

Wednesday, June 3rd, 2015
LSC 3 - Life Sciences Centre
2350 Health Sciences Mall
12-1pm



Dr. Stanley Moore

*Associate Professor,
Department of Biochemistry, University of Saskatchewan*

“Structural and Biochemical Analysis of a Yeast Zn Metalloenzyme Induced by MMS and DNA Alkylating agents”

The *Saccharomyces cerevisiae* *ddi2* (DNA damage inducible 2) gene encodes an HD-domain containing metalloenzyme that is induced over 100-fold by alkylating agents such as methyl methane sulfonate (MMS) and dimethyl sulfate (DMS). A fungal homolog of *ddi2* was previously characterized as a cyanamide hydratase enzyme, and *ddi2* expression is also dramatically induced by addition of cyanamide to yeast growth media. To study the DDI2 protein's biochemical function, we carried out yeast functional assays, developed an in-vitro enzyme activity assay, and solved the three dimensional structure by X-Ray crystallography. The structure reveals that *ddi2* binds Zn^{2+} and is indeed a member of the HD-domain superfamily, and identifies key residues at the active site that likely participate in cyanamide substrate binding and catalysis.

Please contact Dr. Ross MacGillivray (macg@mail.ubc.ca)
to network with the guest speaker.