



Mentoring Students

A Fine Line Between Faculty Member/Faculty Mentor

There's no doubt that Cal Poly faculty members deliver a solid education and preparation for professional careers in all fields from architecture to zoology. We have success stories and statistics to back that up. What they do beyond the classroom, though, as mentors, advisors and friends, is not so easy to quantify.

But when you listen to the students, it becomes clear that the faculty do much more than their job descriptions specify. Their steadfast dedication to helping students achieve academic, social and professional success helps meet Cal Poly's objective to "educate the whole person."

"Professor Jay DeNatale is all about his students," says fourth-year civil engineering major Kristen Salinas. "Not only has he helped me countless times to understand the coursework outside of class, he has also helped me with my senior project. On a personal level, he talks about life after Cal Poly. Students, like myself, who are lucky enough to have outstanding professors, get to experience an awesome learning environment unlike any other."

According to speech communication senior Melissa Garrison, Professor Bernard Duffy has been an instrumental part of her education and has opened the door to future career opportunities. She credits Duffy, one of three 2003 Distinguished Teachers, with "giving students the opportunity to better understand and discuss any questions or concerns about class, graduation or future endeavors."

"Mentoring students is one of the most effective ways faculty contribute to student success," Cal Poly Vice President for Student Affairs Cornel Morton confirms. "Cal Poly faculty understand the important role mentoring plays in student retention and satisfaction with their educational experiences."

A number of mentoring programs are available to students throughout the university. This past year the Student Affairs division collaborated with the Center for Teaching and Learning to offer workshops for faculty interested in student mentorship. The workshops were facilitated by faculty mentors. The following stories illustrate various programs and opportunities that help students gain a well-rounded education.

Students Promote Democracy Via the Internet

As White House officials struggle to democratize Iraq and Afghanistan, they might take a lesson from Political Science Professor Bud Evans and hundreds of college students around the world who are also strategizing – via the Internet – how to promote democracy.

A computer in Nigeria is giving Eshobode Bello a voice in world affairs he could not have even dreamed of a year ago. Now he is chatting daily with Muhammad Sabbir Al Fattah Khan from Bangladesh about such heady matters as environmental sustainability and war.

This “rubbing of the minds,” as one Nigerian student phrased it, is made possible by the Student World Assembly, a global network of hundreds of “wired” university students that is headquartered at Cal Poly.

“We are building a non-governmental world assembly to represent people, in much the same way that the United Nations represents governments,” explains Paul Raynault, president of the Raynault Foundation,



Cal Poly political science student Tyler Bolender (left) with Paul Raynault, president, Raynault Foundation, and speech communication student Lauren Batchelder

Fortune magazine, compares the idea for the SWA to the environmental movement, which “sprang from concerned individuals, not governments, and yet it has changed the world.”

The SWA was founded in September 2003 and was soon overwhelmed with e-mails from interested students. “Within two weeks, we were flooded

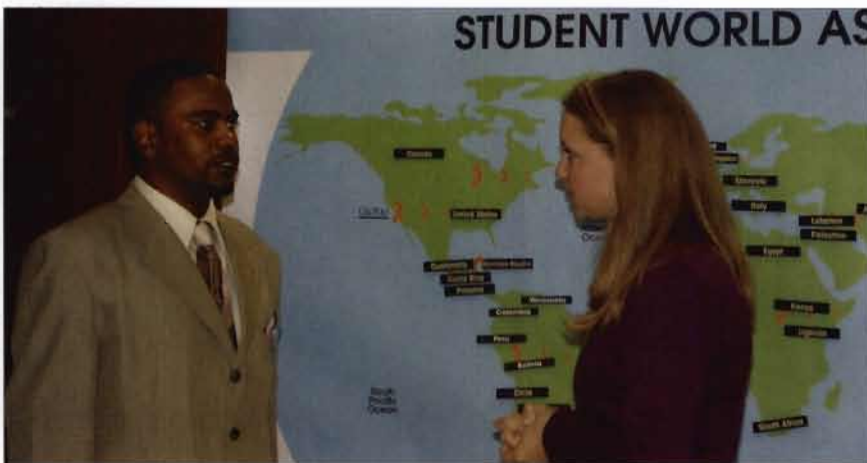
Venezuela,” says Cal Poly’s Evans, whose political science class in global political issues served as the initial springboard for the program.

Evans and Raynault expect the network to continue its logarithmic growth, with 25,000 students eventually talking to each other.

While the initial aim is to spread democracy via universities around the world, the long-term goal is to have a collective body “so influential that when it comes to a consensus on issues of global significance, governments around the world will not be able to deny the resolution,” says Lauren Batchelder, SWA student director of public affairs.

A number of students from around the globe will gather at Cal Poly July 18-24 for the first SWA international conference, where they will engage in face-to-face deliberations, hear expert testimony, and attend committee meetings and lectures on the state of democracy.

For more information on the SWA, visit its Web site at: <http://studentworldassembly.org>.



Kadri Parris, president, Students' Society, University of Guyana, and Lauren Batchelder (Photos courtesy of Student World Assembly)

which provided initial funding for the SWA.

Raynault, a Canadian entrepreneur who has been featured on the cover of

with membership applications from students at 28 universities in 22 countries such as China, Costa Rica, Ghana, Nigeria, Tanzania and

Cal Poly Society of Women Engineers: How SWEet It Is



SWE Advisor Helene Finger (top row, fourth from left) and student members accept the 2003 Outstanding "large" Student Section award at the national organization's annual conference in Birmingham, Ala. (Photo by Isaac Gaston)

Encouraging young women to achieve their full potential as engineers and as leaders, Cal Poly's Society of Women Engineers was named the outstanding national chapter in 2003, for the second year in a row.

"SWE's mission is to create engineering opportunities, provide career and scholastic resources, and demonstrate the value of teamwork to all students of the university and of the community," says Women's Engineering Program Director and faculty advisor Helene Finger.

"Being a part of SWE in college was a wonderful experience because as a female mechanical engineer I didn't have many female engineers in my classes," claims **Susan Chapman, (ME '91)**. "I enjoyed SWE because I got to meet a lot of women from many disciplines. Women engineers share a common experience, which makes connecting to other women engineers easy.

"SWE provides a wonderful support system for female engineers that just can't be duplicated. Its sole purpose is to help women get ahead in technology."

Under Finger's leadership, Cal Poly's SWE won the 2003 Outstanding "large" Student Section award for an unprecedented second consecutive year. The group also received awards for Team Tech, Audio Visual Presentation and Membership, which recognizes successful and well-organized efforts to recruit and retain members.

"SWE is recognized as the source for knowledge for women in engineering at Cal Poly, as well as the source for personal development, networking and career education for all engineering students at the university," Finger says.

While the group primarily reaches out to Cal Poly students, it also connects with younger audiences.

"Through Cal Poly SWE, I have been able to reach out and help other college students as well as elementary and high school students," says computer engineering senior Heather Heimen, current president of the group. "It has been a very rewarding experience to not only encourage other women, but to also be encouraged by them.

"Helene Finger and other professional members of SWE have given me real-life advice that I would not have found anywhere else. Because of the people I have met through SWE, I now have a job and am prepared to become a professional."

With 524 members, the Cal Poly group is the largest of the more than 300 student chapters nationwide, even though the next-largest SWE section has an engineering enrollment 65 percent greater than Cal Poly's. "The group's successes can be attributed to the quality of its programming and the tremendous dedication of a team of phenomenal student leaders," Finger says.

Cal Poly SWE Helps Charter Local Professional Chapter

Cal Poly President Warren J. Baker and College of Engineering Dean Peter Lee were among the 38 founding members of the Central Coast professional chapter of SWE.

The local professional section helps facilitate interactions between students and the local community, also providing an opportunity for female engineering faculty members to network with local professionals.

"The interactions with the Cal Poly SWE section have been fantastic," SWE advisor Helene Finger says. "The Central Coast chapter participated in Cal Poly's National Engineers Week outreach to fourth-graders and conducted leadership training at the university's officers' retreat."

More information about SWE and Cal Poly's chapter is available at www.csc.calpoly.edu/~swe and www.swe.org.

The Bod Squad

They measure the strength of your quadriceps, the intake of your oxygen and the percentage of your body fat.

They do it in the interest of learning more about human performance.

In research projects directed by Kinesiology Associate Professor Susan Puhl, students worked over the summer on three projects:

- One to determine how many calories are expended while walking on different surfaces, such as sand or grass
- Another to test the reliability and validity of the "Bod Pod," a large space-age-looking appliance that measures lean body mass and fat mass
- And a third to see if aerobic and anaerobic measurements can be used to predict physical strength.

Much of the research is done by undergraduates in the university's Webb Human Performance Laboratory, equipped with state-of-the-art lab equipment.

"The college-based fees have allowed



Student-volunteer Maiko Masuda (background, center) has her oxygen intake measured by kinesiology students Eric Homestead (background, left) and Todd Shellabear.

us to bring the lab up to 21st century standards," Puhl notes.

She has involved students in almost all of her research, going back to her earliest days of teaching at Penn State in 1986.

"It is a joy working with the students," Puhl says. "Cal Poly students seem to know the difference between a friend and an instructor. They know what the line is, so you can get very close to that line. I can enjoy them as people."

Puhl, who has taught at Cal Poly since 1999, also appreciates their motivation. "I've had students volunteer in our Polyfit program as freshmen and continue through their senior year. In the program, the students learn how to gauge physical fitness, conduct cardiovascular tests and measure body composition, flexibility and strength. The students volunteer as a way to learn people skills. It's not

a requirement, they're not paid. Most of them don't receive any credit for their time. They just get a T-shirt. But they volunteer year after year because they know they will learn the skills to be successful later in life."

The students see the value in their research endeavors, as well.

"Working in a lab setting and performing real research is like placing the capstone on an education," says kinesiology senior Eric Homestead, who worked on the caloric cost-of-walking team and is using the experience for his senior project. "It pulls the knowledge gained from classes into a real-life setting."

There seems to be a benefit for everyone involved. "I find research to be a very philosophical endeavor. The students think it's cool to work with the latest technology. They also like being part of a team, working in groups," Puhl says.



Rebecca Wilburn records additional readings of Maiko Masuda. (Photos by Bob Anderson)

Cooperative Education Sets the Pace for Real-World Learning

For Derrick Lau (EE '04), the Cooperative Education Program did what it should.

"Co-op was a great experience," Lau says. "I saw everything, from design to development to testing. I had to meet deadlines, and I had to do it within cost."

And it gave him the satisfaction of having played a part – small though he says it might be – in something important.

Lau worked during the second half of 2003 at St. Jude Medical in Sylmar alongside the engineers in the research and development unit of the company's Cardiac Rhythm Management Division. He worked on a device – a logic analyzer interface board, to be precise – that's used to test certain parts of pacemakers for cardiac patients.

"When I got there in July, another engineer was working on this," he says. "It was his idea, but it had some problems. He asked me to design a new board. So I did a prototype, and it worked."

Lau's device reduces the electrical "noise" made when a pacemaker part

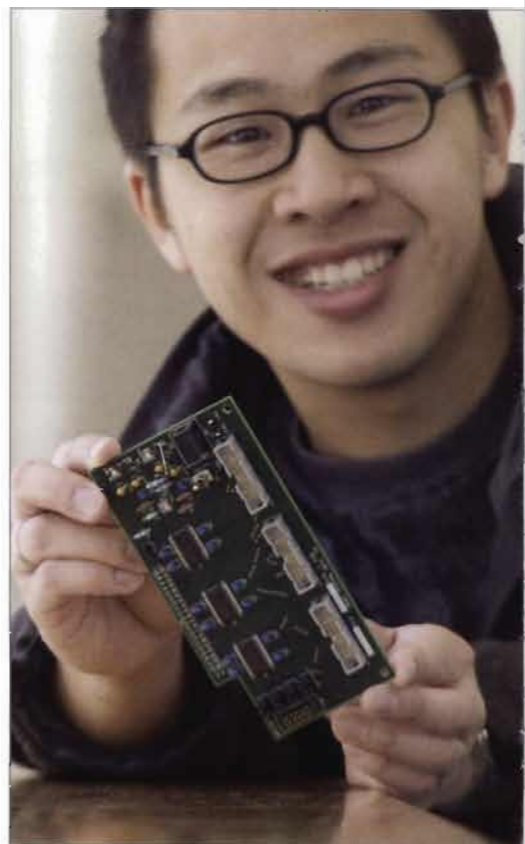
is tested, making signals clearer so the tests are more accurate. St. Jude Medical is already using Lau's device, and, with St. Jude's support, he's back on campus refining two designs of the test interface board as his senior project.

One design is completed. The second will be done before Lau graduates.

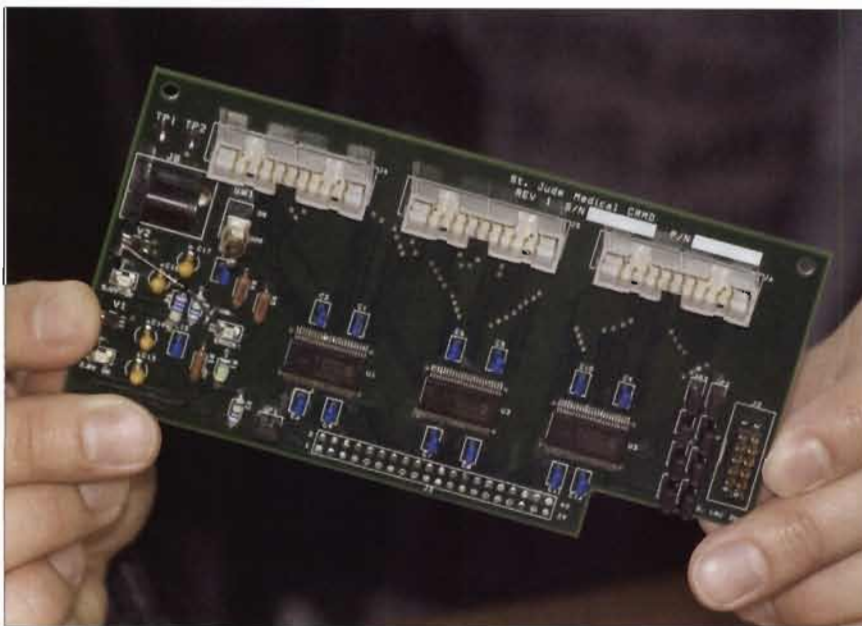
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St. Jude Medical's Electrical Development Engineering Group is impressed with the results, says the group's leader, Chris Sorensen. "It reflects well both on Derrick and on Cal Poly's engineering program."

Lau himself wasn't all that sure about the value of his engineering program until he got into his co-op. "I remember in a lab whining that I



Co-op Student Derrick Lau. (Photos by Jeff Greene/ImageWest)



needed a lab manual to get a project done. The teacher told me, 'There are no lab manuals in the real world.' When I got to St. Jude and saw how engineers get together and throw ideas around, I thought, 'Wow, that's how it is. What my teachers said to me really makes sense now.' Now I understand why I needed all those different courses."

The Sacramento resident lived his first 10 years in his native Hong Kong. He hopes to go directly into the work force after graduation, and he wants to keep designing.

"I really enjoy design, constantly improving things. It's the accomplishment. Like my project. They're actually using what I did. And what I worked on is important. My co-op was a very rewarding experience," he says.

Telling the Story: Cal Poly Students Tutor Youngsters in Reading

Perhaps the students in Professor Lisbeth Ceaser's upper-division education class believe in the philosophy of author Esther Maynell: "Books, to the reading child, are so much more than books – they are dreams and knowledge, they are a future and a past."

Maybe the students are simply dedicated to the mission of service learning, which has become an important initiative of The California State University and Cal Poly.

Or possibly, they just like reading to children.

For whatever reason, the students in Ceaser's class on reading methods for grades 4-8 spend two hours a week tutoring younger local students. Ceaser, a faculty member in the University Center for Teacher Education, and her students are part of a growing movement in education that links community service with academic learning.

Ceaser also sees this service-learning experience as an opportunity to advance the California Reading Initiative, a program to improve the reading skills and literacy levels of the state's students.

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"Reading is essential to success in the complex world of today and tomorrow," Ceaser says. "The ability to read is highly valued and is important for personal, social and economic well being."

"Knowledgeable teachers who provide quality instruction are crucial to helping children and adolescents become successful readers, and these



Cal Poly teacher education student tutors children in local classroom. (Photo by Lisbeth Ceaser)

teachers must be available to all students in California."

Cal Poly is helping to meet the growing need for teachers. Those who are new to the profession must know how to communicate, coordinate and

consult with other educators about the reading process. Ceaser's students learn all about that.

"The course focuses on presenting research-based knowledge of best practices for reading instruction, and practicing assessment and instruction of reading skills in a variety of intermediate- and middle-school grade levels," Ceaser says.

"Students must demonstrate the knowledge and skills to deliver effective reading instruction based on the results of ongoing assessment; present a balanced, comprehensive reading program; and show sensitivity to the needs and social context of all students," she adds.

In addition to tutoring, her students attend lectures two hours a week, keep reflective journals, write a case-study assessment of one child's literacy development, and demonstrate effective classroom lessons.

According to Ceaser, every Cal Poly student who has practiced the guided instructional activities for reading in a "real" classroom situation has enjoyed a remarkable and meaningful learning experience.

"For every lesson I taught, I probably learned 10 lessons myself," one student confirms.

