The Arctic coast.

Meanwhile, results for the future suggest the greater loss of permafrost, and vegetation to present likely scenarios our Arctic system has faced before, as well as ones we may see in the future.

Specifically, I have worked to provide vegetation profiles for four climate periods: the LGM; the Holocene Thermal Maximum (HTM); the Preindustrial period (~21k years ago); and the modern period (~1850). These models were developed using a variety of data from soil core samples.

Regarding my own findings, the LGM represented a colder, drier climate, corresponding to more tundra vegetation, while the HTM was roughly 2°C warmer than the present day, leading to greater boreal forests. The Preindustrial period seems similar to today, with the HTM being 2°C warmer than the present day, leading to greater boreal forests.

My work contributes to a larger study of permafrost, back through at least the Last Glacial Maximum (LGM) period (~21k years ago). This larger project, led by IARC’s John Walsh and Kazuyuki Saito, uses historical climate, permafrost, and vegetation to present likely scenarios our Arctic system has faced before, as well as ones we may see in the future.

I’m also drawn to this work because it provides a clear path to studying and helping to change one of the biggest problems I see both in Alaska and elsewhere: food security. Since so much Alaska food comes from far away, the lives and health of our most vulnerable people can be helped a great deal by addressing the agriculture and localization of our own supply.

I have a large variety of interests outside of work. I’m an avid volunteer, including at the Literacy Council and in our local schools—both with the GI’s portable planetarium presentations and judging science fairs. I’m also a big fan of cross country skiing and fishing, and I’m thrilled to be a burgeoning participant in the Fairbanks bluegrass music scene.