

Postdoctoral Position in Ecotoxicology and Environmental Chemistry

University of Toronto; Home Department: Ecology and Evolutionary Biology; Rochman Lab/In close collaboration with the Sinton Lab in Mechanical and Industrial Engineering

Hybrids are offspring produced from mating events between two species. Once thought to be rare, we now know that hybridization is quite common. There has been a longstanding debate about the importance of hybridization because it can have both beneficial and harmful effects. By creating new phenotypes, hybridization can help organisms adapt, but it can also drive extinction by generating harmful combinations of genes. Past work has proposed that in stressful environments, the benefits of hybridization may outweigh the costs, but this idea has not been clearly tested. Understanding these dynamics has become more pressing as rates of hybridization have increased due to the stresses of rapidly changing environments. As part of a funded Human Frontiers in Science Program grant, entitled *Chance or curse? The consequences of hybridization in a changing world*, and in collaboration with Drs. Molly Schumer, Vitor Sousa and Claudia Bank, we will combine diverse and multidisciplinary expertise to tackle fundamental questions via field observations, laboratory experiments, computational tools, and mathematical models. **The research of the postdoc hired for this position will include the characterization of environmental pollutants, among other water quality parameters, in two systems of hybridizing fish and testing hypotheses about how hybrids respond to multiple and relevant environmental stressors across molecular, organismal and population levels.** Together, work from the many collaborating labs, aims to reveal the consequences of hybridization and allow us to predict its impacts in our changing world.

The Rochman and Sinton labs are seeking a PDF with **expertise in environmental chemistry and ecotoxicology with experience using analytical chemistry techniques to measure contaminants in the environment and experiments and analyses in ecotoxicology to measure toxicological effects, ideally with fish.** The principal goals of this position is to collect and analyze field samples to measure water quality, including pollution, across two field sites. This knowledge will then be used to inform ecotoxicological testing to answer questions about how multiple stressors impact fish at the molecular (gene expression), organismal and population levels. Deliverables will include first-authored publications in high-impact journals, presentations at international conferences; accompanied with an expectation that the PDF will attend project-relevant team meetings, devote time to co-mentoring junior lab members, and play a role in creating an inclusive environment.

PDFs are expected to bring proven leadership in motivating and managing small teams; evidence of organizational and time-management skills; communication skills, including the capacity to offer thoughtful and clear technical guidance on research projects; and clear and efficient writing. PDFs will bring proven expertise in one or more of the following domains:

- Field sampling
- Analytical chemistry (Raman spectroscopy, FT-IR, GC/MS, LC/MS and/or ICP-MS)
- Culturing fish and/or Toxicological testing
- Ecotoxicological experiments
- Gene expression analysis
- Multivariate statistics

The salary will be \$50,000/year + benefits. The term will be 1 year, with the possibility of renewal. Our labs are located in the Faculty of Arts and Science at the Downtown Toronto Campus (St. George) of the University of Toronto.

Applications should be sent by September 1, 2020, to Chelsea Rochman (chelsea.rochman@utoronto.ca). Put "PDF-Exotox_EnvironChem" in the subject line to reference this opportunity. Include a cover letter, curriculum vitae, and a max-0.5 page statement on contributions to equity, diversity and inclusion [see the university statement [here](#)]. Evaluation of candidates will begin immediately, and continue until filled.

Employment as a Postdoctoral Fellow at the University of Toronto is covered by the terms of the CUPE 3902 Unit 5 Collective Agreement. This job is posted in accordance with the CUPE 3902 Unit 5 Collective Agreement.

The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from racialized persons / persons of colour, women, Indigenous / Aboriginal People of North America, persons with disabilities, LGBTQ persons, and others who may contribute to the further diversification of ideas.

The normal hours of work are 40 hours per week for a full-time postdoctoral fellow (pro-rated for those holding a partial appointment) recognizing that the needs of the employee's research and training and the needs of the supervisor's research program may require flexibility in the performance of the employee's duties and hours of work.



UNIVERSITY OF
TORONTO



HUMAN FRONTIER
SCIENCE PROGRAM

