Bin He Elected Chair-Elect of International Academy of Medical and Biological Engineering

Dr. Bin He, IEM director, Distinguished McKnight University Professor of Biomedical Engineering and Medtronic-Bakken Endowed Chair for Engineering in Medicine, was recently elected as the Chair-elect of the International Academy of Medical and Biological Engineering (IAMBE) for 2015-2018. IAMBE consists currently of 119 fellows worldwide including 26 members of national academies. The Academy fellowship represents significant recognition of an individual’s original scientific contributions to and leadership in the field of medical and biological engineering. The Academy is affiliated with the International Federation of Medical and Biological Engineering (IFMBE), the umbrella organization of all national societies of biomedical engineering consisting of over 120,000 members worldwide. Dr. Bob Nerem, the Institute Professor Emeritus at Georgia Tech and member of National Academy of Engineering, is the founding Chair of the Academy. Dr. Roger Kamm, Cecil and Ida Green Professor of Biological and Mechanical Engineering at MIT and member of the Institute of Medicine, is the Past Chair.

International Academy of Medical and Biological Engineering; About IAMBE

Scoliosis Research Society Returns Home & David Polly to Take the Helm

Dr. David W. Polly, Jr., M.D., Professor and Chief of Spine Surgery, and IEM Member, is President-Elect of the Scoliosis Research Society (SRS). Dr. Polly says that Minnesota has “led the way” in making dramatic advancements in treating this condition during much of the society’s 50 years of existence, especially in spinal instrumentation and surgical techniques that have led to much faster recovery times for patients. The SRS, which includes more than 1,200 of the world’s leading spine surgeons, funds a variety of research grants and offers educational opportunities through its conferences, hands-on courses, worldwide courses and e-text. It will be holding its 50th Annual meeting in Minneapolis from September 30 - October 3, 2015. Minneapolis has had an historic relationship with the SRS, hosting its first two annual meetings in 1966 and 1967, and the 25th Annual meeting in 1991. More of the society’s presidents, throughout its history, have had Minnesota roots than from anywhere else.

American Academy of Orthopaedic Surgeons
Scoliosis Research Society 50th Annual Meeting
Jeff McCullough Appointed to Chair of Advisory Council on Blood Stem Cell Transplantation

Dr. J. Jeffrey McCullough, Professor of Laboratory Medicine and Pathology, American Red Cross Professor of Transfusion Medicine, and IEM Member, has been appointed Chair of the U.S. Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA) Advisory Council on Blood Stem Cell Transplantation. Through this appointment, Dr. McCullough will lead the council, which advises the Secretary of HHS on matters regarding blood and stem cell transplantation. Dr. McCullough’s role in founding the National Marrow Donor Program and experience in Stem Cell Transplant program activities, and in blood and marrow stem cell processing gained at the University of Minnesota, adds to his expertise and ability to serve effectively as the Chair of this Committee.

HHS Advisory Council on Blood Stem Cell Transplantation (ACBSCT)

Art Erdman Delivers Keynote at Medtronic Modeling Symposium

Dr. Art Erdman, Director of IEM affiliated Medical Devices Center and Professor of Mechanical Engineering, delivered a Keynote presentation, “Generating an ‘Optimal Solution’ Including Device/Tissue Interaction via Modeling and Simulation,” at the Medtronic Modeling Symposium on June 3, 2015, held on the company’s Mounds View campus. The theme for the conference was “When Modeling Becomes Essential.” The Medical Devices Center, under Dr. Erdman’s leadership, has collaborated with Dr. Dan Keefe’s team in Computer Science and Engineering to develop a virtual prototyping system “The Coffey Table,” one of which is located at the Medtronic Mounds View facility.

Ann Van de Winckel Receives Medical School/UMF Faculty Award

Dr. Ann Van de Winckel, PhD, PT, and IEM Member, received a Medical School/UMF Faculty Equipment Award to support her project, “Integrated Motion Analysis and Biofeedback System for Upper Extremity Performance.” The equipment will allow for more precise measurements to assess a patient’s motor recovery following stroke. The equipment’s software will provide real-time feedback to help stroke patients improve how they move their arms and hands in space. Dr. Van de Winckel’s primary research objectives include defining the involvement and neural mechanisms of proprioception (body awareness) and neuroplasticity in sensorimotor recovery in stroke patients through brain imaging, neurorehabilitation, and clinical assessments. Dr. Van de Winckel is seeking to translate these research findings to therapeutic interventions aimed at sensorimotor recovery.

Teresa Kimberley Receives Grant to Test a Device for Improving Arm Function Following Stroke

Dr. Teresa Jacobson Kimberley, Ph.D., PT, and IEM Member, received a grant from MicroTransponder to participate in a clinical trial to test their new Vivistim System — a neuromodulation device for treatment of hemiparesis secondary to stroke. The treatment involves pairing vagus nerve stimulation with rehabilitation to improve arm function after ischemic stroke. Dr. Stephen Haines, M.D., Professor and Chair, Department of Neurosurgery, and IEM Member, will serve as a surgeon on the project. The University of Minnesota is one of three sites in the U.S. to conduct this investigation.

VNS Stroke Trial; About the Study

Clinical Trial Results Announced for Sleeping Beauty System

On June 21, 2015, results were announced of a clinical drug trial made with the gene-transfer method “Sleeping Beauty System” developed by the University of Minnesota’s Dr. Perry Hackett, Ph.D., Professor of Genetics, Cell Biology and Development, and IEM Member. In the trial, half of the 16 patients treated with the cancer-killing CAR-T drug following bone-marrow transplant survived. The promise of this...
technology led to an investment earlier this year by drug company Merck of nearly $1 Billion, in addition to royalties. The Sleeping Beauty system, which is based on a transposon gene, is thought to be advantageous compared to other, virus-based methods of making CAR-T drugs, which can be more prone to mutations in the host DNA. As a result, the Sleeping Beauty system may be a faster, less expensive and potentially safer production method.

StarTribune - U technology is key to potent drug to treat blood cancer

Wei-Shou Hu among Minnesota Futures Grant Recipients
Dr. Wei-Shou Hu, Ph.D., Professor of Chemical Engineering & Materials Science, and IEM Member, was among four investigators who received a Minnesota Futures Grant for “Glycoengineering of therapeutic biologics by systems design and combinational synthesis.” Their research will utilize genome engineering, synthetic biology and systems biotechnology, and seeks to ensure that drugs made with materials obtained from living human or animal cells meet quality standards. Achieving these standards can be a challenge because current methods for reproducing the cells in a lab can lead to the unwanted altering of the cells’ genetic material and structure, resulting in drugs which don’t meet production standards.

Minnesota Futures awards aim to boost human health

Announcements

Save the Date! IEM Annual Conference and Retreat
September 21, 2015
McNamara Alumni Center
Minneapolis, MN
Cost: Free

This year’s Institute for Engineering in Medicine (IEM) Conference and Retreat will be taking place on September 21, 2015 from 8:30 AM - 6:00 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, followed by lunch. In the afternoon, breakout sessions will be taking place for IEM faculty members (or other interested parties including industrial colleagues) to discuss research collaborations opportunities relating to Cardiovascular Engineering, Neuroengineering, Cellular and Molecular Bioengineering, Medical and Biological Imaging, and Medical Devices. From mid-afternoon, there will be a poster/networking session highlighting research of IEM faculty members and their groups included in the program. The retreat and conference shall offer rich opportunities to develop collaborations, and also learn more about how to responsively apply for IEM seed grants. New this year, a group of IEM Industrial Fellows will be announced in 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
Grace Jinliu Wang, Ph.D.
Deputy Assistant Director for Engineering
National Science Foundation

K. Dane Wittrup, Ph.D.
C.P. Dubbs Professor
Chemical Engineering & Biological Engineering
Associate Director, Koch Institute for Integrative Cancer Research
Massachusetts Institute of Technology
Member, National Academy of Engineering

POSTER SESSION:
From mid-afternoon, there will be a poster/networking session highlighting research of IEM and 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 top student poster presentations in each of the five IEM research themes: Cardiovascular Engineering, Neuroengineering, Cellular and Molecular Bioengineering, Medical and Biological Imaging, or Medical Devices. A second category for post-doc researchers will be made available, with a $300 1st, $200 2nd, and $100 3rd place award for top presentations across themes at the conference. So up to 18 poster awards! Plan to present your best work.

In order to secure a spot in this year’s program, we ask you 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