



Tri-City teachers broaden horizons

Fellowships educate on cutting-edge industries to take back into class

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Katy Kuei and Jonathan Davies are career educators who headed straight into teaching after college.

While they both have science degrees, their relative lack of work experience outside the classroom could be viewed as a setback to their teaching.

That's why Industry Initiatives for Science and Math Education was formed. Since 1985, the nonprofit organization has placed thousands of teachers into summer fellowship programs with private companies and research institutions.

By being exposed to today's cutting-edge industries — companies such as Lockheed Martin, IBM and Google — teachers gain a practical understanding of the skills required to work in such environments and then are able to develop relevant lessons for their students.

"The goal was to help teachers better motivate their students and prepare them for careers in science, technology, engineering and math," said Kaye Storm, director of special projects for IISME.

"It's not that teachers aren't doing a good job ... but they can't really counsel their children on an industry career if they haven't worked in the industry themselves."

Inspired lesson plans Kuei, a science teacher at Mission San Jose Elementary School in Fremont, agreed that her work the past two summers at private corporations has helped shape the curriculum she designs.

"It definitely enriches my own lab activity when I have a lot more to offer," she said.

Working in the environmental affairs department at New United Motor Manufacturing Inc., Kuei this summer developed a presentation for employees to become more aware of environmental issues.

She's also designing a lesson plan for the new school year that would require her students to use multimedia to address an environmental issue, write an essay and submit their work to the Environmental Protection Agency. Students would receive a certificate of recognition signed by the president later on.

Meanwhile, another Tri-City area teacher is completing his second summer of work at the Lawrence Berkeley National Laboratory.

Davies, who teaches at James Logan High School in Union City, created a Web tutorial for using greengenes, an application that allows users to analyze gene sequences. Last week, he led a workshop on using greengenes, which was attended by four other Logan High teachers.

Through this experience, Davies also has come up with a scenario for a class assignment: Students pretend to be professional microbiologists hired by a city to test water samples.

After submitting their findings to the county health department, the scientists attend a City Council meeting where the elected officials must decide whether to shut down the area's beach.

A different world

Asked how their work this summer compared to their time in a classroom, the first thing both Kuei and Davies noted was the freedom of not having to work within a structured bell schedule.

"I think teachers are a little more intense," said Davies, who would arrive at the lab last summer at 8 a.m. and be the first one at work. "Teachers get things done. They've learned to use their time effectively."

Not being confined to a bell schedule is a pleasant respite, Kuei said, but she enjoys the freedom she has as a teacher to design her own curriculum.

"I'm my own boss in the classroom," she said, adding that she prefers also the immediate gratification of teaching.

"When you teach every day, you get rewards. When a student gives you a hug, you get response. Working in the industry, gratification is very rare. Sometimes people work for months to see results," she said.

Storm, the director at IISME and a former teacher herself, said it's healthy for teachers to experience a different work environment.

"Stepping out of the culture of education for eight weeks and stepping into the culture of industry is really revitalizing for teachers. They come back to school revved up to put into lessons what they have learned," she said.

Several years ago, IISME tracked the teachers who had gone through its fellowship program and found that they were twice as likely to remain in the teaching profession compared to national and state averages, Storm said.

IISME has awarded 2,375 fellowships since 1985. Of the 188 teachers with fellowships this summer, 14 are from the Tri-City area.

The fellowships, worth up to \$7,400 each, help teachers to remain in the Bay Area and gives them the confidence to try new things, Storm said.

"(The program) helps teachers to take a few more risks," she said. "It helps to revitalize them. And it helps them to afford to stay in teaching."