BIOLOGY 380.3
Project Proposal Form

Student's name:_____ **Signature:** _____

Student number:_____ **NSID**: _____

Proposed Supervisor: Dr. Morrissey **Signature:** _____

Course & CRN#: _____ **Term:** 2_____

Proposed Project Title: Behavioural ecotoxicology of pesticides in birds

Project Outline: Many birds, particularly those that use agricultural habitat for breeding or during migration, can be routinely exposed to pesticides. Adults can be exposed to pesticides through contact with sprays, or consuming treated seeds, granules, contaminated insects, soil or plants and could face chronic or repeated exposure through their lifetime, including at critical stages such as reproduction and migration. However, the effects of chronic low-level exposure to pesticides on avian behaviour are rarely assessed. The project seeks up to 5 students who will learn about how behaviour is altered by pesticides and will learn to use video analysis software to measure the migratory behavioural activity patterns of captive adult European starlings following chronic exposure to an insecticide. Students will analyze data they have processed along with existing data on body mass, AChE enzyme activity, and migratory orientation behaviour. Each student will also review literature on a topic related to the effects of neurotoxic insecticides on avian behaviour. This analysis and research will contribute to ongoing assessments of how sub-lethal exposure to pesticides can affect migratory birds.

Each student will learn to:

- Prepare videos for analysis and analyze videos using automated video analysis software
- Manage data collected from video analysis
- Conduct statistical analysis with the data produced as a class, in combination with data collected previously on bird mass and AChE enzyme activity
- Review and synthesize pertinent scientific literature

Evaluation: Jointly instructed by Dr. Christy Morrissey and Dr. Margaret Eng (Environment & Climate Change Canada)

Assessment Metric:	**Date(s) Grade is to be Assigned:**
Annotated bibliography for lit review (10%)	Jan.31
Practical Research Performance (15%)	Video analysis data (Feb.15)
Research Notebook (25%)	Data files and notes (March 15)
Oral Presentation (10%)	Mar. 29
Literature Review/ Final report (40%)	Final report including: background literature review (10%), methods and analysis (15%), synthesis and interpretation (10%), general report presentation (5%) due April 5
Total (100%)	

A copy of the final literature review is to be provided to the Department. The original Research Notebook may be retained by the Course Supervisor depending on intellectual property requirements.

Approved:_____ Date:_____

(Department Head)