

Program Strives To Spark Interest In Science



Radford University Professor Francis Webster demonstrates flame colors emitted by different substances during a demonstration at the Southwest Virginia Higher Education Center in Abingdon, Va., on Tuesday

David Crigger/Bristol Herald Courier

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ABINGDON, Va. – A column of flame shoots up from the table, and the audience erupts in a “Wow!” The fuel was something the auditorium full of sixth-grade girls never expected: baby powder.

“Surface area,” Radford University Professor Francis Webster said after demonstrating the candle-like flame on a corn chip followed by the flaming corn starch powder – essentially the same substance, dispersed as dust.

“The importance is, if you work in a coal mine, and there’s dust in the air, you had better be careful,” he said. “If you work in a grain mill, and there’s dust, you had better be careful.”

Webster recalled the deadly explosion fueled by sugar dust at a Georgia refinery in February – an occurrence he said is still surprisingly common, although knowledge of dust’s dangers has improved industrial safety in recent years.

Speaking as part of Tuesday’s program for Females Advancing Science, Technology, Engineering and Math (STEM) at the Southwest Virginia Higher Education Center, Webster said he hopes to help young people connect science with everyday life – and give them the hands-on inspiration he gained growing up during the space-race era. Organized for girls from four area school systems, STEM was designed to expose them to fields they might not have known or considered before, said Rachel Fowlkes, the

education center's executive director.

The hundreds of girls who participated saw Webster's chemistry demo before attending smaller, hands-on classroom sessions on different aspects of science, math, technology and engineering.

"Here are some women who are young, who are doing these really neat careers with high-paying salaries here in Southwest Virginia," Fowlkes said of the women who led many of Tuesday's hands-on sessions.

"There are some good jobs here, and if you talk to anyone at Eastman [Chemical Company] or General Dynamics ... they're having to go outside the area to hire engineers, chemists and programmers."

Fowlkes said the program started with industry concerns about the dearth of Southwest Virginia women who become engineers. It became an effort to introduce girls to technology-related fields when they're young enough to choose the rigorous course of study in middle and high school that is needed to prepare them for college and high-paying jobs.

"It's important to get all our students excited about science, but I think girls have historically not thought it was in their future," said Elizabeth Lowe, a Washington County School Board member who volunteered at Tuesday's event.

"Every time they clap and say, 'Wow,' I think we've got them."

Other volunteers recalled their school days, with boring science lectures squeezed in at the end of the school day – a big contrast, they said, with Tuesday's hands-on learning activities.

"Science, engineering and math. Those used to be very scary words for women," said Jo Ellen Tiscornia, who was helping girls design T-shirts using Crayola markers and alcohol. "When I was in college, there were just a handful of girls that went into the engineering department, and that's different now."

The science in the project was the separation of different substances, said Susie Castrodale, a volunteer from General Dynamics, which makes aircraft parts.

"The ink in the markers, some of it will be attracted to the alcohol, and some will be attracted more to the solid, which is the T-shirt," she said.

"It doesn't seem like science; it's really fun," Kelsey McAllister, a student at Chilhowie Middle School, said as she worked on a T-shirt. "I didn't think you could actually do a craft and think it was science."

"I think it's awesome," said Chandale Fletcher, also of Chilhowie Middle School. "It's cool that we get to do something like this and get out of school to do it."

Lauren Gibson, a chemical engineer at Eastman, was helping girls from Northwood Middle School make bouncing balls from glue, corn starch, Borax and water.

"We're going to try making the ball again and see if we can make it differently," she said.

"And that's what an engineer would do, is try to perfect the process."

Some of the girls in attendance Tuesday said that with their generation, the perception that science is a boys' field is changing.

"It's not true," said Elizabeth Ferris, a student at E.B. Stanley Middle School. "Girls are just as interested in science and technology as boys are."

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