MOLECULAR STRUCTURE AND FUNCTION PROGRAM SEMINAR

Dr. Nathan Magarvey

Department of Biochemistry and Biomedical Sciences,
McMaster University

Mining Microbiomes for Small Molecule Therapies

Abstract: A vast number of currently used human therapeutics are natural microbial metabolites or derivatives of these genetically encoded natural products. The current paucity in new therapies is certainly well correlated with a lowered discovery rate of these natural compounds and a redefinition of how we find therapies and devising phenotypic assays strategies is required. New discovery is now being led by next-generation sequencing of microbial populations ranging from those within environmental microbiomes and ones comprising our human microbiota. Effective mining of this genomic data to reveal new small molecule therapies demands, however, constructing appropriate tools to make connections beyond the current linear predictions stemming from central dogma of DNA-RNA-Protein, and onwards to an extended link with the genetically-encoded small molecules. Through the studies present in this talk, a focus will be placed on informatic technologies (genomic/metabolomic) and the new bioactive small molecules that are being realized through a fusion of genomic and metabolomic tools and work on making integrated connections from DNA-SMALL MOLECULES. Therapeutic opportunities will be presented from the approach, and specifically work associated with interrogating microbiomes, including human microbiomes. Extensions of this approach will be presented into personalized medicine and the new drug discovery from nature to treat challenging human disease.

Date : Monday, February 3, 2014
Time : 1:00 - 2:00 pm
Location : Room 02.9320 (Event Room 1, 2nd Floor)
SickKids Peter Gilgan Centre for Research and Learning (PGCRL),
686 Bay Street

Host: Dr. P. Lynne Howell

Pizza lunch will be provided

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