



McCormick News Article

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McCormick Research Projects Receive \$4 Million from NSF

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Two research projects led by faculty at the McCormick School of Engineering and Applied Science have each received \$2 million from the National Science Foundation's Office of Emerging Frontiers in Research and Innovation.

The projects, led by Vadim Backman, professor of biomedical engineering, and Chang Liu, professor of mechanical engineering and electrical engineering and computer science, aim to further develop optical techniques for detecting cancer and to develop an artificial skin for sensing.

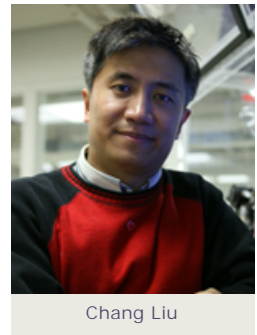
The office awarded the highly competitive grants for "transformative ideas that represent an opportunity for a significant shift in fundamental engineering knowledge with a strong potential for long term impact on national needs or a grand challenge." Northwestern researchers received two of the 20 awards given out nationwide.

Backman is collaborating with Igal Szleifer, Christina Enroth-Cugell Professor of Biomedical Engineering, and Hermant Roy, associate professor of medicine at Northwestern's Feinberg School of Medicine and director of basic and clinical research for the gastroenterology section in the NorthShore University Healthsystem, to further understand the implications of the increase in the nanoarchitectural disorder on the cell function at the molecular level. Disorder of a cell's nanoarchitecture is one of the earliest events in the formation of cancer, so Backman's techniques could provide a non-invasive way to easily test for a wide range of cancers.

Liu is collaborating with Mitra Hartmann, associate professor of biomedical and mechanical engineering, and Alan Kadish, Chester C. and Deborah H. Cooley Distinguished Professor of Cardiology at Feinberg, to develop a flexible, sensing skin that can discern contact and temperature. Liu and his collaborators hope to use biologically inspired principles to achieve such a goal, and they plan to test their sensors by creating catheter tips for cardiac surgery procedures to increase accuracy, reliability, and speed.



Vadim Backman



Chang Liu

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