**Positions for graduate students at the Master's and Ph.D. level are available in the field of Synthetic Biology in the group of Dr. David H. Kwan at Concordia University, Montréal, Canada**

Please send a C.V. and contact information of two references to david.kwan@concordia.ca by December 1st, 2015 for positions starting no later than May, 2016

The aims of our research are focused upon using techniques in synthetic biology as a means of exploiting enzymes, developing them as tools in industrial biocatalysis, as well as targeting them within pathogenic microbes to disable them with inhibitor drugs as therapeutics to treat infectious diseases.

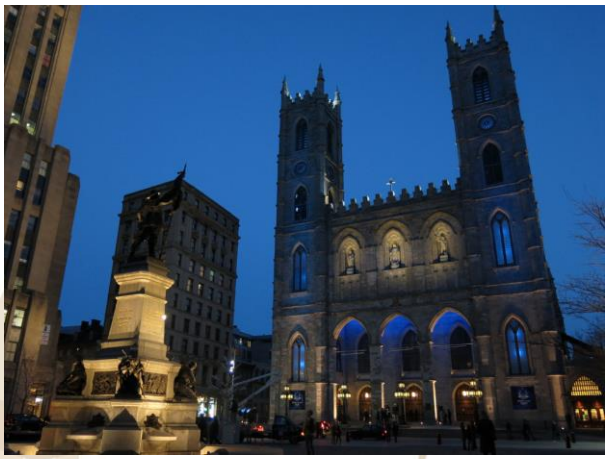
**Enzyme engineering**

Using techniques like directed evolution, we work on engineering enzymes to optimize them towards desired activities by mimicking the natural selection process in the laboratory. To this end we are pursuing research towards discovering and engineering enzyme biocatalysts for the production of anticancer anthracycline glycoside drugs and other therapeutic drugs from the same class of natural products for use in a wide range of health applications. We also aim to establish, using synthetic biology, new methods for producing biorenewable hydrocarbons as alternatives to petroleum products and to engineer, through directed evolution, efficient enzyme biocatalysts for doing so.

**Screening enzyme inhibitors as antimicrobial drugs**

We aim to develop and apply high-throughput enzyme activity-based methods for discovering drugs against *Mycobacteria tuberculosis* using an *in vitro* reconstituted biosynthetic pathway of mycobacterial cell wall components by which to assay enzyme inhibitors.

Downtown Montréal



Notre Dame Basilica, Old Town Montréal

Concordia University, Loyola Campus