manikin” for surgical training. Stratasys 3-D Printers Ramp Up Health Care Applications

**Andrew Grande Discusses Need for a Greater Percentage of Minnesota Stroke Patients to Receive Recommended Treatment**

In a recent Star Tribune article, Dr. Andrew W. Grande, Assistant Professor of Neurosurgery and IEM Member, discusses the need to increase the percentage of stroke patients receiving recommended treatment in Minnesota beyond its current level of 4%. Dr. Grande says that key factors in improving this figure are for patients to learn about the symptoms of a stroke, and then to seek immediate treatment at a hospital. That treatment, which has been primarily in the form of IV medications, will now include more medical devices that mechanically remove blood clots from patients experiencing acute severe strokes. So far, two devices have been approved for treatment of this condition in the U.S., one manufactured by Medtronic, and the other by Stryker. Early intervention is required, as current devices need to be used within several hours of the onset of symptoms.