News

Cancer Animal Core Established as an IEM Affiliated Lab
In response to the increasing demand for cancer research resources among IEM Members, the Institute for Engineering in Medicine (IEM) has funded the establishment of an affiliate laboratory, the Cancer Animal Core (CAC), which provides service to IEM members and the community.

What makes the CAC especially unique on campus is its capability to test devices and therapeutics, its access to a variety of cancer imaging modalities, and its accessibility to researchers new to the use of animals, according to CAC Director Dr. John Bischof, a Distinguished McKnight University Professor of Mechanical Engineering and IEM Associate Director for Development.

The CAC also offers users a full range of cancer research services in the management of animals, cell lines, tumor monitoring, and data sets. As a result, the CAC can “dramatically reduce the time and effort for an investigator to run pilot and long term projects using cancer models that are already in operation within the core,” says Qi Shao, a Biomedical Engineering Ph.D. candidate managing the lab. For more information on the CAC’s services, please contact Qi Shao at shaox070@umn.edu

Joan Bechtold Named to the NIH NIAMS Advisory Council
Dr. Joan Bechtold, Ph.D., Professor of Orthopaedic Surgery, and IEM Member, was among five new members named to the National Institutes of Health (NIH) National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) Advisory Council. Members on the council consist of both scientists and laypersons experienced with the NIAMS’ mission. They advise the institute on broad issues, and recommend what courses of action should be taken on research proposals.

Since 1995, Dr. Betchold has been receiving funding from NIH for a variety of research projects. Her primary research focus area is on bone healing in situations in which co-morbidities exist, especially for patients who have received revision joint replacement surgeries. With her expertise and experience, she will help NIAMS support research seeking answers to issues in causes, treatment, and prevention of arthritis, musculoskeletal, and skin diseases.

NIH NIAMS - Five Named to NIAMS Advisory Council

StarTribune Highlights Use of 3D Printing by Drs. Angela Panoskaltsis-Mortari and Robroy MacIver
The laboratory of IEM Member Dr. Angela Panoskaltsis-Mortari was among 20 facilities chosen to receive one of the earliest bioprinters, a 3D printer using living tissue, which she is utilizing in her research. Dr. Angela Panoskaltsis-Mortari is a Professor of Pediatrics in the Division of Blood and Marrow Transplantation and Pulmonary Medicine and Director of the Cytokine Reference Laboratory. In the StarTribune article, Dr. Panoskaltsis-Mortari discusses the tremendous promise of 3D bioprinting, such as the printing of organs. The article also cites hurdles to achieving this promise, and other uses of 3D printing in medicine at the University of Minnesota.

Among those other uses is the more-simple printing of plastic 3D models of organs, as utilized by the Visible Heart Lab, an IEM Affiliated laboratory, for educational purposes. As an example of how this technology is used, IEM Member Dr. Robroy MacIver, an Assistant Professor of Surgery who specializes in pediatric cardiothoracic surgery,
shows the organ models to his patients’ parents so that they can better-understand the conditions faced by their children.

Star Tribune - University of Minnesota researcher has one of the first “bioprinters” using living tissue

Medical Devices Center Announces 2015-’16 Innovation Fellows

The Medical Devices Center (MDC), an IEM affiliated center, is pleased to announce the names of its Innovation Fellows for the 2015-2016 academic year. The program’s Director, Dr. Ben Arcand, is enthusiastic about this class, stating “We’ve recruited a very strong team for the 2015-’16 Innovation Fellows Program with a diverse range of technical skills and experiences.” The Fellows have backgrounds in neurosurgery, cardiology, electrical, mechanical and biomedical engineering, chemistry, app development, and neurosciences. Dr. Arcand feels that this diversity will allow the team to “be well-poised to develop technologies that meet important unmet clinical needs and to collaborate across a variety of clinical and technical areas.” This will be the 8th year of the program, which has produced 160 patent disclosures during its first 5 years, and has prepared dozens of its alumni to be productive innovators in industry, academia, and clinical medicine.

The 2015-’16 Class Members:
Adam Black, Ph.D. candidate, Biomedical, Electrical Engineering, University of Minnesota
Michael Greminger, Ph.D., Associate Professor in Mechanical Engineering, University of Minnesota - Duluth
Brian Krohn, Ph.D. candidate, Natural Resource Science, Chemistry; CEO of Zuri Apps; Entrepreneur
Amit Goyal, M.D., Resident in Neurosurgery, University of Minnesota
Steven Reinitz, Ph.D., Co-founder B.B.R. Medical Innovations; Entrepreneur
Ahmed Selim, M.D., Internal Medicine Physician (Cardiovascular Hospitalist), University of Iowa Hospital and Clinics
Bradley Slaker, M.B.A., Founder and CEO of DesignWise Medical; Entrepreneur
Anastasia Zink, Ph.D. candidate, Neuroscience, University of Minnesota, Co-founder of MN Neuromodulation Consortium

Medical Devices Center Innovation Fellows Program

Dr. Kalpna Gupta Presents Approaches to Addressing Pain from Sickle Cell Disease

Dr. Kalpna Gupta, Professor of Medicine, Hematology, Oncology and Transplantation, and IEM Member, gave the plenary talk “Cannabinoid-based therapy and approaches to quantify pain in sickle cell disease” at the Sickle Cell Disease Research and Educational Meeting in Hollywood, Florida, April 10-13, 2015. Dr. Gupta also gave the plenary lecture “Integrative approaches to treat sickle pain,” at the 10th International Congress of Sickle Cell Disease in Strasbourg, France, April 16-18, 2015.

Sickle Cell Disease affects 70,000 to 80,000 Americans, according to Generics Home Reference, and can lead to intense pain. That said, obtaining approval and funding to test cannabinoids in humans has been a challenge due to laws against marijuana. Still, this avenue of research could have great potential. In a medicaljane.com article last year, Dr. Gupta stated that “cannabinoids have good outcomes in treating Sickle Cell Disease pain.”

Medical Jane - Sickle Cell Disease and Cannabis: Human Trials Set to Begin in California Next Month

Dr. Russell Hobbie Co-Authors the Fifth Edition of Intermediate Physics for Medicine and Biology

Dr. Russell K. Hobbie, Professor of Physics, Emeritus, and IEM member, has co-authored the fifth edition of Intermediate Physics for Medicine and Biology along with Dr. Bradley J. Roth, Professor of Physics, Oakland University. According to its publisher, Springer, this textbook, “Bridges the gap between an introductory physics course and the physics needed by researchers and practitioners in medical physics, biological physics, biomedical engineering and medicine.” Additional information about the book can be found online.

Springer - Intermediate Physics for Medicine & Biology, 5th Edition

Announcements

IEM Clinical Immersion Program for Non-Clinicians (Only one Cohort Remains Available for Fall 2015)

Rolling admission through 2015
Minneapolis, MN
Cost: $5,000/week (Funds will be used to support research programs for Surgical residents)
The Institute for Engineering in Medicine (IEM) Clinical Immersion Program for Non-Clinicians is tailored towards professionals within the medical device community looking to move outside of the design suite and into the surgical suite — an environment where their products are used on a day-to-day basis.

Participants in the program will undertake a week-long course observing various surgeries, while receiving formal training in a clinical setting on processes, policies, and procedures relating to a variety of healthcare situations. A minimum of 5 participants are needed per rotation, with a maximum of 8. Once registration is full, teams will be placed on a waiting list for future rotations. Private groups can be arranged for companies seeking to send full teams. Please contact the Institute for Engineering in Medicine for questions relating to the program, or inquiries about tailoring the program to meet specific goals.

For information on registration and availability please contact:
IEM office
(612) 624-8483
iem@umn.edu
www.iem.umn.edu

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Funding Opportunities

New Funding Opportunity for Healthcare Projects with Commercial Potential
The University of Minnesota has recently received one of three NIH Research Evaluation and Commercialization Hub (REACH) awards. The REACH program is intended to facilitate and accelerate translation of biomedical innovations into commercial products that improve patient care and enhance health. In order to help achieve this mission, MN-REACH recently announced call for pre-proposals for technology and product definition studies (e.g. feasibility studies, prototype development, or proof-of-concept studies). Projects which are one step away from commercial transactions are encouraged to apply. Funding is available in the range of $10,000 to $150,000 per project, depending on the best estimate of actual developmental costs.

HOW TO APPLY
Interested applicants can access the pre-proposal submission form, as well as information on the full proposals and selection criteria, from the MN-REACH website: www.mn-reach.umn.edu

Pre-Proposal Deadline: June 8, 2015

SEEKING GUIDANCE
Investigators seeking guidance are welcome to contact the program via email at mn-reach@umn.edu. Assistance is available to every potential applicant.