

Native provides expertise, guidance to girls on PBS show

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Mallory Peper, second from right, helped four young female scientists harvest enough wind energy to power a bird bath water pump. The Faribault native appears on the science-based PBS series "SciGirls." (Photo provided)

By all accounts, Mallory Peper was a SciGirl before being a SciGirl was cool.

The Faribault native and 2002 Shattuck-St. Mary's graduate admits she grew up loving science fiction, science and mathematics.

After receiving a bachelor's degree in hydrology at St. Cloud State with a minor in geographic information systems, Peper settled in for a career mapping and analyzing wind, solar and transmission projects.

Then TV came calling.

PBS' new series, "SciGirls," challenges young girls to become more involved in science, technology,

engineering and math — STEM. Each show follows a different group of middle school girls; topics range from the environment to technology and from engineering to nutrition.

An episode about alternative energy sources — specifically wind energy — required a mentor for four young girls interested in building their own wind farm.

Enter Peper.

She was nominated for the role by her peers in a group called Women of Wind Energy, and didn't hesitate to accept.

"I was absolutely thrilled by the opportunity to teach young girls about the opportunities in wind energy," Peper said Wednesday. "I'm so excited to be a part of it."

While five of the first 12 episodes were filmed in Minnesota, the series is designed for national appeal. Other episodes are set in the Florida Keys, New York City, coastal California and the deserts of Utah.

The "SciGirl" strategy is not to produce the segments in television studios but instead to feature real girls who are engaged in scientific activities, said series producer, Kathy Shugrue.

"We believe that there is a certain appeal in showing real girls who are not actors," she said. "The (viewers) want to see girls who are like themselves."

They specifically look for female grad students — like Peper — who can relate to the young girls on the show.

It was a perfect fit.

“It was an absolute blast,” Peper said. “Their raw passion for learning was inspiring and motivational. These girls met in science camp, and were science enthusiasts themselves. They had their heads on straight, as far as science and mathematics.”

She, too, is furthering her education, pursuing her master’s degree in GIS and project management at St. Mary’s University while working at Westwood Professional Services, a land and energy development consulting firm in Eden Prairie.

So, is there a new career on the horizon — in television?

“I enjoyed the experience,” Peper said, “but one show’s enough for me — unless they want to do another GIS show.

“I believe in what they’re doing,” she continued. “Had this come around 10 years ago, I very likely would have been one of those girls raising her hand to be on the show. It’s cool to be a girl.”

Episode 106: ‘Blowin’ in the Wind’

In addition to Faribault native Mallory Peper, this “SciGirls” episode features Hannah, Nicole, Aditi and Vicki, all fans of wind energy.

They decide to create a mini wind farm of their own and turn to KidWind, the organization that created the mini wind turbines they had worked with at the summer science camp where the girls first met.

The girls put together two mini turbines and test variations on the shape and pitch of the blades. They realize they need to know more about how real wind farms work, so they arrange to meet wind energy mentor Peper, then visit two working wind farms. They learn how much analysis goes into finding the best location for a wind farm to provide a steady source of energy.

Taking what they learn from their field trip with Peper, the girls look for a location for their wind farm. They know they need a wide open space and so select a nearby ski hill. Using an anemometer, the girls take concurrent wind speed readings at different locations. They confirm their predictions: that the highest

and most consistent winds are at the very top of the hill.

The girls assemble 15 turbines and lay them out in two staggered rows, one with eight turbines and one with seven, basing their design on the real wind farm. They test each turbine and connect them all, getting a reading of more than 70 volts.

When they initially hook their wind farm to the water pumps in their bird bath, nothing happens. After troubleshooting their circuits and consulting with KidWind engineers, they rewire the turbines and reconnect the water pumps.

“It was refreshing and rewarding, especially when the water shot out — like a water fountain,” Peper said. “They were able to actually see the force behind the water fluctuate as the wind picked up and died down.”

Her role, filmed last summer, took about three days to complete.

As for the experience of working with four “tween” girls, Peper laughed.

“It’s hard to say where they’ll go (career-wise), but seeing their excitement about the experience as a whole, I imagine they’ll go far,” she said.

The episode, which originally aired March 19-21 on Twin Cities Public Television, may be viewed on the SciGirls Web site, www.pbskids.org/scigirls.

Girls still lag in science careers

In elementary school, girls are as enthusiastic about science as boys, according to a National Science Foundation report. Sixty-six percent of fourth-grade girls said in a survey that they like science, nearly the same as the percentage of boys.

But after that age, girls quickly drop away from science, technology, engineering and math — the cluster of studies called STEM.

Here are the consequences: Women make up 49 percent of the U.S. work force, but fill only 25 percent of the STEM jobs. In recent years, women have earned more than half of all bachelor’s degrees awarded in the United States, but only about 21 percent of the degrees awarded in engineering and 25 percent in computer sciences.

Women earn about 45 percent of all doctoral degrees but less than one third of those awarded in chemistry, computer sciences, math, physics and engineering, according to a separate report by the Institute of Education Sciences at the U.S. Dept. of Education.

Congress and the National Science Foundation have developed dozens of programs aimed at lowering any barriers to women in science.

It is just such an initiative that gave rise to “SciGirls.” Most of the funding comes from the National Science Foundation with additional support from ExxonMobil.

— Kay Fate