



Cell & Systems Biology
UNIVERSITY OF TORONTO

Special Seminar: Systems Biology Search Candidate for Assistant Professor

Dr. Leslie Mitchell

New York University Medical Center

“Genetics from scratch: designing and building synthetic eukaryotic chromosomes”

With the decreasing cost of gene synthesis, availability of genome sequence data, and new DNA assembly strategies, we are now in a position to build designer chromosomes from scratch. Applying a ‘bottom-up’ genetics approach enables new research questions that can both test and extend our knowledge of chromosome and genome biology. I will describe new approaches to assemble and manipulate designer synthetic chromosomes for expression in *S. cerevisiae*, including the combinatorial assembly of non-native pathways onto supernumerary chromosomes, the ‘telomerator’ as a tool to specify gene order and orientation, and the Synthetic Yeast Genome Project, Sc2.0, aiming to build the world’s first synthetic eukaryotic genome encoding myriad designer changes. Together this work serves a platform for systematic studies of eukaryotic chromosomes, opening up new large-scale capabilities and opportunities for designed genomes.

Thursday, March 10, 2016 at 11:00 a.m.

Ramsay Wright Building, Room 432

To view this seminar at UTM and UTSc, please contact [James McGuire](#) (416-978-6060) to ensure that you have a [Jabber account and software](#)

It will also be recorded to be accessible within 24 hours after the event.

Ramsay Wright is a wheelchair accessible building.