

Interview with ARCUS Member, Hannah Holland-Moritz

By: Katherine Schexneider, ARCUS Volunteer

Editor's Note: Katherine Schexneider interviewed Hannah Holland-Moritz on 22 March 2022. The following transcript of that interview accompanies and provides further background to the ARCUS Member Profile of Hannah Holland-Moritz published in the May 2022 issue of Witness Community Highlights. This interview and the Member Profile highlight the work of our individual members and help ARCUS members get to know one another by supporting connections across disciplines, communities, and career paths.

Katherine: What got you interested in permafrost?

Hannah: When I started graduate school, I had no thoughts of working in the Arctic at all. My professor told me about this opportunity to study mosses, and I was kind of agnostic about the Arctic, but then my perspective totally changed when I went to Alaska for the first time to collect mosses. I suddenly understood why people rave about going to Alaska and how amazing a place it is. I've now been to some places in Canada as well, and these northern ecosystems are really special places. The last year I was in Alaska, with the fires and the temperatures of 90°F, I felt incredibly sad about the changes going on, and this led me to develop a wider view of what's going on in the Arctic, and that's how I hit on permafrost. I was interested in how my work intersects with the permafrost in Alaska and other regions, how the microbes I study interact with permafrost. By knowing what's going on, we can perhaps have greater control over the situation, to preserve and save this beautiful area of the planet.

Katherine: Can you describe some of the beauty that you see?

Hannah: I could go on for ages about this. I think I'm an observer, I appreciate things for what they are. I was originally drawn to microbes as something that is usually out of eye's reach. But, man, if you have a microscope, there's this entire world that comes to life. You can see all kinds of colors and shapes; microorganisms trying to eat each and just survive. It's an alien planet, almost. But it's actually entirely natural because it's the oldest form of life on our planet. It is the world that exists inside of our world that we are not keyed into on a daily basis. There are microbes that have magnets in them, microbes that hunt down other microbes as prey. It's just stunning, really. Unfortunately, I don't work with visuals for 99.9% of what I do. Most of my work is with DNA. But, just because you can't see something under a microscope, you can still appreciate its beauty through the DNA sequencing.

Katherine: Do you ever take photos related to your work? How would that help tell the story of microbial communities?

Hannah: I love taking my camera into the field. I take a lot of photos of mosses. Even if I don't know the species of moss, I find them very beautiful. One of the goals that photographers have—and I'm an amateur photographer—is to tell a story. You're telling a story through pictures, or a picture, and you're telling the story of the world as you see it, or as you want someone else to see it. Not everyone can go to visit Arctic communities, but that doesn't mean that they shouldn't be able to understand the Arctic and share in the beauty that I saw and the beauty that the people who live there see every day. When you can't visit but have photographs, you can start to see what matches your stereotypes and what maybe contradicts your stereotypes. One comment I get a lot is about how lush and green it looks, that it's not all polar bears on sea ice.

Katherine: Do you draw schematics to describe ecological processes? I know that helps the general public understand the science of the Arctic and what's going on there.

Hannah: Oh, I love drawing pictures. Sometimes I use computer programs to try to capture what I'm conveying because I'm not the best artist. I tend to compare microbial ecology to things people have more experience with in their day-to-day life. In New Hampshire, for example, people may be walking along trails and see some plants by the side of the trail or observe some animals or birds, and microbes do a lot of those same things that plants and animals do, albeit in their own special way. So, I will often draw on those similarities to diagram an ecological process and talk about it.

Katherine: Well, thank you so much, Hannah, for taking time to share with the ARCUS community the very important and fascinating work you do.