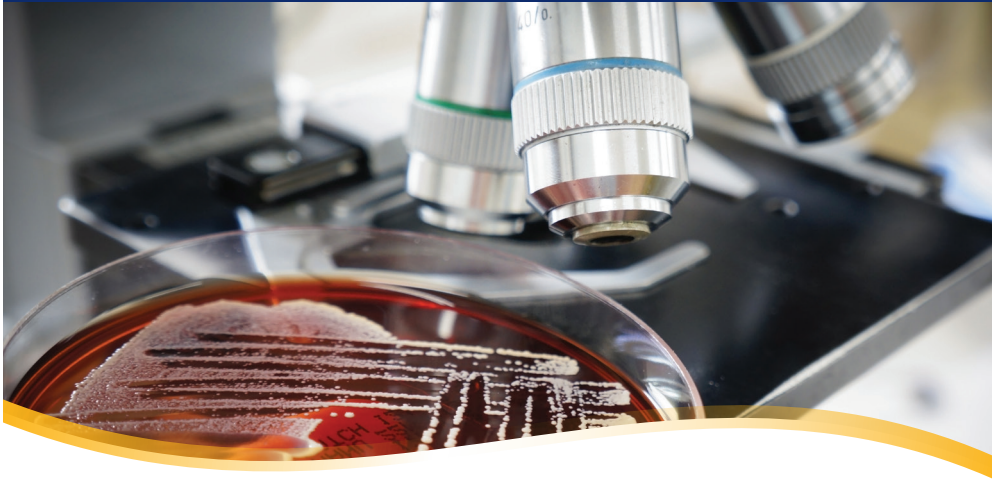


University of Pittsburgh Center for Medical Innovation (CMI)

A University Center in the Swanson School of Engineering



The Center for Medical Innovation at the Swanson School of Engineering is a collaboration among the University of Pittsburgh's Clinical and Translational Science Institute (CTSI), the Innovation Institute, and the Coulter Translational Research Partnership II (CTRP). Established in 2011, CMI promotes the application and development of innovative biomedical technologies to clinical problems; educates the next generation of innovators in cooperation with the schools of Engineering, Health Sciences, Business, and Law; and facilitates the translation of innovative biomedical technologies into marketable products and services. CMI has supported 84 early-stage projects through more than \$1.6 million in funding since inception.

CMI VISION

The vision of the CMI is to establish an internationally recognized center for developing innovative medical technologies, educating students, and facilitating commercialization.

CMI MISSION

The mission of CMI has three essential components:

- **Research:** To provide an organizational structure to link engineering faculty, clinicians, and students at the University of Pittsburgh, and to fund early-stage development of innovative biomedical technologies.
- **Education:** To educate the next generation of innovators in the design, development, and commercialization of medical technologies through classroom and hands-on experiences in cooperation with the schools of Engineering, Health Sciences, Business, and Law.
- **Development:** To facilitate the translation of innovative biomedical technologies into marketable products, services, and business ventures in collaboration with the University of Pittsburgh Innovation Institute, and the Clinical Translational Science Institute (CTSI).

Structure

The CMI promotes collaborations among University of Pittsburgh clinicians and engineers which are likely to result in improvements to healthcare. A multi-disciplinary CMI leadership team is in place to manage the process. Seed money will be available to clinician-engineer teams whose collaborative project proposals are successfully reviewed and approved by CMI.

Educational Program

CMI will offer, through the Swanson School's Department of Bioengineering, two options for a Professional Masters degree, and a new graduate Certificate in Medical Product Innovation. Additionally, engineering graduate students may participate in courses and innovation projects as part of their dissertation work. Medical students will be able to satisfy School of Medicine research requirements through participation in CMI sponsored projects. Courses in innovation and entrepreneurship already offered through the Swanson School of Engineering, the Katz School of Business, and the School of Law will be available to all students interested in medical innovation. Multi-disciplinary student teams (including graduate students in engineering and business, as well as law and medicine) will work with engineering faculty, clinicians, and industry advisors to develop innovative medical technologies through the prototype stage.

Directors

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2023 ROUND-2 PILOT FUNDING | AWARDS ANNOUNCEMENT

The University of Pittsburgh's Center for Medical Innovation (CMI) awarded grants totaling \$51,000 for three research groups through its 2023 Round-2 Pilot Funding Program for Early Stage Medical Technology Research and Development.

CMI, a University Center housed in Pitt's Swanson School of Engineering, supports applied technology projects in the early stages of development with "kickstart" funding toward the goal of transitioning the research to clinical adoption. Proposals are evaluated on the basis of scientific merit, technical and clinical relevance, potential health care impact and significance, experience of the investigators, and potential in obtaining further financial investment to translate the particular solution to healthcare.

"This is our twelfth year of pilot funding," said Alan D. Hirschman, PhD, CMI Executive Director. "Since our inception, more than \$1.6 million from external funding sources and from the Swanson School of Engineering has been invested in 84 early stage medical technologies. Many of these technologies have the potential to significantly improve the delivery of health care and several new companies have resulted from the program, which has successfully partnered UPMC's clinicians and surgeons with the Swanson School's engineering faculty."

2023 ROUND-2 CMI PILOT FUNDING AWARDS

AWARD 1

Michael McDowell, MD

Assistant Professor, Department of Neurological Surgery UPMC

Harvey Borovetz, PhD

Distinguished Professor of Bioengineering, Swanson School of Engineering

FOR: *Malleous: a novel suction-retractor instrument to increase efficiency and effectiveness in the operating room*

Development of a novel surgical instrument that combines suction and retraction tools into one device. The resultant product concept will provide substantial reduction in the duration, cost, and effectiveness of many surgeries.

AWARD 2

Zhiyu Sheng, PhD

Postdoctoral Associate, Department of Medicine, University of Pittsburgh

Kang Kim, PhD

Professor of Bioengineering and Medicine, University of Pittsburgh

Edith Tzeng, MD

Chief of Vascular Surgery, VA Pittsburgh Healthcare System, Pittsburgh, PA

FOR: *Novel Triplex ultrasound array probe for staging carotid artery atherosclerosis plaques*

Development of a new ultrasound transducer for non-invasive imaging of unstable lipid-filled arterial plaques. These "vulnerable plaques" are a cause of sudden death in patients with atherosclerotic disease. The new technology can be used with commercially available ultrasound imaging equipment to identify at-risk patients for emergency treatment.

AWARD 3

Sejeal Katiyar

Undergraduate Bioengineering Student, Swanson School of Engineering

Edward Andrews, MD

Assistant Professor of Neurological Surgery, UPMC

FOR: *noVRel*

Development of an advanced Virtual Reality headset for use by surgeons in the OR to visualize elements of the surgical field with high fidelity. The headset will adapt commercial VR equipment for use in the OR to achieve multi-modal visualization in real time.

PREVIOUSLY AWARDED PILOT FUNDING

2023 PILOT FUNDING AWARDS

Round 1

AWARD 1 – *A Novel Low-Profile Fully Retrievable Foldable Epidural Lead Array (FELLA) System*

➔➔➔ **Details of this program and other CMI related information can be found at engineering.pitt.edu/cmi**



The information printed in this document was accurate to the best of our knowledge at the time of printing and is subject to change at any time at the University's sole discretion.

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