

Undergraduate Initiative in the Siberian Arctic

Dr. Walter is leading the UAF team as they participate in a new initiative at the Woods Hole Research Center known as the Polaris Project (PI Associate Scientist Max Holmes).

The Polaris Project will train future leaders in arctic research and education, and inform the public; both tasks are essential given the rapid and profound changes underway in the Arctic in response to global warming. This work is being supported by a \$1.6 million grant from the National Science Foundation.

According to Dr. Holmes, “The Arctic is central to the global climate change issue, and Russia has by far the largest share of the Arctic. Yet few western scientists, much less students, ever get the chance to work in the Russian Arctic. This project will be a unique collaboration among students, educators, and scientists from distinct cultures working together to address a critically important scientific challenge.”

The Polaris Project includes a field course and research experience for undergraduate students in the Siberian Arctic,

several new arctic-focused undergraduate courses taught by project co-primary investigators (PIs) at their home institutions, the opportunity for those co-PIs to initiate research programs in the Siberian Arctic, and a wide range of outreach activities. (See graphic for a visual guide to the partnering institutions and outreach activities.) All project participants, both students and faculty, will visit kindergarten through Grade 12 classrooms to convey the excitement of polar research. Materials related to the project will be featured in the *GoNorth* curriculum, which is used in thousands of schools worldwide. The guiding scientific theme will be the transport and transformations of carbon and nutrients as they move with water from terrestrial uplands to the Arctic Ocean.

Holmes adds, “A key factor in the success of this ambitious initiative will be the superb team of young scientists and educators that has been assembled from across the US and Russia. It is an interdisciplinary, cross-cutting program, and I am thrilled that NSF has responded to our plans and goals in such a big way.”

Dr. Andrew Bunn, an assistant professor in the Department of Environmental Sciences at Huxley College at Western Washington University, is excited to be part of the Polaris Project because, “The Polaris Project will allow us to take students to one of the most remote and alluring places in the world to do some really important science. We have a responsibility to understand the dramatic changes taking place in the Arctic and to train and inspire the next generation of arctic researchers.”

The initiation of the Polaris Project comes during the International Polar Year (IPY). The IPY is a large scientific program focused on the Arctic and the Antarctic from March 2007 to March 2009, organized through the International Council for Science (ICSU) and the World Meteorological Organization (WMO). The Polaris Project will emphasize several of the IPY priorities outlined by the National Research Council and the National Science Foundation, including attracting and developing the next generation of polar researchers, promoting diversity and involving arctic indigenous communities, integrating research and education, creating innovative undergraduate science and education resources, providing authentic research experiences for undergraduates, and collaborating with other IPY projects in the US and internationally.



Key Objectives and Outcomes

- attract and develop next generation of arctic researchers
- engage new investigators in polar research
- encourage interdisciplinary teaching and learning
- integrate research and education
- create innovative undergraduate science and education resources
- provide authentic research experience for undergraduate students
- bridge formal and informal education and inspire broad public audience
- promote diversity in arctic science and education
- involve arctic residents and communities
- impact K-12 student and teachers
- build international partnerships and collaborations
- link with other IPY projects
- advance arctic science

Dr. Holmes, director of the Polaris Project, is an earth system scientist with broad interests in the responses and feedbacks of ecosystems to environmental and global change. Most of his current research takes place in the Arctic (field sites are in Russia, Canada, and Alaska), and addresses how climate change is impacting the cycles of water and chemicals in the environment. Dr. Holmes is strongly committed to integrating education and outreach into his research projects, and is particularly interested in involving students in the excitement of scientific research.

The Woods Hole Research Center is dedicated to science, education and public policy for a habitable Earth, seeking to conserve and sustain forests, soils, water, and energy by demonstrating their value to human health and economic prosperity. The Center has initiatives in the Amazon, the Arctic, Africa, Russia, Asia, Boreal North America, the Mid-Atlantic, and New England including Cape Cod. Center programs focus on the global carbon cycle, forest function, landcover/land use, water cycles and chemicals in the environment, science in public affairs, and education.

For more information, please contact:

*Elizabeth Braun
Director of Communications
Woods Hole Research Center
508 540 9900, x109
ebraun@whrc.org*