

Aimee Lee Stephanie Houde

Department of Fisheries and Oceans

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ACADEMIC POSITIONS

NSERC Postdoctoral Fellow

January 2016 - present

Department of Fisheries and Oceans, Pacific Biological Station, Molecular Genetics Lab
Department of Forest and Conservation Sciences, University of British Columbia

Work: Development of biomarkers for measuring Pacific salmon smolt quality. Effects of hatchery rearing manipulations on Pacific salmon smolt quality. Advisers: Drs. Kristi Miller (Saunders), Scott Hinch, and Tony Farrell.

Postdoctoral Fellow

June 2015 - August 2015

Great Lakes Institute for Environmental Research, University of Windsor, Windsor, Ontario, Canada
Department of Biology, University of Western Ontario (Western University), London, Ontario, Canada

Work: Analysis of the genetic and maternal variance components of traits. Effects of thiamine deficiency on the performance of Atlantic salmon. Advisers: Drs. Trevor Pitcher and Bryan Neff.

EDUCATION

Doctor of Philosophy in Biology

September 2010 - May 2015

Department of Biology, University of Western Ontario (Western University), London, Ontario, Canada

Thesis: Restoration of native biodiversity in altered environments: reintroduction of Atlantic salmon into Lake Ontario. Supervisor: Dr. Bryan Neff. [\[PDF\]](#)

Certificate in University Teaching and Learning

March 2013

Teaching Support Centre, Western University, London, Ontario, Canada

Master of Science in Biology

September 2007 - December 2009

Department of Biology, Dalhousie University, Halifax, Nova Scotia, Canada

Thesis: The relative risks of inbreeding and outbreeding endangered populations of Atlantic salmon, *Salmo salar* L. Supervisor: Dr. Jeffrey Hutchings. [\[PDF\]](#)

Bachelor of Science in Marine Biology (Honours Co-op)

September 2003 - August 2007

Department of Biology, Dalhousie University, Halifax, Nova Scotia, Canada

Thesis: Ecological interactions between juveniles of multi-generational crosses of farmed and wild Atlantic salmon, *Salmo salar* L. Supervisor: Dr. Jeffrey Hutchings. [\[PDF\]](#)

GPA: 4.17 out of 4.30

FUNDING AWARDS

MAJOR SCHOLARSHIPS, GRANTS OR CONTRACTS

- 2016- NSERC Postdoctoral Fellowship (\$45 000 a year)
- 2016- Mitacs Accelerate Internship (\$30 000 a year)
- 2012-14 Queen Elizabeth II Graduate Scholarship (\$15 000 a year)
- 2010-12 NSERC Alexander Graham Bell Canada Graduate Scholarship (\$35 000 a year)
- 2007-09 NSERC Alexander Graham Bell Canada Graduate Scholarship (\$17 500 a year)
- 2006 NSERC Undergraduate Student Research Award (\$4 500)

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OTHER SCHOLARSHIPS AND GRANTS

- 2014 Ontario Federation of Anglers and Hunters Fisheries Research Award (\$2 000)
- 2013 Canadian Society of Zoologists Leo Margolis Scholarship (\$500)
- 2010-14 Graduate Research Scholarship top-up, School of Graduate and Postdoctoral Studies, Western University (\$4 000 a year)
- 2009 Faculty Research Grant Scholarship, Faculty of Graduate Studies, Dalhousie University (\$3 000)
- 2007 Faculty Research Grant Scholarship, Faculty of Graduate Studies, Dalhousie University (\$800)
- 2006 Atlantic Salmon Federation Olin Fellowship (\$1 000)
- 2006 In-course Scholarship, Dalhousie University, NS (\$1 500)
- 2006 Hugh P. Bell Scholarship, Dalhousie University, NS (awarded to the most promising honours biology and marine biology students, 1 of 4; \$500)
- 2005 Constance MacFarlane Scholarship, Dalhousie University, NS (awarded to a deserving student in the biology or marine biology honours program; \$2 000)
- 2004 In-course Scholarship, Dalhousie University, NS (\$2 500)
- 2003 Entrance Scholarship, Dalhousie University, NS (\$750)

DISTINGUISHED AWARDS

- 2016 Royal Society of Canada Alice Wilson Award, Academy of Science
- 2016 L'Oréal-UNESCO For Women in Science – NSERC Postdoctoral Fellowship Supplement (nominated)
- 2016 Canadian Association of Graduate Studies/ ProQuest Distinguished Dissertation Award (nominated)
- 2016 Canadian Society of Zoologists T.W.M. Cameron Outstanding Ph.D. thesis Award (runner-up)
- 2012 Society of Graduate Students, Graduate Student Teaching Award, Western University, ON (nominated)
- 2007 Dalhousie Student Union Letter of Distinction, Dalhousie University, NS (awarded for outstanding contributions to university life)
- 2007 NSERC award for innovation, APICS Undergraduate Biology Conference, St. John, NB (\$200)
- 2007 Top undergraduate presentation, APICS Aquaculture Conference, St. John, NB (\$400)
- 2007 Overall winning presentation, APICS Aquaculture Conference, St. John, NB (\$100 and plaque)
- 2006 Dr. Ming Fang Li Memorial Prize, Dalhousie University, NS (student with the best academic standing and work term performance in his/her third-year of the marine biology co-op program; \$1 242)
- 2003-07 Dean's List, Dalhousie University, NS
- 2003 Science Department Achievement Award, St. Peter Catholic High School, ON (awarded to the graduate that displayed exceptional skills in Physics, Chemistry, and Biology)

CONTRIBUTIONS TO RESEARCH

IN PREP ARTICLES FOR PUBLICATION

- Houde, A.L.S.**, Kaukinen, K.H., Schulze, A., Strohm, J., Farrell, A.P., Hinch, S.G., Miller, K.M. 2017. Seasonal changes of juvenile Coho salmon (*Oncorhynchus kisutch*) gene expression in freshwater and early marine environments. In prep.
- Houde, A.L.S.**, Günther, O.P., Strohm, J., Li, S., Patterson, D.A., Farrell, A.P., Hinch, S.G., Miller, K.M. 2018. Discovery and validation of candidate smoltification gene expression biomarkers using multiple species. In prep.

Houde, A.L.S., Akbarzadeh, A., Li, S., Patterson, D.A., Farrell, A.P., Hinch, S.G., Miller, K.M. 2018. Salmonid gene expression biomarkers indicative of acclimation and mortality related to specific stressors: salinity, temperature, and oxygen levels. In prep.

PUBLICATIONS IN REFEREED JOURNALS

- He, X., **Houde, A.L.S.**, Neff, B.D., Heath, D.D. 2018. Transcriptome response of Atlantic salmon (*Salmo salar*) to competition with similar non-native species. ***Ecology and Evolution*** [\[PDF\]](#)
- He, X., **Houde, A.L.S.**, Neff, B.D., Heath, D.D. 2017. Genetic architecture of gene transcription in two Atlantic salmon (*Salmo salar*) populations. ***Heredity*** 119: 117–124. [\[PDF\]](#)
- Smith, A.D., **Houde, A.L.S.**, Neff, B.D., Peres-Neto, P.R. 2017. Effects of competition on fitness-related traits. ***Oecologica*** 183: 701–713. [\[PDF\]](#)
- Houde, A.L.S.**, Wilson, C.C., Neff, B.D. 2017. Performance of four salmonids species in competition with Atlantic salmon. ***Journal of Great Lakes Research*** 43: 211–215. [\[PDF\]](#)
- Houde, A.L.S.**, Wilson, C.C., Pitcher, T.E. 2016. Genetic architecture and maternal contributions of early-life survival in lake trout. ***Journal of Fish Biology*** 88: 2088–2094. [\[PDF\]](#)
- Houde, A.L.S.**, Smith, A.D., Wilson, C.C., Peres-Neto, P.R., Neff, B.D. 2016. Competitive effects between rainbow trout and Atlantic salmon in natural and artificial streams. ***Ecology of Freshwater Fish*** 25: 248–260. [\[PDF\]](#)
- Houde, A.L.S.**, Pitcher, T.E. 2016. fullfact: an R package for the analysis of genetic and maternal variance components from full factorial mating designs. ***Ecology and Evolution*** 6: 1656–1665. [\[PDF\]](#)
- Houde, A.L.S.**, Garner, S.R., Neff, B.D. 2015. Restoring species through reintroductions: strategies for source population selection. ***Restoration Ecology*** 23: 746–753. [\[PDF\]](#)
- Houde, A.L.S.**, Saez, P.J., Wilson, C.C., Bureau, D.P., Neff, B.D. 2015. Effects of feeding high dietary thiaminase to sub-adult Atlantic salmon from three populations. ***Journal of Great Lakes Research*** 41: 898–906. [\[PDF\]](#)
- Houde, A.L.S.**, Wilson, C.C., Neff, B.D. 2015. Effects of competition with four non-native salmonid species on Atlantic salmon from three populations. ***Transactions of the American Fisheries Society*** 144: 1081–1090. [\[PDF\]](#)
- Houde, A.L.S.**, Black, C.A., Wilson, C.C., Pitcher, T.E., Neff, B.D. 2015. Genetic and maternal effects on juvenile survival and fitness-related traits in three populations of Atlantic salmon. ***Canadian Journal of Fisheries and Aquatic Sciences*** 72: 751–758. [\[PDF\]](#)
- Houde, A.L.S.**, Wilson, C.C., Neff, B.D. 2015. Predictability of multi-species competitive interactions in three populations of Atlantic salmon. ***Journal of Fish Biology*** 86: 1438–1443. [\[PDF\]](#)
- He, X., Wilson, C.C., Wellband, K.W., **Houde, A.L.S.**, Neff, B.D., Heath, D.D. 2015. Transcriptional profiling of two Atlantic salmon strains: implications for reintroduction into Lake Ontario. ***Conservation Genetics*** 16: 277–287. [\[PDF\]](#)
- Houde, A.L.S.**, Wilson, C.C., Neff, B.D. 2015. Competitive interactions among multiple non-native salmonids and two populations of Atlantic salmon. ***Ecology of Freshwater Fish*** 24: 44–55. [\[PDF\]](#)
- Rollinson, N., Keith, D., **Houde, A.L.S.**, Debes, P.V., McBride, M., Hutchings, J.A. 2014. Risk assessment of inbreeding and outbreeding depression in a captive breeding program. ***Conservation Biology*** 28: 529–540. [\[PDF\]](#)
- Houde, A.L.S.**, Wilson, C.C., Neff, B.D. 2013. Genetic architecture of fitness-related traits in two populations of Atlantic salmon. ***Heredity*** 111: 513–519. [\[PDF\]](#)
- Houde, A.L.S.**, Fraser, D.J., O'Reilly, P., Hutchings, J.A. 2011. Relative risks of inbreeding and outbreeding depression in the wild in endangered salmon. ***Evolutionary Applications*** 4: 634–647. [\[PDF\]](#)
- Anderson, S.C., Farmer, R.G., Ferretti, F., **Houde, A.L.S.**, Hutchings, J.A. 2011. Correlates of extinction risk in Canada. ***BioScience*** 61: 538–549. [\[PDF\]](#)
- Houde, A.L.S.**, Fraser, D.J., O'Reilly, P., Hutchings, J.A. 2011. Maternal and paternal effects on fitness correlates in outbred and inbred Atlantic salmon (*Salmo salar*). ***Canadian Journal of Fisheries and Aquatic Sciences*** 68: 534–549. [\[PDF\]](#)

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- Fraser, D.J., **Houde, A.L.S.**, Debes, P.V., O'Reilly, P., Eddington, J.D., Hutchings, J.A. 2010. Consequences of farmed-wild hybridization across divergent wild populations and multiple traits in salmon. *Ecological Applications* 20: 935–953. [\[PDF\]](#)
- Houde, A.L.S.**, Fraser, D.J., Hutchings, J.A. 2010. Fitness-related consequences of competitive interactions between farmed and wild Atlantic salmon at different proportional representations of wild-farmed hybrids. *ICES Journal of Marine Science* 67: 657–667. [\[PDF\]](#)
- Houde, A.L.S.**, Fraser, D.J., Hutchings, J.A. 2010. Reduced anti-predator responses in multi-generational hybrids of farmed and wild Atlantic salmon (*Salmo salar* L.). *Conservation Genetics* 11: 785–794. [\[PDF\]](#)

TEACHING EXPERIENCE

COURSE LECTURING AND PREPARATION

Western University

- 2013 Western Certificate in University Teaching and Learning
- 2013 Create a Course Outline (10 hours)
- 2012 Teaching Mentor Program for Graduate Students (6 hours)
- 2011 Create a Teaching Dossier (3 hours)
- 2010 Advanced Teaching Program (20 hours)

Guest Lecturing

- 2014-15 Research Presentation. Behavioural Ecology (0.5 hour, Western University)
- 2014 Statistical Analyses. Behavioural Ecology (0.5 hour, Western University)
- 2014 Fisheries Conservation. Conservation Biology (1 hour, Western University)
- 2013 Fish Diversity. Marine Environments (1.5 hours, Western University)
- 2013 Fish Adaptations. Marine Environments (1.5 hours, Western University)
- 2013 Behaviour Experiments. Animal Behaviour (0.5 hour, Western University)
- 2013 Conservation Genetics. Molecular Ecology (1.5 hours, Western University)

STUDENT MENTORING

Graduate or Undergraduate Thesis Advising

- 2013-16 “Innate and learned predator recognition in four strains of captive-bred Atlantic salmon, *Salmo salar*” (M. Lau, MSc Biology, Western University)
- 2012-15 “Thermal performance covaries with environmental temperature across populations of Atlantic salmon (*Salmo salar*)” (K. Gradil, MSc Biology, Western University)
- 2014-15 “Validation of non-invasive techniques for estimating egg size, ovary size, and muscle fat content of sexually-mature fish” (B. Tieu, BSc Honours in Biology, Western University)
- 2013-14 “Determination of population size, survival rate and spatial distribution of the Bog Copper butterfly *Lycaena epixhanthe*, in a highly isolated bog” (J. Zafar, BSc Honours in Biology, Western University)
- 2012-13 “Egg fatty acid composition and its effect on juvenile survival in introduced populations of Chinook salmon” (L. Oviedo, BSc Honours in Biology, Western University)

Other

- 2014 Teaching Assistant: Analysis and Interpretation of Biological Data (one semester; Western University)
- 2014 Teaching Assistant: Tropical Marine Environments (one semester; Western University)
- 2013-14 Teaching Assistant: Behavioural Ecology (two semesters; Western University)
- 2011-12 Teaching Assistant: First-year Biology (three semesters; Western University)

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- 2011 Teaching Assistant: Animal Behaviour (one semester; Western University)
- 2008-09 Undergraduate Co-op Supervisor (two semesters; Dalhousie University)
- 2007-09 Co-supervisor of Laboratory Research Assistants (two students; Dalhousie University)
- 2007-09 Teaching Assistant: Ecology (two semesters; Dalhousie University)
- 2007-08 Teaching Assistant: Ecology and Evolution of Fishes (two semesters; Dalhousie University)
- 2007 Teaching Assistant: Dalhousie Integrated Science Program (one semester, Dalhousie University)
- 2006-08 Peer Tutor: Biology and Marine Biology Peer Tutoring Program (Dalhousie University)
- 2006 Aquatron Facility Educational Tour Coordinator, John Batt (Dalhousie University)
- 2000-03 Science Peer Tutor (St. Peter Catholic High School, ON)

OTHER CONTRIBUTIONS TO RESEARCH

ORAL PRESENTATIONS AT INTERNATIONAL OR NATIONAL MEETINGS

- 2017 Sockeye Enhancement Meeting, Harrison Hot Springs, BC
- 2015 Canadian Conference for Fisheries Research, Ottawa, ON
- 2014 American Fisheries Society, Quebec, PQ
- 2014 Canadian Society for Ecology and Evolution, Montreal, PQ
- 2012 Thiamine Deficiency Complex, Ann Arbor, MI
- 2012 Ecological and Evolutionary Ethology of Fishes, Windsor, ON
- 2012 International Association for Great Lakes Research, Cornwall, ON
- 2010 Canadian Conference for Fisheries Research, Winnipeg, MB
- 2008 Canadian Conference for Fisheries Research, Halifax, NS (Poster)

ORAL PRESENTATIONS AT PROVINCIAL MEETINGS

- 2016-17 Watershed Enhancement Managers' Meeting (annual)
- 2014 Lake Ontario Atlantic salmon science workshop, Alliston, ON
- 2013 Ontario Ecology, Ethology, and Evolution Colloquium, London, ON
- 2011-13 Lake Ontario Atlantic salmon Restoration Program, Port Hope, ON (annual)
- 2007 Atlantic Provinces Council on the Sciences (APICS), Aquaculture Conference, University of New Brunswick (St. John), St. John, NB
- 2007 Atlantic Provinces Council on the Sciences (APICS), Undergraduate Biology Conference, University of New Brunswick (St. John), St. John, NB

ORAL PRESENTATIONS AT UNIVERSITIES

- 2015 Harwood Fish Culture Station, Harwood, ON
- 2014 Friday Philosophicals, Western University, London, ON
- 2012 Biology Graduate Research Forum, London, ON (Poster)
- 2011 Friday Philosophicals, Western University, London, ON
- 2010 Lett Symposium, Dalhousie University, Halifax, NS
- 2009 Friday Informal Seminar Hour, Dalhousie University, Halifax, NS (October)
- 2009 Friday Informal Seminar Hour, Dalhousie University, Halifax, NS (January)
- 2007 Cameron Conference, Dalhousie University, Halifax, NS
- 2006 NSERC Undergraduate Student Research poster session, Dalhousie University, NS (Poster)

OTHER PUBLICATIONS

Warnock, W.G., Stroud, D.H.P, Merz, J.E. (**Houde, A.L.S.**, formal reviewer). 2016. Donor stock selection of Chinook salmon for reintroduction to the transboundary Reach of the Columbia

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River. Report prepared for the Canadian Columbia River Inter-Tribal Fisheries Commission. 153 pp. [\[PDF\]](#)

Houde, A.L.S., Hall, E. 2014. A risk assessment on the impacts of salmonids on Atlantic salmon in Lake Ontario tributaries. In *Proceedings of the Lake Ontario Atlantic Salmon Restoration Science Workshop, February 18–20, 2014, Alliston, Ontario* (Stewart, T.J., Bowlby, A., Wilson, C.C., eds.). Ontario Ministry of Natural Resources and Forestry, File Report LOA 14.08. [\[PDF\]](#)

Fitzsimons, J.D., **Houde, A.L.S.** 2014. Review of thiamine for Atlantic salmon workshop 2014. In *Proceedings of the Lake Ontario Atlantic Salmon Restoration Science Workshop, February 18–20, 2014, Alliston, Ontario* (Stewart, T.J., Bowlby, A., Wilson, C.C., eds.). Ontario Ministry of Natural Resources and Forestry, File Report LOA 14.08. [\[PDF\]](#)

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. [\[PDF\]](#)

Houde, A.L.S. 2006. Ecological interactions between juveniles of multi-generational crosses of farmed and wild Atlantic salmon, *Salmo salar* L: relevance for conservation? *Atlantic Salmon Federation Olin Fellowship Progress Report*. [\[PDF\]](#)

OTHER WORK EXPERIENCE

- 2010 Fisheries Biologist, 15 February- 26 March, Dr. Doug Swain (DFO Moncton, NB)
- 2009 Introduction to fish stock assessment course: model fitting and interpretation, Coby Needle, 31 August- 4 September (Dalhousie University)
- 2007-09 Scientific Diver, Dr. Alan Pinder and Dr. Bob Scheibling (Dalhousie University)
- 2006 Wet Laboratory Research Assistant, Dr. Dylan Fraser (Dalhousie University)
- 2006 Molecular Ecology Laboratory Research Assistant, Dr. Daniel Ruzzante (Dalhousie University)
- 2005 Assistant to the Aquatron Facility Research Technician, Jim Eddington (Dalhousie University)
- 2005 Alzheimer's Disease Drug Research Laboratory Technician, Dr. Sultan Darvesh and Prof. Earl Martin (Mount Saint Vincent University, NS)

PEER REVIEWING EXPERIENCE

I have served as a reviewer for *Heredity*, *BMC Evolutionary Biology*, *Journal of Experimental Marine Biology and Ecology*, *Canadian Journal of Fisheries and Aquatic Sciences*, *FACETS*, *Evolutionary Applications*, *Fisheries Management and Ecology*, *Conservation Physiology*, *Transactions of the American Fisheries Society*, *Marine and Coastal Fisheries*, *Journal of Great Lakes Research*, *Journal of Fish Biology*, *Ecology of Freshwater Fish*, *Environmental Biology of Fishes*, *Freshwater Science*, *North Pacific Anadromous Fish Commission Bulletin*, *Aquatic Invasions*, *Aquatic Living Resources*, *Aquaculture Environment Interactions*, *Northwest Science*, and *The Southwestern Naturalist*.

RELEVANT EXPERIENCE

LEADERSHIP AND COMMITTEE EXPERIENCE

- 2013-14 President: Society of Biology Graduate Students (Western University)
- 2012-14 Sponsorship Coordinator: Biology Graduate Research Forum Committee (Western University)
- 2012-13 Biology Representative and Website Designer: Ontario Ecology, Ethology, and Evolution Colloquium Committee (Western University)
- 2012-13 Constitution and Bylaws Committee: Society of Biology Graduate Students (Western University)
- 2011-13 Outreach Representative: Society of Biology Graduate Students (Western University)
- 2010-11 Undergraduate Education Representative: Society of Biology Graduate Students (Western University)
- 2008-09 President: Biology Organization of Graduate Students (Dalhousie University)

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- 2007-09 Member: Lett Biology Conference Committee (Dalhousie University)
- 2007-09 Fire Warden: 4th floor Life Science Centre (Dalhousie University)
- 2006-09 President: Dalhousie SCUBA Diving Club (Dalhousie University)
- 2006-08 Member: Dalhousie Student Union Shinerama Committee (Dalhousie University)
- 2008 Marine Biology Representative: Biology Undergraduate Education Committee (Dalhousie University)
- 2007-08 Treasurer: Biology Organization of Graduate Students (Dalhousie University)
- 2007 Science Representative: Dalhousie Student Union (Dalhousie University)
- 2007 Vice President: Dalhousie Science Society (Dalhousie University)

- 2006-07 Vice President: Dalhousie Association of Marine Biology Students (Dalhousie University)

SCUBA DIVING AND OCEAN CERTIFICATIONS

- 2010 PADI Divemaster
- 2010 PADI Enriched Air Diver
- 2008 Pleasure Craft Operator's Card
- 2006 DAN Oxygen First Aid for SCUBA Diving Injuries
- 2006 Restricted Maritime Radio Operator's Certificate

OTHER CERTIFICATIONS

- 2017 Fish Transport Course, Fisheries and Oceans, Nanaimo, BC
- 2017 Introduction to Fish Husbandry, Fisheries and Oceans, Nanaimo, BC
- 2017 Water Monitoring Course, Fisheries and Oceans, Nanaimo, BC
- 2016 St John Ambulance Transportation of Dangerous Goods
- 2016 St John Ambulance Transportation Endorsement
- 2016 St John Ambulance Emergency First Aid for Industry (OFA Level 1 Equivalent)
- 2016 Canadian Aquaculture Institute The Experimental Fish
- 2016 WHIMIS Comprehensive Training
- 2015 Introduction to Geographic Information Systems (Western University)
- 2010 Single Handed Fly Rod, Atlantic Fly Fishing School, Brookfield, NS
- 2008 Backpack Electrofishing Crew Supervisor
- 2007 Canadian Council on Animal Care certification for the care and use of fish
- 2003 French Immersion Certificate, St. Peter Catholic High School, Ottawa, ON

SKILLS, ACTIVITIES AND INTERESTS

- Read, write, and speak fluently both English and French
- Comprehensive knowledge of R/Splus
- Website design using HTML and Dreamweaver
- Ichthyology, fisheries, aquariums
- SCUBA diving, fly fishing, photography