



Chemical & Physical Sciences  
UNIVERSITY OF TORONTO  
MISSISSAUGA

## COLLOQUIUM

TUESDAY, FEBRUARY 14<sup>TH</sup>, 2012  
12:00 P.M. (**SHARP**) – 1:00 P.M.  
**CCT 2150**

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# C.S. Raman

*University of Maryland School of Pharmacy*

## **“CO-OPTING CONFORMATIONAL DIVERSITY TO EVOLVE NEW PROTEIN FUNCTIONS”**

A longstanding question in molecular evolution is how genetic, structural, and biochemical alterations lead to new protein functions. Earlier work from my laboratory (Nature 455:363-368, 2008) demonstrated that a single amino acid substitution at the active site of a heme-dependent enzyme was necessary and sufficient to generate a novel activity. Here I will discuss our recent findings, which will show how nature has fine-tuned conformational fluctuations to evolve unusual catalysts.