

The Future of Emergency Care

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EMERGENCY MEDICINE

Emergency Medicine (EM) focuses on life-threatening injuries and illnesses for which rapid detection, decision making, and treatment are necessary—traumatic injury and sudden cardiac death, as well as in-hospital acute problems such as sepsis, hospital-acquired infections and acute organ failure. The EM labs at NCRC give basic scientists, clinical investigators, inventors, and entrepreneurs across the university a scientific home to support integrated, pioneering research into the creation of emergency care systems that engage both patients and health systems to provide solutions to the growing need for and complexity of emergency medical care.

Over the past 18 months, EM has carried out a phased migration into NCRC. Dr. John Younger, MD, MS, the Associate Chair for Research in Emergency Medicine and a member of the Biointerfaces Institute, was the first faculty member to make the move. Dr. Younger points out that there are very few centers that can effectively quilt together the many research activities needed to advance new ideas in the basic sciences—biological, physical, or theoretical—into clinical application. “The NCRC’s approach to biomedical research and development with an eye towards translation and technology development is something [EM] wanted to be a part of and contribute to.”

Since then, the Michigan Center for Integrative Research in Critical Care (M-CIRCC) has moved its dry research and administrative space into Building 10. There are now six PIs in the basic science component of EM, an additional PI within IHPI, and approximately six more anticipating moving in as part of the Injury Research Center. Kayvan Najarian, PhD was recruited this year to head M-CIRCC’s Bioinformatics Signal and Image Analysis Core. Scott Van Epps, MD, PhD, whose interest is in bacterial contamination of medical devices and the development of infection resistant vascular devices, also joined the lab.

Three graduate students are currently working with EM, with a fourth mentored “by wire” at the University of Colorado-Boulder, and the program’s first post-doctoral research just joined in August 2013. EM also actively seeks out undergraduates—two students were in the lab in Summer 2013, including one who received a Howard Hughes visiting student award from Macalester College in Minneapolis.

2013 also saw the relocation of basic science laboratories from BSRB, the University of Pennsylvania, and Virginia Commonwealth University, into NCRC. New work spurred by the collocation has focused largely on the development of a new technology for rapid identification of cells and bacteria. A utility patent for this application was submitted in the

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spring, and EM has secured over \$175,000 from both the Coulter Foundation and the Michigan Initiative for Innovation and Entrepreneurship. The program is currently exploring the feasibility of a biotech start-up with the Washtenaw County Incubator Collaborative, a state-funded collaboration between Ann Arbor SPARK, the MC3 Business Accelerator, and the Michigan Research Institute.

The move to NCRC has made the basic and translation laboratories in Emergency Medicine at Michigan the largest and most established in the country. In the next 6 months, EM expects the Injury Research Center, an EM-initiated, institution-wide program funded by the Centers for Disease Control, to relocate to NCRC. By the summer of 2014, almost all EM research infrastructure will have consolidated on Plymouth Road.