

Biology Seminar

12:30 - 1:30 pm

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Via ZOOM



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Abstract

Aquatic ecosystems are constantly challenged, either through natural cycles of the seasons and/or due to our own actions, which have severely impacted them over the last century. Fish have been used as model organisms extensively, to better understand how they cope with anthropogenic impacts on their habitat and what we can expect for the future. Understanding how physiological parameters, such as tissue energy allocation, mitochondria function and stress response, adjust to human-induced changes in aquatic habitats offers insights on not only fish and ecosystem health, but also on the basic physiology of conserved systems, such as growth and endocrine signaling. In this talk, I will touch on the work that I did with the Great Lakes Fishery Commission, exploring the effects of pesticides in sea lamprey, rainbow trout and lake sturgeon. Next, I will talk about the extraordinary capacity of goldfish to withstand bouts of complete anoxia, therefore offering insights into adaptive mechanisms that these organisms have evolved to protect their organs against such challenges. Lastly, I will talk about the effects of the pharmaceutical metformin, a drug used to manage Type II diabetes, on wild-caught fathead minnows in a mesocosm exposure experiment that we conducted at the Experimental Lakes Area. All these studies will offer information on how animals cope with anthropogenic challenges in their environment, from gene, protein and organelle, to tissue and whole animal responses.

