

Libertyville Review

Libertyville High School teacher sharing lessons from Greenland NASA mission

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Mark Buesing's career has taken just about as many twists and turns as the bicycle he used to race against Lance Armstrong.

First, he was an engineer. Then came cycling (more on that, later). And now, teaching.

Most recently, the Libertyville High School physics teacher and boys cross-country coach added working with NASA scientists to his varied résumé.

The 47-year-old from Bristol, Wis., returned this spring from a three-week expedition to Greenland. He was one of only 15 teachers selected from a pool of roughly 300 applicants that joined glaciologists in NASA's Operation IceBridge. Amy Westman, a Libertyville graduate who's now an oceanographer with the U.S. Antarctica Program, urged Buesing to apply.

The six-year, airborne mission maps and measures land and sea ice in Arctic and Antarctic campaigns. Buesing gave students — not just in Libertyville — a look at the research through PolarTREC, a program that pairs teachers with polar scientists.

He was tasked with translating a complex mission into lessons delivered to schools around the globe via virtual, real-time chats.

In Libertyville, Buesing brought back a rare souvenir: students in his Advanced Placement physics class analyzed a slice of NASA data, 30 seconds worth to be precise.

A seemingly insignificant study, right?

Except that no other high school in the country has interpreted the information in its curriculum, Community High School District 128 officials say.

Students translated the data into visual representations of a glacier.

"Even in high school, they can play on the same field as any other scientist," said, Buesing, dubbed "Mr. Mark" by students. "Science is very democratic that way."

His goal is to encourage students to pursue careers in science, technology, engineering and math.

"To see teachers doing things in science is invaluable in showing kids there's promise in the field outside of the classroom," said Greg Herman, 55, the Libertyville High School science department chair.

Even if they don't chose that path, Buesing hopes students "still keep one foot in that world." Plus, basic science literacy allows them to break down complicated issues like climate change, nuclear energy or space exploration into "smaller and understandable pieces," Buesing said.

For the teacher, the trip re-energized his nearly 20-year career at Libertyville, where he also heads academic decathlon.

He graduated with an engineering degree from University of Illinois and worked with several engineering companies. After that, he became a professional cyclist, ascending to the 1992 Olympic trials, where he competed against Armstrong.

He took a gig as a substitute teacher at Grayslake High School to support his racing income ("I was not Lance Armstrong," he says). After a few weeks with students, he soon discovered he was "meant to be a teacher" and earned his master's degree at Roosevelt University in Chicago.

"There was a total epiphany," Buesing said. "There was this miracle of learning happening right in front of me."

In Greenland, he posted frequent updates on his website, posted YouTube videos, used Skype to connect with students and compared notes with fellow teachers from Greenland and Denmark. The effort reached more than 500 students and 100 teachers at both the elementary and high school levels during the campaign.

"I always emphasize to my students that inside any hard problem are two or more easy problems trying to get out," Buesing said. "You can take that same approach to any complex science topic."

The group was based in a town of about 5,000 people in Kangerlussuaq, Greenland. They "mowed the lawn," flying out of the Thule Air Base to survey glaciers and covering about 2,000 miles daily.

Scientists collected two terabytes of data per day. Pilots are so skilled that they can return each year to a precise location to map an area.

"They were so dedicated to the science," Buesing said. "They were so dedicated to the future, knowing that they're collecting this data now, but it's going to take years of data before someone can put that into a model that's accurate."

As for his own ongoing mission, Buesing vows to continue speaking at schools and community groups about his self-described "adventure" in Greenland. Anyone interested can contact him at mark.buesing@d128.org.

"That will continue as long as I can make it last," he said.

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