Module #

UNIVERSITY
Ontario Universities Program in Field Biology

Course Title:	**Field Methods in Ecological and Environmental Genomics**
Instructor(s):	Robert I. Colautti (robert.colautti @ queensu.ca; 613-533-2353)
Dates:	May 13-27
Location:	Queen's University Biological Station (QUBS)
Cost:	$1,200 ($350 deposit + $850 balance due before arrival) **Include**: field trips, sequencing, 13 nights accommodation + board @ QUBS
Prerequisites:	University courses in biology. Additional courses in ecology, genetics and statistics are recommended. **Mandatory:** (1) Basic laptop with battery lasting 3+ hr while using wi-fi. (2) field clothing appropriate for a variety of weather conditions from cold rain to hot sun (rain pants, sunscreen, bug spray, etc).
Enrolment:	Max 14 students
Description:	Genetic diversity is a critical component of global biodiversity and an important consideration for sustaining natural systems that are robust to present and future anthropogenic disturbance. In this introductory-level course, you will learn a variety of field-based methods for sample collection, biotic surveys, and manipulative experiments in natural systems impacted by a variety of human activities at locations in and around Queen's University Biological Station (QUBS). You will learn to how to combine field methods with genetic techniques to inform management priorities and address fundamental issues in ecology and conservation science. We will explore big questions in conservation genetics such as (i) the genetic basis of biological invasions vs extinctions, and (ii) predicting ecological and evolutionary responses to novel and changing environments. This course focuses on field methods, but evening lectures and tutorials will introduce you to a variety of classic, modern, and emerging methods in molecular genetics and computation. A final project will emphasize training in the methods of reproducible science and informed management. There is no required text for the course, but "A Primer of Ecological Genetics" by Conner and Hartl is highly recommended as a reference.
Evaluation:	20% Field & lab notes 15% Seminar 15% Project proposal 10% Participation 40% Scientific Report (submitted 2 weeks after the field course)