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2015 ARCHES Grant Recipients Announced

**PEORIA, Ill. (Dec. 18, 2015)** –Four research projects are each receiving up to $70,000 through a collaboration between Jump Trading Simulation & Education Center and Health Care Engineering Systems Center at the University of Illinois College of Engineering at Urbana-Champaign. Jump ARCHES (Applied Research for Community Health through Engineering and Simulation) encourages clinicians and engineers to work together to improve patient outcomes and reduce health care costs.

Those applying for grants are working on new tools, techniques and devices to enhance medical simulation and education as well as for clinical use and treatments. Selected groups have one year to build prototypes and can reapply for funding to continue their projects in late 2016.

**Improving Patient Discharge Process:** Simulation will be used to analyze how hospital discharge plans are designed and how to improve the process. New and evolving technologies combined with the unique situation of each patient will be used to develop appropriate discharge plans. The goal of the research is to reduce readmission rates. The principal investigators of this project include Deborah Thurston, Professor of Industrial and Enterprise Systems Engineering at U of I at Urbana-Champaign and Dr. Richard Pearl, Surgeon, Director of Surgical Simulation at Jump and professor at University of Illinois College of Medicine at Peoria.

**Addressing Safety and Reliability of Surgical Robots:** This project will create a future-proof standard for simulations that work to address reliability and safety challenges in minimally invasive robotic surgery. This data will be used to make robotic surgery safer, and improve the next generation of surgical robots. The principal investigators of this project include Ravishankar Iyer, Professor of Electrical and Computer Engineering, Computer Science and Coordinated Science Laboratory at U of I at Urbana-Champaign and Dr. David Crawford, Surgeon and Clinical Professor at UICOMP.

**Simulation Training for Mechanical Circulatory Support:** This project aims to develop and validate a simulator that helps surgeons perfect the process of providing oxygen to failing heart/lungs. This simulator covers a gap in training primarily achieved through hands-on exposure in the clinical environment. The principal investigators of this project include Dr. Matt Bramlet, Director of the Advanced Imaging and Modeling Program at Jump and Assistant Professor of Clinical Pediatrics at UICOMP and Dr. Jai Raman, Professor of Cardiothoracic Surgery at Rush University Medical Center.

**Identifying Fall Risk:** This project will assess fall risk and predict falls using camera-captured motion data of participants in a simulated home environment. The system will allow for targeted intervention. These simulations will offer clinicians new opportunities to better examine body dynamics. The principal investigators of this project include Jacob Sosnoff, Associate Professor of Kinesiology at U of I at Urbana-Champaign and Dr. Julia Biernot, Assistant Professor of Neurology at UICOMP and Director of Illinois Neurological Institute Cognitive Center.

More than 15 groups submitted proposals for this round of funding. Teams of clinicians and engineers will have another opportunity to apply for funding in February, 2016.

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