



Mentoring

A NEW GENERATION OF

Faculty

As the baby-boomer generation reaches retirement age, Cal Poly finds its longtime, tenured faculty members retiring in greater numbers, making it more important than ever to attract and retain a new generation of faculty.

More than 50 full-time, tenure-track faculty members were hired in calendar year 2003, compared to a decade ago when just nine were added. During the past three years, 135 new tenure-track faculty members came on board, representing nearly 20 percent of the university's 2003 tenure-track faculty.

"This is a watershed period for Cal Poly," says Interim Provost Bob Detweiler, "a time when a new generation of faculty

members accepts the challenge of sustaining the quality of academic disciplines all across the campus."

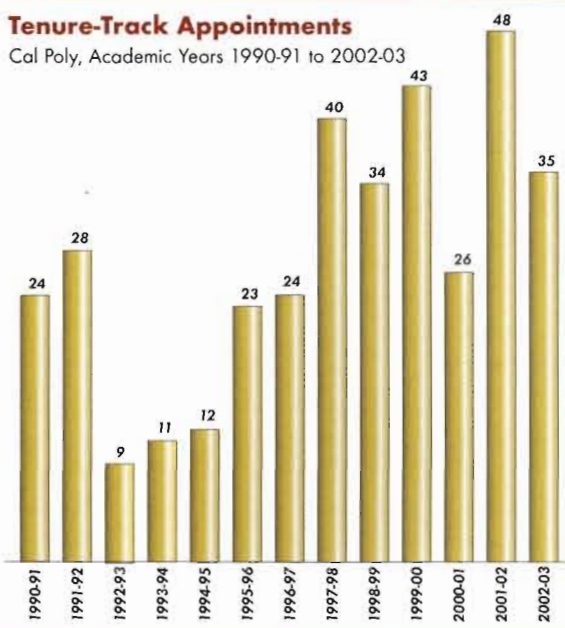
Helping all faculty members be effective teachers is the mission of Cal Poly's Center for Teaching and Learning, led by Special Assistant to the Provost and Computer Science Professor Joe Grimes.

The center provides the resources to enhance teaching skills, promotes cross-discipline collaboration, sustains an interactive community of faculty and staff learners, encourages awareness of issues that affect both the academic community and its disciplines, and provides professional development assistance.

The Center for Teaching and Learning offers a variety of workshops, classes, learning communities, grant opportunities and personalized assistance. "This is extremely important because the academy – and particularly the faculty of the academy – have a tremendous responsibility for shaping our graduates and, by extension, the world we all will live in," Grimes says.

Tenure-Track Appointments

Cal Poly, Academic Years 1990-91 to 2002-03



Positively Psyched!

Psychology Professor Jennifer Teramoto Pedrotti lists "positive psychology" as one of her top research interests.

Pedrotti describes positive psychology as the study of the enhancement of human strength and optimal functioning, and she appears to know of what she speaks: While working on her master's and doctoral degrees in counseling psychology at the University of Kansas, she earned straight A's. Optimal functioning, indeed.

The relatively new field of positive psychology focuses on quality-of-life characteristics such as hope, coping and resilience. She used that interest as the basis for a new class, offered for the first time to Cal Poly students in spring 2004.

"Psychology has traditionally spent a lot of its time focusing on pathology," Pedrotti says, "but positive psychology balances that viewpoint by allowing us to appreciate human strengths as well. I think it's important for students to be able to see both sides of the spectrum."

To the Concord native, the study of psychology was a natural choice.

"My dad is a microbiologist and my mother's a teacher," Pedrotti says.

"To me, psychology was sort of a marriage of these two disciplines – the study of developing individuals in a scientific paradigm."

While working on her Ph.D., Pedrotti conducted her clinical internship at the Topeka, Kansas, Veterans Administration Hospital, where she treated mostly Vietnam veterans with post-traumatic stress disorder.

"I saw a lot of people in a lot of pain," she recalls, "but it was nice to work there and to help. The Topeka VA hospital is one of just a few that still offer an inpatient 90-day treatment program for veterans with PTSD. The patients there are very



Jennifer Teramoto Pedrotti (Photo by Bob Anderson)

motivated and work hard at their program."

Pedrotti, who began teaching at Cal Poly in fall 2003, appears right at home on a college campus, looking a bit more like her students than her colleagues.

"I have always loved the classroom," she says. "I love to work with college students, and I enjoy research as well. I fell in love with the Central Coast when I was here for my interview, and I was really impressed by the learn-by-doing philosophy at Cal Poly. Plus, I knew it was a great school because my siblings are graduates."

Pedrotti's sister, **Amy Teramoto**,

graduated in 1998 with a degree in business administration, and her brother, **Joe Teramoto**, earned a biological sciences degree in 2002.

"Jennifer is a wonderful and valuable addition to the Psychology and Child Development Department, bringing with her an expertise in the cutting-edge field of positive psychology and the ability to teach a wide range of courses in the major," says Department Chair Don Ryujin. "She is already getting wonderful teaching evaluations from her students and is a gracious and helpful colleague who is much appreciated within the department."

Pulitzer-Prize Winner Comes Home to Mustang Daily

George Ramos spent 31 years in daily journalism, 25 of them as a three-time Pulitzer-Prize-winning reporter for the *Los Angeles Times*. But in 2003, he came back to where he started his journalism career: Cal Poly's *Mustang Daily*.

Ramos joined the Cal Poly Journalism Department faculty as its chair in September 2003 and immediately took on the job of *Mustang Daily* advisor.

Though he's now in more of a mentoring and advisory role than a direct writing and editing one, some of his "daily" reporting habits are hard to break. "Every afternoon at 3:30, I find myself looking up at the clock and thinking, 'It's 90 minutes to deadline – what's my lead? What's my story?' Old habits die hard."

But those journalism habits – sticking to daily deadlines, getting things right, quoting people accurately, writing readable stories without fear or favor – are what Ramos is intent on teaching the current crop of journalism students and his *Mustang Daily* staffers.

Ramos proudly points out that the *Daily's* student staffers in April took home a statewide third-place award for general excellence from the California Newspaper Publishers Association.

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"After 31 years, I think I have something to tell these kids, and I think they're listening," Ramos says. "I tell these kids, and it's true, 'You are much smarter than I was at your age.' I try to encourage them; I try to give them the sense that they can do



George Ramos (Photo by Bob Anderson)

it. I have an open-door policy, and kids are in my office all the time," Ramos says.

His role model is former *Mustang Daily* Advisor Brent Keetch. "I was the editor-in-chief of the *Mustang* in 1968. Keetch, who went on to head Cal Poly's English Department, was the student newspaper's faculty

advisor. He could walk on water, as far as I'm concerned. He had all this experience – he'd been at the *Salt Lake Tribune*. He encouraged me, and I hope to do the same thing for today's students."

In his first year as a Cal Poly facul-

ty member, Ramos has moved ahead on several goals. "The No. 1 priority, of course, is to get the department accredited. That is awfully important, to show everyone that we have that kind of peer recognition for the Journalism Department's academic program," he says.

He's also working on other changes for the department, such as improving the studio facilities for radio station KCPR. The department is drawing ever more students into its public relations concentration. "Sixty percent of our students are now PR students, and we need to serve them," Ramos says.

So far, Ramos, 56, is relishing his return to Cal Poly, and tackling his goals. "We need to continue to do a better job in all these areas, so when our kids get out in the real world and launch their careers, they are ready to go."

CPTV Rating 'Soares'

Thanks to cable television and the World Wide Web, which deliver news around the clock, 365 days a year, the demand for educated and experienced journalists is likely to be greater than ever.

No problem, says Journalism Professor John Soares, who teaches Cal Poly's broadcast journalism courses and whose experience in industry and academia give students the best of both worlds.

When he arrived at Cal Poly last fall, Soares began to revitalize the broadcast curriculum. While CPTV has been around awhile, it received a real boost in 2003 with funding from the College of Liberal Arts and the Student Academic Fee initiative.

The production-newsroom and studio, where students now deliver live 30-minute broadcasts weekdays, underwent a major refurbishment in spring and summer 2003.

"A new anchor desk and news set, control room, lighting grid and air conditioning are some of the major improvements that created a professional work environment with broadcast appeal," Soares says.

Student fees allowed the department to begin purchasing sorely needed equipment to improve the production value of the newscast and prepare students for industry standards, he explains.

"We now have a great learn-by-doing lab, which replicates the operational realities of broadcast news, from time pressures and deadlines to getting it right the first time and correcting it when you don't."

The results have been amazing. "When I arrived at Cal Poly, our first production was 'live-to-tape,' and it was a train wreck. It wasn't for lack of effort – just that our students had never produced a live-to-tape broadcast with no starts or stops," he recalls.

Soares is happy about the progress made to date. "It is such a great team, it's almost a culture," he says of his students.

The students write the stories and learn production and editing techniques – the whole gamut. Broadcast news is all about problem-solving – how to anticipate, foresee and correct problems to put out a good product, he says.



John Soares (with headphones)

Soares brings a wealth of knowledge and experience to Cal Poly and his students. He currently produces the weekend newscasts for KCOY-TV in Santa Maria. Before he moved to the Central Coast, he served as an assistant professor and director of the Marlin Fitzwater Center for Communication at Franklin Pierce College in Rindge, N.H., where he was voted Outstanding Faculty Member for the academic years 1999-2000 and 2001-2002.

In addition to his work in the classroom, studio and newsroom at Cal Poly, Soares helped organize the first Cal Poly student chapter of the Radio and Television News Directors Association, the world's largest professional organization devoted exclusively to electronic journalism.

Student members are connected to the business even before they are in the business, he says, which helps them land internships and even jobs. They have held internships at local television stations and stations in Los Angeles, San Francisco and San Diego, as well as with Fox News and "20/20."



Student anchors Jo Kwon and Mike Heimowitz (Photos by Bob Anderson)

Factoring Excellence into Math Teacher Education



Elsa Medina (Photo by Jeff Greene/ImageWest)

Strawberry Fields ... But Not Forever

When Elsa Medina (B.S. MATH '94, M.S. MATH '96) moved from the Mexican state of Zacatecas to Oxnard, Calif., she was a 17-year-old senior in high school who could barely understand a word of English.

Even so, she graduated from Oxnard High School.

"I always liked school and learning," Medina says. "But I didn't want to continue with school because I felt so lost. My idea was to return to Mexico. My parents' idea was to show me how hard they worked their whole lives."

Her parents were farm workers, so Medina worked for a few months picking strawberries in the fields of Oxnard.

"I got the point," says Medina, now a professor in the College of Science and Mathematics teaching math to future math teachers. "It was a very good learning experience that made me stop and reflect about my possibilities, which were much better in

the United States. So I decided to stay."

Although her ability to speak and understand English was still very limited, she enrolled in community

college, where she found her calling.

"I couldn't understand a word in my geology or history classes," she smiles, "But 'X' and 'Y' sound the same in any language. I soon fell in love with math." She went on to earn a bachelor's and master's degree in mathematics from Cal Poly and a doctorate from the University of Northern Colorado in 2000, the same year she returned to Cal Poly to teach.

"I knew that I wanted to be a teacher from the time I was a kid in elementary school," Medina says. "I always admired my teachers. When I first arrived in the United States, I couldn't speak English well, but I could easily explain math. So I thought, 'I could do this! I could teach mathematics.'"

"The faculty in the Mathematics Department at Cal Poly believed I could go on and continue my education in math. They encouraged me first to get a master's degree. I received a pre-doctoral grant that allowed me to go to a conference. While there, I met the chair of the Mathematics Department at the University of Northern Colorado, and he invited me to enter the Ph.D. program there."

In addition to teaching future teachers, Medina coordinates the mathematics credential program, supervises student teachers in K-12 classrooms, and co-directs the Cal

"I knew that I wanted to be a teacher from the time I was a kid in elementary school," Medina says. "I always admired my teachers."

Poly-Bakersfield Math Project, the local arm of a statewide effort that offers professional development workshops and opportunities to K-12 teachers.

Kate Riley: Part of Equation to Educate Math Teachers

Among the new faces on campus is a mathematics education professor whose former K-12 teaching experience helps her prepare future teachers for the rigors of the classroom.

Kate J. Riley joined the Mathematics Department in fall 2003, after teaching

"Cal Poly believes that science and mathematics are central to the polytechnic curriculum and further believes in recruiting students who can develop into highly qualified math teachers to serve California and beyond," Riley says.

for 12 years, mostly at an award-winning National Blue Ribbon high school. After completing a master's degree in mathematics and a doctorate in mathematics education from Montana State University, Riley is now pursuing her goal of teaching future mathematics teachers.

She was drawn to Cal Poly because of its academic reputation and commitment to science and mathematics education.

"Cal Poly believes that science and mathematics are central to the polytechnic curriculum and further believes in recruiting students who can develop into highly qualified math teachers to serve California and beyond," Riley says.

"I really appreciate its learn-by-doing philosophy, and I was very interested in the fact that the universi-

ty is pursuing the Center for Science and Mathematics," she adds.

The proposed 250,000-square-foot structure will be one of the largest science and mathematics buildings in the California State University system and is expected to have a profound influence on teaching and learning. The center will support partnerships of the faculty, staff and students in creative activities through undergraduate research.

It will be the ideal environment for Riley's teaching style, which incorpo-

rates a great deal of activity, technology and interactive mathematics. Using technology such as the Geometer's Sketchpad, Riley brings a new dimension to the study of mathematics.

"The software program enables students to explore and comprehend mathematics in ways that are not possible with traditional tools. Visualization is very powerful in allowing students to understand and discover mathematics concepts," she explains.



Kate Riley (Photo by Bob Anderson)

The Sun Worshipper

Architecture Department faculty member and solar design expert Robert Peña practices what he preaches.

A relative newcomer to Cal Poly, but not to higher education or the principles of ecological design and sustainable building, Peña is passing on his knowledge to the next generation of architects and engineers – particularly to students on the Solar Decathlon team.

Cal Poly's team was one of 19 chosen from around the world to compete in the 2005 Solar Decathlon. The teams, from the United States, Puerto Rico and Spain, are to design and build small solar-powered dwellings that generate enough energy to power a household, operate a home-based business, and run an electric vehicle.

Peña was part of a faculty team awarded a \$5,000 grant from the competition sponsors, the U.S. Department of Energy and the National Renewable Energy Laboratory, to get the project started.

"The Department of Energy has

Peña serves as advisor to the Renewable Energy Club, the student group that will build the house and compete in Washington, D.C. He traces his interest in solar architecture back to the first Earth Day in 1970.

"I grew up in Los Alamos, N.M., where the National Laboratory had a group working on passive solar energy prototypes," Peña says. "As a junior-high student, I saw that architecture – which is responsible for a large share of our 'environmental burden' – could be less burdensome by using the sun as a way to heat, cool and power buildings."

Peña has spent his professional life as both teacher and practitioner, going from one to the other "as a way to walk my talk."

"I've had the good fortune to work with leading ecological designers and solar architects," he says. "Academia gives me a chance to explore and learn about ecological design in a way that professional practice doesn't."

Residing and working on the Central Coast allows Peña to live in a



Robert Peña (Photo by Chris Greene/ImageWest)

office in Sausalito and making frequent trips to Berea College in Kentucky, burning copious amounts of jet fuel, to work on a project ironically called Ecovillage."

At Cal Poly he enjoys the encouragement of colleagues who are supportive of solar architecture and ecological design, among them Architecture Professor Sandy Stannard and Mechanical Engineering Professor Jesse Maddren, who are members of the faculty team leading the Solar Decathlon project. The decathlon project will be built and tested by Cal Poly students on campus, deconstructed and transported to Washington, D.C., where entries will be reconstructed on the National Mall in fall 2005.

"We would like the project to be used as a kind of prototype to address particular housing problems in California," Peña says. "It could be used as a model for migrant farm-worker housing or as a more environmentally friendly alternative to mobile housing."



Student model of proposed Solar Decathlon home (Photo courtesy of Architecture and Environmental Design Archives)

been eager to get Cal Poly involved," Peña says, "because of our reputation as a hands-on, technically and professionally oriented school."

way that is closer to his values.

"I don't have to drive anywhere," he smiles. "Previously I was driving 50 miles a day from Berkeley to my

Designing Woman

Graphic designer Kathryn “Katie” McCormick comes to Cal Poly’s Art and Design Department with degrees in design and architecture from one of the nation’s top design schools.

McCormick’s bachelor’s degree in design and master’s in architecture were both earned at the University of Cincinnati, where she also taught in both disciplines. Her cross-discipline approach helped fuel her professional success as a freelancer and a designer for Adidas America, where she served such clients as the New York Yankees and Los Angeles Lakers basketball star Kobe Bryant.

McCormick’s courses at Cal Poly range from a large design history class to a small, informal undergraduate seminar course. She also teaches typography, symbology, corporate identity, and package and editorial design. And, it seems, she’s never taught a class she didn’t like.

“The design history class was one of the most challenging courses I have taught,” McCormick recalls. “Preparation for a course like that



Katie McCormick points out elements of design. (Photo by Bob Anderson)

was somewhat different from what I was used to in the studio, but I learned so much. Helping the students bridge past work with their situation today – and questioning them about where the field is going – was really exciting.”

The Ohio native also enjoys teaching studio classes, where students critique

The upper-division seminar course is fun, too, because the students are older, and you can talk about the big issues, McCormick says. “Everybody brings something to the table. It’s another example of me learning from them.”

McCormick tries to boost students’ confidence and pride, although this

“As a designer, you’re a problem-solver. Focusing on one project is fine, but a student should view the world as wide open and realize there’s nothing he or she can’t design,” McCormick says.

each other’s work and approach problems the same way designers do in a professional studio – as one big team.

“Also, in the studio classroom, you can experience the students ‘getting it’ and watch their work progress through the project and throughout the quarter,” she says.

is not part of the formal curriculum. “In the design profession,” she says, “those qualities are as important as your portfolio. As a designer, you’re a problem-solver. Focusing on one project is fine, but a student should view the world as wide open and realize there’s nothing he or she can’t design.”



(Photo by Leah Kolt)

Bright Lights From Watts

Odessa Jenkins

Back in Watts, in South Central Los Angeles, 12-year-old Odessa Jenkins (SOCS '02) couldn't imagine life outside the ghetto.

"Growing up in Watts was tough," remembers Jenkins, one of four children of a single mother.

"There was a lot of pressure on me 'to be more.' Everyday at 5:30 a.m., I'd walk to the bus stop with my backpack, waiting for the two-hour commute to Waitt Middle School in Norwalk. That's where I learned I could be more. I couldn't see that in Watts, where it's so hard for some to realize their vision. Unless someone shows you, it's impossible to see what you can be – to see the future."

Jenkins remembers her 10th grade math teacher challenging her when she needed it. "She forced me to take honors calculus. She really pressed me to find my breaking point mentally and physically and push beyond that."

In 1991, Odessa's mother told her that her brother had been murdered. "She asked me, 'What are you going to do with your future?' From then on it was straight A's. It was winning on the basketball court. I was tenacious," she recalls.

Ron Cooper

Chemistry senior Ron Cooper (CHEM '04) also grew up on the mean streets of South Central Los Angeles, one of nine children. His parents were divorced. Cooper learned he could be more from his fifth-grade teacher.

"He saw that the work was too easy for me. He had me come in after school for special assignments. He challenged me and opened my eyes to make me realize how well I could do in school."



Odessa Jenkins & Ron Cooper (Photo by Chris Greene/ImageWest)

Fast forward several years.

Jenkins, now a Cal Poly assistant basketball coach, came to Cal Poly on a basketball scholarship. "I came to educate myself. I played basketball. I met people who changed my life. Cal Poly changed my life," Jenkins says, eyes shining. "I had teachers tell me I could be something I couldn't even see myself."

Now in a position to help young-adult athletes succeed, she tries to influence her students by showing "strength, power and ferocity."

"They know my background, and they know that I expect no weakness when faced with adversity. They feed off my inner strength and find their own confidence. They become successful when they eliminate their inner limits."

About the future, Jenkins encourages her students to do what they love, to follow their hearts, "because when you get older, your mind takes over. I want my athletes to remember every time they were told they couldn't, and they

did. I want my athletes to remember the work they put in and to be proud of the program they created."

Cooper came to Cal Poly in 1998 on a football scholarship. After he graduates this spring, he plans to enroll in the Cal Poly teacher credential program. After that, he says, he wants to teach high school chemistry and mathematics where he grew up, in South Central Los Angeles.

Cooper met Jenkins in a class during his freshman year. They are planning an August wedding.

Jenkins and Cooper now see clearly life's many possibilities, including the possibility of returning to the inner city to teach – and reach – children, to tell them about the larger world outside the ghetto. The desire to be role models is strong.

"Whatever I do, I am going back to the city," Jenkins says. "I want to open doors for kids who don't have visions of the future. We want to show kids how to use their power – how to express it. We want to show them the sky is the limit."

Learning by Teaching: Computer Science and Internet2

For Michael Haungs, teaching is a continuing education. "There's the old saying: 'The best way to learn a topic is to teach it,'" Haungs says. "By teaching, I get to interact with students to facilitate their learning, and I grow right along with them."

The 34-year-old computer science professor joined the Cal Poly faculty last year. After earning his doctorate at UC Davis, he taught there for a year specifically to see if he wanted to make teaching a career.

"That year, I discovered how enjoyable teaching could be and decided to pursue employment at a teaching university. I am also very active in research and wanted to find a university that could accommodate both my interests. Cal Poly's reputation for teaching excellence, research and industry ties seemed a natural fit for me."

His specialty is computer systems research, and these days he's working on operating system functionality to improve Internet application performance – and helping his students get into the real thing themselves.

"The classes I teach have a lab component where I can apply the learn-by-doing approach," he says. "There is only so much I can tell a student. I find experimenting with and changing real systems to be an invaluable part of teaching."

"For example, I have students modify, change and measure the Linux operating system. This not only reinforces the theory taught in class, but also gives the students practical experience they can put on their resumes."

He is supervising eight seniors in their senior projects and advising seven master's program students. Their projects involve such nitty-gritty reality-of-the-art as network programming, operating system optimization, software to help program-



Michael Haungs advises student in engineering computer lab. (Photo by Bob Anderson)

mers conduct experiments over a network, and delivery of large amounts of "geospatial" data over Internet2.

That last project gives Haungs a unique opportunity to combine research and teaching. He and two graduate students are studying the factors that limit computers' capacity to deliver the massive sets of data

his students are looking at how Cal Poly's BioResource and Agricultural Engineering Department can use the images to study various agricultural points of interest. They're also working with a department at Oklahoma State University.

That project and the others are journeys the young professor enjoys making with his students.

"I find it particularly rewarding to see a student's knowledge progress on a topic through a quarter and know that I had an impact," Haungs says.

involved in transmitting aerial images that are processed to account for the curvature of the earth. He's hoping to expand the ability of researchers and students everywhere to use the detailed images to study any location in the United States.

To begin the project, Haungs and

"I find it particularly rewarding," he says, "to see a student's knowledge progress on a topic through a quarter and know I had an impact."

"I got into teaching because I love learning," Haungs says – and in his teaching at Cal Poly, he gets to do both at once.

