

## Physics teacher to spend month in Antarctica

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Sometimes curiosity takes the best of an individual, which was the case when Redwood City-resident Casey O'Hara saw a metal pole while attending training in Alaska.

O'Hara could not resist seeing if his tongue would stick.

Realistically, O'Hara, a physics teacher at Carlmont High School in Belmont, knew his tongue would stick but still needed to see what would happen. He handed a fellow teacher his coffee and, of course, a camera and got to licking.

True to prediction, his tongue stuck. This outcome was not surprising, but the quick freezing action and strength of the connection was.

O'Hara used his coffee to become free, but not before getting a great snapshot.

It's that kind of curiosity O'Hara hopes to instill in his students: The urge to want to know more and understand how science fits in with that curiosity. Today, O'Hara begins nearly a week-long trek ending at the South Pole where he'll spend one month at the IceCube, the world's largest neutrino telescope and the biggest research project ever attempted in Antarctica. While there, O'Hara will help with research but also conduct experiments of his own at the beckoning of students. He will keep an online journal with photos and answer questions posed by those who check his log.

O'Hara, a 37-year-old who began teaching at Carlmont six years ago, is a Knowles Science Teaching Foundation fellow. Through the five-year fellowship, O'Hara is able to work closely with a group of science teachers from around the country for training and to discuss curriculum.

It was at a fellowship gathering that O'Hara learned of the opportunity to travel to Antarctica. He was one of about 15 who went to the informational meeting and one of six chosen. O'Hara travels first while another teacher will go next winter. The remaining four act both as alternates and working with O'Hara remotely while he's at the South Pole.

"Through KSTF's network of Fellows and alumni, hundreds of teachers and students nationwide will be able to tune in to the IceCube experience," said KSTF Executive Director Angelo Collins in a press release. "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."

O'Hara was subjected to a physical before given the go ahead, and then he began making a mental checklist of all the things he'll need over the month. He'll be issued boots and clothing on loan before arriving in Antarctica on Nov. 23.

Before leaving, he and other teachers put together a number of experiments that he will try there to see if there are any differences in the results.

One experiment will be making ice cream. On Friday, O'Hara made ice cream with his students. The recipe was simple: fill a larger ziplock bag about half full with ice and salt. In a smaller bag, combine the ingredients for ice cream. Place the smaller bag into the larger bag and begin to shake. It took students about five minutes before ice cream was formed.

O'Hara will see if that process is faster when done outside in Antarctica.

A fellow teacher's students asked O'Hara to see if his beard grows at a different rate. Over October, O'Hara grew out a beard and took measurements, which the students graphed.

In addition, O'Hara will see how quickly a drop of water freezes. Lastly, he will monitor his blood rate, heart rate and reaction time. The reaction time element will tie in well with lessons his own students will be learning and can duplicate in Belmont to compare differences.

For O'Hara this unique opportunity gives him a chance to travel where few ever will while participating in a gathering scientific data. But more than that, O'Hara hopes the experience is memorable for his students.

He noted, physics is one of those classes that students either love or hate and it's generally based on their experience with a teacher.

"I want to be that totally awesome teacher," said O'Hara hoping his students will find a curiosity in science that will lead to further study later in life.

Follow O'Hara on his adventure at <http://www.polartrec.com/node/10836>.

Heather Murtagh can be reached by e-mail: [heather@smdailyjournal.com](mailto:heather@smdailyjournal.com) or by phone: (650) 344-5200 ext. 105.