News

Registration Filling Rapidly for Minnesota Neuromodulation Symposium
Registration for the 4th Annual Minnesota Neuromodulation Symposium is rapidly approaching its limit. The event is free to University of Minnesota faculty, staff and students, but registration, at the link below, is required for attendance. This internationally-known symposium will be held April 14th and 15th at the Commons Hotel on campus and feature leaders in neuromodulation from academia, industry and government, and a highly-diverse group of more than 100 presenters representing 37 different institutions, 18 non-profit organizations, 10 companies, and 12 countries.

Registration for Minnesota Neuromodulation Symposium
Minnesota Neuromodulation Symposium Scientific Program

Kelvin Lim Discusses Traumatic Brain Injury’s Psychological Impacts and Treatment Strategies
IEM Executive Committee Member Dr. Kelvin O. Lim, Professor and Vice Chair for Research of the Department of Psychiatry, discusses in MinnPost the long-term psychological impact of traumatic brain injury (TBI) and new treatment strategies to address it. TBI, which is often the result of car accidents or combat, can lead to behavioral changes and depression as connections between neurons are damaged, disrupted or disconnected. One of the treatment strategies being explored by Dr. Lim is the mapping of brain-circuit abnormalities and determining whether those can be addressed with transcranial magnetic stimulation (TMS), which will be investigated in a new study conducted at the VA. The effectiveness of TMS and other stimulation techniques to treat TBI is “of great interest to us here at the university,” says Dr. Lim. - Psychological Impact of Brain Injury can be Long-Lasting

FDA Releases New Guidance for Neurological Devices
On March 4th, the FDA released draft guidance on considerations for “Medical devices intended to slow, stop, or reverse the effects of neurological disease face challenges with regard to collecting safety and efficacy data in a clinical study, when less invasive pharmacotherapy approaches may be better understood or more-well accepted in the clinical community.” As reported by the Regulatory Affairs Professionals Society, the guidance can apply to devices that treat the progression of neurological diseases, such as Parkinson’s, Alzheimer’s and primary dystonia. The agency’s statement says that “study designs should aim to distinguish between symptomatic benefit(s) and disease-altering benefit(s) that slow disease progression and quantify the magnitude of such benefits in terms of biomarkers and clinical outcome assessments.”
Neurological Device Trials: FDA Offers Draft Guidance | FDA Announcement on Neurological Devices

Richard James Proposes Using Twisted X-Rays for Structure Determination
IEM Member Dr. Richard D. James, Professor of Aerospace Engineering and Mechanics, and his colleagues have discovered that twisted X-rays could be used as a better method of performing X-ray crystallography in materials science and biology research. As reported by the International Union of Crystallography,
twisted X-rays could better define yet-unknown helical structures than traditional approaches as many of these structures “do not readily crystallize as three-dimensional periodic structures,” and the process of crystallization can alter materials. The twisted X-rays could overcome these limitations by “matching the symmetry of the incoming radiation to the symmetry of the structure to be studied.” Dr. James says that he and his students are now investigating how to build a source for twisted X-rays, which is challenging because the ability to manipulate X-rays is limited.

Twisted X Rays Unravel the complexity of Helical Structures

Andrew Grande Treats Painful Nerve Condition with Surgery
IEM Member Dr. Andrew W. Grande, Assistant Professor, Neurosurgery and Co-director of the University of Minnesota’s Earl Grande Stroke and Stem Cell Laboratory, performs a surgical procedure to address Trigeminal Neuralgia (TN), a very painful nerve condition. While most of the approximately 150,000 patients diagnosed with TN each year in the U.S. can be treated with medication, some require brain surgery to relieve the pain. One such patient is a mother of four from Hudson, Wisconsin, who’s experience with the condition and successful surgery by Dr. Grande are profiled in the *Hudson Star-Observer*. The surgical procedure, called microvascular decompression, relieves pressure on the trigeminal nerve. - [Hudson Mother Comes Back from Debilitating Pain](#)

Emil Lou Discusses Aspirin’s Ability to Reduce Cancer Risk
Dr. Emil Lou, Assistant Professor of Medicine and IEM Member, discussed the findings of a recent study published in *JAMA Oncology* showing that regular use of aspirin can lower a person’s cancer risk. As reported by the Academic Health Center’s publication *Health Talk*, the research was based on data from large, decades-long studies of 88,000 women and 47,000 men. The impact was most significant for gastrointestinal cancers, including a 19% reduction for colorectal cancer. Aspirin use to achieve this reduction resulted from taking from .5 to 1.5 tablets per week for a minimum of 6 years. Dr. Lou says that the study “represents one of the most comprehensive studies to date supporting regular aspirin use as a low-cost intervention to help decrease the risk of gastrointestinal cancers.”

Benefits of Aspirin May Include Lower Cancer Risk

IEM Members Offering Cell-Based Therapy Training to University of Minnesota Physicians and Scientists
IEM Executive Committee Member Dr. Allison Hubel, Professor of Mechanical Engineering, and IEM Member David H. McKenna, Jr., Associate Professor of Lab Medicine and Pathology, are directing the Hematology Workforce Training Program, which seeks to directly address the growing need for researchers with cell-based therapy skills. “The ability to treat all of the millions of patients who would benefit from these therapies is limited in part by the lack of trained physicians and scientists in this field,” says Dr. Hubel. Funded by an NIH Research Education Program (R25) grant, this short-term training program is customized to a trainee’s specific needs and interests and involves both one-month rotations and a research project that are customized to the trainee’s career needs. The program is actively recruiting new trainees. - [Hematology Workforce Training Program](#)

Announcements

38th Annual International Conference of IEEE Engineering in Medicine and Biology Society EMBC 2016:
Program Themes:
- Biomedical Signal Processing
- Biomedical Imaging & Image Processing
- Micro & Nanobioengineering? Cellular & Tissue Engineering
- Computational Systems & Synthetic Biology? Multiscale Modeling
- Cardiovascular & Respiratory Systems Engineering
- Neural Engineering, Neuromuscular Systems & Rehabilitation Engineering
- Wearable Biomedical Sensors & Systems
- BioRobotics, Surgical Planning and Biomechanics
- Therapeutic & Diagnostic Systems, Devices and Technologies, Clinical Engineering
- Biomedical and Health Informatics
2016 Design of Medical Devices Conference April 11, 12-14
The University of Minnesota Design of Medical Devices Conference is the world’s largest premier medical devices conference. The conference will be held April 11, 12-14, 2016 at The Commons Hotel and McNamara Alumni Center. You will have an opportunity to learn from world-renowned experts, in a wide variety of fields, who are scheduled as keynotes & featured speakers. Online registration ends April 4!

‘Call for Science’ to Find Solutions and a Cure for Alzheimer’s Disease
Health Connexions™ Launches a Ground-Breaking New $100 Million Program to Fund Alzheimer’s Solutions
Health Connexions is taking a bold step forward to gather the science, and then fund solutions and a cure for Alzheimer’s Disease. Scientists with innovations are encouraged to submit their solutions as part of this epoch-making initiative.

Health Connexions™ recently announced a world’s first initiative to bring $100 million in funding to support the development of solutions and a cure for Alzheimer’s Disease. First, in partnership with its connections in the investment community, Health Connexions will screen Alzheimer’s-related solutions submitted through this ‘Call for Science’ to ensure that the best solutions and science, and the most important, are funded. The screened solutions will be presented to the organization’s network of investors, and its membership of over 2 million people, to ask them to also support the effort to find solutions and a cure for Alzheimer’s Disease. “We are partnering with some of the leading organizations in the world to bring forward this message and galvanize support to exponentially fund solutions and a cure for Alzheimer’s Disease,” stated Dawn Van Dam, President & CEO of Health Connexions.

The first step in the process is this announcement, inviting scientists from around the world to send in a brief summary of their solution which will address or cure Alzheimer’s Disease. Send submissions to: MoreALZmoney@healthconnexions.com Health Connexions will screen the opportunities and begin a process of working with investors to prioritize and accelerate funding for the most promising solutions. The plan is to kick-start investment across-the-board, to be able to make a substantial, measurable change in the outcomes for those at risk of Alzheimer’s Disease, or those already afflicted with this condition.

2nd International Conference on One Medicine One Science
APRIL 24-27, 2016
UNIVERSITY OF MINNESOTA, MINNEAPOLIS, USA
Registration is open

The Science Behind One Health, at the Interface of Humans, Animals and the Environment
iCOMOS is a global forum to (i) communicate the importance of science in solving pressing health issues at the interface of humans, animals and the environment; (ii) facilitate interdisciplinary, international collaborations embracing health, science and economics; and (iii) inform public policy development that is necessary for preserving human and animal health.
iCOMOS 2016 will feature keynote lectures and poster presentations in the following areas.

- Balancing Personalized/Precision Medicine and Public Health in a Changing Environment. How do you balance the new potential for individualized health care with public health programs serving communities and populations, especially in the context of environmental pollution and climate change? Here, we highlight scientific complexities of individual and population health in animals and humans as impacted by environment.
• Air Quality, Environmental Exposures, and Health. What is the science behind major air-related diseases and overall health, as well as the human and economic consequences of these diseases? iCOMOS examines the science and politics linking clean air and health.

• Water at the Interface of Health, Economics, and Environment. The fundamental need for water quality and quantity is increasingly difficult to fulfill. Water policy balances human, animal, and environmental health needs, but each are measured by different standards. Relevant knowledge is often inexact or disputed. We present the challenges to achieving desirable health and economic consequences in water management.

• Role of Science in Formulation of Local and Global Health Policy. Health policies that establish national and international social priorities are often influenced more by near-term economics and public emotion than by science. We will look at how science enlightens public policies for sustaining human, animal and environmental health.