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Teachers take real-world experience into classroom

By Jennifer Shaw
Correspondent

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It was quite the cerebral summer for a few area teachers.

One researched a possible genetic link to the onset of breast cancer at Lawrence Berkeley Laboratory, while another amassed data to determine the efficiency of a defense meteorological satellite at Lockheed Martin.

The high school teachers were among the 155 who took part in the 27th annual eight-week summer fellowship program, sponsored by the Industry Initiatives for Science and Math Educators, or IISME.

The teachers had an opportunity to actively participate in cutting-edge research. And then, as a key goal of the program, they were to take their real-world, summer work experiences at area high-tech companies, research labs and universities and infuse them into their curriculum.

Peter Bodrog, a teacher at College Park High School in Pleasant Hill, worked at Lockheed this summer. He is eager to help his biology and advanced placement environmental sciences students make meaningful connections between their classroom experience and the workplace.

"We're looking at the subject matter in a whole new way ... It's showing its application outside of the classroom," he said.

"Subjects we may think of as academic are being made use of in a tangible way ... It makes it engaging and hands-on," Bodrog said.

Peat Sutherland, who teaches chemistry and forensic science at Las Lomas High School in Walnut Creek, has held various IISME fellowships since 1992.

He has

worked at Dow Chemical's research facility, doing stretching and impact tests on recycled plastics, was a technical writer at Hewlett-Packard, experimented with lasers and optics -- and had a "really cool job" at Varian Medical Systems, helping formulate calibration procedures for large machines that treat cancer patients.

"It's the excitement of doing science, of getting to go into the lab to do the things you've only read about," said Sutherland.

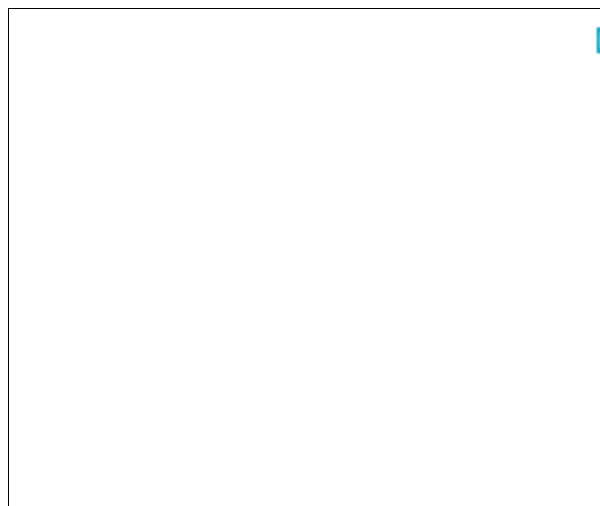
This year, the 24-year veteran teacher served as a peer coach for two dozen fellows, helping them create lesson plans for the coming academic year.

Annie Pang, a chemistry and biology teacher at College Park, experimented with breast tissue taken from two female subjects, ages 19 and 91, to track the growth of cancer cells after infecting the tissue with two antibiotic resistant retroviruses -- one carrying the HER2/neu gene.

Pang will be drawing from what she gleaned during her fellowship to help teach her students about how genes are replicated.

"The stimulating fact is that I have to keep learning, to keep researching to find the correct answers. I'm being exposed to the new technologies, the new machines they're developing, the new lab techniques," she said, with palpable enthusiasm.

This summer, Ellen Fasman was immersed in exploring state-of-the-art computerized ways to deliver instruction, specifically how simulation and



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animation are being utilized in a digital advanced placement biology textbook.

During prior IISME fellowships, Fasman has had hands-on adventures in realms such as molecular cloning, working with artificial blood vessels and identifying biomarkers for the onset of asthma. Each time, she has been able to empathize more with her students' learning process.

"It's the best shot at honing my teaching skills. It's allowed me to stretch myself, which is what I want my students to do," said Fasman, who teaches biology and physiology at Concord High School.

"It also puts me in the same uncomfortable zone as my students, confused and overwhelmed at times, and having to learn something new."

Fasman and her IISME colleagues also modeled lifelong learning.

"I owe it to my students to keep learning and to not use the same dusty old curriculum year after year," she said. "It keeps me on my toes."

For more information, visit www.iisme.org.