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Tyler Breech Works to Understand the Evolutionary History of Rainbow Trout



Tyler Breech, Idaho State University doctoral student

Jan 15, 2020 – Tyler Breech, a doctoral student in Biological Sciences at Idaho State University, is part of the larger Idaho NSF EPSCoR GEM3 research team working to understand the impacts of environmental and social change on Idaho’s wildlife, particularly, rainbow trout.

His primary research focus is the genetics of redband trout. He points out that there are many hypothesized subspecies of rainbow trout, for example redband trout, coastal rainbow trout, and California golden trout just to name a few. Tyler is working to understand how these different rainbow trout located throughout the native range in western North America are related to each other, and where native Idaho redband trout fit in that family tree.

Understanding the evolutionary history and learning more about the relationships of rainbow trout within their native range could have a significant impact on management and conservation efforts throughout the range.

Tyler, who is originally from Millville, Pennsylvania, received his bachelor’s degree in history and secondary education. An interest in his biology coursework eventually took him to University of Mississippi for a Master’s degree. He is currently working under the guidance and mentorship of Idaho State University faculty, working in both Dr. Janet Loxterman’s evolutionary biology lab and Dr. Ernest Keeley’s fish ecology lab.

His work is collaborative and incorporates efforts from across Idaho. Tyler states, “I greatly enjoy working with others and have started working on projects or project ideas with researchers and graduate students from Boise State, University of Idaho, and Idaho State University. Additionally, I hope to incorporate researchers and employees from Idaho Fish and Game and the Columbia River Inter-Tribal Fish Commission, and am working towards that end already.”

Tyler is also interested in improving connections between university researchers and mentees. The EPSCoR project has already allowed him to serve as a mentor to undergraduates. Upon completion of his doctorate, Tyler hopes to have a career where he can integrate both teaching and research.

His involvement in EPSCoR has also helped him move closer to his goals. According to Tyler, “EPSCoR has helped by introducing me to a vast network that has the insight into the field, as well as creating collaborations to gain further experience.”

- *Idaho EPSCoR RII Track-1 project “Linking Genome to Phenome to Predict Adaptive Responses of Organisms to Changing Landscapes” (GEM3) aims to understand the impacts of environmental and social change on Idaho’s landscapes, wildlife, and people. The overall focus of this award is on the way in which genomes affect adaptive capacity in sagebrush ecosystems and redband trout habitat. Learn more at www.idahogem3.org*



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