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KNOWLES SCIENCE TEACHING FOUNDATION FELLOW SELECTED TO TRAVEL TO SOUTH POLE WITH ICECUBE, THE WORLD'S LARGEST NEUTRINO TELESCOPE

Five Additional KSTF Teaching Fellows to Aid in Antarctic Research, Bringing Polar Science into the Classroom

Moorestown, NJ, January 14, 2009 — Casey O'Hara, KSTF Teaching Fellow and National Board Certified physics teacher at Belmont, California's Carlmont High School, will travel to the South Pole during the 2009-2010 winter (austral summer) to take part in the construction of IceCube (www.icecube.wisc.edu), the world's largest telescope built to detect neutrino particles and the biggest research project ever attempted in Antarctica. IceCube involves collaboration between thirty leading institutions in the US, Sweden, Germany, Belgium, the Netherlands, Japan, Switzerland, New Zealand, and Britain. Five other KSTF Fellows have been selected to support the research in the U.S. The KSTF team, which consists of high school teachers with exceptional content knowledge in science and mathematics, will begin training for the IceCube project February 21 in Alaska.

A primary goal of the National Science Foundation supported IceCube project is to engage and motivate the next generation of scientists and engineers. "We want to make sure that every participant maximizes the impact of this incredible opportunity," said Dr. James Madsen, physics professor at the University of Wisconsin at River Falls. "The existing network of KSTF Fellows means that hundreds of teachers and students nationwide will be tuned in to the IceCube experience." Mr. O'Hara and the five other participating KSTF Fellows will receive an extensive introduction to astrophysics and polar science while working with noted scientists building and operating the IceCube observatory. They will also be trained on a variety of communications tools including blogging, Webcasting and photography to better leverage the experience. The team will develop new classroom curriculum and activities based on the science of IceCube.

"KSTF is honored to partner with one of today's premier science project," said Dr. Angelo Collins, KSTF's Executive Director. "Our teachers will have the unique opportunity to engage their students, colleagues and the larger education community with real-time scientific research happening at one of the most remarkable places on Earth."

One of the biggest science projects ever funded by the National Science Foundation, IceCube is designed to detect neutrinos, other subatomic particles as well as high-energy cosmic rays. The detector grid with its unique light sensors is built so that scientists can determine the neutrinos' direction, energy level and ultimately learn about their source such as an exploding star or a black hole. "IceCube gives us is a new window into the universe," said Dr. Madsen. "This fundamental research can lead to improved understanding of nature and have enormous potential to open up new areas of science." When IceCube is completed in 2010-2011, it will occupy a cubic kilometer of Antarctic ice. Significant scientific investigations are already under way with the data collected during the construction phase.

During his stay at the South Pole, Mr. O'Hara will work on the cosmic ray detector on the surface. Good preparation and a healthy mental attitude are essential: Some of the challenges facing those who work at the IceCube observatory include extreme temperatures (-5 to -31°F /-15 to -35°C during the austral summer); 24 hours of intense sunlight; and 10,000 ft. of elevation that can cause altitude sickness.

"I look forward to this adventure and to sharing the thrill of scientific discovery with my students," said Casey O'Hara. "I know that I will be able to develop rich and exciting curriculum because of my experience at the South Pole."

Mr. O'Hara's KSTF support team will be fully briefed on the goals, logistics and science of the project during the training session in Alaska, and the summer training sessions at the University of Wisconsin River Falls and the University of Wisconsin-Madison. The five KSTF Teaching Fellows selected for the project are:

- Katey Shirey, physics teachers at Washington-Lee High School in Arlington, Virginia (chosen as the first alternate to go to the South Pole with IceCube in the 2009-2010 winter and selected to make the trip in the 2010-2011 winter)
- Liz Ratliff, mathematics teacher at Lexington High School in Lexington, SC
- Kristen Fancher, chemistry teacher at Dansville High School in Dansville, MI
- James Lane, prospective biology teacher studying at Hamline University
- Scott Murphy, prospective physics teacher studying at the University of Maryland

About KSTF

The Knowles Science Teaching Foundation (KSTF) was established by Janet H. and C. Harry Knowles in 1999 to strengthen the quality of science and mathematics teaching in United States high schools. The Foundation's signature program, the KSTF Teaching Fellowships, awards exceptional young men and women with a five-year fellowship valued at up to $150,000 as they embark on careers teaching high school science and mathematics. There are currently 101 KSTF Fellows who are impacting nearly 10,000 students in the 2008-2009 academic year alone. KSTF's other programs includes Research Fellowships for doctoral level researchers and a biennial Knowles Conference series. For more information visit www.kstf.org