CENG celebrates award-winning faculty

Dr. Joseph Mello wins the hearts and minds of students

When Joe Mello was named Outstanding Club Advisor for the College of Engineering in 2005, one of the student members of the Society of Automotive Engineers commented, “He’s encouraged us all to go above and beyond to learn our stuff and apply it at the highest level possible.” Another said, “His knowledge in the field is outstanding and is only matched by his desire to share this knowledge with his students.”

Clearly, these are the attributes of a great teacher, as well as a club advisor, so it’s no surprise that Mello received the 2007 Northrop Grumman Excellence in Teaching Award.

Mello left a career in aerospace to join Cal Poly in 1998. Known for his advocacy for the undergraduates, he has served as an advisor to the award-winning Cal Poly Society of Automotive Engineers for seven years. He has taught classes in everything from mechanical engineering fundamentals to advanced design, including machine design courses and the senior project capstone design experience.

Mello has also made significant curriculum contributions: he developed an important and popular composite materials technical elective, a unique course that exposes undergraduates to complex materials, and he played a key role in a reorganization of the ME design curriculum.

Mello earned a bachelor’s and a master’s degree at Cal Poly and his Ph.D. from the University of California, Davis.

Dr. Richard Savage combines teaching and applied research

Richard Savage is often seen wearing his signature “shower cap” —his cleanroom garb and badge of his work developing the Micro Systems Technology

College of Engineering, Cal Poly, San Luis Obispo, California, Fall 2007
College of Engineering ranked No. 1; Cal Poly remains Best in the West

The College of Engineering topped the list of the nation’s public, non-Ph.D. granting engineering colleges in the U.S. News & World Report 2008 Best Colleges rankings. Among both public and private institutions, the college is No. 4. The ranking appears in the magazine’s Best Undergraduate Engineering Programs - for schools whose highest degree is a bachelor’s or master’s.

Individual College of Engineering programs also lead the nation. Cal Poly’s computer, electrical, industrial/manufacturing and mechanical engineering programs were each ranked as the top program at a public university. Both civil and aerospace were ranked No. 2.

Additionally—for the 15th year in a row—Cal Poly has been rated the best public-master’s university in the West.

“We hear that our graduates are doing great things and we take pride in that. Getting a ranking in U.S. News for the 15th straight year reflects the success of our gifted faculty in preparing students with an emphasis on learn by doing,” said Cal Poly president Warren Baker.


Invest in the Best

CENG alum gives back with quarter-million dollar endowment

For Dr. Isaac Barpal (EE & Math ’67), his personal memories of support from faculty and friends in times of need are what compel him to continue a legacy of giving back to Cal Poly. Barpal has endowed a college-wide scholarship fund worth nearly a quarter million dollars, ensuring that his spirited legacy never fades.

Barpal remembers arriving at Cal Poly with little but the shirt on his back. Largely through perseverance and the encouragement of his professors, he graduated with two degrees in just three years. “I wish I could be there and do for others what these people did for me,” he said. “Since that is not possible, my other way of expressing my gratitude is to support other students. And I hope that in the future they follow in my steps.”

Barpal’s long history of giving to Cal Poly dates back to 1987. Most notably, in 2003 he and his wife Margaret bequeathed $5 million to Cal Poly to provide financial aid for disadvantaged students and to assist the Electrical Engineering department in perpetuity. He first established the Barpal Scholarship in 2001 with a $10,000 gift, continually renewing it since that time.

The newly endowed college-wide “scholarship program for excellence” will generate two $5,000 scholarships per year. One scholarship will go to the engineering student with the best overall GPA at the end of his or her junior year. The other scholarship will be reserved for a highly qualified incoming student, whom Barpal will assist in selecting. Although Barpal had already included Cal Poly in his estate, he wanted to be sure that he was able to see the students who benefited from his gift.

In 1998, Barpal retired as Senior Vice President and Chief Technology Officer of AlliedSignal Inc. In this capacity, he oversaw the corporation’s technology efforts and administered its Research and Technology Center. Before joining AlliedSignal, he had a distinguished 22-year career at Westinghouse Electric Corporation. His successful career and selfless giving will always serve as a reminder of what hard work can accomplish.

ME alum supports Cal Poly’s Project-Based Learning

Projects are what make Cal Poly students stand out,” explains John Nielsen (ME ’65). “When the students go out into the work field, they will already know how to build things, solve problems in the real world, and actually operate the machines and manufacturing processes required to make the project work.”

It is for this very reason that Nielsen and his wife Connie recently visited campus to donated appreciated stock to the Nielsen Endowed Mechanical Engineering Student Projects Fund. With this gift, they have pledged their support for the future of Cal Poly’s project-based approach to learning.

Nielsen, who retired in 1999, had a rewarding career as a mechanical engineer designing and testing machinery for the Army and large companies such as General Mills. Speaking of his work designing farm harvest equipment for FMC Corporation in San Jose, CA, he said, “Right away, my Cal Poly experience of lab classes and projects came into use because I was on the shop floor assisting the manufacturing crew in creating new harvesters.”

This fall, the Nielsens were treated to a custom tour of the mechanical engineering facilities, including the Aero Hangar which houses Cal Poly’s Supermileage Vehicle and Human-Powered Vehicle (HPV). Nielsen took a special fancy to the HPV and even managed to find his way inside its tiny cockpit.

Nielsen’s affinity for project-based learning shines through in this generous gift, which he said is intended “to endow the funding of student projects to help the students achieve their goals.” The Nielsens plan to visit campus on a regular basis, especially during March when the Mechanical Engineering Department puts its various projects on display.
CENG donors honored at June commencement

The College of Engineering recognized the accomplishments of its donors, Donald E. Bently and Paul E. Bonderson, Jr. (EE ’75), during the June 2007 commencement ceremonies. Bently and Bonderson received honorary degrees for their exemplary careers and personal commitment to providing for the next generation of Cal Poly engineers.

Bently received an honorary degree of Doctor of Science in recognition of outstanding achievements in business, engineering and sustainable agriculture practices. Bently is president of the Bently Pressure Bearing Company and founder and former chairman and CEO of Bently Nevada Corporation, the world’s leading supplier of monitoring instrumentation and services (now part of GE Power Systems).

A long-time member of the Mechanical Engineering Advisory Council, Bently has a history of service in support of engineering education. In 1997, Bently Nevada Corp. joined in sponsoring Cal Poly’s Solar Turbines/Bently Nevada Vibrations and Rotor Dynamics Laboratory. In 2002, the university dedicated the Donald E. Bently Center for Engineering Innovation, established with a significant gift by Bently to the Mechanical Engineering Department.

Bonderson received an honorary degree of Doctor of Science in recognition of his outstanding achievements in business and engineering and his leadership in support of project-based learning. Bonderson is currently president of Lone Oak Ventures LLC, and the former vice president of engineering and co-founder of Brocade Communications Systems Inc.

Bonderson, who delivered the commencement’s keynote speech, chairs the College of Engineering Dean’s Advisory Council and was a member of the college’s Centennial Campaign Committee. He is also a founding board member of the Cal Poly Foundation.

In November 2006, Cal Poly dedicated the Bonderson Projects Center, the first building on campus funded entirely by a private, individual donor. Made possible by gifts from Bonderson and his wife Sandra, the 19,000-square-foot building provides specialized space for individual and collaborative student projects. The facility is also home to the Project Based Learning Institute.

Polylink launched: Online community for Cal Poly alumni

PolyLink is here! It’s a secure, private, protected Web site that is free and open to all Mustang alumni.

Go to www.calpolylink.com and log in using the first-time password that you received by e-mail from Cal Poly in August.

Didn’t receive a password or don’t have an e-mail address listed with the university? Go to www.calpolylink.com and click on First Time Login for instructions on how to join.

Once signed in to PolyLink, you can look up old classmates, send private e-mails to catch up with friends and contacts, view friends’ online photo galleries, create a personal page, post your class notes, photos and professional updates, and join PolyLink groups and message board discussions.

PolyLink is also the ideal spot to network. Alumni at all professional levels can use PolyLink to sign up to mentor new grads, receive mentoring, post information about job openings at their companies and post business card information -- giving new Cal Poly grads and all alumni an inside track on career info.
Cal Poly CubeSats launched into space from Russia’s cosmodrome

Interstellar success came in the form of faint beeps and electronic static when Cal Poly students were thrilled to hear the sounds of two CubeSats launched into space in mid-April. It was the second attempt at a Russian launch campaign after rocket failure hampered the progress of the project in July of 2006. Damaged insulation in the engine's fuel and hydraulic lines caused the rocket to crash just one minute after blast off.

Cal Poly students involved in the CubeSat Project were vindicated with the successful launch and ejection of all seven CubeSats into a 640 km Sun-synchronous orbit from the Baikonur Cosmodrome in Kazakhstan on April 17th.

Aerospace graduate student Roland Coelho, who traveled to Kazakhstan in March only to be disappointed again when the launch was placed on hold, has remained determined about the CubeSat project: “Following the rocket failure in July 2006, we faced many challenges in continuing to launch satellites, but we made it a point to keep on going.”

Coelho also sees the value in the opportunity to participate in a real world space launch and credits Cal Poly’s educational philosophy: “As a student I am very fortunate to be a part of this program and proud to be a student at Cal Poly. This is the perfect example of ‘Learn by Doing.’”

The payloads were ejected from a converted RS – 20 (SS – 18) Intercontinental Ballistic Missile (ICBM) known as Dnepr. A total of fourteen CubeSats were dispersed into orbit, two of which were built at Cal Poly. Among the Cal Poly payloads were the EgyptSat – 1 of the Arab Republic of Egypt, SaudiSat – 3 and five SaudiComsats of the Kingdom of Saudi Arabia and five other picosatellites developed by Universities of the United States and Colombia, including Cal Poly.

Cal Poly’s contributions to the CubeSat community have been twofold. Not only do they construct picosatellites but have also provided a flight-proven deployment system, the Poly Picosatellite Orbital Deployer (P – POD) that was used to disperse all seven CubeSats in the April 17th launch. In this capacity, the Cal Poly team was instrumental in the successful launch of Colombia’s first satellite.

Details about the launch is posted on [www.cubesat.org](http://www.cubesat.org) and on the Polysat website: [http://polysat.calpoly.edu](http://polysat.calpoly.edu)

WEP gives young student campers a hands-on introduction to engineering

This July, a diverse group of local high school students enjoyed an unlikely kind of summer vacation — “Engineering Days at Cal Poly.” Offered by the Cal Poly Women’s Engineering Program (WEP) for the first time, Engineering Days was a week-long educational summer camp that introduced underrepresented low-income and potential first generation college graduates to the field of engineering.

The program provided activities and instruction in various fields of engineering, with lectures from Cal Poly professors Kathy Chen (MATE), Lynne Silovsky (EE), Diana Franklin (CSC/CPE), Dianne DeTurris (AERO), and Tracy Thatcher (CE/ENVE). Students received practical advice in preparation for college and went on a field trip to PG&E’s Diablo Canyon Power Plant.

WEP Program Director Helene Finger said that the program successfully drew 85% potential first generation college attendees and 70% female students. Program faculty worked with AVID, a program designed to encourage college attendance by students whose parents did not receive a college degree, to recruit camp participants.

Engineering Days culminated in a hands-on engineering design activity and an exhibition of student projects, including: robots that drew pictures, rockets, dance pads, water filters and homemade liquid nitrogen ice cream. “My favorite part was when the students launched the rockets they had built the day before,” said volunteer counselor Emmet Woods, a materials engineering sophomore. “But what can I say; I’m a sucker for rockets.”

Several student volunteers, many of whom are members of the Society of Women Engineers (SWE), helped to make Engineering Days a great success. SWE Secretary Darcie Levulett said she got involved because “It is important to participate in activities that increase the interest of younger generations in math, science, and engineering.” She believes underrepresented students should become more involved in these fields because they bring unique perspectives to problem solving.

Engineering Days was made possible by donations from Cisco Networking, Google, Hewlett-Packard, Morro Bay Power Plant, PG&E, Raytheon, and the Wolfgang Pollack Foundation.
Meet the frosh:
1,617

That’s the number of new, first-time engineering freshmen that are on campus this fall. It’s the largest freshman class in the history of the college. In fact, CENG’s enrollment growth represents 56% of the total growth of the university.

Notable facts about the CENG enrollment:
- Among the freshmen, seven are National Merit finalists and five are National Hispanic Scholars.
- The percentage of female freshmen increased from 13.0% in 2006 to 15.7% in 2007; in 2006 Cal Poly ranked #15 in the nation for awarding engineering bachelor’s degrees to women.
- The percentage of non-white, underrepresented students in CENG’s total enrollment increased to 35.9% from 32.6% last year.
- In 2006, Cal Poly was 8th in the nation for total undergraduate engineering enrollment.
- In 2006, Cal Poly ranked 10th in the nation in the number of engineering bachelor’s degrees awarded; 11th in the number of engineering degrees awarded to Hispanics; and 12th in degrees awarded to Asian-Americans.

- In the number of B.S. degrees awarded, seven CENG programs ranked among the top 20 in the U.S.: civil #3, electrical #6, mechanical #8, computer engineering #10, industrial & manufacturing #12, aerospace #16, computer science #18.

CENG Dean Mohammad Noori notes, “This year Cal Poly had particular success in recruiting underserved students, plus those who are well-prepared in science, technology, engineering and math, known as ‘STEM’ fields. Our thanks goes to Jim Maraviglia, the university’s assistant vice president for Admissions, Recruitment & Financial Aid, and my fellow deans, chairs, faculty and staff who engaged in an array of outreach efforts.”

The National Science Foundation awards grants to CENG professors

Engineering professors working on two separate projects recently received prestigious grants from the National Science Foundation.

Materials engineering associate professor, Dr. Trevor Harding and his colleagues from the University of Michigan and Lawrence Technological University received an $850,000 NSF grant for the Engineering Education program for their project entitled “A Holistic Assessment of the Ethical Development of Engineering Undergraduates.”

In addition, Assistant Professor Jianbiao Pan from industrial engineering, and electrical engineering professors Albert Liddicoat and James Harris were awarded $199,030 for their proposal to “Enhance Student Learning Through State-of-the-Art Systems Level Design and Implementation.” The award is designated an NSF Course, Curriculum, and Laboratory Improvement grant.

Cal Poly’s share of the $850,000 project is $180,000 over the next four years. “The principal investigators at the three institutions work very closely together,” he explained. Their plan is to survey more than 4,000 engineering students from 20 universities over the next four years in order to gauge what activities have the greatest influence on ethical development.

“For me the project began in 2000 when I uncovered a case of cheating among students in my class,” said Harding. “The incident so bothered me that I conducted a study to find out how much students were actually cheating in college.”

For the other NSF project, Pan, Liddicoat and Harris will “build a pipeline” in the computer engineering curriculum at Cal Poly that will engage students with hands-on project-based learning. “We believe that this multidisciplinary effort will better prepare students by providing them with more practical experience,” states Pan.

“These two awards demonstrate how faculty scholarship can significantly enhance our mission to be a global leader in engineering education,” said Ed Sullivan, Assistant Dean for Research & Graduate Programs.

NASA research initiative lands at Cal Poly

Two Cal Poly Aerospace Engineering professors have signed separate million dollar contracts with NASA’s Aeronautics Research Mission Directorate.

Their research will help shape the future of air flight. Dr. David D. Marshall and Dr. Rob McDonald submitted separate winning proposals for research related to NASA’s umbrella plan to develop future generation aircraft.

“The next two decades are ripe for an aviation renaissance,” said McDonald. “Advanced multidisciplinary physics-based design and analysis capabilities are required to pursue the revolutionary vehicle and technology concepts needed to meet NASA’s aggressive goals.”

McDonald proposed developing a multidisciplinary analysis and optimization (MDAO) software framework that will facilitate the design of future aircraft. He was awarded a three-year contract worth nearly $1 million which will use to fund four Cal Poly students. McDonald will also collaborate with Phoenix Integration, based in Wayne, PA, and renowned independent software developer J.R. Gloudemans.

Many of the record number of accepted CENG freshmen and their families packed the Cal Poly Rec Center during Open House in April.

Marshall anticipates funding at least five Cal Poly students and collaborating with several researchers, including Robert Englar of the Georgia Tech Research Institute.

AERO professors Robert McDonald, left, and David Marshall received separate million dollar grants for NASA research.
Faculty

From Page 1

Group, which brings together students interested in working on Micro Electro Mechanical Systems or MEMS.

In recognition of his contributions to student learning and research, Savage received the 2007 Raytheon Excellence in Teaching and Applied Research Award.

With more than twenty years in industry before he joined Cal Poly in 2002, Savage instituted an industrial perspective by integrating project-based learning and design into materials engineering curriculum.

He says, “I view teaching as a discovery process for both the student and myself. My primary objective is to build confidence and self reliance through stimulating laboratory and lecture experiences. I strive to instill in students the importance of knowledge with a conscience so they may thrive in their careers beyond Cal Poly but also give back to society.”

In addition, Savage has undertaken numerous applied research projects. In 2006-07, he generated $75,000 in projects grants from Olympus alone. These projects provide hands-on experience for many students, especially in the area of micro systems technology. Savage earned his Ph.D. in 1979 from Indiana University.

Dr. Diana Franklin allows for error

Error has never been sweeter: Diana Franklin, assistant professor of computer science and computer engineering, received a prestigious, $300,000, five-year grant from the National Science Foundation’s Early Career Development (CAREER) Program to study the concept of allowing incorrect execution in some computer programs.

Franklin will investigate applications such as video and audio where small inaccuracies may be tolerated. “This is a five-year grant, so each year I am going to explore different aspects of the ways in which we can short-cut execution so that our programs run faster, but still get mostly the right answer,” she says.

An expert in computer architecture, Franklin joined the College of Engineering in 2002. She holds a doctorate in computer science from the University of California, Davis.

In addition to receiving funds for a graduate research assistant, faculty members who receive the CAREER grant become eligible to apply for the funding of up to four undergraduate assistants each summer. “This would greatly increase the opportunities that undergraduates have to participate in research and pursue a graduate degree,” said Franklin.

Dr. Jane Zhang thinks globally

In recognition of her important work promoting international education, electrical engineering professor Dr. Jane Zhang received a $10,000 Wang Family Scholarship, one of just four awarded annually by the California State University system.

This summer, Zhang and Dr. John Pan, an industrial and manufacturing engineering professor, visited Shanghai Jiao Tong University (SJTU) in China, where Zhang will serve as a faculty fellow. The Cal Poly professors discussed establishing a joint-master’s degree program and student-exchange program with SJTU faculty and students.

Zhang also identified two prospective research partnerships between Cal Poly and SJTU. “The first project involves segmentation of medical imagery and recognition of man-made objects, and the second builds upon the SJTU’s extensive research in the areas of face detection, face tracking, and face recognition,” explains Zhang.

After giving a presentation of her own work on automatic speech recognition, Zhang talked to quite a few students. “Many of them expressed a desire to gain more experience through research and study in the U.S. and beyond,” she says.

The Wang Family Scholarship Fund prepares students for the tribulations of international business. Zhang’s leadership in international study has demonstrated that although borders may separate nations, they cannot separate the minds of great engineers.

Dr. Lynne Slivovsky promotes learning through service

The basic idea of “service learning” is providing academic credit for community service—and Lynne Slivovsky is one of its champions. She has introduced a new multi-disciplinary service learning course, developed numerous service learning projects, and established Design for Community Based Learning (DeCBL), a virtual center that promotes service learning through practical support.

Her advocacy has not gone unnoticed. The assistant professor of electrical engineering and computer engineering was recently selected as a Faculty Fellow in the Service Learning for Political Engagement Program, a joint venture between the California Campus Compact and the Carnegie Foundation for the Advancement of Teaching.

Slivovsky is one of just 25 professors from California to be so honored. “A primary focus of mine is to work on socially responsible projects with students,” says Slivovsky. “I have incorporated service learning projects into my capstone design class, and I require K-12 outreach from all of my senior project students. In my course in museum design, students will design museum exhibits for the local community that highlight sustainability in science, technology, engineering and math education.”

Slivovsky and the other Fellows convened this summer. “This work is important and complex, which is why we brought together the most thoughtful and committed faculty to develop models of service learning,” said Elaine Ikeda, executive director of California Campus Compact.
Dr. Robb Moss does research in China that’s truly earth-shaking

President Richard Nixon opened relations with China for trade and diplomacy—Robb Moss, meanwhile, has established U.S.-China research ties.

The civil engineering assistant professor traveled to China this summer with two Cal Poly students to complete a potentially life-saving international research project. He received a National Science Foundation Special Grant for Exploratory Research for the trip.

The Cal Poly team, in collaboration with researchers from Southeast University of Nanjing, the U.S. Geological Survey and the China Earthquake Agency – Institute of Engineering Mechanics collected data on soil liquefaction at sites affected by the devastating 1976 Tangshan Earthquake.

Liquefaction, one of Moss’s core teaching and research interests, is a process often following an earthquake in which saturated soil loses strength due to ground shaking. This problem can lead to structural damage and loss of life. “Liquefaction engineering requires high quality empirical data for predicting liquefaction at a particular site,” explained Moss. “Data collected from nearly 20 sites we investigated during our trip will increase the amount of data in the worldwide database by roughly 10 percent.”

“My students, David Thornhill and Steven Kuo, provided invaluable help,” said Moss. Kuo, fluent in Mandarin, was an asset especially for his ability to communicate between the English and Chinese speaking groups.

Moss had been planning this research for years, but everything fell into place when Southeast University received funding for Seismic Cone Penetration Testing (SCPT) equipment, the first of its kind in China. In addition, the SCPT method put forth by Moss, et al. in 2006 had become the accepted standard by the Chinese government. Because of this, he said, “The reception I received was incredible.”

Dr. Jose Macedo continues CENG’s Fulbright “legacy”

Last year, computer science profes-

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Sion Meiling Lui headed to the Republic of Macedonia. This year, Jose Macedo resides in Panama. Both are distinguished as U.S. Fulbright Scholars.

“There aren’t many institutions where, in a period of one year, two faculty members receive the prestigious Fulbright Fellowship,” said College of Engineering Dean Mohammad Noori. “The award is a great recognition and certainly enhances the global visibility of our programs.”

On sabbatical from Cal Poly, Macedo, an industrial and manufacturing engineering professor, is working with the Technological University of Panama, where he teaches the principles of lean management, a business model which aims to streamline the manufacturing process and eliminate potential waste.

“I hope to make their program more beneficial to its students by training faculty, leading graduate-level seminars, and bringing in local industry,” he said. Macedo also hopes to discuss implementation of a student exchange program.

Fulbright has now given Macedo two awards, which is very rare. In 1983, he received a Fulbright Scholarship from the Commission for Educational Exchange between the United States and Peru for his studies at the UC Berkeley.

The Fulbright Scholar Program sends 800 U.S. faculty and professionals abroad each year to advance global education and cultural understanding.

College of Engineering mourns the loss of three long-serving professors

Emeritus Professor Emile Attala
(1934 – 2007)

Dr. Emile Attala’s career spanned from petroleum engineering, to aerospace, to computer science professor at Cal Poly, where he taught for 27 years, from 1970-1997.

In 1958, he earned a degree in petroleum engineering in Egypt and went to work in the Middle East oil fields. After emigrating to the United States, he pursued a master’s degree at UC Berkeley and subsequently joined the aerospace industry. While working for NASA, he was part of the three-man team that programmed the back-up system for Apollo 13.

In 1970, Attala joined Cal Poly’s new Computer Science Department. He obtained his Ph.D. in computer science from the UC Santa Barbara, and in 1978 he was appointed department chair. While at Cal Poly, he initiated evening and weekend workshops to introduce local business owners to a new emerging technology: personal computers.

Dr. Attala is remembered for his love of teaching and his passion for family, friends and Middle Eastern cuisine.

Emeritus Professor William D. Forgeng, Jr.
(1935-2007)

William D. Forgeng, Jr.
He earned his Ph.D. from Purdue University and his bachelor’s degree from Cornell.

Students will remember Forgeng as a “hands-on” instructor, who took particular enjoyment in keeping track of alumni and their families over the years. According to Associate Dean Dan Walsh, Forgeng was a “scholar and a gentleman.” “Bill was the reason I came to Cal Poly,” says Walsh, “and he helped me transition from a green Ph.D. to a seasoned engineering professional. He was always a source of wise council, and an unstinting advocate for his beloved students. He was a source of stability and decency; Bill, simply, did it right.”

Donations can be made to the William D. Forgeng Scholarship Award (contact Joe Donahoo at 805-756-6870 or jdonahoo@calpoly.edu).

Emeritus Professor Don Morgan
(1917-2007)

A graduate of Oregon State University in electrical engineering, Don Morgan furthered his career with a Ph.D. in industrial engineering at Stanford University. He was head of Cal Poly’s Industrial & Manufacturing Engineering Department for 20 years.

Morgan’s long teaching career included a two-year tenure at Singapore University, and stint as a guest lecturer at the University of New South Wales in Sydney, Australia. He has been recognized by many groups in industry and education for his contributions to the enrichment of his field, students and colleagues. Morgan and his wife Jean were named “IME Early Leaders” at the department’s 50th Anniversary Golden Jubilee in 2006.

“Don was so loyal and passionate about the department that he attended some of our meetings until recently,” says Don White, IME chair. “He was a pillar of the Cal Poly community, and set the direction for Industrial Engineering after he arrived here in the 1960s. He was an inspiration and model for us all.”
BME experiencing rapid growth

Two-year-old biomedical engineering program is now up to 338 students and eight faculty members

It’s as if the department has been injected with a growth hormone. Or, along with designing better orthopaedic implants, stents and other medical devices, and researching tissue engineering and muscle regeneration, the members of Cal Poly’s Biomedical and General Engineering Department (BMED/GENE) are also discovering the secret to exponential growth of an academic program.

Look at the numbers: While General Engineering has been a major for more than a decade, the Biomedical Engineering degree was established just two years ago—the first such program in the California State University system. Last year there were 143 students enrolled as biomedical majors. This year there are 338. Likewise, with the hiring of five new professors this year, the BMED/GENE faculty has grown from three full- and one 30%-time professor to eight and a third.

What accounts for this doubling of size? Massive advertising? Free tuition? No; Dr. Robert Crockett, interim department chair, cites supply-and-demand: “Our growth has been driven by California industry,” he says.

“On the one hand, companies like St. Jude Medical, Edwards Life Sciences and Advanced Bionics have enabled us to grow by providing financial support, project topics, and faculty research opportunities,” Crockett explains. “Students, on the other hand, see that there are an expanding number of diverse job opportunities in the market, ranging from research and development to working with surgeons in the operating room as a product expert. There’s definitely a pent-up demand and students have sought us out.”

In addition to market forces, Crockett attributes biomedical’s popularity as a major to the field itself. “Biomedical engineering is attractive to students—and in particular, women and underrepresented groups—because it clearly shows the human side of engineering,” he notes. “The field has an immediate impact on people’s lives.”

The faculty members of the burgeoning department have their own reasons—but just as much enthusiasm as their students—for joining this new program. Dr. Trevor Cardinal, who has an undergraduate degree in kinesiology and a Ph.D. in physiology, was attracted to the interdisciplinary aspect of the department. Dr. David Clague, who joins the department after a decade at Lawrence Livermore National Lab, is excited about research opportunities. And Dr. Lanny Griffin, who came to Cal Poly in 1997 as a member of the Materials Engineering Department, says, “This has been my wish since I first came to the university, to be a part of a rich and diverse biomedical engineering program.”

Industry leader Kiewit Pacific helps CE students get their hands dirty

The Concrete Lab—now the “Kiewit Civil Engineering Materials Laboratory”—is where civil engineering students literally get their hands on a basic building block of their trade.

Kiewit, a leader in heavy construction responsible for building some of the most modern and technically challenging bridges in North America, is the lab’s new sponsor. The company sponsorship enabled the department to refurbish the facility.

Kiewit Pacific has a long-standing relationship with Cal Poly. Not only do company ranks include civil engineering alumni, but Kiewit maintains a presence on the Civil & Environmental Engineering Industrial Advisory Board.

Department Chair Dr. Gregg Fiegel said there are many additional benefits for Kiewit that come with lab sponsorship, including improved access to students. “They’ve been pleased with Cal Poly interns and hires, and desired a bigger presence in the civil engineering program,” notes Fiegel. “Sponsorship is a great way to accomplish that goal.”
Cal Poly foments goodwill, wins first international alternative vehicle race

The Cal Poly Human Powered Vehicle (HPV) team came home from Maracaibo, Venezuela with a trophy and new friends and colleagues from overseas. The September 4-6 event was the first American Society of Mechanical Engineers (ASME) Human Powered Vehicle Challenge held outside the United States. Cal Poly went up against five other teams from Caracas and Maracaibo, Venezuela, and Santiago, Chile.

With a top speed of 40 mph, “Matrix,” Cal Poly’s lightweight and streamlined HPV took first in all categories: design, sprints and endurance. Seventeen students built the bike, which took 2nd place overall at the 2007 ASME HPV Competition held last May.

“The students designed and built a carbon fiber-over-foam frame for lightweight strength, and a carbon/kevlar fairing or cover for rider protection and aerodynamics,” explained George Leone, a technician in the Mechanical Engineering Department who advised the team along with Professors Andrew Kean and Kim Shollenberger.

Leone, who traveled with eight team members to Venezuela for the contest, reported that it was a “great experience, not only for our Cal Poly students, but also for the South Americans, with whom we shared our ideas, technical expertise and information.”

In his thank you e-mail to the Americans, Andres Rondo, the Venezuelan student organizer of the event, also emphasized that the Cal Poly team represented the United States not only as competitors, but also as goodwill ambassadors.

“The HPV Team of Cal Poly is amazing,” Rondo wrote. “You gave an example of humanity and collaboration, receiving help from you was something that we weren’t expecting. The first main idea of this event was to participate in a HPV competition. At the end of the day we realized that the main idea changed into an event where we built bridges between different communities and cultures. Now I feel more proud of what we did here.”

Cal Poly’s HPV receives support from several company sponsors. Mafi-Trench LLC of Santa Maria generously donated funds for team travel and shipping costs. Bike construction materials were donated by Soller Composites, AirTech Advanced Materials Group, and the General Plastics Manufacturing Company.

AERO team takes on Raytheon contest

For junior aerospace engineering student Chaz Morantz, taking part in the Raytheon Strike Weapons Design Competition was nothing less than inspirational. “Our experience in Tucson was amazing,” Morantz said. “Raytheon gave us a tour of their facility and the production line for several products including the one we worked on. The competition made me very eager to start working in industry.”

The goal of the student teams was to reduce 18 pounds off the structural weight of the strongback of the Raytheon Joint Stand-Off Weapon while keeping stresses within limits. Morantz and fellow AERO students Bryan Morrissey and Jennifer Chan were given ProEngineer models for the components and also a list of restricted zones that could not be modified.

“Most of the other teams that competed were mechanical engineers and we were the only team of purely aerospace engineers,” said Morantz. “The other teams were also doing this as their senior design projects. We did this in our spare time and really surprised ourselves with the quality of our results and presentation to Raytheon.”

Cal Poly environmental engineers outsmart a bear

Here’s the scenario posed by the 2007 Water Treatment from Your Kitchen…and Beyond competition: You’re wilderness campsite is attacked by a bear. You survive, but you need drinkable water in order to hike two days to safety. How do you treat ten gallons of contaminated water using only the salvaged materials from your camp?

The Cal Poly Society of Environmental Engineers and some civil engineering students designed and built a water treatment system that treats water to drinkable standards through screening, filtration, disinfection, and sedimentation.

“Tentration” earned the team second place and high marks for its sustainability, versatility, and compact design. “We designed the unit so that no water was ever lost,” explains team member Thomas Abia. “It was almost an automated treatment process, involving mesh, cotton and sand filtration, and conveyance through a bleach-coated trap for disinfection. We even kept the tent in good working condition!”

Team participants included Thomas Abia, Daniel Frost, Cameron Ripley, Angela Stinson, Kyle Winneker, and Michael Randall.
Cal Poly concrete canoe team places 5th in the nation

Each year, Cal Poly's Society of Civil Engineers (SCE) pit themselves against 220 colleges across the U.S. in a year-long contest involving design know-how, project management, engineering expertise, endurance, imagination and sheer muscle.

It’s the Concrete Canoe Competition. This year, Cal Poly paddled to fifth in the nation, with a first in the coed sprint and a second in “final product.” Cal Poly also brought home the ACI Innovative Design Award, which recognized the canoe’s unique, M.C. Escher-inspired tile mosaic design detail.

The 20th Annual ASCE National Concrete Canoe Competition was held at the University of Washington on June 14-16. Cal Poly’s team was led by civil engineering seniors Jason Kump, John Layous, Jason Marshall, and Skye Orvis.

“One of the highlights was winning the design award,” said Marshall. “We also won the coed sprint by a tenth of a second—it literally came down to a photo finish.”

This was the second year in a row that Cal Poly scored well at the national level: in 2006, the team came in second. Cal Poly’s winning formula, according to Marshall, includes faculty support, student interest, and the spirit of innovation.

“Two huge reasons for our success are professors Garrett Hall and Eric Kasper from the Civil Engineering Department,” notes Marshall. “They’ve always been supportive of whatever we need. Plus, we have an extremely large and active SCE chapter. Almost everyone in the chapter helps out in some way.

“Finally, Cal Poly’s success comes from the ability of our students to think outside the box. No idea is too strange or obscure. This ability to try new things has helped us immensely in the competition.”

Once again, Cal Poly dominates

At the 2007 American Institute of Aeronautics and Astronautics (AIAA) Student Design Competitions, Cal Poly aerospace engineering students upheld a long-standing tradition of victory by taking two first place wins and sweeping the Undergraduate Team Aircraft (UGTA) design category.

Under the direction of instructor David Hall, Cal Poly UGTA design team Arete Aeronautics and its inter-theater tactical transport “Amarok” surpassed the competition. Team Arete included Collin Baukol, Brian Saponas, Ken Thomas, Abagain Liddle, Patrick Wellman, and Derek Geiger.

In addition to the first place win for Arete Aeronautics, teams Awsom-O and Sleipner Aerospace took second and third with their designs for “Sunstorm” and “Odin’s Fury.” The triple-medal showing marked the second time in three years that Cal Poly swept a design category in the competition.

Aerospace engineering professor Mark H. Waters advised another Cal Poly team, whose design, “The Mosquito,” took top honors in the Undergraduate Team Engine design category with an air breathing propulsion system for an uninhabited limited life Mach 3 vehicle. The team included Collin Baukol, Eric Hansen, Josh Caldwell, Dan Gilani, Cassy Anthony, Nick Jenkins, Terence Statt, and John Bernard.

Each year the AIAA competition marks the culmination of a three-quarter senior-level aircraft design course in which students receive valuable insight from industry professionals. This year, the student designers heard from NASA and benefitted from visits to Boeing, Lockheed Martin, Northrop Grumman, and Edwards Air Force Base.
Cal Poly design team qualifies for vehicle safety competition

A Cal Poly multidisciplinary engineering student design team was selected as one of three North American winners of the Enhanced Safety of Vehicles International Collegiate Student Safety Technology Design Competition for its Pre-Crash Sensing Demonstration System.

The CENG students developed a vehicle pre-crash sensing and automated braking system using a custom-made test cart, a laser range finder, and an ultrasound sensor. After an on-campus review in March, U.S. Department of Transportation representatives chose the Cal Poly team based on their work, presentation, and demonstration of the test vehicle that anticipates and reacts to collisions. Three teams from North America, two from Asia-Pacific and three from Europe competed at the finals in June.

The Cal Poly team achievement represents three years of work by 16 students from mechanical, electrical, and computer engineering programs. “This competition provided an exciting opportunity for students from multiple disciplines to combine ongoing research activities in vehicle sensing,” says faculty advisor Peter Schuster.

In 2004-05, three students worked to identify, collect, and perform baseline tests on a variety of exterior sensors. During 2005-06, eight students performed testing with LIDAR and RADAR sensors, developed sensor-filtering algorithms, and designed and built a mobile test vehicle for evaluating sensor performance. Over summer 2006, two students refined the sensor processing algorithms, and during the current academic year, the team of four students completed the integration of the sensor algorithms with the mobile test vehicle. The result of this ongoing research and development is a vehicle that demonstrates autonomous warning, braking, and simulated airbag deployment.

The mechanical engineering students and faculty advisors who represented Cal Poly at the ESV Conference included Drs. Peter Schuster and Charles Birdsong, seniors Danny Murphy, D.J. Parsons, Justin Carpenter and Duane Howard.

Cal Poly’s “Spybot” outsmarts the competition at the 2007 RoboGames

A robot designed and built by Cal Poly students won the Robo-Magellan Competition at the International RoboGames in San Francisco. Dubbed “Spybot,” the robot won the event by autonomously navigating an outdoor course with use of GPS, camera, compass, encoder, and ultrasonic range finder.

“Spybot completed a nearly perfect last run in a record 1:31, substantially lower than the next runner-up time of 2:12,” reports team co-leader Tyson Messori. “Spybot navigated the course using only wheel encoders, a digital compass, and nine sonar sensors, and then homed in on the cone with its camera—it turns out that solar flares may have taken out the on-board ETek GPS system.”

The multidisciplinary Robotics Club included mechanical engineering seniors Scott Barlow, Tyson Messori, and Chi-Yeh (William) Hsu; mechanical engineering graduate student Terry Cooke; and computer engineering senior Patrick McCarty. Dr. Chris Clark, assistant professor in Computer Science, served as faculty advisor.

Held twice each year, Robo-Magellan reflects the growing importance of autonomous navigation for both military and commercial applications. The contest requires entrants to design and build a robot capable of GPS waypoint navigation, obstacle detection, and color tracking.

MATE students prove they’re “hip” in design contest

A design by a team of Cal Poly materials engineering students for a prosthetic hip component won 2nd Place in the ASM Materials Education Foundation 2007 Undergraduate Design Competition. The design of a shock dampening neck could help ensure that fracture of ceramic components in a total hip replacement is less likely in the event of a traumatic accident.

Team members included juniors Michelle Alexander, James Burchell, Kurt Franchuk, Matt Goebel, and Emily Norvell. The project was completed as part of a materials engineering course team-taught by Drs. Blair London and Trevor Harding. Students were assigned the task of designing a new orthopedic biomaterial technology that improved the performance of a current implant and met all safety requirements set forth by the Food and Drug Administration.
**1,902 MPG!**

Cal Poly engineering students win first Shell Eco-Marathon

A team of Cal Poly Engineering Students competing in the U.S. Shell Eco-Car Challenge took the top prize and $10,000 for the university with their entry, a sleek vehicle which performed at an astounding 1,902 miles per gallon.

The Shell Eco-marathon Americas competition offered the grand prize to the university whose student team completed the farthest distance using the least amount of fuel. Students from the across the U.S. and Canada competed. Cal Poly student Kevin Fang drove the winning car to victory in the marathon.

“It’s important to be involved in programs like the Shell Eco-marathon to make people aware of what we can achieve in future transportation,” said mechanical engineering major Tom Heckel, team manager for Cal Poly’s Super Mileage team. “I hope teams like ours will help shape the vehicles people drive years from now and those vehicles will be more environmentally friendly.”

**Cal Poly SBES members attend convention**

Fifteen members of Cal Poly’s Society of Black Engineers and Scientists (SBES) chapter attended the 33rd annual National Society of Black Engineers (NSBE) national convention in Columbus, OH, during spring break.

With nearly 25,000 members in attendance from around the world, the conference provided an excellent opportunity for students to network with their peers and industry professionals while gaining further insight into both the engineering and non-engineering professions.

With the theme “Our Time, Our Renaissance,” the conference included professional development workshops, guest speakers, design competitions, a graduate school fair, and a two-day career fair with more than 400 companies and government agencies present, including Morgan Stanley, Dean Witter, the United States Steel Corporation, IBM, Brown and Caldwell, PGE, Deloitte Consulting, Northrop Grumman, Boeing, Apple, and Hewlett-Packard.

Each year at the convention, the NSBE also holds executive board elections. These elections are held on a national basis (national executive board), regional basis (regional executive board), and a collegiate basis (chapter executive board). Five Cal Poly SBES members were selected to hold regional executive board positions, putting them in charge of specific NSBE operations from Hawaii to Colorado.

**Cal Poly ASME chapter is No. 1 again**

Cal Poly’s American Society of Mechanical Engineers (ASME) continued their legacy as the nation’s leading student chapter at the American Society of Mechanical Engineers, Ingersoll-Rand Regional Conference in Reno, NV. The group was named top chapter for the 10th straight year and placed 2nd in the Student Design Competition.

Cal Poly’s top chapter status represents the group’s active annual calendar that includes tours, meetings, speakers, and notable outreach activities. “Our members are eager to give back to the community,” says Andrew Tranovich, ASME chair.

In the past year, members produced engineering lab activities for a local middle school and hosted the 2006 ASME Human Powered Vehicle Challenge, a three-day design and race competition. Such events coupled with the chapter’s excellent membership participation ensured them another win in Reno.

The Cal Poly team also brought home a 2nd place prize in the Student Design Competition for their entry: a human-powered water boiling and distillation system. The contest was based on the need for such devices in the aftermath of natural disasters such as the tsunami of 2004 and Hurricane Katrina. Cal Poly received high marks for superior distillation.
AERO student triumphs against tough odds

Matthew Durham earns achievement scholarship after debilitating back injury

Aerospace engineering junior Matthew Durham is no stranger to adversity. He has persevered despite life’s many challenges, including a debilitating nerve injury to his back. In recognition of his accomplishments, Durham was recently awarded the William Randolph Hearst and California State University Trustees’ Award for Outstanding Achievement.

Durham was chosen as part of a select group of just 23 students statewide to receive the $3,000 Hearst scholarship, one student from each CSU campus. “Although I was quite thrilled winning the award, I hope that everyone remembers that there are many others who are just as deserving as I am,” he said.

Durham, an honors student, says he relishes the “learn by doing” opportunities offered by Cal Poly. He is actively involved with CubeSat, the joint venture between Cal Poly and Stanford University’s Space Systems Development Lab to build and launch small satellites into space. Durham participated in the CubeSat launch last May and is currently involved in designing and testing the next generation of Cal Poly satellites.

Ironically, Durham was once perceived to be an “at-risk” youth. He credits the Grizzly Youth Challenge Academy at Camp San Luis Obispo with setting him on the right path. “Grizzly is not for everybody,” said Durham. “But it made me feel like I wanted to continue doing good things.”

In 1999, Durham joined the Army. Two years later, he collapsed after injuring his back in a military training exercise. Durham had unknowingly suffered a spinal cord injury, yet he boldly regained his composure and finished the exercise of his own accord. Durham was medically discharged from the Army after five years of service, but says thoughts of his military brethren remain on his mind. “Much of the credit for my inspiration and success goes to the troops,” he said. “As I attended my courses I found it difficult to give anything less than my absolute best knowing that those who are at war have it far more difficult than I do.”

ENVE student’s biodiesel project truly goes green

Ian Woertz hopes to create fuel from algae that grows in dairy waste ponds

Ian Woertz is the first to admit biodiesel fuel derived from algae isn’t going to solve the transportation energy crisis any time soon. But quoting a researcher he overheard at a biofuels conference last spring, the Civil and Environmental Engineering grad student says “when you’re talking about environmental problems, there is no silver bullet, but there is silver buckshot.”

Working with CE/ENVE professors Yarrow Nelson and Tryg Lundquist, Woertz, one of the founding members of the Cal Poly Biodiesel Club, is taking aim at reducing two of the United States’ biggest environmental challenges — reducing air pollution and the country’s dependence on foreign petroleum— by developing cleaner-burning biofuels. Woertz project, titled “Biodiesel from Algae Applied to Agricultural Wastewater Treatment,” proposes making algae-based biodiesel fuel from the green scum in the Cal Poly Dairy’s waste pond. “Producing biodiesel from algae isn’t a new idea, but it’s a great one,” says Nelson. “Combined with wastewater treatment, it has very exciting potential.”

While biofuels have traditionally been made from corn, soybeans, sugar cane, palm oil or even used vegetable oil from restaurants, algae is an intriguing “feed stock” because of its high yield per acre and the rapid life cycle of the photosynthetic microorganisms.

“The fact that algae grows naturally in wastewater and has a much higher oil content than corn or soybeans makes it an attractive source,” says Woertz. “With a possible yield of 1,100 gallons a year per acre, it’s easy to see the promise of algae.”
MATE student awarded first Bonderson Fellowship

Brian Stahl will earn M.S./Ph.D. degrees at Cal Poly and UC Santa Barbara

Brian Stahl is poised to be a pioneer. Not only is the Cal Poly materials engineering graduate student aiming to undertake New Age research in the fields of biomaterials/biocompatibility and electronic and photonic materials, but he is also forging a unique, new collaboration between Cal Poly and UC Santa Barbara.

Stahl was recently named the first recipient of a Bonderson Fellowship for Master’s-Ph.D. Degree in Biomedical and Materials Engineering. Established through a $500,000 gift from Paul and Sandra Bonderson, the program provides $50,000 per year for five years for recipients to pursue master’s degrees at Cal Poly and then Ph.D.’s at UCSB. The program also earmarks funds for equipment and lab costs, as well as support for faculty, thus nurturing greater collaboration between researchers at the two universities.

Stahl’s interest in biomaterials and biocompatibility was sparked by an internship at Boston Scientific, a medical device manufacturer. “I was amazed by the complexity of the human body and how these devices could be used to treat a disease which would have required open-heart surgery several decades ago,” he says.

At Cal Poly, Stahl has been working on the microfabrication of a silicon-based piezoresistive pressure sensor, a project of the Micro Systems Technology research group. Led by Dr. Richard Savage, this effort involves students from materials engineering, biomedical engineering, electrical engineering, and mechanical engineering, who work on projects involving micro and nano scale technologies.

Engineering scholar-athlete wins national scholarship

Jessica Eggleston, an industrial and manufacturing engineering senior and distinguished Cal Poly athlete, recently received a Toyota Material Handling USA, Inc. Honor Scholarship, one of eight presented annually by the Material Handling Education Foundation (MHEF).

Eggleston is also a top-scoring Cal Poly basketball player. In her final season, Eggleston’s 1,052 career points gave her the fourth all-time career scoring record in Cal Poly women’s basketball. She was named Cal Poly’s Scholar-Athlete of the Year and made First Team All-Conference.

The scholarship award competition required applicants to submit letters of recommendation and an essay about materials handling. Eggleston’s on-court experience helped in the latter: “I used a lot of basketball analogies,” she said light-heartedly; “I guess they really liked it.”
College of Engineering Dean Mohammad Noori announced the recipients of the 2007 Outstanding Graduating Seniors and Outstanding M.S. and B.S./M.S. Awards at an awards ceremony in mid-May. Top academic achievers were determined by grade point averages. In addition, engineering departments named honorees for contributions to the College of Engineering, contributions to Cal Poly, and service to the community. College-wide winners from each category received special recognition, including $200 bonds from Lockheed Martin. The recipients were:

Outstanding Graduating Seniors for Academic Excellence
- Travis Lockyer (AERO)
- Christopher Davis (CE)
- Jonathan Gandhi (CPE)
- Chetan Desai (CE)
- Carter Deleo (EE)
- Cash Fitzpatrick (ENVE)
- Christopher Heylman (GE)
- Michael Williams (IME)
- Edward Clements (IME)
- Ruth Borrud (MATE)
- Kyle Corman (ME)
- Alexandre Mattos (SE)

Outstanding Graduating Seniors for Contributions to the College of Engineering:
- Robert Rivera (AERO)
- Lisa Wertenberg (BME)
- Phaidra Rice (CE)
- Steven Cary (CPE)
- Christine Le (CS)
- Paul Lacey (EE)
- Christopher Heylman (GE)

Outstanding M.S. Graduates
- Stephen Rousseau (AERO)
- Adam Feffer (CE/ENVE)
- Jedd Weise (CSC)
- Joyce Leung (GE)
- Tyler Sheffield (EE)
- Chingai Tam (Engineering Management)
- Sevan Oungoulian (ME)
- Celeste Fiore (Transportation Planning)

Outstanding B.S./M.S. Graduates
- Theodore Garbeff (AERO)
- Shawna Von Stockhausen (CE/ENVE)
- Jason Rickward (CSC)
- Jordan Corey (EE)
- Brian Mitchell (GE)
- Lisa Wertenberg (GE)

Engineers without Borders update: Nicaragua Project

The reality of life in Nueva Vida, Nicaragua, belies its optimistic name. Most of the 12,000 residents are refugees from Hurricane Mitch in 1998. Unemployment is near 80 percent, and the municipal infrastructure is unreliable at best.

Cal Poly Engineers Without Borders, however, resolved in 2006 to help improve conditions in Nueva Vida by supplying the community health center with a consistent, reliable, and safe supply of water in a region plagued by constant water and power outages.

The EWB-redesigned water system provides enough storage to allow for continued operation throughout water outages and has an electric pump as well as a back-up manual pump. The group, led by Shawna Von Stockhausen, also decided to locate the storage tank underground to protect the water from disease and theft.

In July, the EWB team successfully installed the tanks.

EWB Cal Poly plans to continue working with the community of Nueva Vida. “Because so many younger students are involved with this project, there is a lot of long-term potential to help the people there,” said Von Stockhausen.
Cal Poly female engineer receives boost from Google

With the help of a $10,000 scholarship from Google, Jessica Kiefer hopes to inspire young women to follow career paths in engineering.

Google, the Internet search company, awarded Kiefer its prestigious Anita Borg Scholarship. Named after a female pioneer in computer science, the award recognizes women pursuing careers in computer science and engineering.

But Kiefer is doing more to grow the ranks of female engineers than just earning her own bachelor’s and master’s degrees in electrical engineering. She also commits her own time—and scholarship funds—to outreach activities that expose K-12 students to engineering and technology careers.

“It’s important to get young students, especially girls, interested in engineering,” she says. “So, with some of the money I received from another very generous scholarship from the Society of Women Engineers, I purchased some class materials for an elementary school science program I’ve started with other Poly students. The program is called SEATES—Science, Engineering and Technology in Elementary Schools.”

“We’re tremendously proud of Jessica and we’re also grateful for her commitment to women in engineering,” says College of Engineering dean, Dr. Mohammad Noori. “The college is also determined to attract and retain more female students—Jessica is not only a fine ambassador, but she’s an excellent role model. We’re delighted that Google agrees with us.”

PolyHouse: Cal Poly students turn work into hope

Extreme home remodeling is not just a reality T.V. theme—for a group of Cal Poly engineering students, it’s personal. Over the course of just two weekends last spring, industrial and manufacturing engineering professor Roya Javadpour and her project management class demolished and renovated a house in Santa Margarita, CA to serve the needs of an elderly disabled woman who has lived there for more than 40 years.

The fourth annual “PolyHouse” project was Javadpour’s largest undertaking yet, with her students raising upwards of $50,000 in donations of cash, building materials and other assistance. The new house provides increased mobility, including wheelchair friendly features such as a spacious roll-in shower.

This year, industrial engineering graduate student Daniel Marrujo, his parents and younger brother Michael, an electrical engineering sophomore, made PolyHouse a family affair.

“My parents are really interested and involved with our education at Cal Poly,” he said. Despite a lengthy drive from Sacramento, “...when I told them about the PolyHouse project, they thought it would be really neat to participate with the class. They jumped at the opportunity.”

Students find the hands-on experience both challenging and fulfilling; a majority have never worked construction. “I’ve never worked so hard in my life, but it was definitely worth it,” said Sheeva Banisalam, industrial and manufacturing engineering senior and leader of the project’s flooring team.

For the first time, students outside the project management course were recruited to manage all of the equipment used on site and help streamline the entire process. Landon Reilly and Ashley Kahrs were two of seven students from the facilities planning and design class who volunteered to join the project. “We had several different projects to choose from, but this one sounded the most rewarding,” said Reilly.

Each year, the PolyHouse project attracts students from various disciplines. Aerospace engineering senior Timothy Mok led the project’s landscaping team. “I came into this knowing the work that it would require,” he said. “I didn’t need to take this class, but wanted to do it for the opportunity to really change someone’s life for the better.”

PolyHouse ‘07 was a family affair for the Marrujo's.
Faculty Notes

Dean’s Office


Multidisciplinary


Charles Birdsong (ME), Brian Self (ME), and Lynne Sivovsky (CSC) received a C3RP grant for a project on “Utilization of Tactile Displays and Ultrasonic Sensors as a Collision Avoidance system for the visually Impaired.”

Aerospace Engineering

Dan Biezad co-authored “Integrating General Aviation Aircraft in the Aerospace Curriculum” with Joon Kim of Lockheed Martin. He presented the paper at the American Society for Engineering Education (ASEE) 7th Annual Conference held in Honolulu.

Diane DeTurris co-authored and presented two papers at the 43rd American Institute of Aeronautics and Astronautics (AIAA) Joint Propulsion Conference in Cincinnati: “Performance Characterization of a 15-cm Ion Thruster with Simulated Beam Extraction,” and “Examination of Fabri-Choking in a Simulated Air Augmented Rocket.”

Robert McDonald published two conference papers on “The Role of Error in the Conceptual Design of a Transport Aircraft” and “Error Allocation in Complex Systems Design.” These were presented, respectively, at the 45th AIAA Aerospace Sciences Conference in Reno, NV, and the AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference (MDO) Conference in Portsmouth, Virginia.

Over the summer, McDonald worked on the design of a novel small unmanned aerial vehicle (UAV) concept for AeroMech Engineering, a mini/micro UAV company founded in 1999 by Cal Poly alumni, Thomas Akers (AERO ‘01) and Norman Timbs (ME ‘88, ET ‘92).


Women’s Engineering Program welcomes new director

Karen Bangs steps into the directorship of the Women’s Engineering Program with a wealth of experience at companies like Skyworks Solutions Inc., Conexant Systems, and Rockwell Semiconductor Systems—experience that made her realize the importance of increasing the ranks of women in engineering and technical fields.

“There are few women in my industry,” notes Bangs. “In fact, I was always in meetings in which I was the sole or perhaps one of two women attending. It made me realize that we need to recruit and retain women in engineering, so I was delighted to be asked to serve on Cal Poly’s WEP advisory board years ago.”

Bangs, a 1986 Cal Poly industrial engineering alumna with an M.B.A. from UC Irvine, has been appointed director of the WEP program, a position vacated by Helene Finger, who is currently pursuing her doctorate. Bangs joined Cal Poly as an instructor in the Industrial & Manufacturing Department in 2005.

“My immediate goals for the Women’s Engineering Program are to increase departmental representation and to seek ways to better leverage resources,” says Bangs. “Above all, I want to continue on the path set by Helene and past directors. The Society of Women Engineers and WEP have come a long way and made a difference, but there’s still more we can do to encourage women in this profession.”

Biomedical & General Engineering


Civil & Environmental Engineering

Robb Moss participated in a collaborative research project involving the
collection of liquefaction/non-liquefac-
tion case history data in the Tangshan
region in China that was affected by
the 1976 earthquake. He worked with a
colleague at the U.S. Geological Survey
(USGS), researchers at Southeast Univer-
sity in Nanjing and the China Earthquake
Agency – Institute of Engineering Me-
chanics (CEA-IEM). He received funding
from an NSF Special Grant for Explor-
atory Research (SGER), while additional
funding came from the USGS. Funding for
my US colleague was covered by the
USGS and institutional, local, and federal
government sources in China.

**Computer Science &
Software Engineering**

Chris Clark co-authored and presented
two papers at the International Sym-
posium on Unmanned Untethered Sub-
mersible Technology (UUST), 2007 held
in Durham, NH: “Autonomous Control of
a Differential Thrust ROV,” and “SIFT
Approach Used in Fish Tracking for Auton-
omous Underwater Vehicle.”

Clark also co-authored papers that
were presented by his students and pub-
lished in conference proceedings, in-
cluding the following: “Dynamics of Step-
climbing with Deformable Wheels and
Applications for Mobile Robotics,” and
“Design of a Wheeled Mobile Robotic
Platform with Variable Footprint” pre-

sented at the 2007 IEEE/RSJ Conference
on Intelligent Robotics and Systems in
San Diego; “Optimized Lane Assignment
Using Inter-Vehicle Communication”
presented at the 2007 IEEE Intelligent
Vehicles Symposium (IV’07) in Istanbul;
and “Development and characterization
of modular and reconfigurable robot
joints with harmonic drive transmission
systems” and “Task Based Configuration
Optimization of Modular and Recon-
figurable Robots using a Multi-Solution
Inverse Kinematics Solver” presented at
the 2007 International Conference on
Changeable, Agile, Reconfigurable and
Virtual Production (CARV) in Toronto.

Clark received a State Faculty Sup-
port Grant for a project on “Simultaneous
Localization & Mapping of Underwater
Tunnel Systems,” and an Extramural
Funding Grant for work on “Autonomous
Underwater Robotic Systems for
Distributed Sampling Applications.”
He also received a $25,000 grant from
Lockheed Martin to develop a “Cal Poly
Mars Sandbox.”

John Clements served on the Program
Committee for the Trends in Functional
Programming, 2007 conference held at
Seton Hall University in New York.

Hasmik Gharibyan presented “Gender
Gap in Computer Science: Studying Its
Absence in One Former Soviet Republic”
at the 2007 ASEE Annual Conference and
Exposition in Honolulu.

David Janzen was named Professor
of the Year by the Computer Science
Department. He co-authored “A Leveled
Examination of Test-Driven Development
Acceptance,” published at the Inter-
national Conference on Software Engineer-
ing (ICSE) in Minneapolis, MN. Janzen,
Clark Turner and H. Saiedian also pub-
lished “Empirical Software Engineering in
Industry Short Courses” at the Confer-
ence on Software Engineering Education
and Training (CSEE&T), Dublin, Ireland.

Lockheed Martin awarded Janzen
and John Clements a $25,000 grant to
research “Test-Driven Learning: Integrat-
ing Test-Driven Development in an Early
Programming Course.”

Mei-Ling Liu published a chapter on
“Web Services” in The Handbook of
Computer Networks, Hossein Bidgoli, ed.
(ISBN: 978-0-471-78461-6, Wiley Publish-
ing, Inc., Indianapolis, IN., 2007).

**Electrical Engineering**

Mike Cirovic presented “Creative Engi-
neering Design: A Novel Approach to
Engineering Design, Project Planning
and Management” at EAAEIE 2007 (In-
novation in Education for Electrical and
Information Engineering) held in Prague,
Czech Republic.

Dennis Derickson presented a paper at
the ETOP 2007 (Education and Training in
Optics and Photonics) conference in Ot-
tawa, Canada, that he co-authored with
Sam Agbo, Xiaomin Jin, John Sharpe
(Physics) and EE students Sean Jobe and
Dan Wasche. The paper was on “Phonon-
tics Education Program at California
Polytechnic State University.”

James Harris and Ali Shaban were
invited to give a seminar on “The Cal Poly
Sustainable Power for Electrical Resourc-
es (SUPER) Project” to the Environment
Energy Technologies Division at Law-
rence Berkeley National Laboratory.

Xiaomin Jin co-authored “Strong Guiding
of Light in Hollow Nanowire Structures”
published in the OSA Journal: Chinese
col.osa.org/issue.cfm). Co-authors in-
cluded Dr. Lian Chen of Nano Photonics,
Inc., and EE student James DeLeon.

Jin co-authored “Two-Dimension
Simulation of Gallium Nitride-Based Laser
Diode.” The paper was sponsored by
the Wang Faculty Fellowship at Peking
University in Beijing, China, and repre-
sents an international collaboration with
Professors Bei Zhang and Guoyi Zhang
and Ph.D. student Tao Dai. Cal Poly EE
students Sean Jobe, James DeLeon,
Jason Flickinger also co-authored.

Jin and Flickinger also co-authored
“Gallium Arsenide Photodiode Simula-
tion.” Dr. Chen of Nano Photonics and
Dr. Heller from RSoft Design Group
collaborated with Jin and Flickinger on
the research. This paper and the previous
one were presented by Flickinger at the
7th International Conference on Numeri-
cal Simulation of Optoelectronic Devices
held in Newark, DE.

At the OSA Topical Conference on
Nanophotonics held in Hangzhou, China,
Jin presented “Strong Guiding of Light in
Hollow Nanowire Structures” and “The
Optimization of Gallium Nitride-Based
Laser Diode through Transverse Modes
Calculation” co-authored with Sean Jobe
and T. Dai.

Senior design student Kurt Burian
and Xiaomin Jin co-authored “Generic
Device Control System for Remote Pro-
cedure Calls” presented by Burian in the
6th Annual Wireless Telecommunications
Symposium in Pomona, CA.

One of the papers listed above
represents research funded by a $43,000
Agilent Technologies grant, which also
funded the travel expenses for confer-
ence presentations by Jin’s student co-
authors. Jin received a $6,000 augmenta-
tion of this grant in June. Jin has also
been successful in building a collabora-
tive relationship with JDSU: the company
not only sponsored a master’s student
thesis project directed by Jin, but also
donated $12,000 for the department’s
photonics laboratory.

Silvia Liddicote, adjunct faculty, was
awarded a three year, $150,000 WIRED
(Workforce Innovation in Regional Eco-
nomic Development) Grant supported by
the Department of Labor. She serves as
one of the steering committee partners
on the STEM Collaborative Action Plan
to boost K-University participation in sci-
tence, technology, engineering and math.

John Saghi (EE/CPE) was awarded a
$20,000 research grant from Raytheon
Space and Airborne Systems to con-

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**Walker, Gorman honored as top staff**

Rhonda Walker, left and Sondra Gorman
were named the College of Engineer-
ing’s Outstanding Staff Award recipi-
ents for 2006-07.

Sondra Gorman, the administrative assistant to the
Biomedical and General Engineering Department,
has been with Cal Poly for 20 years. Her department
chair states that she is the “foundation for the fastest
growing program at the university,” and notes that
“Sondra’s knowledge of our working procedures is
encyclopedic, and her capacity for work staggering.”
New CENG faculty

Kristen Cardinal — Assistant Professor, Biomedical and General Engineering
- Ph.D. University of Arizona (Biomedical Engineering)
- B.S. Cal Poly (General Engineering ’03)
- Research Expertise and Interests: Tissue engineered blood vessels, bioreactor systems for tissue cultivation, cardiovascular device evaluation

Trevor Cardinal — Assistant Professor, Biomedical and General Engineering
- Ph.D. University of Arizona (Physiological Sciences)
- B.S. Cal Poly (Kinesiology ’03)
- Research Expertise and Interests: Mechanisms of blood flow control, vascular architecture, molecular control of revascularization, muscle regeneration, and the role of skeletal muscle stem cells in revascularization

David Clague — Assistant Professor, Biomedical and General Engineering
- Ph.D U.C. Davis (Chemical Engineering)
- M.S. U.C. Davis (Engineering)
- B.S. U.C. Santa Barbara (Chemical Engineering)
- Research Expertise and Interests: Transport phenomena, complex (bio-) fluids, microfluidics, Bio-MEMS and numerical methods

Alexander Dekhtyar — Associate Professor, Computer Science
- Ph.D. University of Maryland at College Park (Computer Science)
- M.S./B.S. Tver State University, Russia (Applied Mathematics and Computer Science)
- Research Expertise and Interests: Uncertainty in databases, uncertainty in AI XML semistructured databases, digital libraries, computing for humanities, logic programming, algorithms and complexity theory, data mining, information retrieval, independent verification and validation traceability

Scott Hazelwood — Assistant Professor, Biomedical and General Engineering
- Ph.D. U.C. Davis (Biomedical Engineering)
- M.S. U.C. Davis (Biomedical Engineering)
- M.E. Harvey Mudd (Mechanical Engineering)
- B.S. Harvey Mudd (Engineering)
- Research Expertise and Interests: Orthopaedic biomechanics, with special emphasis on: the effects of age, disease, and the treatment of disease on bone remodeling; the effects of exercise on bone remodeling; bone fracture and fracture healing; orthopaedic implant designs and their effects on bone remodeling

William Hughes — Assistant Professor, Materials Engineering
- Ph.D. Georgia Institute of Technology (Materials Science and Engineering)
- B.S. Virginia Polytechnic Institute and State University (Materials Science and Engineering)
- Research Expertise and Interests: Synthesis and characterization of one-dimensional nanostructures, piezoelectricity, and atomic force microscopy

Lily Laiho — Assistant Professor, Biomedical and General Engineering
- B.S. Cal Poly (Industrial Engineering)
- M.B.A. University of Southern California
- Research Expertise and Interests: Biomedical instrumentation, biomedical imaging, optical biopsy, spectroscopy, microscopy, design of medical devices

John Oliver — Assistant Professor, Electrical Engineering/Computer Engineering
- Ph.D. U.C. Davis (Computer Engineering)
- M.S. U.C. Davis (Computer Engineering)
- B.S Boston University (Electrical Engineering)
- Research Expertise and Interests: Computer architecture, low-power processors, sustainability of computing, reliability of computer processors

Shikha Rahman — Assistant Professor, Civil & Environmental Engineering
- B.Sc. Bangladesh University of Engineering and Technology (Civil Engineering)
- M.Sc. Bangladesh University of Engineering & Technology (Water Resources Engineering)
- Ph.D. Georgia Institute of Technology (Fluid Mechanics and Water Resources)
- Research Expertise and Interests: Water resources engineering, hydrological processes, environmental hydraulics, experimental fluid mechanics, graphics and 3D visualization techniques, engineering education, numerical modeling, open channel hydraulics, sediment transport, turbulence, scalar diffusion, plume tracking by aquatic organisms

Lizabeth Schlemer — Associate Professor, Civil & Environmental Engineering
- Ph.D. U.C. Santa Barbara (Architecture)
- M.A. California Institute of Technology (Environmental Engineering)
- Research Expertise and Interests: Engineering education with a focus on assessment methodologies and applications and assessment of project-based learning; and human factors engineering, including cognitive processing under stress and design of effective aids to processing.
Advantage

Faculty News

continue development of Automatic Target Recognition (ATR) schemes for Synthetic Aperture Radar (SAR) imagery and raw data.

Ali Shaban spent 10 weeks as an Electric Power System Protection consultant for Chevron.

Jane Xiaozheng Zhang participated in international research collaboration at the Shanghai Jiao Tong University in China.

Industrial & Manufacturing Engineering


Rod Hoadley was issued a patent for his Dual-Level Bicycle Rack designed with the help of IME students.

Roya Javadpour was presented the Paul Wolff Accessibility Award by the San Luis Obispo County Community Foundation for her “exemplary contribution of time, energy and talent toward the creation of a barrier-free community for people with disabilities.” The award recognizes Javadpour’s leadership of PolyHouse, her annual IME class project to renovate the home of a disabled community member.

Javadpour was also an invited speaker for the Innovation in Engineering Management Session of the 2007 ASEE Conference in Nashville.

Unny Menon served an interim position of Assistant Vice Provost for Academic Programs through Aug. 31. His tasks included: coordinating Cal Poly’s participation in the CSU Access to Excellence project; developing a plan to line up graduate and undergraduate students and student projects for the 2007 summer programs in China, Korea and Taiwan; assisting with coordinating the task force on international projects; and assisting with coordinating the Instructionally Related Activities program.


Pan received a C3RP grant supplement for his project on “Drop Testing Reliability of Lead-free Solder Interconnections” and a $10,000 grant from the Cal Poly Provost Office to develop collaboration programs with Shanghai Jiao Tong University.

Dan Waldorf and Scott Liu of Genius Metal, Inc., were awarded a National Science Foundation Phase I grant for Small Business Innovative Research (SBIR) for a project entitled “Competitive Carbide Cutting Tools with Alternative Binders.”

Materials Engineering


Harding co-authored “Academic Integrity Among Engineering Undergraduates: Seven Years of Research by the E3 Team”, a paper presented at the ASEE Annual Conference in Honolulu, HI.

Trevor Harding and William Hughes received a C3RP grant to research “Validation of In-Situ Conductive AFM Technique for Evaluation of Corrosion in Biomedical Materials at the Nanoscale.”

Trevor Harding, Richard Savage, Linda Vanasupa, and J. Stolk presented “A Systemic Model of Development: Strategically Enhancing Students’ Cognitive, Psychomotor, Affective, and Social Development” at the International Conference on Research in Engineering Education in Honolulu, HI.

Richard Savage presented two papers at the 2007 American Society for Engineering Education Conference in Honolulu, HI, as part of the Materials Division: Teaching Methods for the 21st Century. The papers included “Collaborative Design of Project-based Learning Courses: How to Implement a Mode of Learning that Effectively Builds Skills for the Global Engineer,” which was co-authored with Linda Vanasupa and J. Stolk, and “A Design Methodology for Empowering Project Based Learning.”

Savage secured two industrial research partnerships to support the Micro Systems Technology research group. Photon Dynamics sponsored a summer research project, which involved the use of CENG’s newly acquired Atomic Force Microscope; MATE undergraduate student Ryan Rivers participated. A $43,000 grant from Olympus Corporation will sponsor research focused on characterizing electrostatic actuators for micro mirror arrays that are employed in optical network devices. This major research effort involves a partnership between Cal Poly and Olympus’s MEMS Technology research center in Tokyo, Japan and their Microsystems America engineering group in Atlanta, GA. MATE graduate student Steve Meredith leads a multi-disciplinary team of students to complete the work.

Mechanical Engineering

Charles Birdsong led an interdisciplinary student team research project in Human Sensing and Pre-Crash Detection, which represented the U.S. at the NHTSA Enhanced Safety of Vehicles International Collegiate Student Safety Technology Design Competition in Lyon, France.

He presented “Developing a MAT-LAB/Simulink RTWT Based Hydraulic Servo Control Design Experiment,” at the American Society of Engineering Educators World Conference in Honolulu.

Birdsong, Peter Schuster, and D. Desrosiers presented “A Pre-Crash Simulator to Evaluate Vehicle Collision Prediction Algorithms” at the Fifth IFAC Symposium on Advances in Automotive Control, in Aptos, CA. Birdsong and Schuster also presented “Undergraduate Research Experiences from a Three-Year Project” at the ASME International Mechanical Engineering Congress and Exposition in Seattle, WA.

Birdsong promoted student research and learning opportunities by implementing state-of-the-art control software and developing a lab controller design project. He presented a paper describing the experiment at the 2007 ASEE Annual Conference. As faculty advisor for Tau Beta Pi (TBP), Birdsong initiated a service project, which allows TBP pledges to work with the Templeton Endeavour Academy to expose junior and senior high school students to engineering.

Jim Meagher, Frank Owen, and Kim Shollenberger, Frank Owen, and Jim Meagher taught a summer short course at Munich University of Applied Sciences (MUAS). The program included courses in mechanics, thermodynamics, automotive mechatronics, and German language and culture. The program attracted 22 students representing six different countries and 11 different Universities. Ten students from Cal Poly attended the course.

Jim Meagher presented a paper on “Characterization and Modeling of Shaft Cracks and Rotating Asymmetries” co-authored with Xi Wu at the International Symposium on Stability Control of Rotating Machinery in Calgary, Alberta.

Jim Widmann presented “Redesign of a Senior Capstone Design Experience: A Flexible Model for Continuous Improvement” co-authored with Joe Mello at the National Capstone Design Conference in Boulder, CO. At the ASEE Conference in Honolulu, HI, he presented “Student use of Author’s Textbook Solution Manuals: Effect on Student Learning of Mechanics Fundamentals” co-authored with Kim Shollenberger, and “Enhancing Learning in Mechanical Design using a Model Eliciting Activity” co-authored with Brian Self. Widmann was elected Paper-Chair Elect for the Design in Engineering Education Division (DEED) of ASEE.

Women’s Engineering Program

Helene Finger, director, presented “Advancing Women in Engineering by Empowering Student Leaders to Promote the Recruitment and Retention of Females in Engineering” at the ASEE Annual Conference in Honolulu.
Alumni updates

The Engineering Advantage prints alumni updates as space permits. Notes not included will appear in a future issue.

1950s

Darwin Sainz (ME ’57) is retired from Unocal, where he served from 1980 to 1996 as CEO of the California Coastal Operators Public Relations Division. He lives with his wife Jeanette in Los Alamos.

1960s

Larry Goforth (EE/MATH ’61) retired in 2000 from Caltech’s Jet Propulsion Laboratory. He led development of the Multi-mission Image Processing Laboratory in support of the Voyager, Magellan, Galileo, and Cassini projects. Larry was also an engineer with the US Army Atmospheric Sciences Lab in White Sands, NM and taught undergraduate math at West Coast University, Los Angeles. He lives in Las Cruces, NM.

Jiro Oi (EL ’68) presented a paper at the Digital Fabrication 2006 NIP22 Convention in Denver, CO, and was awarded “Best Interactive Paper Display.” While in Denver, he visited his classmate, J. Steven Blaisdell (EL ’68), who is co-owner of Intrinsic Sound.

1970s

Shabbir Bala (IE ’74) recently opened an upscale Boondockers Café in Marysville, WA serving breakfast, lunch and dinner. His son Faraz graduated from West Point this year and he is proud of his daughter, Sahar, a junior in high school.

Alexander Kozlov (ENGR SCI ’79) holds the position of Brigadier General in the U.S. Army Reserves and has recently taken command of the 9th Regional Readiness Command, a 24-unit, 3,500-citizen soldier force headquartered in Fort Shafter Flats, HI. In civilian life, he serves as vice president of MacDonald- Bedford, a construction management consulting firm. Brig. Gen. Kozlov has been in uniform for 20 years, five of them on active duty, and deployed as a reservist to Bosnia and Kuwait.

Craig Lewis (ME ’78) recently joined Ventek International, a small manufacturing company in Petaluma, CA as the General Manager. Ventek assembles self parking pay stations and integrates these systems into technological systems in the parking industry.

Raymond Reamy (ET ’77) retired after 25 years as a senior engineer with Entergy Corp., one of the largest electrical utilities in the country. He now serves as Director of Quality Control for Turner Industries Group, LLC in Baton Rouge, LA, the nation’s top maintenance contractor as listed by Engineering News Record.

Richard Rolston (CSC ’79) works as a Principal Software Engineer for Primarion in Torrance, CA. He is also enrolled in the computer science master’s degree program at Loyola Marymount University.

Stanley Shaner (ET-AC&R ’75) has worked in the Cardiac Rhythm Disease Management business as a field sales representative since 1980, first for Pacemaker/St. Jude Medical, and since 1998 for Medtronic. He, his wife Dorothy, and their four children, live in Goleta, CA. He writes, “Along with the pleasure of helping restore normal heart rhythms to those in need, my job has allowed me to stay in touch with and watch the many great changes at Cal Poly since 1980. I am always proud and thankful for the great education I received there and all the wonderful people involved with the College of Engineering.”

David Short (Construction Management ’77, CSC ’78) is a senior project manager for Inovant, a division of VISA. He manages the Program Management Office for the construction of a $482 million Data Center and office complex. He will also oversee the migration from the existing data center to the new one over the next four years.

Cal Poly AERO alumni leading the charge into space

The race to space continues, but this time the goal is dramatically different. From Burt Rutan (AERO ‘65) designing SpaceShipOne to Robert “Hoot” Gibson (AERO ’69) piloting the Benson Space Company/SpaceDev Dream Chaser, Cal Poly alumni are playing key roles in the budding space tourism industry.

As CEO of Scaled Composites LLC, Rutan built what has been described as “the most aggressive aerospace research company in the world.” In 2004, he made history with SpaceShipOne, the first privately manned spacecraft to reach suborbital space, thus claiming the $10 million Ansari X-Prize.

One year later Rutan forged a partnership with British entrepreneur Sir Richard Branson, forming a new aerospace production business, The SpaceShip Company. By 2010, the company aims to build a fleet of commercial, sub-orbital spaceships for Branson’s Virgin Galactic and other spaceline operators. “I would like to achieve a goal that NASA has neglected,” said Rutan, “to make flight outside the atmosphere accessible to the common man.”

But the SpaceDev Dream Chaser just may give Rutan’s SpaceShipTwo a run for its money. “I think we are going to be the first ones into space,” said Gibson, a veteran astronaut with five Space Shuttle flights under his belt.

As COO and Chief Test Pilot for the Benson Space Company, Gibson has guided the development of the Dream Chaser. Within two years, Gibson hopes the craft will be able to shuttle three passengers just beyond the outer reaches of Earth’s atmosphere. Of Gibson, CEO Jim Benson said, “I don’t think there’s a better pilot in the world.”

Gibson and Rutan are both at the forefront of a revolution in spaceflight. With likeminded ingenuity and a united passion for bringing the masses into space, only time will tell which of these Cal Poly alumni makes it there first.
Jay Warren (EL ‘75) recently joined the Board of Directors for CardioDynamics. He is currently the President and CEO of Cameron Health, Inc., a medical device company that designs, manufactures, and distributes a subcutaneous implantable defibrillator system. Over his career, Jay has held various executive management positions at Guidant Corporation, Inter- deics, Inc., and Medtronic, Inc. He earned a master’s degree from an interdisciplinary program between Southwest Methodist University and Southwestern Medical School.

Jeffrey Weaver (CSC ‘76) is the Assistant Vice President responsible for overseeing the merger integration initiatives for the SBC-AT&T merger and the AT&T, BellSouth and Cingular merger. Over a 28-year career with Pacific Bell, SBC, and AT&T he has seen five mergers and was involved with the planning or execution for all of them. Jeffrey and his wife live in San Antonio, Texas.

1980s

David Bailey (EL ’89) was married to Beth Wood on October 8, 2006. He is a senior consultant at Booz Allen Hamilton in Chantilly, VA.

Robert Gardner (ENVE-ACRE ’86) was named executive director of EDA Consortium after serving in various managerial, sales and engineering positions in EDA companies for over 40 years.

Tom Gibbs (ENGR SCI ’80) contributed an article published on Grid Today (www. gridtoday.com) titled, “Grid, Hype & Rock ‘n’ Roll.” Tom is a managing partner at Vx Ventures, previously director of Industry Solutions at Intel.

Peter Gillespie (ME ’86) was named president of Tevet Process Control Technologies, a metrology company. A former executive with companies such as KLA-Tencor, Axxelis Technologies and Boxer Cross, Inc., Peter has more than 15 years of semiconductor solutions development experience.

Scott Jarvis (CSC ’89) is a Project Engineer at Kyocera Wireless, Inc.

Scott McGowen (CE ’84) has worked for Caltrans for 23 years. After serving in Design, Traffic Operations and the Office of the Office Engineer, he became the Office Chief for the State Transportation Improvement Program and then the Office Chief for Design Special Projects. He was recently named the Chief Environmental Engineer, a position in which he is responsible for the Environmental Engineering Offices, including Stormwater Quality, Hazardous Waste and Noise.

Bob Miller (ET ’82) is a Director of Information Technology at Parker Hannifin Corporation. His division is responsible for manufacturing Electromagnetic Interference (EMI) shielding materials.

Kimball Norup (CE ’89) was recently named Executive Vice President, Marketing for RightAnswers, Inc., a provider of end-to-end self-service solutions. Prior to joining RightAnswers, he served in senior management positions at the Nelson Family of Companies, Noverus, and Geodex International.

Leonard Reder (EE ’80) works for the Jet Propulsion Laboratory on the Mars Science Laboratory mission, the next Mars Rover mission.

Adele (Harvey) Schneider is producing a documentary on cerebral palsy (CP). The film, in part, chronicles her experience circumnavigating the globe to talk with people about CP, and includes interviews with Loreen Arbus, Academy Award winner Chris Cooper, Marianne Leone of the “Sopranos,” actress Cheryl Hines, Emmy winner William H. Macy, actress Geri Jewell, and Last Comic Standing Josh Blue, all of whom have been effected by CP.

Jesus Valenzuela (MATH ’74, CE ’80) lives with his wife Jackelyn in Elkton, MD, where he serves as a subcontract administrator for ATK Propulsion & Controls Systems, a division of Alliant Tech Systems Corporation.

1990s

Sidney Bennett (ME ’99) joined Innovative Neurotronics as its quality assurance engineer. Prior work experience includes CAD design, FEA analysis, and project management for multimillion dollar product lines at DePuy Orthopaedics and Encore Medical Corporation.

Jeff Cattaneo (ENVE ’97) has been named district engineer of the Marina Coast Water District. He was previously engineer for the San Benito County Water District and worked as a design engineer in Louisville, KY.

Richard Fulford (CE ’94) was recently named as an executive vice president for PIMCO, a fixed-income management firm. He serves as a London-based account manager responsible
After taking two bullets in his leg from Iraqi insurgents, Brennan Shea Goltry (CE ‘04) led his soldiers on foot into battle. His action last February earned him a Silver Star.

“Shea,” as he’s known, serves as a captain in the 82nd Airborne’s 505th Parachute Infantry Regiment, 2nd Battalion, Company C. Charlie Company. He deployed to Iraq in August 2006; the company was patrolling Samarra when the incident occurred.

According to his Cal Poly ROTC instructor, retired Maj. Paul Buechner, Shea stood out during his college years as “one of the best cadets that we had” and a “diligent student.”

The Silver Star is the nation’s fourth-highest decoration. It may be awarded to any person who distinguishes him- or herself by extraordinary heroism during combat.

Mike Henry (ME ’94) is married with “three awesome boys, 15, 12, and 8.” He serves as a field sales engineer for Danaher Motion, the largest manufacturer of electro-mechanical and mechanical automation components and systems in North America. He says, “I have enjoyed the diversity and challenges of my customers and distributors.”

Joseph Kava (MATE ‘91) recently became chief operating officer for RagingWire Enterprise Solutions, Inc., an IT outsourcing provider of infrastructure, software, and on-demand solutions. He has more than 17 years of technical and operational management experience in the technology industry, having held senior director and management positions at Applied Materials.

Matthew Manjarrez (CE ’95) recently rejoined Fehr & Peers Associates as a Traffic Engineer after spending three years as an expert witness in forensics. Matthew enjoys his job but said that most of all, “I love being a husband to my wife of 11 years, Leann, and a crazy dad to my two boys, Adam (7) and Elijah (5).”

Steve Musallam (EE ‘90) was recently named vice president of marketing for Magnum Semiconductor. He has over fifteen years of experience marketing ICs to the consumer electronics industry. Previously, Steve held positions in product marketing for Mobilugen and C-Cube Microsystems. During his career, he has been responsible for defining and launching some of the industry’s first sing-chip MPEG-2, MPEG-4 and H.264 audio/video codecs.

Clemm Noernberg (AERO ‘93) and his wife Kathleen Dougherty (Accounting ‘93) founded Areias Systems in their garage in 1999. The company, which builds products such as cables and control systems, is now one of the fastest-growing companies in the U.S. with an annual sales of $7.2 million.

Richard Robinson (ET ‘97) serves as Chief Operations Officer, Department of Telecommunications and Information Services for San Francisco County and City.

2000s

Garrett Cole (MATE ‘01) is a Postdoctoral Researcher in the Center for Micro- and Nanotechnologies at Lawrence Livermore National Laboratory. He received his PhD from UC Santa Barbara in 2005.

Drew Huston (B.S., M.S, AERO ’03) received his Naval Aviator Badge, pinned on his uniform by his proud mother, during a “winging ceremony” in early April in Kingsville, Texas. Drew is now preparing for his first permanent duty as a United States Navy carrier pilot. He said his first permanent assignment will either be flying an E2C Hawkeye on airborne early warning missions or flying a C2 cargo plane that takes supplies and personnel to carriers. While at Cal Poly, he took classes and obtained his private pilot’s license, then applied to officer candidate school.

Edward Liou (ME ’04) started Alter-a company with friends in which he currently serves as Project Manager. They have developed a fitness machine that can alter your effective body weight (www.alter-g.com). Edward says, “This means if you are recovering from an injury, or have overtrained, want to run faster at a lower body weight, or simply want to see what it would be like to walk/jog/run on the moon, we can do it.”

Wendy Martin (ENVE, M.S. CE/ENVE ’03) says, “I’m very excited to be the President of the new ENVE Alumni Chapter of the Cal Poly Alumni Association. We’re proud to have hosted three ENVE reunions and produced and distributed two ENVE alumni newsletters.”

Sean Miller (IE ’02) is employed at the Northrop Grumman Corporation as the lead Quality Engineer for the Sub-Systems & Airframe Integration Team on the F/A-18 E/F Super Hornet and E/A-G Growler program located in El Segundo.

Kevin Quinley (ME ’06) and Ryan Quinley (ME ’06), honors graduates, joined Lockheed Martin Space Systems Co. in Sunnyvale. Ryan and his team design multiple mechanisms for unclassified U.S. Air Force satellites. Kevin, whose job title includes test integrator, works on classified projects. But Ryan will eventually transfer to the classified division and work in the same building as his twin.

Ed Woo (EE ’06) is a Systems Engineer for Raytheon in El Segundo working on the Global Hawk, an unmanned aerial vehicle (UAV) that does reconnaissance.

At 6-1 and 263 pounds, Chris Gocong (BME ’06) played defensive end at Cal Poly, but was moved to outside linebacker by the Philadelphia Eagles.

BME grad earns starting role with Philadelphia Eagles

After missing most of his National Football League rookie season in 2006 with a neck injury, former Cal Poly All-American Chris Gocong (BME ’06) has earned a starting role as an outside linebacker with the Philadelphia Eagles.

Gocong, who won the Buck Buchanan Award as the best defensive player in Division I-Along after recording a school-record 21.5 sacks during the Mustangs’ 9-4 2005 season, was moved to linebacker after playing defensive end at Cal Poly. He had 21 tackles and a pass breakup in the Eagles’ first six games.

Alumni, connect with PolyLink

PolyLink — www.calpolylink.com — is the ideal spot for alumni to network. Alumni at all professional levels can use PolyLink to sign up to mentor new grads, receive mentoring, post information about job openings at their companies and post business card information. See PolyLink article, P. 3.
Putting students first

You may have noticed: we celebrate students. For more than 100 years, students have come first at Cal Poly—and the generosity of our alumni, parents and friends make that possible.

Three key needs to ensure student success include:

- **Student scholarships**: student awards, especially for freshmen, support students and help the college recruit outstanding candidates, including women and underrepresented minorities.

- **Student project support**: Student projects require material and equipment and travel to competitions or to collaborate with industry professionals.

- **Hands-on engineering education**: we call it “Learn By Doing,” and we need labs and cutting-edge equipment to keep it going.

This is the first time we have asked for your support in this newsletter. We hope you will answer the call. Please consider a gift to the College of Engineering. We can promise you it makes a difference for those that matter most: our students.

Mail your check to the College of Engineering in the envelope provided Thank you for your loyalty to Cal Poly!

Paul Bonderson (EE ’75)
Chair, Dean’s Advisory Council

Kathleen Holmgren (IME ’80)
Co-chair, Dean’s Advisory Council

P.S. If you would like to get involved with students, projects, or faculty, contact Joe Donahoo (805-756-6870; jdonahoo@calpoly.edu).