GUEST SPEAKER SEMINAR

Molecular Genetics
UNIVERSITY OF TORONTO

Light-induced depigmentation in planarians – an animal model of acute porphyrias

Porphyrias are rare metabolic disorders typically caused by inherited mutations in heme biosynthesis enzymes. The resulting buildup of heme precursors, including cyclic tetrapyrroles called porphyrins, can trigger a variety of symptoms including extreme photosensitivity. Treatment options for severe cases, which can be life threatening, are limited. We recently reported intense visible light induces bodily depigmentation in the planarian *Schmidtea mediterranea*, and traced this response to physiological porphyrin biosynthesis in its subepithelial pigment cells. Remarkably, starvation is associated with increased porphyrin levels and enhanced photosensitivity, mirroring the sudden onset of disease symptoms some porphyria patients experience when dieting or fasting. Our results establish light-induced depigmentation in planarians as an animal model of 'acute' porphyrias, providing an experimentally tractable system for basic science and drug discovery research.

Dr. Jason Pellettieri
Associate Professor, Department of Biology
Keene State College

Host: Dr. Bret Pearson

Date: Tuesday July 26th, 2016
Time: 2PM
Place: 1 King's College Circle, Medical Sciences Building, Room 4171