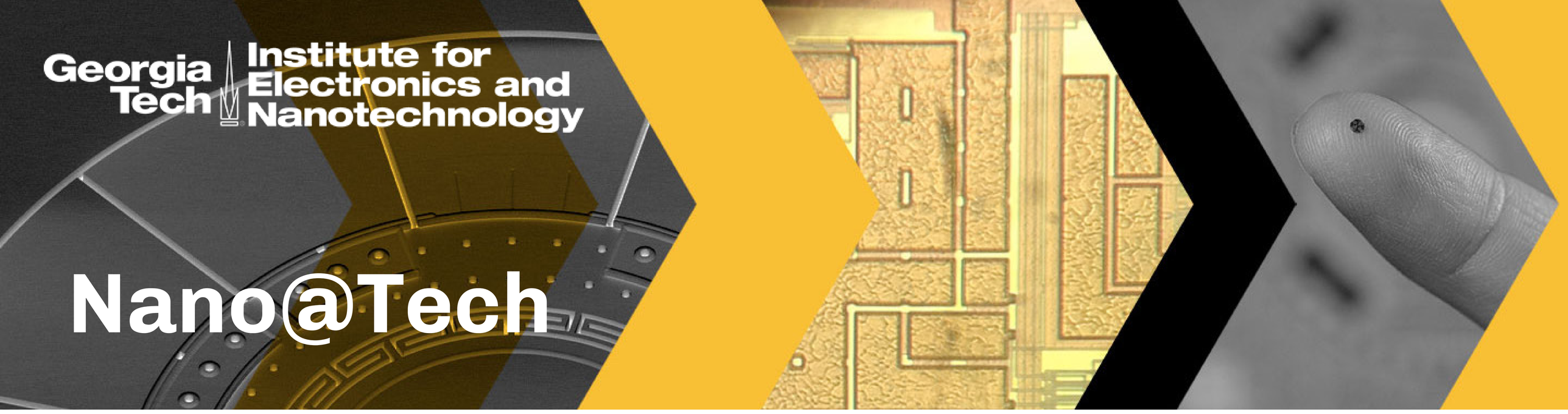

Tuesday January 8, 2019 12:00pm—1:00pm
Marcus Nanotechnology Building | 1117-1118

A Microfluidic Platform for Isolation of Mechanotyped Cells

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Abstract : The mechanical properties of metastatic cancer cells can be modulated to better migrate through tissues. We evaluate cell stiffness as a biomarker for isolating of cancer cells and subtypes of cells. In this case, the heterogeneity of cancer cells can be reduced through rapid label-free isolation and sorting to improve our understanding of invasive or drug-resistant subpopulations. Microfluidic channels are designed that reposition flowing cells in proportion to important biomechanical properties of stiffness, size, and adhesion. The repositioned cells are then collected at the outlets. We demonstrate three examples of how this sorting process can be used to collect invasive ovarian cancer, drug resistant leukemia, and purer stem cell cultures.

Bio: Todd Sulchek conducts fundamental and applied research in the field of biomechanics. His research program focuses on creating new micro-technologies to apply to questions in cellular mechanics and adhesion. He joined Georgia Tech in July 2008 as an Assistant Professor of Mechanical Engineering. Dr. Sulchek also holds program faculty positions in Bioengineering and Biomedical Engineering. Prior to Georgia Tech, he was a Postdoctoral Researcher and Staff Scientist at Lawrence Livermore National Laboratory. Dr. Sulchek graduated with his PhD in Applied Physics from Stanford University. He is a recipient of the NSF CAREER award, the CETL/BP Junior Faculty Teaching Excellence Award, the Lockheed Inspirational Young Faculty award, 2012 Petit Institute Above and Beyond Award, Class of 1940 Course Survey Teaching Effectiveness Award, and is a Woodruff Fellow. Over his research career he has published 74 journal papers (H-index of 34 on Google Scholar) and has filed or been issued 12 patents.

Nano@Tech is held at noon in room 1116-1118 of the Marcus Nanotechnology Building. The event is free and lunch is provided. For information on future events contact: nanotech@ien.gatech.edu

Pizza lunch will be provided, however we ask that you limit yourself to two slices so that all attendees are accommodated.

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