

## **Building a Culture of Safety and Trust in Team Science**

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**BER Program:** ESS

**Project:** NGEE Arctic

**Project Website:** <https://ngee-arctic.ornl.gov/>

### **Project Abstract:**

Some of the most scientifically exciting places are also some of the most difficult to study. The Arctic, for example, is rapidly changing, as evidenced by melting sea ice, thawing permafrost, disappearing glaciers, and greening hillslopes. Increasingly, scientists from around the world and across a wide spectrum of disciplines are working together to advance our understanding of this vulnerable and globally important biome. As scientists become part of larger teams and join broader and more diverse scientific endeavors, they must all become leaders in creating cultures of safety, inclusion, and trust to facilitate the physical and emotional well-being of individuals in scientific teams and in the local communities where scientists work. Here we share lessons learned from an “experiment within an experiment” begun as part of a large-scale, decade-long research project in Alaska. The experiment was focused on answering the question: How can we intentionally create a project-wide culture of safety, inclusion, and trust that facilitates strong cross-disciplinary collaboration and exciting scientific discoveries?

Our team of more than 150 people includes empiricists, modelers, and data scientists from four U.S. Department of Energy National Laboratories as well as from the University of Alaska Fairbanks (UAF), all working together on the Next-Generation Ecosystem Experiments–Arctic (NGEE Arctic) project. We achieve our scientific goals by underpinning our science with a strong culture of safety, inclusion, and sharing: (1) We make the safety of ourselves and our team our number one concern before, during, and after field and laboratory campaigns by encouraging

rigorous planning, continuous dialogue, and questioning attitudes. (2) We hold each other accountable by promoting a respectful and harassment-free work environment for everyone, both within the project team and within the broader community of local and indigenous people where we are guests. (3) We prioritize cross-disciplinary collaboration through project-wide sharing of ideas—from senior researchers to first-year students—facilitated by a system to openly and immediately share data, both within the project and beyond. (4) We continue to learn by engaging with each other in planning exercises that span the ‘what ifs’ of scenarios that could endanger team member physical or emotional safety, by engaging with other projects on their own codes of conduct at annual meetings, and by inviting speakers from programs like ADVANCEGeo to help us understand the pitfalls of implicit bias and to improve our project culture.

### **References:**

Iversen, C. M., W. R. Bolton, A. Rogers, C. J. Wilson, and S. D. Wullschleger (2020), Building a culture of safety and trust in team science, *Eos*, 101, <https://doi.org/10.1029/2020EO143064>.  
Published on 21 April 2020.