Why We Teach

AN OCCASIONAL SERIES

In Tenenbaum's class, science for non-majors comes to life

Science instructor hopes knowledge will help students make informed decisions for Earth

PHOTO ILLUSTRATION: NASA/JPL-CALTECH/T. WYNNE

Laura Faye Tenenbaum
Adjunct physical science instructor
Glendale Community College

It wasn't until her college freshman year that Laura Faye Tenenbaum became interested in science. Now, an adjunct physical science instructor at Glendale Community College near Los Angeles, Tenenbaum teaches science to non-majors who enroll in her classes merely to satisfy breadth requirements.

She hopes to motivate her students to become scientists or at least help them to understand science, so they can make informed decisions about matters that affect our planet.

"My job," explains Tenenbaum, "is to show that much of today's science is interdisciplinary and to expose students to the variety of possibilities. It's essential to use techniques that bring science to life," she says, recalling that in high school, she was bored by science. "To reach students, you must speak in their language, find the media they relate to."

Furthering her own media skills, Tenenbaum joined the NASA Jet Propulsion Lab as a faculty fellow upon winning a Pasadena City College/Glendale Community College Career and Technical Education Community Collaborative grant. As an education program specialist and member of the climate change communication team, she is in charge of the JPL Web site (http://climate.nasa.gov) and integrates it into her classroom instruction.

Tenenbaum believes "the marriage between multimedia and science is the way to go," and her work at the propulsion lab is wedded to her teaching. "The site is smokin' hot," she says. "It gets kids going. There are bells and whistles…animations, video tutorials and interactive features to help students visualize climate change and earth science concepts." Her students participate on the site. They evaluate it, ask questions, and "feel they're a part of something bigger than themselves."

While hoping the relevancy of global climate change will attract students who may not otherwise be interested to the sciences, she also takes her students on tours of the jet propulsion lab. In one case, this led a student to apply and be hired for a position there.

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Tenenbaum welcomes other tools her students already use. If during class, someone asks something she cannot answer, she will ask students to look it up on their phones, and email her the answer right then and there for immediate feedback. "I don't have to say I'll look it up and get back to you."

Because she saw how much her students viewed YouTube videos, she integrates those, too, into her classes. At first she'd seek out and show videos related to topics discussed in class, then she asked her students to look for videos and email her the links for extra credit. Tenenbaum found that by showing the best few videos students sent at the beginning of class, students were more motivated to arrive on time, and they received a valuable summation of what was taught in previous classes.

Now her students make their own videos. Tenenbaum who has taken moviemaking classes, explains she started bringing cameras into the lab section of her class. Students would film each other doing experiments. Or they'd go about campus and "ask man on the street type questions to find out what the average person knew." Sometimes she invites scientists for her students to interview and videotape.

Her students in classes, which are at least half female and more than one-third Latino and other minorities, "feel they're participating in their own learning," explains Tenenbaum. "This breaks down the stereotype that girls or black kids or other minorities can't do science…because there you see it. Everyone's doing science together. And science is not boring."

Tenenbaum is excited to be teaching today. "There's a lot of funding now for engaging a new generation of students in the sciences. We're right on the cutting edge of bridging multimedia gaming techniques and bringing it into the classroom. And it totally works" as evidenced by her students' interest in the JPL site.

"When you see a girl who walks into class as a freshman who never liked science… and all of a sudden she's participating and asking questions, sending you links and videos, you know she's learning deeper than just giving an answer. She's going above and beyond the class."

— By Mindy Pines, CFT Reporter

ABOUT THIS SERIES: Day in day out, CFT member educators from early childhood to the university are making a difference, reaching students and changing lives.

Despite budget cuts that are devastating schools and colleges throughout California, and affecting all jobs in education, CFT members are putting their students first and continuing to hone their craft.

What motivates them? What is their educational philosophy? How do they practice their craft? What is their vision for the future of education?

In this issue, *California Teacher* introduces "Why We Teach," an occasional series to feature teacher members and recognize excellence in education.

On the web

>Go to http://climate.nasa.gov, the Web site of the NASA Jet Propulsion Lab, winner of a 2009 Webby Award.