

Name: **David Pham**

SFU faculty/major: Computing Science

**Title of presentation:** Disulfide Bond and N-Glycosylation Visualization in Cell Surface Proteins

### **Abstract**

Cell surface proteins are an important bridge between the extracellular matrix and the intracellular molecular machinery. Understanding patterns in their structure helps to denote their crucial molecular biological processes, such as signalling and sensing.

Two post-translational modifications under investigation are:

- 1) Disulfide bonds
- 2) N-glycosylation

Formation of disulphide bonds and N-glycosylation is critical for the maturation of membrane proteins in both eukaryotic and prokaryotic cells. Defects in either of these post-translational modifications have been linked to severe congenital disorders, cancer, cardiovascular, and immunological diseases. Research conducted in our lab suggests that the relative positions between the disulfide bond and N-glycosylation have a significant degree of correlation. The goal of my research project has been to develop an analysis/visualization tool to facilitate the understanding of this relationship.