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Monday, August 18, 2014

Middle school science teacher savors field research in 'unknown world' of the Arctic

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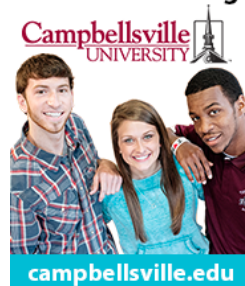
The researchers placed glue on flowers to catch pollinators during a PolarTREC summer project in Greenland. Morton Middle School's Emily Dodson-Snowden was one of the teachers selected for the project. (All photos courtesy of PolarTREC unless otherwise noted)

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By Tammy L. Lane
Special to KyForward

Emily Dodson-Snowden, a sixth-grade science teacher at Morton Middle School, didn't have a typical summer break. She spent three weeks in Greenland studying how climate change influences plant/pollinator interactions and plant reproduction as part of PolarTREC (Teachers and Researchers Exploring and Collaborating).

"I've always been interested in the Arctic and Antarctic," she said. "It's like an unknown world everyone wants to discover."

Dodson-Snowden applied a year ago along with about 200 other teachers. PolarTREC, whose projects are funded by the National Science Foundation, ultimately picked only 12 to pair with small groups researching penguins, ice melts and other frosty topics. She learned of her selection just before the winter holidays. "Everyone said Friday Dec. 13 was unlucky, but not for me," said Dodson-Snowden, who also got married that day.

In February she flew to Alaska for a week of training with her team, which eventually included three researchers from Dartmouth College. "It's become a trend for young researchers to want to work with educators because they've grown up with it," she noted.



Then right after school dismissed in June, she headed to Kangerlussuaq on the west coast of Greenland – described as a cold, desert-like landscape with scrubby plants and sandstorms that whipped their tents. Her team worked outside of town and occasionally stayed at the local science station to charge instruments and take a hot shower. “I love camping, so that part was actually really fun,” she said.



Emily Dodson-Snowden (Photo by Tammy L. Lane)

On a typical day, the team trekked to three sites along Kangerlussuaq’s longest road, which ends at the ice sheet. The three-degree temperature shift along the way enabled them to observe, take samples and measure how climate and precipitation might impact plant pollination by bees, mosquitoes and flies.

“We noticed the plants were blooming larger and faster closer to town, so you can tell the warmer temperatures are having an effect,” she said.

And since the ozone layer is so thin, the arctic is a good place to study the potential broader impact of global warming. The majority of flowering plants in nature and one-third of crop plants depend on pollinators to produce fruits and seeds.



Emily Dodson-Snowden paused at the entrance of the Permafrost Tunnel Research Facility in Fox, Alaska, where she went for training.

The work in Greenland meant long days and little sightseeing, but Dodson-Snowden did enjoy hot chocolate at the ice sheet during the summer solstice and sampled grilled muskox burgers, whale and caribou. Now she looks forward to sharing her adventures at Morton and introducing youngsters to possible career paths in STEM (science, technology, engineering, math).

“Students just eat it up when they see you’ve experienced stuff. They see that I’m doing science – I experience it and bring it back for them to experience,” she said. Her first unit is ecology, so she plans to show the sixth-graders how to research pollination in their own backyard.

PolarTREC also fueled some creative teaching techniques, especially for experiments design, which is part of the new science standards.

“The learning went both ways. The researchers were interested in how teachers would take it down a level to share it with kids,” Dodson-Snowden said, adding, “I’ll definitely use this in my classroom for years to come.”

Tammy L. Lane is a communications specialist and website editor at Fayette County Public Schools.

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