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Summer break means Arctic adventure for St. Johns County teacher



Liberty Pines Academy science teacher Stephen Kirsche is gearing up for his next big adventure, a chilly trek to one of the coldest corners of Earth — the Arctic Circle.

Kirsche will embark on his expedition for a month this summer through the PolarTREC (Teachers and Researchers Exploring and Collaborating) program, which is funded by the National Science Foundation and assigns K-12 teachers to various hands-on field research experiences in polar regions.

“I was very much drawn to the program based on the fact that as a science teacher, even though I’m in a classroom all the time talking about science and how it’s done in the field, I don’t really have a lot of experience actually going into the field and doing it,” he said.

The three-week experience will place Kirsche alongside Dartmouth University professor Ian Baker and doctoral student Eric Wagner as they collect core samples at Summit Station, a research facility on top of Greenland's ice sheet.

“What I loved about the idea of going to the Arctic is that our team is really small, so I won't be there as an observer, I'll be there actually helping do the research,” Kirsche said.

The crew will drill 80 meters, or a little more than 250 feet, into the ice for samples that will provide data on sheet's recent melting. Some of the samples will be transported to Dartmouth, where Kirsche and his team will examine the ice's structure and how it's affected by changing temperatures.

“Basically we'll be asking if the temperature at the surface has caused the ice to break down that far underneath, as well,” Kirsche said. “If it has, that's significant considering the melting that's happening in Greenland.”

Air pockets from deep within the ice will also allow researchers to study carbon samples from past years, measuring and comparing previous levels to current levels.

Kirsche recently received a “crash course” in Fairbanks, Alaska, where he met with a dozen other teachers for survival training and research briefings. He's since brought the experience back to the classroom to share with his seventh- and eighth-grade students.

“They're definitely excited and curious, although I don't think they completely understand, since most of them grew up in Florida and have no idea what snow is,” he said. “Some of them think I'm crazy for going there to live in a tent for three weeks.”

He's already started documenting his experiences in an online research journal, which he said he'll share with students (via www.polartrec.com) over the course of summer break. When the new school year starts, he hopes the hands-on research will take his class beyond the traditional textbook.

“I want to use it to explain to them during our talks about climate and how it's changing. There's so much out there on both sides about climate change, it's hard to know what to believe anymore,” Kirsche said. “This is a way to look at data and show them how to deal with it.”

He added that his biggest mission is prompting the thought process behind science, getting the students to ask what to look for and how to look for it.

The expedition helps add credibility, an important component when teaching middle-schoolers.

“When you show them world examples, it makes it that much more meaningful,” he said.

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