

BANGOR DAILY NEWS

Distance learning program links rural students to Vanderbilt students and research faculty



By Tom Walsh, BDN Staff
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SURRY, Maine — Imagine a fourth-grader getting off a school bus and offering this response to a parent asking what went on at school today: “We designed and we built and then we tested a new artificial leg.”

It’s a response that could have come last Friday from any of the 22 Surry Elementary School fourth- and fifth-graders who are participating in a new interactive distance learning curriculum. For an hour every Friday afternoon the program allows students to videoconference with undergraduate and graduate students and with research scientists and faculty at Vanderbilt University in Tennessee.

The Vanderbilt University Medical Center created its Aspirnaut™ program to partner with rural K-12 schools as a means of encouraging student interests and aptitudes in skills required for real-world jobs involving science, technology, engineering and math (STEM).

The program specifically targets economically, ethnically and geographically diverse students, providing 25 STEM-based laboratory sessions a year to elementary and high schools in seven states, with lab lessons customized to dovetail into each school’s curriculum.

In Maine, the program is now in place in elementary schools in Dedham, Frenchboro, Hancock, Indian Township, Islesboro, Milbridge, North Haven, Otis and Vinalhaven. It's also available to Ellsworth High School students and to students participating in the after-school programs sponsored by the EdGE project of the Bar Harbor-based Maine Seacoast Mission.

The Aspirnaut™ program came to Surry with the arrival last fall of Cathy Lewis, the K-8 school's new principal. She was the principal of the Beech Hill K-8 school in Otis in 2010, when the program was first introduced in Maine. Fourth-grade teacher Libby Bishop and her fifth-grade counterpart, Joan Dwyer, oversee the electronic lab sessions at Surry's 105-student elementary school.

Lewis made sure that there was a white lab coat for each student and that the coats were embroidered not only with a Vanderbilt logo, but with each student's name. Last week, students seemed to be wearing their lab coats with as much pride as a star athlete sporting a high school letter jacket. When this school year's Aspirnaut™ curriculum has run its course, students will get "diplomas" from Vanderbilt.

"This program is about more than science and math," Lewis said Friday. "It's about life and career preparation. Every Vanderbilt instructor starts the lesson by discussing with the kids his or her own personal interest in science or math and what career field they're in. Kids start to think, 'Hey, that could be me.'

"It's funny," Lewis said, "but the Skype [videoconferencing] technology we use doesn't always work. That's a lesson, too. We want them to see that's what sometimes happens."

The in-school electronics were working fine for an Aspirnaut™ Beaming STEM Lab unit on skeletal mechanics that provided four teams of students with the challenge of engineering, building and road-testing their own designs for a prosthetic leg, using common household items — toilet plungers, sponges, bubble wrap, heavy cardboard tubes and, of course, duct tape.

Fifth-grader Zach Beckwith said Friday that his team of young prosthetic engineers scrapped their first design after initial testing in favor of what he termed a "chicken foot" version that offered better stability.

"We were able to build a new leg in 20 minutes that was better for stability," said Beckwith, 11, who told the class he has a special interest in prosthetics, as a close friend of his mother's uses one after losing a leg in a motorcycle accident.

"What I learned is that you can do engineering no matter what age you are, whether you're our age or out of college," Surry fifth-grader Amelia Hayden said.

Serendipity played a major role in bringing the Aspirnaut™ program to Maine. Brian Langley, a state senator from Ellsworth, is a chef who owns the Union River Lobster Pot restaurant in downtown Ellsworth. He's also a teacher, having taught culinary arts classes at the Hancock County Technical Center for nearly 30 years before retirement.

"The mother of one of my dishwashers at the restaurant worked at Home Depot, where she met a couple — Billy and Julie Hudson — who were here from Vanderbilt for the summer, doing research at the MDI Biological Laboratory," Langley said. "As it turned out, they were the founders of the Aspirnaut™ program, which was new at the time. They gave her a business card, which her son gave to me. Online I saw that they did a lot of work with rural education outreach, so I contacted them."

Within days, the Hudsons were meeting at the restaurant over fresh blueberry muffins with Langley and Lewis. Within two hours, Lewis and the Hudsons had agreed on a plan to bring the program to Beech Hill School. Within months, the program was up and running in Otis.

“I love it because it’s a real hands-on approach to science education,” Langley said. “These kids start out by doing stuff and figure out why along the way, instead of going through all kinds of stuff before they get to do anything.”

A long-time member and former chairman of the legislature’s Joint Standing Committee on Education and Cultural Affairs, Langley seems happy to have played a role in bringing the Aspirnaut™ program to Maine.

“I’ll never forget seeing Billy Hudson on Skype, telling a class of students from grades six, seven and eight that, at Vanderbilt, he has 20 PhD researchers — 18 from foreign countries and two from the United States. He told those kids, ‘Our country needs you, so you need to work hard and study hard.’ And I remember, while this was going on, there was a fifth-grader out in the hall, peering through the window, wishing he could be in the program, too.

“It’s things like the Aspirnaut™ program that I’ve been able to help with that has made this job [as a legislator] worth doing,” Langley said. “When you see what it’s doing for these kids, it reminds me you why you are doing this.”



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