



Bryan Piatkowski

Liane B. Russell Fellow

Where and when did you earn your PhD?

I received my PhD in biology from Duke University in December 2020.

What was the subject of your dissertation?

My dissertation studied the evolution and ecology of *Sphagnum* peat mosses, a group of 380 plants that have extraordinary impact on global carbon cycling and engineer peatland ecosystems through traits such as cell wall biochemistry.

What was your dissertation's major contribution to your field?

A major contribution of my dissertation was to document how functional traits evolved in *Sphagnum* and demonstrate the role of natural selection in shaping patterns of variation among species.

Who is your ORNL mentor and where are you working on campus?

My mentor is Dave Weston, staff scientist in the Biosciences Division, and I am working with the Plant Systems Biology Group.

What will your fellowship research focus on?

My fellowship research will focus on using evolutionary techniques to better understand how plants respond to challenging environmental conditions and identify the genetic components of stress tolerance that are shared across levels of biological hierarchy.



What is your project's expected contribution to your field?

My project will develop a comparative framework to integrate genetic discoveries from disparate model organisms and facilitate the translation of such findings into novel systems. I will establish new capabilities to model the evolution of gene-to-trait associations and study how plants interact with their environment. This research is important to the DOE mission for its relevance to sustainable production of bioenergy feedstocks in changing environments.

What are your research interests?

My research interests include understanding how organismal complexity emerges from genetic variation and linking microevolutionary processes, such as mutation, to macroevolutionary consequences like speciation.

What led you to science and your specific discipline?

The diversity of biological form and function has fascinated me since a young age. I chose my specific discipline of evolutionary biology to better understand how this diversity came to be and identify the mechanisms that promote its preservation.

What did you do before coming to ORNL?

Before coming to ORNL, I was a postdoctoral associate at Duke University, where I studied the genomics of plant speciation.

Could you share an interesting fact or two about yourself?

I love to be outdoors and enjoy hiking in my free time.

What nonscience topic or activity is important to you and why?

A topic that is important to me is support for the arts because I believe these activities help us to better understand, communicate, and connect with one another.

