Graduate Positions Available

MECHANISMS OF LAMPRICIDE TOXICITY IN FISHES

Sea lampreys are parasitic, jawless fish that feed by sucking the blood from fishes, often killing their hosts. They invaded the Great Lakes in the early 20th century, decimating fish populations. Sea lamprey populations are now controlled by applying the pesticides *3-trifluoromethyl-4-nitrophenol (TFM) & niclosamide* to streams containing larval sea lampreys. While this has greatly lowered lamprey populations & contributed greatly to rehabilitation of Great Lakes fisheries, research is needed to learn more about how these agents work, to improve their effectiveness & to minimize adverse effects on non-target fishes.

We are looking for enthusiastic B.Sc. or M.Sc. graduates to join the *Aquatic Toxicology & Physiology* labs of Dr. Michael Wilkie, Allison McDonald & Jonathan Wilson to conduct M.Sc. or doctoral studies on the mechanisms of niclosamide and TFM toxicity in lampreys & non-target fishes. Using state of the art facilities, trainees will use molecular & biochemical approaches, microrespirometry, & imaging techniques to study how lampricides affect sea lamprey & trout at multiple levels of biological organization. Experience with sub-cellular and biochemical analyses, toxicology, analytical chemistry, HPLC, fish energetics, or gill function would be an asset. Sponsored by the *Great Lakes Fishery Commission,* research will be based in the *Department of Biology, Wilfrid Laurier University*, Waterloo, Ontario. The guaranteed stipend will be $21,500/year for M.Sc. Students & $ 27,500 for Ph.D. students.

We seek students for 3 projects beginning May 2019 (start dates negotiable):

Ph.D. Student: Effects of lampricides on mitochondrial function in fishes.

M.Sc. Student # 1: Uptake, distribution & elimination of lampricides by fishes.

M.Sc. Student # 2: Impacts of lampricides on gill structure & function of lamprey & non-target fishes.

Prospective candidates are encouraged to contact:

Dr. Michael Wilkie. Email: mwilkie@wlu.ca
Dr. Allison McDonald. Email: amcdonald@wlu.ca
Dr. Jonathan Wilson. Email: jmwilson@wlu.ca

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