

**Department of Molecular and Cellular Biology**  
**DISTINGUISHED SPEAKER SEMINAR SERIES****Dr. Brenda Andrews**

Professor and Chair, Banting & Best Department of Medical Research,  
Faculty of Medicine, University of Toronto; Director, Terrence Donnelly  
Center for Cellular and Biomolecular Research (the Donnelly Centre)

**"Exploring Biological Pathways  
using Yeast Functional Genomics"****Wednesday, October 5, 2011**  
**at 12:30 p.m. in THRN 1307**

To discover general principles of genetic networks and to define gene functional and biological pathways, our group has focused on the systematic identification of genetic interactions in the budding yeast. Synthetic genetic array (SGA) analysis provides a high throughput approach for systematic analysis of genetic interactions in budding yeast. We have used SGA analysis to construct a genome-scale genetic interaction map by examining 5.4 million gene-gene pairs for synthetic genetic interactions, generating quantitative genetic interaction profiles for about 75% of all genes in *Saccharomyces cerevisiae*. The global network identifies functional cross-connections between all bioprocesses including chromosome replication, repair and dynamics, mapping a cellular wiring diagram of pleiotropy. We have also expanded our SGA platform to encompass other types of genetic interactions and to include cell biological phenotypes and quantitative read-outs of the activity of specific biological pathways. In one project, we have coupled synthetic SGA) technology with high-content screening (HCS) to detect subcellular morphology defects in yeast mutants. As we expand our method to include many cellular compartments, we ultimately aim to provide an invaluable long-term resource of mutant subcellular morphology.

Host: Dr. George van der Merwe

Coffee, Tea & Timbits

**EVERYONE IS WELCOME TO ATTEND!**

*"A great opportunity to hear leading researchers in the scientific community discuss their work"*