



**Department of Anatomy and Cell Biology**  
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**"Two by two: co-regulating gene pairs in yeast and beyond"**

Ever since Jacob and Monod dissected the regulatory mechanisms of the Lac operon, it has been appreciated that cells have a need, and a means to coordinately regulate the expression of multiple genes at a time. This talk will cover the characterization of a recently discovered form of multi-gene expression control in eukaryotic cells, namely adjacent gene co-regulation (AGC). The analysis of the large, co-regulated gene sets involved in ribosome biogenesis in yeast revealed that a significant fraction of the genes from within these regulons exist in the genome as immediately adjacent gene pairs. These pairs are transcriptionally coupled such that promoter motifs from one gene are able to influence the expression of the neighboring gene, even when the two genes are arrayed in a convergent orientation and where the gene promoters are separated by thousands of basepairs. AGC was found to be widely conserved across eukaryotes, and to play a role in multiple metabolic pathways beyond ribosome biogenesis.

**Wednesday, January 16<sup>th</sup>, 2019**

**11:30 am**

**Strathcona Anatomy Building**  
**3640 University Street**  
**Room 2/36**

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