



Amphibious fishes: Terrestrial locomotion, performance, orientation, and behaviors from an applied perspective

Dr. Noah Bressman, Friday, October 9, 2020

3:00 – 4:00 PM, Zoom Virtual meeting room

Presentation: A wide diversity of fishes exhibit amphibious behaviors for a variety of reasons. However, it is unknown how most amphibious fishes orient in terrestrial environments and the terrestrial behaviors of many amphibious fishes have not yet been described. The goals of this research are to determine the senses and cues mangrove rivulus (*Kryptolebias marmoratus*) and walking catfish (*Clarias batrachus*) use to orient in terrestrial environments, describe the conditions that encourage emersion in northern snakehead (*Channa argus*) and walking catfish, and describe the terrestrial locomotor behaviors of northern snakeheads and Neotropical suckermouth catfishes (Loricariidae). Behavioral assays with a variety of visual and chemical stimuli were used to determine the cues these fish use to orient while emerged. Experiments with a variety of environmental conditions and crowd-sourcing surveys were used to determine conditions that promote terrestrial emersion. High-speed videos were used to describe terrestrial behaviors. As many of these fish are invasive species, incorporating knowledge of their amphibious behaviors, performance, and orientation can help us better understand how they disperse overland, improving management plans and risk assessments.

About the speaker: Dr. Bressman earned his PhD in biology at Wake Forest University in Dr. Miriam Ashley-Ross' lab in May 2020. He is now a postdoctoral research fellow in Dr. Doug Fudge's lab at Chapman University. Dr. Bressman's research interests include fish biology, functional morphology, biomechanics, and behavior, with a special focus on how amphibious fishes move and orient on land. In addition to being a scientist, he is an artist that uses photography, Photoshop, and biochemical methods to create skeletal images of vertebrates. He is also a competitive fisherman on a mission to catch every species of fish (currently at 405!) and a scientific blogger for the journal *Integrative*



Organismal Biology, Integrative and Comparative Biology, The Company of Biologists through Outside JEB, and the Discovery Channel TV show, A Fishing Story. His current work is studying the properties and applications of hagfish slime, such as to safely stop boat propellers at high speeds and to fight wildfires.

Seminar information: This seminar will be held virtually via Zoom. To log into the seminar please use the following web link:

<https://fresnostate.zoom.us/j/93828128141?pwd=K2NuaEExTGpLVWwMON2lvWnpETHMyQT09>

Passcode: 542050