Proposal for a Collaborative REU Site Program REAL ICE - Research Experience in Antarctica Linking Ice and Climate Education

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The ice-core deep-drilling program at the divide between the Ross and Amundsen Sea drainage basins of the West Antarctic Ice Sheet (WAIS) is a large collaboration among scientists and the National Science Foundation to augment our understanding of the history of global climate. To complement the substantial collaborative effort by the scientific community, we have proposed to NSF a program that will combine high profile public outreach with research experience for undergraduates. Although this program is still pending funding, we would like to encourage WAIS scientists to think about ways in which a program of this type might connect with their WAIS activities.

Each year that the deep drilling activities occur, ten undergraduate students in science, writing, education, and public policy from all parts of the country will be invited to join the "REAL ICE Outreach Team". They will spend the fall quarter of the academic year studying and doing research on climate change and the role of ice in the climate system. Each cohort of students will spend the first six weeks of the quarter on the campus of the University of Washington (UW) studying with UW and Portland State University faculty to deepen their knowledge of Earth's climate and learn how ice cores teach us about climate history. Also, during this time science writers and science educators will work with the students to teach them ideas and techniques in teaching and communicating scientific discoveries. They will then travel to McMurdo Station and on to the WAIS deep drilling site to continue their learning through research experience for another five to six weeks.

The overall goal of the program is to provide the public with a personal connection to the research that is happening in Antarctica. It is much easier for the general public to become interested in a project such as the WAIS Divide program if they can relate through people (the students) with whom they feel a connection.

This REU Site education and outreach program has two audiences, the ten undergraduate students we choose each year to be directly involved and the general public associated with educational institutions. For the the undergraduate students, we will 1) challenge them to think critically through making observations, framing questions, and designing scientific experiments, 2) teach the process of scientific discovery through their own experiments and working with scientists, 3) challenge the students to communicate their understanding through teaching each other, and 4) inspire the students not only to learn for themselves, but also to share that knowledge with others. The impact on the

secondary audience occurs through high-profile outreach and recruitment activities which will not only interest students in participating, but also educate the public about the WAIS Divide drilling program. During and after the program, students will develop their own outreach activities, which they will then take with them and share with their local communities.

If you have ideas and suggestions for the implementation of this program please email Erin Pettit (epettit@ess.washington.edu).