

# Teaching Dossier

Dr. Aimee Lee Houde

Department of Fisheries and Oceans, Pacific Biological Station  
Nanaimo, British Columbia, V9T 6N7

*And*

Department of Forest and Conservation Sciences, University of British Columbia,  
Vancouver, British Columbia, V6T 1Z4

Email: [ahoude@mail.ubc.ca](mailto:ahoude@mail.ubc.ca); Website: [www.aimee-lee-houde.com](http://www.aimee-lee-houde.com)

January 2016

CONTENTS

**Teaching Philosophy Statement ..... 1**

**Teaching Responsibilities..... 1**

    Guest Lectures..... 1

    Teaching Assistantships ..... 2

    Students Advised..... 3

**Evidence of Teaching Effectiveness ..... 4**

    Summary of Formal Student Ratings ..... 4

    Colleague Evaluations ..... 4

**Recognition of Teaching Excellence ..... 4**

    Teaching Awards or Nominations..... 4

    Research Presentation Awards ..... 4

**Key Teaching Strategies and Innovations..... 5**

    Teaching Strategies..... 5

    Contributions to Teaching and Courses ..... 5

**Educational Leadership..... 6**

    Curriculum or Educational Committees ..... 6

**Scholarship on Teaching ..... 6**

    Papers Published on Teaching or Curriculum Issues ..... 6

**Professional Development..... 6**

    Teaching Courses..... 6

    Teaching Workshops ..... 6

    Expertise Training..... 7

## TEACHING PHILOSOPHY STATEMENT

As a biology instructor, I aim to make the subject of biology personally relevant and to have my students think critically by comparing the strengths and weaknesses about the evidence for selected biological theories. Often undergraduate students are presented with biological information and are asked to recall this information on midterms and exams; the excitement, personal accomplishment, and thinking component prominent in biology are lost. I aim to teach my students the skills required to address the questions still left in biology, such as the influence of genetics in the conservation of biological diversity, rather than teach my students the skills to recall the current knowledge of biology.

In my lectures, I engage students by making the biological information personally relevant using current examples and using lots of pictures and diagrams. For example, I discuss the benefits and costs surrounding the aquaculture industry and provide pictures of the study organisms. I have my students think about the biological information being covered by asking occasional questions, guiding group discussions, and presenting problems. Also, I have my students think about the biological information outside of lecture using take-home questions and assignments. For example, what are the benefits and consequences to gene flow in small populations?

In my laboratories, to get students excited about biology and to think about ways to address biological problems, instead of giving students a 'recipe' protocol to follow, I present a problem and the students generate their own protocol to follow. For example, students are asked to design an experiment to examine whether the presence of a predator influences parental behaviours. I do not give the students the solution, but guide students towards a solution by asking questions that hint towards a solution, such as ensuring they have appropriate controls. My students feel a sense of personal accomplishment when they have come up to a solution of addressing a biological problem.

Students are evaluated for participation in discussions, problem sets, laboratory assignments, midterms, and exams. Students are given timely feedback on their progress after an evaluation so that they may have the opportunity to improve or seek extra help. The occasional questions I ask in lecture are an assessment of whether I am achieving my learning goals for students and whether I need to make modifications to my teaching to ensure that my learning goals are achieved. I also like to assign reflection questions in laboratories for students to write down what they are feeling and learning in the laboratory. These reflection questions are another occasional assessment of whether I am achieving my learning goals for students.

## TEACHING RESPONSIBILITIES

### GUEST LECTURES

#### **Biology 4436G** "Behavioural Ecology"

2014-15; two 0.5 hour lectures; 25 students (Western University, London, ON)

For two years, prepared and presented two lectures: one on Atlantic salmon research projects, with a particular focus on experimental design for measuring behaviour, and the other on statistical analyses for different response variable types

#### **Biology 3442F** "Conservation Biology"

2014; one 1 hour lecture; 69 students (Western University, London, ON)

Prepared and presented a lecture on topics of fisheries conservation and my research.

#### **Biology 4223F** "Marine Environments"

2013; two 1.5 hours lectures; 33 students (Western University)

Prepared and presented two lectures on topics of fish diversity and fish adaptations.

#### **Biology 3436F** "Animal Behaviour"

2013; one 0.5 hour lecture; 97 students (Western University, London, ON)

Prepared and presented a lecture on experimental designs for measuring animal behaviour, with a particular focus on anti-predator and competitive abilities of fish.

### **Biology 3444F** “Molecular Ecology”

2013; one 1.5 hours lecture; 32 students (Western University)

Prepared and presented a lecture on topics of conservation genetics.

\*See Lecture Outlines (available upon request).

## TEACHING ASSISTANTSHIPS

### **Biology 2244** “Analysis and Interpretation of Biological Data”

2014; one semester; 100 students (Western University, London, ON)

Conducted two laboratory sessions each with 50 students with the help of one other teaching assistant. Gave laboratory preparation talk, graded laboratory reports, and provided feedback to the students.

### **Ontario Universities Program in Field Biology** “Tropical Marine Environments”

2014; one semester; 25 students (Western University, London, ON)

Supervised student that were observations for field journal and collecting data for their research project in coral reefs of Belize. Provided feedback on experimental design. Graded field journal.

### **Biology 4436G** “Behavioural Ecology”

2013-14; two semesters; 25 students (Western University, London, ON)

Supervised student research projects. Provided feedback on experimental design and statistical analyses. Graded project proposals, presentations, and reports.

### **Biology 1001A and 1002B** “Introductory Biology”

2011-12; three semesters; 1000 students (Western University)

Conducted two laboratory sessions each with 40 students with the help of one other teaching assistant. Gave laboratory preparation talk, graded laboratory reports, and provided feedback to the students.

### **Biology 3436F** “Animal Behaviour”

2011; one semester; 120 students (Western University)

Conducted four laboratory sessions and five computer sessions with 23 students. Gave laboratory preparation talk, graded laboratory reports, and provided feedback to the students.

### **PADI Open Water Diver**

2010; three courses; 20 students each course (Torpedo Rays SCUBA Adventures, Dartmouth, NS)

Assisted the instructor in teaching beginner SCUBA divers important skills by using demonstrations.

### **PADI Rescue Diver**

2010; one course; 5 students (Torpedo Rays SCUBA Adventures)

Assisted the instructor in teaching advanced SCUBA divers how to rescue divers on the surface and underwater being a ‘victim’ and demonstrating the rescue skills.

### **Biology 2006** “Introductory Ecology”

2008-09; two semesters; 25 students each year (Dalhousie University, Halifax, NS)

Assisted the laboratory instructor with conducting laboratory sessions. Guided small group discussions and guided students work through ecological problems. Graded laboratory reports and provided feedback to the students.

### **Biology/ Marine Biology 3067** “Ecology and Evolution of Fishes”

2007-08; two semesters; 45 students each year (Dalhousie University)

Guided fish dissections and exercises in measuring life-history variables of fishes. Guided students with their assignments and preparation for the midterm and exam.

### **Science 1510** “Dalhousie Integrated Science Program”

2007; fall semester field trips; 80 students (Dalhousie University)

Small lectures for students on the ecology of the marine organisms encountered on field trips. Guided students in identifying marine organisms encountered and completing their assignments.

\*See Teaching Assistantship Course Outlines (available upon request).

## **STUDENTS ADVISED**

These are students who I had the opportunity to be involved in the advising of their projects or overseeing their research assistance. The students were being directly supervised by faculty members.

### **Brian Tieu** “BSc Honours in Biology student”

2014- present (Western University)

Advised on experimental design and statistical analyses. Graded research proposal, progress reports, presentations, and thesis. Thesis entitled: Validation of non-invasive techniques for estimating fecundity and fat content of female kokanee salmon, *Oncorhynchus nerka*, and lake trout, *Salvelinus namaycush*.

### **Malcolm Lau** “MSc Biology student”

2013-present (Western University)

Advised on experimental design. Thesis entitled: Learning and anti-predator response differences in populations of Atlantic salmon.

### **Kayla Gradil** “MSc Biology student”

2012-present (Western University)

Advised on experimental design and data interpretation. Thesis entitled: The adaptive capacity of thermal tolerance in Atlantic salmon: Reintroduction to Lake Ontario.

### **Javeria Zafar** “BSc Honours in Biology student”

2013-14 (Western University)

Advised on experimental design and statistical analyses. Graded research proposal, progress reports, presentations, and thesis. Thesis entitled: Determination of population size, survival rate and spatial distribution of the Bog Copper butterfly *Lycaena epixhanthe*, in a highly isolated bog.

### **Leo Ovideo** “BSc Honours in Biology student”

2012-13 (Western University)

Advised on experimental design and statistical analyses. Graded research proposal, progress reports, presentations, and thesis. Thesis entitled: Egg fatty acid composition and its effect on juvenile survival in introduced populations of chinook salmon.

### **Matthew Yates** “Co-op student”

2008-09; two semesters (Dalhousie University)

Taught techniques in stream sampling and fish handling. Introduced the concepts of local adaptation and outbreeding depression. Completed a Honours BSc and is currently pursuing a MSc in Biology at Concordia University.

### **Meghan McBride** “Research Technician”

2009 (Dalhousie University)

Taught how to extract DNA, amplify DNA, and size DNA on polyacrylamide gels. Introduced to genetic parentage assignments and analyses of survival data. Currently pursuing a MSc in Biology at Dalhousie University.

**Trina Peters** "Research Technician"

2007 (Dalhousie University)

Introduced to the analysis of genetic data in biology. Completed graduate courses at the Michener Institute for Applied Health Sciences. Currently a Cytogenetics Technologist at the IWK Health Centre in Halifax, NS.

**EVIDENCE OF TEACHING EFFECTIVENESS****SUMMARY OF FORMAL STUDENT RATINGS**

	Avg. Class Size	07-08	08-09	10-11	11-12	13-14	Avg.
BIOL 3067	45	4.64	4.53				4.59
BIOL 2060	25	4.33	3.54				3.94
BIOL 1002/1202	40			4.42	4.38		4.40
BIOL 2244	42					4.28	4.28
Average		4.49	4.04	4.42	4.38	4.28	4.32

\*Scale is out of 5. 1 = very poor, 2 = poor, 3 = fair, 4 = good, 5 = very good

**COLLEAGUE EVALUATIONS**

I was observed by four graduate students in a teaching mentor program. They observed me teaching a first-year laboratory on the Hardy-Weinberg equation, a population genetics concept. Students were to run samples on a gel and use the information in the Hardy-Weinberg equation.

Most comments were that I explained things well and asked the students questions to make sure they understood the methods and concepts, that I repeated important instructions to minimize errors, that I encourages everyone in the lab to participate, and that I was extremely knowledgeable.

\*See Colleague Evaluations (available upon request).

**RECOGNITION OF TEACHING EXCELLENCE****TEACHING AWARDS OR NOMINATIONS**

- 2012 Society of Graduate Students, Graduate Student Teaching Award, Western University, London, ON (nominated)
- 2007 Dalhousie Student Union Letter of Distinction (awarded for outstanding contributions to university life), Dalhousie University, Halifax, ON

**RESEARCH PRESENTATION AWARDS**

- 2007 NSERC award for innovation, APICS Undergraduate Biology Conference, St. John, NB
- 2007 Top undergraduate presentation, APICS Aquaculture Conference, St. John, NB
- 2007 Overall winning presentation, APICS Aquaculture Conference, St. John, NB

## KEY TEACHING STRATEGIES AND INNOVATIONS

### TEACHING STRATEGIES

**Review the previous lecture at the beginning of each class.** I spend up to five minutes reviewing the previous lecture's major content, such as definitions. The goal is to emphasize important concepts from the previous lecture and to generate connections between the previous and current lectures.

**Include outlines and summaries in each class.** I have an outline at the beginning of each lecture. I go over the connections of the topics in the outline before describing the topics in more details. I have a summary at the end of each lecture. I give an overview of the concepts and emphasize any important conclusions from research on the topics.

**Ask questions during class.** I periodically ask questions to the class to gauge whether they have understood important concepts. If I sense that the class did not understand a concept, I go over the material with simplified detail and include another relevant example.

**Have discussions to stimulate critical thinking.** Career scientists do a lot of problem solving and critical thinking, a skill development that is typically neglected in early-level science courses. I give students papers to read before discussion sessions. During discussion sessions, students learn to critically interpret the paper and think about other ways the experiment could have been designed or the data have been interpreted.

### CONTRIBUTIONS TO TEACHING AND COURSES

#### **Conservation Genetics**

Course Outline Project (Western University) \*See Course Outlines (available upon request).

This is an undergraduate-level course that has two weekly lectures and a weekly discussion session examining key papers in conservation genetics topics. I have developed and included this course in my contributions because I am an expert in conservation genetics and conservation genetics is a growing field in biology.

#### **Biology Outreach Committee**

2011-13; four semesters (Western University)

Educated the public on recent research within the Biology Department through conversations at open-houses. Set-up and taught an experiment on crayfish behaviour that engaged visiting high school students.

#### **Biology and Marine Biology Peer Tutor**

2006-08; four semesters (Dalhousie University)

Tutored university students in the subjects of biology and marine biology. I initiated this program to help undergraduate students that were having difficulty understanding course materials.

#### **Aquatron Facility Educational Tour Coordinator**

2006 (Dalhousie University)

Educated children about local marine organisms, coral reefs, and research at Dalhousie University. Handled various marine organisms to demonstrate morphological parts to students.

## EDUCATIONAL LEADERSHIP

### CURRICULUM OR EDUCATIONAL COMMITTEES

- 2011-13 Biology Outreach Committee (Western University)
- 2010-11 Biology Undergraduate Education Committee (Western University)
- 2008 Biology Undergraduate Education Committee (Dalhousie University)

## SCHOLARSHIP ON TEACHING

### PAPERS PUBLISHED ON TEACHING OR CURRICULUM ISSUES

**Houde, A.L.S.** 2011. Integrating problem solving and critical reflection opportunities in first- and second-year science courses. *Teaching Innovation Projects 1: Article 7*. [\[PDF\]](#) (this paper was produced as an innovation to integrate problem solving and critical reflection into undergraduate courses; it was an assignment in the Advanced Teaching Program)

## PROFESSIONAL DEVELOPMENT

### TEACHING COURSES

**Certificate in University Teaching and Learning** (2013, Western University)

Training to enhance the quality of teaching to university students. Learned presentation and group facilitation skills (50 hours).

**Teaching Mentor Program** (2012, Western University)

Gathered observations on colleagues teaching and providing written and verbal feedback (6 hours).

**Advanced Teaching Program** (2010, Western University)

Learned practical skills in teaching and handling situations with university students (20 hours).

**PADI Divemaster** (2010; Torpedo Rays SCUBA Adventures)

Learned the skills to be an assistant in the teaching of SCUBA diving courses (40 hours).

### TEACHING WORKSHOPS

- 2013 "Ethical Dilemmas in Teaching", Teaching Support Centre (1 hour)
- 2013 "Creating Effective Lectures", Teaching Support Centre (1 hour)
- 2013 "Excellence in Online Teaching", Teaching Support Centre (1 hour)
- 2013 "Great Ideas for Teaching", Teaching Support Centre (1 hour)
- 2013 "Establishing a Presence in Online Teaching", Teaching Support Centre (1 hour)
- 2012 "Posing Effective Questions in Class", Teaching Support Centre (1 hour)
- 2012 "Teaching Your Own Course", Teaching Support Centre (1 hour)
- 2012 "Running a Great Lab", Teaching Support Centre (1 hour)
- 2012 "Great Ideas for Teaching", Teaching Support Centre (1 hour)
- 2012 "Threshold Concepts Within the Disciplines", Teaching Support Centre (1 hour)
- 2011 "Posing Effective Questions in Class", Teaching Support Centre (1 hour)
- 2011 "Techniques to Manage Student Behaviours", Teaching Support Centre (1 hour)
- 2011 "Great Ideas for Teaching", Teaching Support Centre (1 hour)
- 2011 "Maximizing Student Learning from Projects", Teaching Support Centre (1 hour)
- 2011 "Case Studies in Undergraduate Education", Teaching Support Centre (1 hour)

- 2011 “Creating a Dynamic Teaching Dossier”, Teaching Support Centre (1 hour)

**EXPERTISE TRAINING**

- 2015 Canadian Conference for Fisheries Research, Ottawa, ON (15 minutes)
- 2014 American Fisheries Society, Quebec, PQ (15 minutes)
- 2014 Canadian Society for Ecology and Evolution, Montreal, PQ (15 minutes)
- 2014 Friday Philosophicals, Western University, London, ON (30 minutes)
- 2013 Ontario Ecology, Ethology, and Evolution Colloquium, London, ON (15 minutes)
- 2012 Biology Graduate Research Forum, London, ON (Poster)
- 2012 Thiamine Deficiency Complex, Ann Arbor, MI (15 minutes)
- 2012 Ecological and Evolutionary Ethology of Fishes, Windsor, ON (15 minutes)
- 2012 International Association for Great Lakes Research, Cornwall, ON (15 minutes)
- 2011 Friday Philosophicals, Western University, London, ON (30 minutes)
- 2011 Canadian Conference for Fisheries Research, Toronto, ON (Observer)
- 2009 Friday Informal Seminar Hour, Dalhousie University, Halifax, NS (October, 45 minutes)
- 2009 Friday Informal Seminar Hour, Dalhousie University, Halifax, NS (January, 45 minutes)
- 2010 Canadian Conference for Fisheries Research, Winnipeg, MB (15 minutes)
- 2008 Canadian Conference for Fisheries Research, Halifax, NS (Poster)
- 2007 Atlantic Provinces Council on the Sciences (APICS), Aquaculture Conference, University of New Brunswick (St. John), St. John, NB (15 minutes)
- 2007 Atlantic Provinces Council on the Sciences (APICS), Undergraduate Biology Conference, University of New Brunswick (St. John), St. John, NB (15 minutes)
- 2007 Cameron Conference, Dalhousie University, Halifax, NS (15 minutes)
- 2006 NSERC Undergraduate Student Research poster session, Dalhousie University, NS (Poster)