



Sun to Ice

Research Overview

Sun to Ice is an NSF-funded research project led by the University of New Hampshire's *Institute for the Study of Earth, Oceans and Space*. The related research aims to investigate extreme solar events and their effects on Earth by detailed studies of each process in the chain from Sun to ice, as energetic particles travel to Earth, enter our atmosphere, and ultimately collide with our planet. Our researchers observe and model this process, both as independent mechanisms as well as an integrated system, as we seek to make important breakthroughs in diverse, complex and interlinked systems that cross the boundaries between space physics, atmospheric, and ice core science.

Educational Outreach Goals

We aim to bring intensive STEM professional development to high school physics, chemistry, astronomy and Earth and physical science teachers. We will use a modified version of the NSF-funded Research Experience for Teachers (RET) model, which will:

- Provide in-service high school teachers with an ongoing research experience with a Sun-to-Ice research collaborator.
- Partner teachers with a Leitzel Center education specialist, to help educators transfer knowledge and practices gained through their research to their curriculum design and teaching practice.
- Create a community of teachers, faculty members, and university students, with the common goal of integrating the research of S-2-I, and its scientific context, with the curricular needs of high school classes, with particular emphasis on connecting with the Next Generation Science Standards.
- Provide access to relevant equipment and materials through the Leitzel Center's Advancing Science Program.

Participant Benefits

- Participant stipend, travel expenses, and reimbursement to school for substitute teacher expenses.
- Participation in an active research group at the leading edge of interdisciplinary work in Space Physics, Atmospheric Science, and Snow & Ice Science.
- Involvement in a *Professional Learning Community* of similarly engaged peers, interested in the integration of authentic research with high school curricula.