<Computer_Systems_Technology_Colloquium/>

JAEHEE SHIM

- October 22, 2015
- 300 Jay St. Brooklyn, NY • Namm 923
- Noon - 1:00pm

Pharmacology Powered by Computational Analysis: Predicting Cardiotoxicity of Chemotherapeutics

Cardiotoxicity is unfortunately a common side effect of many modern chemotherapeutic agents. The mechanisms that underlie these detrimental effects on heart muscle, however, remain unclear. The Drug Toxicity Signature Generation Center at ISMMS aims to address this unresolved issue by providing a bridge between molecular changes in cells and the prediction of pathophysiological effects. I will discuss ongoing work in which we use next-generation sequencing to quantify changes in gene expression that occur in cardiac myocytes after they are treated with potentially toxic chemotherapeutic agents. I will focus in particular on the computational pipeline we are developing that integrates sophisticated sequence alignment, statistical and network analysis, and dynamical mathematical models to develop novel predictions about the mechanisms underlying drug-induced cardiotoxicity.

Jaehee Shim is a Ph.D candidate in the Biophysics and Systems Pharmacology Program at Icahn School of Medicine at Mount Sinai (ISMMS). As a part of her Ph.D. studies, she is building dynamical prediction models based on analysis of gene expression data generated by the Drug Toxicity Signature Generation Center at ISMMS. She received her B.S in Biochemistry from the University of Michigan-Dearborn. Prior to starting her Ph.D, Jaehee worked at the ISMMS Genomics Core with a team of senior scientists and gained experience in improving and troubleshooting RNA sequencing protocols using Next Generation Sequencing Platforms.

Light refreshments will be served.

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