CONTENTS

DEPARTMENTS

04 LETTERS
05 UNIVERSITY NEWS
26 BET YOU DIDN'T KNOW
30 HOT SHOTS

FEATURES

08 CATCHING UP WITH PRESIDENT BAKER
  Solving the looming shortage of tech workers
10 CLOSING THE GAP
  Effort on to encourage women engineers
12 ON THE MEND
  Grad students research dunes solutions

16 PLAY BALL
  The Mustangs are an up-and-coming baseball team
20 ENRICHING AGRICULTURE
  A Salinas Valley farmer is helping agriculture students
22 2 COOL
  Just in time for summer, Cal Poly Ice Cream
23 MOVING UP
  Where’s the beef?
24 TEACHING WHAT SHE LIVES
  Matina Zulfacar welcomes students to her Afghanistan classroom and to the U.S. to continue their studies
28 A WONDERFUL LIFE
  Meet four generations of Mustangs
ALASKA ACCOLADES

I WANTED TO LET YOU KNOW how much I enjoyed your recent edition of the Cal Poly Magazine. I am a '66 graduate of Cal Poly, teaching in Fairbanks, Ala. (Yes, still teaching and loving it). I teach the gifted and was able to put most of the magazine to use in each of my classes, as I strongly emphasize creativity. My students enjoyed hearing about the Disney World project and CYBER-MAN, as well as several other articles. They are presently creating habitats in space for the year 2065 and must come up with new and innovative ideas, since much of what we are using today will be obsolete.

Next year our emphasis will be on solving crimes. Thank you again for your wonderful magazine. I know how much work is put into publishing it. I am looking forward to your next publication.

— Judy (Pensinger) Farnham, Fairbanks, Ala.

ESTEEM SEEMS LACKING

JUST RECEIVED THE SPRING 2006 copy of Cal Poly Magazine ... it is extremely professional. The article entitled “Don't Call Us Cowboys” ... terrific photography and a wonderful rags-to-riches story. I would like the magazine to entertain another story ... this time about our university as a whole. I have a real issue with "how academically strong is our institution." I have read most of the facts and figures distributed by Cal Poly and can understand that some university stroking cannot always be prevented. Here are some questions the article may wish to address:

• Are students attracted to Cal Poly mostly because of low tuition?
• Will an A++ high school student consider a Cal Poly degree over a UC degree?
• Have we really achieved national notoriety ... coast to coast?
• Have our incoming freshmen classes steadily increased our admissions standards despite increased diversity efforts?

Living in Southern California, I hear a lot of good things pertaining to local UCs and private schools, although more recently the name Cal Poly, San Luis Obispo, has been cropping up in conversations as the desired college to attend. Nevertheless, most colleges under the CSU lack a certain esteem. I understand this request may be a slight departure from the norm, but as an ARCH '71 graduate, I feel alumni around the country would be very interested.

— George Adrian, Glendale

FIFTY YEARS, REALLY?

MY GOODNESS, IT DOESN'T SEEM LIKE 50 YEARS, but I graduated from Cal Poly SLO in June 1956. I read with quite some interest your article about the Grand Reunion last year. In those days, those of us who attended the Kellogg-Voorhis campus (now known as Cal Poly Pomona) had to transfer during our senior year to complete our final two quarters and graduate from SLO. I remember well the vets who lived on the hill in "Silver City" and how it was a little hard to find female companionship in the local community. There were a lot of "imports" come Poly Royal days. Politics were not a factor in college those days. If any prof had a political opinion, he kept it to himself! I am indeed sorry to hear what goes on today. Well, I don't know if you are going to have anything for the 50-year alumni this year ... maybe John Madden, one of our more notable alumni from that era, may show up.

— Dave Wilson, Jacksonville, Ore.

HE WAS PUSHED

IN THE ARTICLE "A Simply Grand Reunion," spring Cal Poly Magazine, I would suggest a small correction regarding the certificates given to wives. It was "Pushing Hubby Through," rather than "Putting Hubby Through." We still have ours and it was signed by Julian McPhee.

— Chuck Erikson, Class of 1956, Hockessin, Del.
NEW STUDENT HOUSING ON ITS WAY

CAL POLY OFFICIALS BROKE GROUND in March for Poly Canyon Village, the university's newest student housing project.

Believed to be the largest student housing project in the country, Poly Canyon Village will have three residential village or neighborhood areas to house approximately 2,700 students. The complex includes two parking structures totaling 1,900 parking spaces, commercial village areas for retail and food service, and a recreation center.

As designated in the Campus Master Plan, Poly Canyon Village will sit on approximately 30 acres of sloping land north of Brizzolara Creek. The project will mean replacement of the Animal Nutrition Center, Beef Center and Meats Processing Center. These brand new ag facilities will be located at the north side of campus. (See related story, page 23)

Each of the neighborhoods in Poly Canyon Village will feature outdoor gathering spaces framed by buildings and landscaping. Students will live in four- five- and six-bedroom apartments – each with full kitchen facilities.

Completion of the apartments will be in two phases, with occupancy scheduled for fall 2008 and fall 2009.

NO PIP SQUEAK

THE PERFORMING ARTS CENTER will soon house a pipe organ that would make the Phantom of the Opera proud.

Installation of the gigantic Opus 129 in Harman Hall was set to begin June 19, and should take about six weeks to complete. The instrument will look available by summer's end, but that doesn't mean it's performance ready.

Because it has 2,300 pipes, tuning this beauty is complex. Basic tuning will be done this summer, but the "voicing" process will take roughly nine months, 56 hours a week, to complete. First, each pipe is voiced alone and then with other sequences of pipes so they sound perfect together. Pipes range in size from a pencil to 32 feet tall.

The waiting list for an organ such as this is five years; it took about a year to build. It is the work of CB Fisk, Designers and Builders of Pipe Organs of Gloucester, Mass.

The organ is the generous gift of Performing Arts Center patrons Bert and Candace Forbes of San Luis Obispo. An elegant debut concert befitting this magnificent instrument will be held in spring 2007.

Don't expect to hear "Take Me Out to the Ballgame."
BUILDING FOR FUTURE BUILDERS

CAL POLY’S LONG-ANTICIPATED Center for Construction Excellence will soon leap off the drawing board and into the hands of contractors who are turning the site of the former campus Air Conditioning Building into a state-of-the-art facility for future builders.

The center will be the new home of the Construction Management Department. Construction will total 58,000 square feet of lecture space, labs, classrooms and offices at a cost of $21.3 million. Completion of the new complex is expected in summer 2008.

Taking center stage will be a two-story, one-of-a-kind materials demonstration laboratory – the heart of interdisciplinary learning in the Construction Management Department.

Sponsored by Simpson Strong-Tie, the demonstration lab will provide a 5,000-square-foot space for interdisciplinary training in planning, design, engineering and construction. The lab will allow visitors, faculty and practitioners to showcase and demonstrate building techniques with students.

Other labs will provide specific training and hands-on experience in different segments of the construction industry. Founders halls will be named for alumni Rob Rossi and C. Nicholas Watry in honor of their major gifts. Additional supporters will also be recognized.

An alumni campaign to raise $1 million toward completion of the center is under way. For more information, contact Tana Anastasia, Construction Management Department alumni coordinator, at (805) 756-6381 or gmnastas@calpoly.edu.

JACQUELIN BURATOVICH REPORTING FROM KABUL

WORKING IN A DEVELOPING COUNTRY recovering from war is a challenge, to say the least, for Jacquelin Buratovich (ENVE ’80). But her company’s efforts to develop drinking-water systems for Afghanistan communities are rewarding.

Buratovich, president of Entropy Consulting of Louisville, Colo., has been the project director for the Afghan Urban Water and Sanitation Program for the past two years. Her company recently built a booster-pump station and discharge pipeline for a boys school and future residential development in a village outside Kabul.

"There are few quality construction materials available and a serious lack of design and construction experience here, since the Afghans have not built anything technical in over 25 years," she reported via e-mail from Kabul. "It takes months to bring materials and equipment in, and everything takes at least twice as long as expected to build."

She and her team of Afghan field engineers and plumbers are accompanied by uniformed men armed with rifles, the "requisite security team that is attached at my hip when I’m in the field," Buratovich wrote. "I don’t even notice them anymore."

On the job, she always wears a tunic and says her hard hat is "head-cover" enough in most venues to appease local sensibilities.

"It’s an amazing adventure. Wish I’d stumbled on overseas work years ago!"
BECHTEL GIFT BENEFITS SCIENCE AND MATHEMATICS

CAL POLY'S CENTER FOR EXCELLENCE in Science and Mathematics Education (CESaME) this spring received a $150,000 gift from S.D. Bechtel Jr. in association with the S.D. Bechtel Jr. Foundation.

Funds provided by this gift will support a new project designed to engage upper elementary school students and their teachers in science, technology, engineering and mathematics (STEM). The project will serve students who are underrepresented in STEM careers.

Cal Poly faculty members and project co-directors Shirley Magnusson, Cotchett professor of science and mathematics teacher education, and Silvia Liddicoat, electrical engineering lecturer, will work with classroom teachers from the Santa Maria-Bonita School District to revise existing curricula to integrate engineering, support student learning in science and mathematics and meet literacy standards.

LINDA HALISKY APPOINTED LIBERAL ARTS DEAN

LINDA J. HALISKY WAS APPOINTED dean of the College of Liberal Arts in April. She has been serving as interim dean since August 2004.

Halisky is credited with fostering a positive environment for teaching, scholarship, creative activity, research, and service to the university and community.

"Linda Halisky has proved to be both visionary and pragmatic in leading the College of Liberal Arts," said Interim Provost Robert Detweiler. "Under her commendable leadership, the college's programs and faculty will continue to thrive."

As dean, Halisky is responsible for the quality of the College of Liberal Arts' undergraduate and graduate academic programs. She oversees about 60 staff members and more than 300 faculty members, who teach some 3,000 majors, representing the third-largest undergraduate enrollment at Cal Poly.

SAVE THE DATE

SATURDAY, SEPTEMBER 30
SPANOS STADIUM, MUSTANG MEMORIAL FIELD AND MUSTANG MEMORIAL PLAZA DEDICATIONS.

CAL POLY WILL DEDICATE the Alex G. Spanos Stadium and Mustang Memorial Field during a public pre-game ceremony at 3 p.m. on Saturday, Sept. 30. And on the same day, the public will have the first opportunity to view Mustang Memorial Plaza, located adjacent to the stadium and dedicated to the 16 football players, a graduate student assistant and a Mustang booster who died in a tragic plane crash in 1960.

The Sept. 30 football game with Southern Utah is the 2006 Hall of Fame Game and will honor the 1960 football team, student assistant and booster, as well as the team coaches and manager, and a sportswriter from that time. During the halftime ceremony, they all will be inducted into the Cal Poly Athletics Hall of Fame.

Alumni will find the stadium in the same location they remember, but completion of the first phase of construction will give it a brand-new look and will expand available seating by 1,500 seats, a total of 10,000 fans.

FRIDAY, OCTOBER 20 – SUNDAY, OCTOBER 22
HOMECOMING

WELCOME HOME, MUSTANGS! The Cal Poly Alumni Association is planning an action-packed weekend to celebrate Homecoming 2006 from Friday, Oct. 20, through Sunday, Oct. 22. Friday kicks off the celebration with the Honored Alumni Banquet and the Grand Reunion for members of the Class of 1956 and all classes that came before. On Saturday, the Alumni Association invites you to a barbecue and wine-tasting on campus before the big game. Game time is 4 p.m. for the Great West Football Conference match-up with South Dakota State. Go 'Stangs! Homecoming wraps up Sunday with the All-Alumni Breakfast. For event details, call the Alumni Association toll free at (888) CAL-POLY. For sports information, go to www.gopoly.com.

SUNDAY, OCTOBER 22 – MONDAY, OCTOBER 30
TASTE OF ITALY THIS FALL

VISIT CHIANTI OCT. 22-30 with the Cal Poly Alumni Association. This seven-day vacation will take you to the beautifully restored Villa Tavolese, located in the medieval village of Marcilla. Never traveled before? Taking a trip with a collegiate group adds a dimension not found in other group travel programs. For information about this and other trips offered to Cal Poly alumni and friends, contact Rosey Parks at rparks@calpoly.edu, or call (805) 756-5747.
BURT RUTAN DESIGNS AND BUILDS AIRCRAFT that break records and make history.

Allison Holmgren is a freshman who hopes to follow in the footsteps of her parents, both Cal Poly industrial engineering graduates.

Mark Montoya is an executive at a construction company in Santa Monica.

In addition to studying at Cal Poly, the trio has something else in common. All three decided to pursue technology careers while in middle school – an early conscious decision that experts say needs to become more widespread if the United States is to maintain its lead in the new global economy.

Montoya (CM '84) says he "fell in love" when he saw "drawings and plans and models" while on a sixth-grade field trip to an architecture firm. Holmgren says her mother, who is a vice president at Sun Microsystems, used to take her to the office, where she met other women engineers and executives. And Rutan (AERO '65) was inspired by Sputnik and the ensuing "space race" and moon shots.

Whether the inspiration comes from a class trip, a parent or an international event, one thing educators and industry leaders agree: Getting students excited about science, math and technology is key to reversing the country's looming shortage of qualified technology workers.

At the forefront of the growing effort to solve this problem is Cal Poly President Warren J. Baker, who has been making it a personal mission for several years to bring business, government and higher education together to increase the number of graduates in science, technology, engineering and mathematics (STEM).

"Unless the United States keeps up with the rest of the world in the numbers of engineers and scientists we produce, we will lose our global competitive edge," Baker predicts. "China is said to be already producing 600,000 engineers a year, compared to only some 70,000 in the U.S."

Baker and Cal Poly alumnus Bill Swanson, chairman and CEO of Raytheon, lead a national Business-Higher Education Forum task force of corporate CEOs and university presidents that provides leadership for strengthening the nation's capacity in STEM disciplines.

During a fall 2005 tour of Chinese universities, Baker witnessed firsthand the investments China is making in STEM education. "Over a period of nearly two weeks, we visited a different university each day. In every case, the institution had experienced dramatic, planned growth in enrollments, especially in STEM disciplines. The faculty and facilities were world class. The education and research results were impressive."

In the 2006 State of the Union address, President Bush recognized the importance of sustaining America's capacity to innovate in the face of growing competition from China and other nations.

Ahead of the president's call to action, the CSU committed in May 2005 to doubling its production of math and science teachers over five years. Then in March 2006, the CSU Chancellor's Office helped host a summit on recruiting and preparing math and science teachers, which was co-chaired by President Baker.

Numerous sponsors from business and government joined the summit: Apple Computer, The Boeing Company, the California Space Authority, the California Council on Science and Technology, the Center for the Future of Teaching and Learning, Edison International, the Majestic Realty Co., Morgan Stanley, Jet Propulsion Laboratory, and State Farm Insurance.

"With business and higher education working together," Baker says, "we are sure to make great strides in the near future."
COLLEGES AND UNIVERSITIES across the nation are having trouble recruiting women into engineering programs, and Cal Poly is no exception.

Fall 2005 enrollment in the College of Engineering tallied 642 female students – barely 14 percent of the college's total population of 4,589. Of 5,310 freshman applicants, just 737, or 13.9 percent, were women. And while more than half the female applicants were offered admission, just 114 enrolled.

The picture isn't any rosier nationwide. Women make up less than 10 percent of the engineering work force and just 20 percent of the undergraduate engineering student population.

The numbers worry educators and industry leaders. “We have an equity and work force diversity gap, and we need to make this career opportunity attractive and available to all,” said Unny Menon, associate dean of Cal Poly's College of Engineering.

Menon and others, like Cal Poly engineering Professor Helene Finger and Sun Microsystems Vice President Kathleen Holmgren (IE’80), are working hard to turn the tide. They believe women play a vital role in the engineering industry, but find girls are turned off to math and science at an early age. “Young girls see computer science, for example, as a very geeky profession,” Finger said. “The stereotype is so strong, they just don’t see themselves going there.”

Women tend to choose “nurturing” careers, she said. “We need to get out the message that engineering is a 'helping' profession. If we don’t, we’ll stop making the advances we need to make. Engineering is all about helping people make their lives better and safer.”

Finger is the women's engineering program director and advisor for the Cal Poly chapter of the Society of Women Engineers. At nearly 500 members strong, the Cal Poly organization is the largest student section in the nation and has won the national SWE title four years in a row.

Cal Poly SWE reaches out to girls through programs like Build-An-Engineer Day, where members bring middle school students to campus for projects and mini-labs, such as using nitrogen to make ice cream.

Some students have gotten the message. “I think the one thing that can hold a woman back is her unwillingness to take risks and to challenge herself,” said Betsy Sale, a fifth-year civil engineering student. “I think girls are less likely to pursue engineering in college because they are not encouraged to push themselves in math and science. Engineering and other ‘hard sciences’ take more of an analytical mindset, one which girls often suppress.”

Engineering major Hayley Musgrove has learned to deal with her minority status as a female during her four years at Cal Poly. “The most challenging thing for me is when I’m working on a group project with all males. It might take them a few meetings to respect my ideas or opinions. I’ve learned to be confident in my ideas and what I have to say. They learn to respect me.”

Young women need role models - someone to show them why careers in engineering are fun and interesting, said alumna Holmgren, a SWE member.

Holmgren has mentored girls over the years, beginning with a visit to a kindergarten class early on where she demonstrated how Hershey Kisses are made and how they are wrapped in foil with the tiny paper tag sticking out. The youngsters loved it, she said, especially when they got to sample the finished product.

Working in a traditionally male profession – and ascending to a seat in the executive boardroom – has had its challenges, Holmgren said. But, persistence has paid off. “I've always loved to figure out how things work. For me, engineering is the place for that. And Cal Poly was the perfect place for me to go.”

For her first job, she was hired as a management consultant for a family-owned flashlight company that needed help with its production planning. The owner was not pleased when Holmgren walked in for the job. “He was expecting gray hair and a three-piece suit. He said he had a daughter older than me.” Fortunately, because of her Cal Poly hands-on training, she had been out on the factory floor, sizing up the operation. “After 15 minutes of sharing some of my ideas, the man softened. I saw the doubt fade away.”

Today, she helps other women by mentoring at Sun, and she’s had some recruitment success within her own family. Daughter Allison is an engineering freshman at Cal Poly, and two younger daughters are waiting in the wings. “I'm doing my part,” Holmgren laughed.
ON THE MEND

BY SUSAN MCDONALD
GRAD STUDENTS ARE HELPING MOTHER NATURE RESTORE THE GUADALUPE DUNES

ON THE SURFACE, THE GUADALUPE DUNES are teeming with life.

Lupines, coreopsis, poppies and dozens of other native plants bloom on the sandy hills and creep along deep ravines. Deer and coyotes play hide-and-seek; hawks circle overhead. The place is crawling with reptiles and insects.

It's beautiful. But what's lurking underneath is a different story. Diluent, a hydrocarbon used to thin crude oil, leaked for decades from the rusty pipes and tanks at the 2,700-acre Guadalupe oil field, threatening to contaminate the nearby Santa Maria River and the ocean. The leak is estimated at 8.5 million gallons.

A group of Cal Poly grad students is experimenting with native plants, microbiology and chemistry to help Mother Nature and the oil company to clean up the pollution.

The oil field's owners, formerly Unocal, now Chevron, began cleanup efforts when the contamination was first discovered in the mid-1990s. Since then, Cal Poly researchers have been contributing to the decontamination efforts.

In collaboration with Cal Poly's Environmental Biotechnology Institute, a handful of grad students, assisted by biology Professor Chris Kitts and environmental engineering Professor Yarrow Nelson, are currently working on some new Chevron/Unocal-funded projects at the dunes and in a lab on campus.

TESTING THE WATERS

A small campus lab, crammed with equipment, is where environmental engineering majors Meghann Chell and Laleh Rastegarzadeh experiment with anaerobic biodegradation. They hope to unravel the natural process of breaking down hydrocarbons without using oxygen.

Their first challenge was to collect groundwater and transport it to the lab without exposing it to air. The students created a transport barrel, where water is pumped in and air is blown out. At the lab, they pump the water into specially designed glass bottles.

The water bottles sit inside a tall glass “glove box.” For their experiments, the students add an amendment to each bottle of water to see what works to speed up the natural breakdown of hydrocarbons. The amendments – sulfates, nitrates,
Iron, manganese – are found naturally in the dunes.

Chell and Rastegarzadeh are monitoring the hydrocarbons and changes in the gases with the assistance of Ken Hanson, a fellow grad student who runs the chromatograph to analyze the changes. "This project is so fascinating," said Chell. "It's a big challenge and really rewarding. It's so specialized, we're starting to speak another language."

Rastegarzadeh, originally from Iran, said she appreciates the environmental education she is getting. "I definitely feel fortunate to be here. This is a chance to look at a disaster, to learn the nature of it, and then take what we learn to other sites."

"OUR GOAL IS TO BIODEGRADE THE REMAINING HYDROCARBONS ON THE REST OF THE SITE."

NATIVE PLANTS MAY HOLD THE KEY
Other students are experimenting with willow trees and different native plants to discover how they might speed up the biodegradation process. To do that, they're testing the natural effects of the contamination on willows planted in plastic crates at the oil field, and they take water samples from the dunes site to run tests on trees growing in the lab.

Environmental engineering majors Eileen Mick and Kevin Crossley and chemistry major Eric Appel are examining the chemical changes in hydrocarbons during bioremediation.

Stephen Huang is studying the effect of diluent on willows, as well as lupines, yarrow, coastal mint and spectacle pods. "I'm trying to learn what the plants can tolerate," said Huang.

Agapito Diaz, a student from Guam, is studying "natural attenuation," or how biodegradation occurs naturally on the site. He wants to take what he's learning back to Guam where there are serious problems with saltwater intrusion and nitrates in the island's drinking water.

They've even coined a term for their work: "ecomediation," which means using the entire ecosystem as a remedy. It's a very long process, according to Professor Kitts. "What we're looking at is not something that happens overnight. It may take 200 years for the hydrocarbons to be eaten up."

The students are also learning to use a geographic information system to map the oil plume under the sand. The oil companies have already removed more than 360,000 cubic yards of contaminated soil and are planning to take away another 360,000 cubic yards soon. The soil is trucked to Santa Maria, where it is used to cover a landfill.

"It's important to remove as much as possible," said Professor Nelson, "but it's not possible to truck all of it away. Our goal is to biodegrade the remaining hydrocarbons on the rest of the site."

For more information about Cal Poly's Environmental Biotechnology Institute, go to the Web site http://www.ebi.calpoly.edu/.
Life goes on at the dunes. Photos by Gonzalo F. Garcia, Chevron Environmental Management Company.
WE HAVE AN UP-AND-COMING TEAM, A NEW BALLPARK
BALL
AND PLANS FOR EXPANSION TO HOST THE PLAYOFFS.

BY STACIA MOMBURG
IS IT THE CRACK OF THE BAT as it connects with a ball or the thwack of the ball as it hits a glove? Is it the smell of hot dogs, fresh cut grass and oiled leather? What is it about baseball that we love so much?

For Cal Poly baseball fans it’s all those things and more. “The older I get, the more I appreciate the game,” said Mustangs Head Coach Larry Lee.

“As a coach, I try to get my players to play the game the way it was meant to be played – to respect the game, as well as your opponent.”

Baseball at Cal Poly has changed a lot, and for the better, over the past five years. Prior to 2001, a baseball game hadn’t been played on campus since the late 1970s. Fans were relegated to watching home games at Sinsheimer Park, they hadn’t seen a winning team in years, and team spirit was waning.

All that changed when Baggett Stadium opened in January 2001. Fans attending the first game in the new stadium were treated to 1,734 gleaming new seats, a genuine press box and state-of-the-art training facilities. They also enjoyed the view of the surrounding rolling green hills and mountains.

Two years later Lee was hired as the Mustangs’ new head coach. A graduate of San Luis Obispo High School, Lee was former head baseball coach for Cuesta College. He had 460 wins under his belt in 16 years at Cuesta. Mustang fans had high hopes for this son of longtime Cal Poly Coach Tom Lee.

Enter Jerry Weinstein. He came to Cal Poly as pitching coach by way of Sacramento City College with some 830 wins during his 23 years of experience. Lee and Weinstein are two of the top winning coaches in the history of California community college baseball.

That coaching powerhouse isn’t wasted on today’s players. “It’s been a great experience,” said junior pitcher Gary Daley Jr. “Where I came from in high school, we didn’t have any real coaching. The coaches here are amazing. They help you prepare for things other than baseball – like the real world.”

It isn’t surprising, either, that the high caliber of coaching became a huge draw for talented recruits, and at Cal Poly the recruits are required to have both talent and brains. The good news is that good ballplayers, who are also exceptional students, want to play for Cal Poly and Lee.

With Lee and Weinstein at the helm, the Mustangs have completed three winning seasons and are on their way to a fourth. In 2005 the team tied for second in the Big West Conference – the fifth-toughest conference in the country – and had its highest-ever ranking with 36 wins. The team missed an NCAA Division I playoff berth by only one game. And two years ago, the Mustangs set a school Division I record with 37 wins.

Excitement over baseball is building, as evidenced by attendance. The 1,734-seat stadium averaged near-capacity crowds for the first nine home games this season. The three-day, season-opening series against Fresno State was standing room only, with nearly 1,900 in attendance per game, proving Cal Poly fans are loving baseball.

As the fan base grows, the university has plans to cope with increased attendance and to become a venue for regional playoff games. As the fan base grows, the university has plans to cope with increased attendance and to become a venue for regional playoff games. A second-phase expansion of Baggett Stadium is in the planning stages. According to Chris Baker, associate director of advancement for Athletics, phase-two expansion plans include adding between 2,000 and 2,500 new seats, enlarging the press box, adding locker-room space for visiting teams, and expanding concession and restroom facilities.

Baseball at Cal Poly. Coach Lee sums it up: “It’s a slow process to build a program that can compete at the highest level. Now we’re gradually getting better on a yearly basis, bringing in the student-athlete who represents the university in a positive way. Not just on the field, but in the classroom and in the community. It’s a great game.”

18 SUMMER 2006
ENRICHING AGRICULTURE

STUDENTS EXCEL WITH LATEST EQUIPMENT AND TECHNOLOGY.
COWS STILL REQUIRED.

BY TERENCE HENDRIX

20 SUMMER 2006
A SALINAS VALLEY FARMER is helping Cal Poly agriculture students work with the latest equipment and technology.

Longtime Salinas Valley grower Arden John Oreggia passed away in late 2005. Though he wanted to, he never had the chance to go to college. He grew up on his family's dairy, served in the Army during World War II, and spent more than 60 years of his life growing produce on the Oreggia Ranch near Gonzales. He built a successful family business, John Oreggia & Co. and Oreggia Farms, and was a pioneer in introducing asparagus to the valley.

Near the end of his life, Oreggia toured the Cal Poly Creamery during Open House. He was struck by the can-do attitudes of the students and what they said about Cal Poly, explained friend and attorney Robert Taylor. In 2004, Oreggia donated $225,000 to the College of Agriculture to support the hiring of a full-time creamery manager. In 2005, he donated an additional $200,000 to purchase commercial-grade equipment for the ice cream lab.

Before his death, he set up the Oreggia Family Foundation, including assets from the estate of his sister, Sabina. To honor Oreggia's memory, the Oreggia Family Foundation intends to support Cal Poly's College of Agriculture for many years to come. "We are looking forward to a continuing partnership," stressed Oreggia Family Foundation trustees Taylor and Denny Bertelsman.

Oreggia Family Foundation donations so far include $45,000 per year for five years for the new Wine and Viticulture program; $68,000 toward the Cal Poly Creamery; $24,000 for discretionary projects; and $337,000 to purchase new equipment for a variety of departments in the college, including expansion of the Animal Science equine embryo transfer lab. Added to Oreggia's initial gifts, the total now approaches $900,000.

The trustees know their longtime friend would approve. "What's happening in labs and classrooms at Cal Poly's College of Agriculture," said Taylor, "is exactly what Arden Oreggia wanted to see going on there."
JUST IN TIME FOR SUMMER, the Cal Poly Creamery is getting back into the ice cream business.

In bright, redesigned cartons featuring a blue sky over Bishop Peak and the green hills of the Seven Sisters, Cal Poly Ice Cream is planning a return to the shelves of Campus Market and Central Coast groceries after a decade-long hiatus.

Year-round flavors include chocolate chip, mud pie, cookies and cream and the venerable vanilla. Soon, there will be limited edition seasonal flavors, too.

The return of Cal Poly Ice Cream sales is thanks in large part to the Oreggia Family Foundation. Support from the foundation is paying for a full-time creamery manager, Jerry Mattas, who oversees ice cream and cheese production and day-to-day creamery operations.

In addition to funding the staff position, the foundation purchased $60,000 worth of commercial ice cream processing and packaging equipment for the creamery. The state-of-the-art equipment allows a team of 10 students to turn milk from the Cal Poly Dairy into 1,400 pints of ice cream in one batch over the course of six hours. A special mixing unit allows "inclusions" -- fruit, chocolate pieces, candy bar crumbs, cookie crumbs, you name it.

"Before, we would have had to do everything by hand," explained Dairy Products Technology Center Director and dairy science Professor Phil Tong. Ten years ago, when students made ice cream, "It was a little tricky. It could get like that episode in 'I Love Lucy' with Lucy in the chocolate factory," Tong recalled.

Now, under Mattas's watchful eyes, students calibrate the ice cream equipment, fold in ingredients, set the flow rate at which soft ice cream swirls into the pints, and wheel away carts of full containers for final freezing.

That final, colder freeze changes the structure of the ice crystals within the ice cream, making it harder and even changing the flavor, Tong explained.

The return of Cal Poly Ice Cream and continued Cal Poly Cheese operations have the creamery humming. Students working there are gaining real-life experience, not only in the nutritional chemistry of ice cream and applying chemistry and microbiology to food processing, but also in plant operations, engineering and marketing.

Since none of the creamery projects receive state funding, all have to be self-supporting. Which is another good reason to buy a pint of the new ice cream: Supporting Cal Poly just plain tastes good.
WHERE'S THE BEEF? Well, at Cal Poly, much of it is moving to greener pastures.

Three new animal science facilities are now under construction: a $5-million Animal Nutrition Center, a $3-million Beef Center and a $4.5-million Meats Processing Center.

Construction of the Poly Canyon Village student housing project is driving the move and expansions.

"These centers are going to be fantastic for our students," said Animal Science Department Chair Andy Thulin. "They will be able to work with cutting-edge equipment in spacious facilities that reflect the state of the industry."

The new Beef Center is a prime example. Instead of one bovine embryo transfer chute and an embryology lab in a converted 60-year-old field shed, the new center will have 10 embryo transfer chutes adjacent to a brand new, state-of-the-art lab. Students will be able to implant fertile embryos from prize cows into eight to 10 recipient cows all at once.

The center will also house the annual Bull Test, where students and faculty feed, monitor and evaluate up to 300 bulls for six months before the best are sold at auction.

The new Beef Center sits atop a hill overlooking 2,200 acres of gently rolling rangeland on Cal Poly's Escuela Ranch across from Cuesta College on Highway 1. In addition to the embryo-transfer stalls, it has research labs, classrooms and meeting rooms, a large covered arena for auctions or shows, seven 2- to 3-acre feeding pens, eight lay-up pens for treating sick animals, a hay barn and a commodity barn.

While it provides improved terrain, grazing and facilities for livestock, the center is nine miles from the campus core. Two large passenger vans will shuttle students and faculty.

Two other animal science centers under construction are located on the main university campus near the Poultry Unit. The Animal Nutrition Center will replace the 60-year-old feed mill. With standard commercial plant design, all operations will be enclosed for precise quality- and ingredient-control and efficient production. Set to open in December, it will still produce all the feed needed for Cal Poly livestock.

Completion will place Cal Poly in the company of only three other U.S. universities with commercial-grade feed production facilities and programs: Kansas State, North Carolina State, and Texas A&M, said Thulin.

"Our students are going to learn how to manage a feed production center, how to deal with all of the Department of Agriculture and Food and Drug Administration regulations and reporting, and how to manage teams of people to get the job done," Thulin said. "That's why our graduates can walk out of here and right into jobs."

The new Meats Processing Center will offer similar experience. Scheduled to come online in 2007, it consolidates swine and beef cattle harvesting and meat processing operations in one location, with the latest equipment and technology. "The livestock will come in one end of the building and the finished product will come out the other -- in some cases, fully cooked," Thulin said.

Further on the horizon is a new $1-million Beef Cattle Evaluation Center next to the Parker Barn on Mt. Bishop Road. The project is now in the planning stages.

The changes are bringing animal science facilities into the 21st century, but with a price tag. Of the $14-million total cost, the state provided $8 million. The College of Agriculture has secured another $3.4 million in private funding. That includes $1 million for the new Meats Processing Center from the Lau family of Modesto and a little over $2.4 from other sources. Industry support has been generous, especially in donations of equipment.

Another $2.4 million is still needed. The funds are critical to the future of the college and its students, Thulin said. "Our programs are on the cutting edge -- the embryo transfer programs, the animal nutrition programs and research that our undergraduate students get to participate in. There's not another university in the country that does it like this."

For details on how to support completion of the animal science facilities, contact the Animal Science Department at animalscience@calpoly.edu or 805-756-2419. — Teresa Hendrix
SINCE THE FALL OF THE TALIBAN in Afghanistan in 2001, ethnic studies Professor Maliha Zulfacar has been leading a cross-continental life.

She spends the academic year at Cal Poly, teaching classes about global ethnic conflict and geopolitics. She spends her summers teaching social science at Afghanistan’s Kabul University.

Electricity, heat and running water remain sporadic there, walls are still pockmarked with bullet holes, books are in woefully short supply, and female students risk kidnappings if found alone outside the university gates.

Despite the challenges, Zulfacar wouldn’t trade her summers for the world. “The students are like sponges – so thirsty for knowledge. They will follow you around, asking for books and asking how to learn,” she said.

She welcomes students to her Afghan classroom, as many as will fit, some sitting on the floor. In summer 2005, two students were young women she was unable to forget. Both 19, Ulker and Farida had been forced out of middle school when the Taliban closed all girls’ schools. When US. troops entered, the two had just managed to finish high school.

That summer, before she returned to Cal Poly, Zulfacar promised to find a way to help the girls continue their studies. The chance came last November when the Afghan Ambassador to the United States, Said Tayeb Jawad, visited Cal Poly for International Education Week. Jawad and Cal Poly President Warren J. Baker discussed ways to help Afghanistan educate its students; it was decided that Ulker and Farida would be the first to come. With help from U.S. Rep. Lois Capps’ office in securing visas, the two Afghan students arrived in December.

Their education could serve as a model for other U.S. universities, Baker said. “Cal Poly has an opportunity to reach out to a new generation of Afghan students in a novel way, to help them make up important lost ground,” he said. “If just 50 universities were to bring two Afghan women students to the United States, it would make a difference.”

The two students initially lived with Zulfacar before being placed with host families. They are studying for a required English competency test and hope to enroll in Cuesta College, with the ultimate goal of transferring to Cal Poly.

Taking in the two young women is just part of Zulfacar’s personal mission. Since March 2002, she has been working with Afghanistan’s Education Ministry. She also organizes fund-raisers for Afghan schools and has made a second documentary about her native country. Funded by a grant from the Open Society Institute, she’s now training and equipping Kabul University students to conduct a new oral history project.

“Afghanistan’s population is 90 percent illiterate, and not much has been done to preserve the experiences of ordinary people during the past three decades of constant warfare,” she explained. “We are trying to gather as much material as possible about the perseverance of the Afghan people – what the ordinary people have gone through, what they have been exposed to, how they managed to survive.”

She will be back in Kabul again this summer – despite the increasing concern of her grown children. “My son told me once, ‘If anything happens to you, they will replace you with another teacher. But we only have one mother – we can’t replace you’,” she said.

Cal Poly has established the Afghan Educational Outreach Project fund for the two Afghan students. Donations may be made payable to the Cal Poly Foundation and mailed to Cal Poly, University Advancement, Room 111, Heron Hall, San Luis Obispo, CA 93407.
FROSH TRIPLETS MAKE SPLASH!

Meet Cal Poly's triplets: From left, Stephen, Chris and Andrew Hurko

They get triple-takes wherever they go.

But, Cal Poly freshmen Andrew, Stephen and Chris Hurko take the stares in stride. They know you don't see triplets every day. In fact, they're pretty sure they're the only triplets on campus.

Though technically "fraternal" triplets, the Hurkos appear identical, with their wispy sun-bleached hair, blue-green eyes, lanky frames and shy smiles. The connection doesn't stop there. All three are majoring in business, and they're all members of the Cal Poly swim team. They live together in a condo off campus and like the same food. They appreciate much of the same music – all like Coldplay, but only Andrew will listen to country western.

And they have the same taste in clothes. As youngsters, their mom dressed them alike, but each had his own "color" to help even their parents tell them apart. Andrew, the oldest, wore yellow; Stephen, blue; and Chris, red.

Even today, if they go their separate ways in a store, they'll meet at the checkout counter with the same shirt or shoes. "It's really pretty ridiculous," laughed Stephen. Or was that Chris?

They are quick to debunk the popular myths about triplets. "We don't have a special psychic connection, each of us can function just fine without the other two, and we are individuals, not just one-third of a group," said Andrew.

The triplets admit to being good kids who attended Catholic school, where the nuns left no room for error. "We've always stood out," Andrew said. "We got noticed for any little slip. If one was bad, we all were considered bad."

After graduation, the three say they just might go into business together. "We have the same interests and the same degree," Stephen said. "We trust each other." – Susan McDonald
HATCHING A HEALTHIER EGG

WHAT DO YOU GET WHEN YOU CROSS AN EGG WITH A TOMATO? An even better excuse to have scrambled eggs for dinner.

Research by Cal Poly Professor Liz Koutsos and graduate student Jake Olson has resulted in eggs fortified with cancer-fighting lycopene. Lycopene is the pigment that makes tomatoes red. It's also an anti-oxidant shown to deter prostate and colon cancer and reduce the risk of breast cancer.

Koutsos holds the Foster Farms endowed professorship in Poultry Science in Cal Poly's Animal Science Department. Her specialty is avian immunology, and she's interested in researching how natural substances in foods affect bird health and well-being. Her latest research focuses on natural substances which cause color in foods -- many of which also convey health benefits.

Lycopene is one of them. While researching whether a lycopene-fortified diet conveyed any health benefits to poultry, Koutsos and Olson came up with another idea. "No one had ever tried to make an egg with lycopene in it," Koutsos said. Under her supervision, Olson made it the topic of his senior project.

After experimenting with adding tomatoes to chicken feed, professor and grad student discovered that feeding chickens tomatoes translated into spectacularly crimson bird droppings, but no lycopene-enhanced eggs.

Then they discovered that purifying and stabilizing lycopene in a specific formula and adding it to hens' diets does produce lycopene-enhanced eggs.

The eggs taste and look like regular eggs, except for a slightly more golden hue to the yolk, and they contain beneficial amounts of lycopene. Koutsos and Olson and Cal Poly have applied for a patent on their lycopene-feed recipe and the method for producing the health-enhanced eggs. Once granted, Cal Poly will begin producing and selling the enhanced eggs through the Cal Poly Eggs enterprise project. Other egg producers wishing to produce and sell the lycopene-enhanced eggs will be able to apply for a license to do so through Cal Poly. — Teresa Hendrix □

"The noblest of all dogs is the hot dog; it feeds the hand that bites it." — Lawrence J. Peter

LEGEND HAS IT THAT BASEBALL GREAT BABE RUTH once downed 24 hot dogs between games of a double header.

Baseball and hot dogs. They're an American tradition. They go together like movies and popcorn. Or Cal Poly and learn by doing.

Typically a concoction of beef, pork and spices, the hot dog is a not-too-distant cousin of the sausage. Long, short, thick, thin, from the tiny cocktail weenie to the robust knockwurst, hot dogs have been an American favorite for decades. Never mind that they are said to have been developed in Frankfurt, Germany, more than 500 years ago.

Germans might have created the frankfurter, but every quarter at Cal Poly, students in Bob Delmore's meat science class re-create it. No matter that the delectable dogs have come under fire in recent years. Myths abound about the alleged ingredients in the meaty mixture. Associate Professor Delmore aims to dispel those myths.

"The much-maligned hot dog is made simply from the trimmings of the sides of beef and pork that we fabricate in class," Delmore says. "Meat and spices, plain and simple."

Anyone who's tasted the spicy treat knows it's anything but plain. — Jo Ann Lloyd □
WHEN LEE FLETCHER LEFT ARKANSAS and headed to Cal Poly with his wife and year-old daughter in 1931, it was the height of the Depression. He had no idea the university would play such a major role in his life and in the lives of three generations to come.

Fletcher arrived on campus and stayed 32 years, says his daughter, Shirley. “My dad might have had just a high school education, but he was a real jack-of-all-trades.” Fletcher was farm foreman and superintendent of the Farm Shop.

The Fletcher family lived on campus, and Shirley and her brother and sister had the run of the place — the horse barn, the swine unit, anywhere they wanted. It was like a big ranch back then, Shirley recalls. “I rode my bike all over campus; I felt safe; we never locked our doors. Growing up on campus was a wonderful life.”

To be sure, the all-male campus provided plenty of diversion, especially for a young woman. There were about 2,000 students, and Shirley’s future husband Joseph Sondeno (EE ’49), was one of them. He enrolled after World War II, after serving in the Army Air Force as a B-17 pilot.

Joseph lived in Chase Hall and worked as a cashier in the cafeteria next to the dorms. The going wasn’t always easy. “Heading straight to Cal Poly after the war almost proved too much for me,” Joseph recalls. “But the instructors were very patient. They took a personal interest; they really seemed to care.”

Then he met Shirley; they were married in June 1948 and spent his senior year living in “Silver City,” a house-trailer complex set up on campus for returning veterans. After graduation, the couple moved to the Bay Area, where Joseph began his career with PG&E and later worked for the Federal Energy Regulatory Commission in Washington, D.C. Children soon followed.

Son Dudley Sondeno (ME ’75), always knew he would go to Cal Poly. The campus had left its mark on the youngster who often visited his grandparents in the ’50s, catching tractor rides with granddad Lee Fletcher. At that time, Dudley says, the campus had the look of an army camp. “These days, it looks like a real university.”

In the early ’70s, Dudley especially enjoyed the labs, "doing that 'hands-on' thing that Cal Poly was so famous for." He remembers much of it.

"The old Mechanical Engineering Building had the Test Engine Lab downstairs and the classrooms upstairs. We always knew what kind of engine was being run by the sounds in the classroom," Dudley says. "Those are the sounds that mechanical engineering students live for."

He is now senior vice president for the Southwest Gas Co. in Las Vegas.

And as fate — or family — would have it, Dudley’s daughter, Kelly, now proudly carries on the tradition. Just finishing her first year as a nutrition major, Kelly jokes that there was "no pressure to go to Cal Poly."

She is thrilled with her choice, and her father and grandparents couldn't be happier. "It's great having her at Cal Poly," her dad says, "hearing about all the great things that are part of Cal Poly and knowing she's carrying on the tradition." 

Note: Are you part of a long line of Cal Poly alumni? If so, you are invited to share your story with the Cal Poly’s Alumni Association for possible online publication. Please e-mail your story to alumni@calpoly.edu.
Four generations: From left, Dudley Sondeno, Kelly Sondeno, Joseph Sondeno and Shirley Sondeno holding a photo of her parents Beatrice and Lee Fletcher. Photo by Nick Hoover.
“WHEN YOU’RE BORN WITH NOTHING, you have everything,” claims award-winning writer Gloria Velasquez, professor of Chicano literature and culture. “My parents were farm laborers. I grew up in a shack with no indoor plumbing.”

A committed humanitarian who aims to correct injustices and right wrongs, the diminutive dynamo credits her humble beginnings for her strength and values. “If I had been born into luxury, I might not have become a woman of great spirit.”

For 21 years, the native of Loveland, Colo., has served as an inspiration and role model to Cal Poly students, especially female students and students of color. “I want to teach them to appreciate diversity, embrace different philosophies, inspire social change.”

Among her many accomplishments, Velasquez is San Luis Obispo’s 2005 Poet Laureate. She is also a novelist, musician, teacher, mother, daughter, sister, grandmother and mentor. Many say she epitomizes the Chicana Superwoman, the title of an early collection of her poetry.

In the book’s introduction, poet Margarita Luna Robles writes that Velasquez’s poetry “reads like diary entries in the life of a Chicana.” Her poems “do not relate what children might write in a school assignment about what they did in the summer. The journeys are the migrant fieldworker maps followed by many Mexicanos from the late 19th century to the present.”
**SUPPORTING DESERVING STUDENTS**

**INVESTING IN THE NEXT GENERATION OF CAL POLY FACULTY**

**ENHANCING LEARN-BY-DOING FACILITIES**

---

**LEAVING A LEGACY**

---

**THE VALUES OF ESTATE PLANNING**

**ONE OF THE MOST meaningful ways to impact the university beyond your lifetime is through a bequest gift. Planning for the distribution of your estate provides an opportunity to reflect on your life and your dreams for future generations.**

Cal Poly's planned giving staff can work with you and your advisors to develop a long-term gift plan that best reflects your financial situation and your personal commitments. Bequest gifts can benefit a designated program or department of your choice at Cal Poly.

**FOR MORE INFORMATION and sample bequest language, please contact:**

**PLANNED GIVING AND ENDOWMENTS**
Heron Hall
Cal Poly
San Luis Obispo, CA 93407

Phone: (805) 756-7125
Toll free: (800) 549-2666
Fax: (805) 756-2711

E-mail: taxwise-gifts@calpoly.edu
Web site: www.giving.calpoly.edu
Parents, please note: if your son or daughter is no longer at this address, please send his or her current address to alumni-info@calpoly.edu.