Distinguished Lecture

Microtechnologies for High-throughput High-content Developmental Biology and Neurogenetics

By

Prof Hang Lu

Chemical and Biomolecular Engineering,
Georgia Institute of Technology

****************************

Date: 9 May 2014 (Fri)
Time: 4:00 pm
Venue: LTF

****************************

Abstract

The speaker's lab is interested in engineering micro systems and automation tools to address questions in systems neuroscience, developmental biology, and cell biology that are difficult to answer with conventional techniques. Micro technologies provide the appropriate length scale for investigating molecules, cells, and small organisms; moreover, one can also take advantage of unique phenomena associated with small-scale flow and field effects, as well as unprecedented parallelization and automation to gather quantitative and large-scale data about complex biological systems. The speaker will show microfluidic systems coupled with artificial intelligence for automated high-resolution imaging and high-throughput genetic screens in C. elegans, and chips for imaging embryos and cells for developmental and functional studies. She will also show micro systems for optogenetic experiments to dissect the function of neural circuits and behavioral output. Her methods enable such systems level studies 100-1000 times faster than traditionally done, and in many occasions yield unique quantitative data that cannot be obtained otherwise.
Biosketch

Prof Lu received numerous awards including the CAREER Award from the US National Science Foundation, the Mentored Quantitative Research Development Award from the US National Institutes of Health, the Young Faculty Award from the US Defense Advanced Research Projects Agency, etc. She is a Fellow of the American Association for the Advancement of Science. Prof Hang Lu received her PhD in Chemical Engineering from the Massachusetts Institute of Technology in 2003. She was postdoctoral associate at the University of California at San Francisco and the Rockefeller University from 2003 to 2005. She joined the Georgia Institute of Technology in 2005, and is currently Professor of Chemical and Biomolecular Engineering and James R. Fair Faculty Fellow.

Prof Lu’s research interests include microfluidic systems for high-throughput screens and image-based genetics and genomics, microtechnologies for optical stimulation and optical recording, systems biology: large-scale experimentation and automation, developmental neurobiology, behavioral neurobiology, systems neuroscience, cancer, immunology, embryonic development and stem cells, etc.

Prof Lu received numerous awards including the CAREER Award from the US National Science Foundation, the Mentored Quantitative Research Development Award from the US National Institutes of Health, the Young Faculty Award from the US Defense Advanced Research Projects Agency, etc. She is a Fellow of the American Association for the Advancement of Science.

ALL ARE WELCOME