

The Daily Journal of Commerce, Portland, Oregon February 20, 2007

February is Engineering Month Industry tries to build the engineers of the future

February is a month focused on engineering, and local groups are taking the opportunity to pull students into the profession.

By Alison Ryan

Beam. Arch. Cable-stayed. Suspension. A group of eighth-grade students at Portsmouth Middle School in North Portland is watching four types of bridges get built – but with less-than-conventional materials.

A piece of foam becomes a beam bridge in the hands of one student. A bright blue cable becomes an arch bridge. Samir Sankari turns from substitute teacher to cable-stayed bridge with the help of fabric that's looped around his arms and head. And in the final construction, a handful of students are on their feet to become the towers of a rope-and-cardboard suspension bridge.



Daily Journal of Commerce photo

The engineers running the exercise are Mark Harris and Peter Martin, just two of the 30-plus Portland engineers who are doing classroom demonstrations and interactive video presentations as part of National Engineers Month.

* * *

The month of all-things-engineered began Feb. 1. National Engineers Week kicked off Monday. And local engineers have grabbed the chance to pass industry information along to the next generation of math and science junkies.

"I feel a definite responsibility to get out and represent well for my profession," said Tova Peltz, a geotechnical engineer at GRI and co-coordinator of the Engineers Week High School Banquet, an event that will put high school students together with engineering pros Wednesday for an afternoon and evening of engineering immersion.

Engineers, about 100, will represent more than 50 local companies and organizations during tomorrow's events at the Doubletree Hotel & Executive Meeting Center. Each engineer will play host to a student or two – about 150 from Portland, Vancouver and Salem high schools are participating – and exactly how the day goes will be up to the host and hostess.

But most will head to one of three afternoon tours. One will revolve around the aerial tram, one will take a behind-the-scenes look at Portland bridges and the Oregon Department of Transportation's control center, and the third will explore Adidas research and development labs. Then it'll be back to the Doubletree to look at displays by Oregon engineering programs and professional societies. The event will be capped with a banquet featuring speakers Anne Wright and Leila Hasan, leaders of the Global Connections project, which develops software for earth imaging.

The work that Harris and Martin are doing is part of a different effort. Over the past 13 years, the Business Education Compact has partnered with businesses such as Intel and organizations such as the Institute of Electrical and Electronics Engineers to put about 4,000 engineers into 7,000 classrooms to reach 200,000 students, from kindergarteners to high school seniors.

"It creates excitement for the skills that are needed to develop the engineers of the future," said Mary Beth Horton, deputy director of the Business Education Compact.

Twenty-six companies are sending engineers into classrooms this month, and presentations are expected to reach 20,000 Oregon students. Tying into the Oregon Museum of Science and Industry's interactive video conferencing technology will mean reaching students in rural or far-away Oregon locations. Last year, fourth-graders in Pendleton watched a presentation being made at OMSI, then built weight-bearing towers out of spaghetti and marshmallows.

While students benefit from the hands-on excitement of projects, Horton said, the pros pull something from it too.

"This supports an investment in the future work force," she said, "and it's also, on an immediate basis, a great reinforcement for an engineer who goes into a classroom to remember why they got into this."

* * *

Back at Portsmouth Middle School, Harris and Martin are multiplying the meanings of the word "engineer" for the eighth graders. Engineers – civil and electrical and mechanical – played a part in building the school. They work on space shuttles, on projects underwater, on projects in the desert and in the snow, on projects all over the world.

"Your shirts," Martin says. "You have chemical engineers involved in the coloring of shirts."

The presenters flip from where engineering studies could take the students to what it'll take to get there. Lots of math classes, Harris says, and science too. Hard work, curiosity, and determination – as the presenters point out, "Don't let anybody tell you you can't."

Mentoring beyond the month

A 20-story tower is being planned for South Waterfront – and the minds imagining the building belong to local high school students.

The 30 students are working on the project as part of participation in the ACE Mentor Program, which began in January in Portland.

"It's really intended to be representative of the collaboration that goes on in a real project," said Ed Dean, vice president at Nishkian Dean and leader of efforts at building an ACE program in Portland.

More than 20 mentors, from local companies such as GBD Architects, Hoffman Construction Co., David Evans and Associates and Gerding Edlen Development, are working with students from six Portland public high schools.

ACE, which stands for Architecture, Construction, Engineering, has been running on a national level for more than a decade. The New York-based nonprofit began in 1994 when 17 design, construction and engineering firms formed three teams – organized like typical building project teams – and pulled 90 students from local high schools to get insight into the industry.

In Portland, students will participate in 12 to 15 mentoring sessions over the next few months. They'll visit sites, work in small groups with professionals in architecture, engineering and construction, and eventually present the 20-story South Waterfront building they've been working on sometime in May.

At the end of the program, students can apply for ACE scholarships, awards ranging from \$1,000 to \$4,000 that can be used for higher education in a building-related field. More than \$30,000 has been raised for scholarships thus far.