MEET THE PRESIDENT
CAL POLY WELCOMES ITS NEW LEADER,
JEFFREY D. ARMSTRONG

ALSO INSIDE >>
> CAL POLY STUDENTS WORK TO PROTECT THE MONARCH BUTTERFLY
> BIO ALUM STUDIES PENGUINS, CLIMATE CHANGE IN ANTARCTICA
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(On Cover) New Cal Poly President Jeffrey D. Armstrong
(Inside) A monarch butterfly like those Cal Poly students and faculty are working to conserve along California’s Central Coast.

Cal Poly Magazine is printed on paper certified in accordance to standards set forth by the Forest Stewardship Council®, which is committed to managing the world’s forests responsibly and promoting well-managed forestry worldwide.
BRADY TUEFEL, assistant professor of journalism at Cal Poly, accompanied the university’s student chapter of Engineers Without Borders to the village of Huai Nam Khun, Thailand, in December. The trip was part of the final phase of a five-year Engineers Without Borders effort working with the residents of six remote mountain villages on sustainable water filtration systems. The villages — with a total population of 5,540 — represent the only settlement of Akha people in Thailand.

Tuefel was invited to accompany the team to assist in documenting the experience through multimedia storytelling, which he teaches in Cal Poly’s Journalism Department. Tuefel also teaches courses in visual communication, multimedia reporting, photojournalism and writing for the media, and he is the adviser for Mustang Daily — Cal Poly’s student-run newspaper.

“As part of my contribution to the team,” Tuefel said, “I plan on applying the techniques that I teach in my journalism classes to accurately capturing the spirit of the community, its people, the project, and the Cal Poly team’s ongoing efforts.”

CAL POLY GRAPHIC COMMUNICATION PROFESSOR TEACHES IN RUSSIA AND THE UKRAINE

CAL POLY GRAPHIC COMMUNICATION PROFESSOR Ken Macro recently completed a sabbatical in Russia and the Ukraine, teaching at Moscow State University of Printing Arts, St. Petersburg University of Technology and Design and at the Kiev Polytechnic Institute in Ukraine. Macro was accompanied by Regis Delmontagne, formerly CEO of the Washington, D.C.-Based Association for Suppliers of Printing, Publishing and Converting Technologies. The two provided an introduction to American philosophy on conducting business in the printing sector (both domestic and abroad), and current trends in management principles and production control methods for print and digitally imaged products to students and faculty at the three universities.

SOCIETY OF WOMEN ENGINEERS SCORES NATIONAL AWARDS

CAL POLY SOCIETY OF WOMEN ENGINEERS (SWE) is a perennial winner at the organization’s national conference and did not disappoint at this year’s event Nov. 4-6 in Orlando, Fla. The group came home with first-place awards for the national Team Tech design contest, Outreach for a Large Section, and Membership Retention for a Larger Section. In addition, current Cal Poly SWE president Stephanie Smith won the award for Scholarship, while past president Lesley Telford and recent graduate Katherine Gage won two of five national Outstanding Collegiate Member awards.

The winning Team Tech project involved designing a small-scale mobile patient monitoring system that sends direct wireless alerts to the emergency team when a patient goes into cardiac arrest or other emergency situation. Developing a successful prototype required that the multidisciplinary team of 12 students focus on electronics, computer-aided drafting and biomedical applications.

EDITOR’S NOTE

FOR OUR SPRING EDITION, we appropriately celebrate a new beginning at Cal Poly by welcoming new president Jeffrey D. Armstrong. Armstrong brings a deep background in university administration and agriculture from his previous posts in Michigan and North Carolina — and he has a keen appreciation for hands-on learning that dates to his upbringing on a Kentucky farm.

As we went to press, Armstrong had just completed his first month on the job — a whirlwind of meetings with students, alumni, faculty and staff. Among the highlights: The Mustang Band’s serenade of the president and his wife, Sharon, at the Feb. 3 basketball game against UC Davis.

For an introduction to the new president, please see our cover story on Page 12 and find out why he is optimistic about Cal Poly’s future. As Armstrong told us, “No matter where I go or who I talk to, everyone believes that as great as Cal Poly is, we can make it better. That’s very inspiring.”

Inspiration bubbles up everywhere on campus. Elsewhere in this edition, we celebrate the importance of innovation in the university’s polytechnic curriculum. On Page 10, we offer you a look at some of the ingenious inventions and clever concepts Cal Poly students are developing through the new Center for Innovation & Entrepreneurship.

And as one would expect, Cal Poly alumni continue this spirit of innovation in their professions. For examples, see the features on several alumni engaged in cutting-edge efforts on climate change and renewable energy on Pages 20 and 22.

As always, we’d love to hear from you — and about you. Please send your questions, comments or news items to me at mlazier@calpoly.edu.

— Matt Lazier, Editor
B.S., Journalism, 1997

Psst: Please be sure to visit the magazine online at www.magazine.calpoly.edu for additional features and multimedia content.

EYES ON THE FUTURE

CAL POLY RETAINS TOP 50 RANKING ON KIPLINGER’S BEST VALUE LIST

WASHINGTON, D.C.-BASED business publication Kiplinger’s Personal Finance again named Cal Poly as one of its “100 Best Values in Public Colleges 2010-11.”

Cal Poly retains its spot at No. 50 on the list of 100 public universities from around the U.S. for in-state students and moves up 14 spots to No. 33 for out-of-state students.

It joins seven University of California campuses (San Diego, UCLA, Berkeley, Irvine, Santa Barbara, Davis and Santa Cruz) as well as Cal State Long Beach and San Diego State from the California State University system.

Kiplinger’s develops its list on a combination of academics and affordability, through a mix of its own reporting and existing data on more than 500 public, four-year colleges and universities.

CAL POLY JOURNALISM PROFESSOR TAKES SKILLS TO THAILAND

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**Cal Poly To Help Build Environment Resource Center In Haiti**

Cal Poly’s College of Architecture and Environmental Design will join several national organizations to help the State University of Haiti construct a new Haiti Built Environment Resource Center, to provide educational courses related to constructing safer buildings (particularly schools), and disaster resilient communities for Haitian officials and builders.

The US National Institute of Building Sciences (NIBS) will lead a team in charge of creating the center. NIBS and the Advanced Research Institute of Virginia Tech invited Cal Poly to join the group because of the university’s hands-on learning approach, as well as faculty expertise in seismic safety and planning for disaster-resistant communities.

William Siembieda, a professor in Cal Poly’s City and Regional Planning Department, will coordinate the college’s effort during the current academic year. Faculty member James Mwangi, a certified disaster safety worker, is also part of the team.

“Our students will get hands-on experience through coursework and field trips,” he said.

**Our Students Will Get Hands-On Experience Through Coursework and Field Trips**

Siembieda expects student to be involved in the project following the construction of the Haiti Built Environment Resource Center. “Our students will get hands-on experience with the project through coursework and field trips,” he said.

**Art And Design Students Produce New Universal Healthcare Symbols**

Art and Design Students, advised by assistant professor Kathryn McCormick, will have their work featured in various hospitals and health care facilities around the country.

The Society for Environmental Graphic Design and Hablamos Juntos, an organization that develops solutions to language barriers in health care, recently unveiled new Universal Symbols in Health Care, many of which were designed by College of Liberal Arts and Design students.

**Kennedy Was Named the President of California State Polytechnic College in 1967 and Retired Feb. 1, 1979, As President of California Polytechnic State University. Robert E. Kennedy, President Emeritus**

Cal Poly President Emeritus Robert E. Kennedy, who led the university for more than 12 years and who remained engaged with Cal Poly for decades after his retirement, died Christmas Day 2010 at age 95.

Kennedy was named the president of California State Polytechnic College in 1967 and retired Feb. 1, 1979, as president of California Polytechnic State University. As the institution’s seventh president, he oversaw a period of significant, concentrated growth.

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Kennedy headed Cal Poly’s Journalism Department in 1946. Three years later, he also took on the role of the school’s public relations director. He served as assistant to President Julian McPeek from 1950 to 1957, dean of the Arts and Sciences Division from 1957 to 1959, and vice president of Cal Poly from 1959 to 1967, before his 12-year tenure as the campus’s leader.

In recognition of his dedicated service to and profound influence on Cal Poly, the California State University trustees voted upon his retirement to name the campus’s then-new library building the Robert E. Kennedy Library.
The story of how Akbar and Batoor made their way from Kabul to the December commencement in Mott Gym has

BY TERESA MARIANI HENDRIX

“If every University in the United States reached out to engage its community to foster the education of two Afghan women, imagine the impact these women would have upon returning to Afghanistan.”

— President Emeritus Warren J. Baker

CAL POLY Afghan Outreach Program graduates its first two students

Farida Akbar and Ulker Batoor were bright elementary school girls in northern Afghanistan when the Taliban came to power in the 1990s and shut down their schools. But the two never gave up on their dream: a college education.

Now, thanks to a unique coalition of faculty, administrators, a U.S. Congresswoman and private donations from Cal Poly supporters who also didn’t want to give up on that dream, the two have earned Cal Poly agribusiness degrees.

Akbar and Batoor are the first graduates from Cal Poly’s Afghan Educational Outreach Program and Fund — though administrators past and present hope they won’t be the last.

“If every university in the United States reached out to engage its community to foster the education of two Afghan women,” said President Emeritus Warren J. Baker, “imagine the impact these women would have upon returning to Afghanistan.”

The story of how Akbar and Batoor made their way from Kabul to the December commencement in Mott Gym has touched a growing circle of Cal Poly supporters.

The pair studied at home between the time the Taliban shut down their elementary schools and U.S. forces arrived and re-opened education to girls and women. By summer 2005, the 19-year-olds were among dozens of young women sitting on the floor in a bullet-pocked Kabul University classroom where Cal Poly Social Sciences Professor Maliha Zulfacar was teaching. (Zulfacar, an Afghan native and former Kabul University professor, has returned to Kabul to teach most summers since the entry of U.S. troops.)

Kabul University still had no running water, only sporadic electricity, and no women’s restrooms. Armed security guards and walls kept students and faculty relatively safe on campus. But Taliban guerrillas were kidnapping female college students off the streets, trying to intimidate young women and the families sending them to school.

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Still, Batoor and Akbar were determined to get a college education. Zulfacar said they stood out in her classroom. “Farida and Ulker would follow me to talk to me after class,” she said. “They were hungry for learning.”

Zulfacar promised that if she could find a way, she would help them continue their studies. A meeting with then-President Baker and Afghanistan government official Said Tayeb Jawad that autumn provided the chance. Jawad asked Baker about the potential for a partnership between Cal Poly and Afghanistan. Baker and Zulfacar suggested bringing Akbar and Batoor to Cal Poly as a pilot program.

U.S. Representative Lois Capps and her office jumped in to arrange student visas. Cal Poly set up the Afghan University Outreach Program and Fund and found private support.

Akbar and Batoor arrived to stay in Zulfacar’s home on Christmas Day 2005. With her help, they enrolled as students nearby at Cuesta College, where they completed CSU general education requirements to transfer to Cal Poly.

When Zulfacar was named to serve as Afghanistan’s ambassador to Germany from 2006 to 2009, Akbar and Batoor went to live with the family of longtime Cal Poly administrator Dan Howard-Greene. His wife, Paula, who holds a Cal Poly teaching credential, tutored Akbar and Batoor in math and English while they attended Cuesta. The two young women arrived on campus as transfer students in 2008.

Now, bachelor’s degrees in hand, Akbar and Batoor want to share what they learned with developing nations. They’re looking for work with non-government aid agencies (NGOs) serving undeveloped countries in Eurasia and Africa.

Akbar, who minored in water and irrigation technology and interned with Capps’ office in summer 2010, has already returned to Kabul to look for work.

“I cannot give up hope on my country,” she said before leaving. “I want to help the farmers by creating some kind of international market for the unique fresh fruits and dry fruits grown in Afghanistan. I also want to work with the government to help provide our people with clean drinking water and make use of rain, snow and well water for agricultural products.”

Batoor minored in food science and nutrition. Last summer, she married a fellow Cal Poly agriculture grad. Now they hope to find work together with international aid agencies, to bring U.S. agriculture techniques to developing countries, including Afghanistan.

“I want to go back to Afghanistan – it is my home and my family is there,” Batoor said. “But I also want to continue my education and work and live in many places around the world.”

CAL POLY MAGAZINE 9
Members of the BevCool team show off their invention in the entrepreneurial ideation lab.

NEED QUICK, INEXPENSIVE REPAIRS for a cracked iPhone screen? Want a bicycle brake that prevents head-over-handlebar crashes? Looking for a device that will cool your drinks in a matter of minutes?

The new Cal Poly Center for Innovation & Entrepreneurship has you covered. These are just a few of the novel business and product ideas Cal Poly students are developing through the center.

Launched last fall, the center is Cal Poly’s first comprehensive assembly of resources to encourage students from across the university to innovate, arm them with the tools they need to turn their ideas into companies, and connect them with alumni, community, and on-campus resources.

The center is the brainchild of Lou Tornatzky and Jonathan York of the Orfalea College of Business. York, Cal Poly’s first professor of entrepreneurship, believes the center will play a critical role in student success in the years to come.

“Today, college grads enter a world that’s much different from the one their parents faced,” he said. “Their success may depend on whether they can create their own opportunities.”

On a campus where Learn by Doing is a way of life, Cal Poly students hone their problem-solving abilities, develop critical thinking skills and then unleash their creativity. The university has always nurtured entrepreneurial potential, indeed many grads have gone on to develop breakthrough products and establish their own companies.

Now, though, the Center for Innovation & Entrepreneurship offers a comprehensive program for entrepreneurial activities.

To read more about the center, visit www.calpolyentrepreneurship.com.

NEW CENTER FOR INNOVATION & ENTREPRENEURSHIP HELPS STUDENTS MAKE THEIR IDEAS REAL

BY CATHY ENNS

BRINGING VISIONARIES TOGETHER

The center’s year-round activities include mentoring, internships with start-up companies, lectures by visiting entrepreneurs and alumni, and assistance in preparing for funding opportunities such as the “no strings attached” contest for Cal Poly students sponsored by Innovation Quest each spring.

Tornatzky and York also established a home for some of these activities – called the “Entrepreneurial Ideation Lab,” a room filled with white boards, flexible seating and other equipment students need to brainstorm.

Events sponsored by the center are as spirited as they are educational. Several months during the academic year, the organization hosts Entrepreneurship Forums. Students, faculty, alumni and community members come to network, share ideas and learn about tools for success.

A key goal of the center is to bring visionaries together. Classes and activities introduce students, faculty, and alumni from across the university to each other and to members of the business community. Young entrepreneurs learn to develop the contacts they need to take their ideas to market.

Diversity of skill sets and experiences is a key strength of the BevCool team, a group of six engineering and business students who joined forces to design a device that chills beverages in two minutes.

In just a few months, the team has created a product plan, built a prototype and earned seed money by winning the Elevator Pitch Competition. “We’re taking advantage of all the center has to offer in bringing BevCool to market,” said team leader Matt Slette, a Mechanical Engineering student.
THE MORNING SUN SHONE Bluish-white over San Luis Obispo on Feb. 1. Literally and figuratively, a new day was dawning over Cal Poly as President Jeffrey Dyer Armstrong prepared for his first day on the job.

Agenda item No. 1. Meet with ASI President Sarah Storloli and the presidents of the campus’s six college student councils for breakfast at Poly Canyon Village.

“The most important person on this campus is the student. The students are why we are all here,” Armstrong said as he arrived for the gathering. “So, my first order of presidential business is to hear what these student leaders have to say.”

Selected by the CSU Board of Trustees in December as the university’s ninth permanent president, Armstrong takes the helm at a critical juncture in Cal Poly’s history: The state’s budget crisis is squeezing higher education funding, threatening the university’s polytechnic programs and diminishing Cal Poly’s ability to graduate well-prepared professionals into California’s workforce.

That may sound daunting for a new president, but Armstrong is optimistic. In an interview with Cal Poly Magazine, he acknowledged the challenges the university faces but none-the-less expressed confidence about Cal Poly’s ability not only to survive California’s current fiscal turbulence, but also to thrive in the decades to come.

Q: GIVEN THE STATE’S RETREAT FROM FUNDING THE STATE UNIVERSITIES, ISN’T YOUR OPTIMISM A BIT UNREALISTIC?
A: Someone once told me that optimists and pessimists actually have one trait in common: They both think they’re realists. Let’s just say I prefer my brand of realism over the pessimist’s.

I’m optimistic for many reasons. We continue to attract California’s brightest, most motivated students — so many that we can only take a fraction of the demand every year.

It’s no mystery why Cal Poly is in high demand. Our faculty and staff are deeply committed to helping students succeed. That kind of nurturing environment is enticing.

And because of our polytechnic focus with our Learn by Doing approach at the core, our graduates are in high demand. They enter the workforce comfortable with science and technology, and they have more hands-on experience than most of their peers.

California’s key industries need employees who are ready to contribute on Day One, and Cal Poly graduates are ready to do that. Employers tell us that they save a year in training when they hire a Cal Poly grad. As a result, our graduates earn at the top tier and quickly become leaders in their professions and communities.

All of that results in alumni who cherish their Cal Poly experience — and are willing to give back with their time, talent and resources. We know from nationwide research that our alumni are exceptionally loyal, and I have no doubt they will help us however they can to ensure that Cal Poly remains a distinctive and highly respected institution.

Q: BUT GIVEN CALIFORNIA’S DESPERATE BUDGET SITUATION, HOW CAN CAL POLY MOVE FORWARD WHILE THE STATE RETREATS FROM ITS COMMITMENT TO HIGHER EDUCATION?
A: We need adequate state funding to keep our polytechnic programs operating. Legislators know that these programs, undergirded by our Learn by Doing philosophy, are relatively expensive to operate. So, part of my job will be to work with the CSU to try to persuade the relevant people in Sacramento to make sure Cal Poly is funded adequately.

That said, Cal Poly needs to rethink how we collect the resources to maintain and enrich our programs.

State funding simply won’t play as large a role for Cal Poly in the future. Here’s an example of why: The funding level the governor is proposing for the CSU this year is the same as in 1999 — only the CSU has 70,000 more students now. That gap

Jeffrey D. Armstrong

Age: 51
Birthplace: Lyon County, Ky.

Family: Wife Sharon; daughter Jessica, a medical student at Michigan State University; and son Zack, a finance major at Michigan State.

Education: B.S., Animal Science, Murray State University, 1981; M.S., Physiology, North Carolina State University, 1984; Ph.D., Physiology, North Carolina State University, 1989

Before Cal Poly: Dean and professor, College of Agriculture and Natural Resources, Michigan State University, July 2001–January 2011; Department head and professor, Department of Animal Sciences, Purdue University, June 1997–June 2001; Professor and assorted administrative posts, College of Agriculture and Life Sciences, North Carolina State University, July 1986–May 1997

Hobbies: Reading, running, golf, basketball, traveling with family.

Favorite sports to watch: “Anything involving the Cal Poly Mustangs.”

Favorite movies: The Shawshank Redemption. “It’s a great story about perseverance in the face of hostile odds.”

Favorite musicians: Jack Johnson, The Eagles, Bob Seger

Favorite book on leadership: Team of Rivals: The Political Genius of Abraham Lincoln. “There’s so much to admire about Lincoln, but his humility is especially inspiring. He was unafraid to surround himself with smart, strong-willed people, he shared credit easily, and he never got bogged down in petty grievances.”

Favorite meal: “A cheeseburger with lettuce, tomato and mayo.”

PC or Mac: “Both. I have an iMac and a Dell.”
is only larger at Cal Poly, where the labs and state-of-the-art equipment in our engineering, architecture, science and math, and agricultural programs require higher funding levels. That means we need to think creatively about how to bring in the resources our programs require.

Fortunately, the things I mentioned before—student initiative, faculty dedication, and alumni and industry commitment—exist for the most part independently of the state budget. So I believe we have an excellent foundation to begin reimagining our financial approach, in spite of California's financial issues.

Q: HOW DOES THAT PLAY INTO THE CAMPUS' EFFORT TO UPDATE CAL POLY'S STRATEGIC PLAN?

A: It’s very closely related. We need help from Cal Poly’s alumni and industry friends, but we can’t expect people to provide their support if we don’t all have a clear vision for Cal Poly for the next decade or more.

Fortunately, excellent progress has been made on the Strategic Plan update. Everyone who has helped draft, review or comment on it deserves our collective appreciation and praise. Now we must quickly put the finishing touches on a plan that gives everyone a clear concept of Cal Poly’s future. I know that the Academic Senate wants to see the plan reflect a bolder, more innovative, faculty dedication, and alumni and industry commitment. Fortunately, excellent progress has been made on the strategic plan update. Everyone who has helped draft, review or comment on it deserves our collective appreciation and praise.

A: Let’s get creative about how to bring in the resources our programs require.

Q: WHAT AREAS OF THE PLAN DO YOU FEEL STILL NEED WORK?

A: It’s an excellent draft in so many ways. I particularly like the vision statement’s focus on our need “to help California meet future challenges in a global context.” I want to see some expansion on that point, because I believe it’s a critical part of our mission that we offer students a more global, multi-cultural experience. For our graduates to succeed in their professions, we have to enhance their awareness of the rest of the world. They need to understand different cultures if they’re going to function well in an increasingly inter-connected global community. I want to be sure that we’re preparing Cal Poly students exceptionally well for a future that will change rapidly in ways not yet imagined.

Q: DOES LEARN BY DOING REMAIN CENTRAL TO A CAL POLY EDUCATION IN THE FUTURE?

A: Absolutely. Learn By Doing is the heart of Cal Poly, and no one does it better.

Q: HOW WILL WE KNOW IF CAL POLY IS DOING ITS JOB WELL?

A: My daily presidential campus is focused on one guiding light: student success. Every decision I make as president will be based on the question “Will this help students succeed?”

The formula for success is straightforward: Put smart, motivated students together with caring and dedicated faculty and staff. How to measure success? One way is graduation rates. Cal Poly does this well already; our graduation rates are the best in the CSU, and we’ve been on an upward trend for five years. I suspect that progress in the next couple of years will be harder to come by given the probable cutbacks in state funding—but over the long haul, we will make steady progress on graduation rates. Another marker for student success is how well our alumni perform after they leave here. Are our graduates continuing to land good jobs? Are they moving on to prestigious graduate programs? Are they earning at the top of the pay scales? Are they quickly moving into leadership roles? If the answers are yes, then we’re doing our job.

Of course, we can always improve. I won’t be satisfied until we’re graduating every one of our students on time and sending them off to long, productive lives.

Q: FACULTY AND STUDENTS SAY THEY HOPE YOU’LL BE VISIBLE ON CAMPUS AND CONNECTED WITH THEM AND THEIR ISSUES. HOW WILL YOU DO THAT, SINCE FUNDRAISING WILL REQUIRE YOU TO BE OFF CAMPUS A GREAT DEAL?

A: Fundraising is an important part of a president’s job, now more than ever. The art of it is connecting donors’ passions with the university’s educational needs. I can’t do that unless I’m genuinely connected to the students and faculty. To do that well, I have to be a visible presence on campus, meeting regularly with students, faculty and attending campus events.

These are all things I enjoy doing. In this first month, I’ve met with many students and faculty and staff leaders, and my wife and I have been to several arts events and athletic events. Sharon and I also have spent time off campus visiting with alumni. We’ve enjoyed all the events, and we can’t wait to move into the President’s Home on campus. That will make it even easier to be around students and faculty.

Q: WHAT HAS BEEN MOST INSPIRING TO YOU IN YOUR FIRST FEW WEEKS ON THE JOB?

A: That’s easy. No matter who I talk to on campus, no one is satisfied with the status quo. Everyone believes that as great as Cal Poly is, we can make it better. That’s why I know my optimism is realistic.

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By Mary McNally

Studies since the early 1990s indicate Western U.S. populations of the monarch butterfly are headed for extinction. But occasional spikes that buck the decline leave experts hopeful these seemingly fragile beauties can rebound. Through a project called Monarch Alert, Cal Poly students and faculty are doing their part to help that hope become reality. In the process, Monarch Alert is giving students a taste of Cal Poly’s Learn by Doing approach.

Launched in 2001 by Professor Emeritus Dennis Frey and now under the direction of biology professor Francis Villablanc, Monarch Alert helps generate data needed to determine just how experts can bring about a monarch resurgence.

Preliminary data suggests that the population at monitored sites in Monterey County declined from 35,000 monarchs in 2008-09 to only 5,000 in 2009-10. So monarchs can use all the help they can get from the likes of Villablanc and his students.

Villablanc (B.S. Biology, 1987) said Monarch Alert’s mission is two-pronged: I only do projects on which I can involve students and have some impact on the conservation of a threatened or endangered species.
“It’s not easy to study nature in nature. Most of the counts in the grove are done in the mornings, when the butterflies are clumped and unable to fly because of low body temperatures. But if the air temperature rises earlier than expected, all 3,000 butterflies burst from the tree at the same moment,” he said, and the count is ruined.

Students also learn that communication is important to conservation. “People only conserve things they are aware of and care about,” Villablanca said, so students make public presentations and provide information and opportunities for people to be involved.

Monarch Alert has benefited from the involvement of friends such as Helen Johnson, a retired medical technician and citizen scientist who first urged Frey to start the program. Johnson’s financial support has been the sole source of funding for student research over the last decade. The monarchs, she said, give focus to her life in retirement. In turn, she is helping Cal Poly students to develop their own research projects and build skills outside of the classroom.

Student team leaders agree: “I chose Cal Poly because it was the Sublime Art of History and American Indian Studies. And about that retirement? Well, it’ll just have to wait.”

President Obama appoints alumnus Wayne Donaldson to lead National Preservation Council

When he opened his first office in San Diego in 1978, architect Milford Wayne Donaldson (Bachelor of Architecture, ’85, Engineering, ’87) vowed to retire at 45. He missed that deadline by more than two decades, and at 67, he’s still not ready to quit.

In fact, last May, he received a new, impressive title, when President Barack Obama appointed him chairman of the Advisory Council on Historic Preservation.

Donaldson said he couldn’t turn the offer down, even though the pay is minimal (actually, zero) and the responsibility awesome. “It took my breath away to hear President Obama had appointed me,” he said.

Donaldson is the first architect to serve as chair in the 45-year history of the council, the nation’s lead agency on historic preservation. It is not a full-time position, so he retains his job as California State Historic Preservation Officer, which former Gov. Arnold Schwarzenegger named him in 2004.

Known for his award-winning historic preservation work, Donaldson didn’t start out yearning to renovate old buildings. While an undergraduate at Uppsala University in Sweden, he got into inflatable structures and even lived in an inflatable “biostream” one summer. Studying for a master’s degree in Scotland, he focused on cutting-edge technology, working with living structures that could move, create food and oxygen, and take care of bio-waste.

But those years in Europe exposed Donaldson to buildings hundreds of years old. “The oldest building at Uppsala University,” Donaldson said, “was built in 1532 – 40 years after Columbus landed.” Remembering that building’s marble steps, he said, “They had probably been repaired several times – but with the same type of marble. That was my first unconscious engagement with the next generation of American preservation.

There was more work in the area than he could handle, and none of the contractors he found had good working knowledge of preservation techniques. So Donaldson earned his contractor’s license and opened sixteen Penny Construction. His reputation and company grew, with jobs ranging from renovating a 1700s adobe structure to mid-century modern, and everything in between.

In his new role with the Advisory Council on Historic Preservation, he has lofty goals. He wants to focus on renewable energy while also protecting the country’s historical resources and cultural landscapes.

He continues to build good working relationships with the American Indians and tribal communities. And he aims to engage the next generation of American preservation.

Donaldson credits Cal Poly with changing the way he thinks about life. “I always wanted to be an architect, mostly because of the buildings I saw,” he said. “Cal Poly gave me a holistic way of thinking.”

A modest man, Donaldson insists he has been blessed. “I was in the right place at the right time.” And about that retirement? Well, I’ll just have to wait.
REc Solar founders Judy Ledford Staley and Fred Sisson on the roof of the Costco in San Luis Obispo—one of 25 of the stores where their company has installed solar equipment.

BY CATHY ENNS

TEMMPERATURES OFTEN FELL BELOW ZERO in ElY, Nev., the winter Cal Poly alum Mike Emrich spent measuring air quality for the Environmental Protection Agency. It was 1973, the height of the oil crisis, and residents were hit especially hard. Food, heating oil and other necessities were trucked in. With his learn by doing education in mind, Emrich (B.S., Industrial Technology, 1972) considered the implications of the oil crisis for ElY and for the country.

He noted that eastern Nevada enjoys 345 days of sun each year. “Pow! The light came on,” he said “There’s a way out.” The flash of innovation launched Emrich into the world of solar power. Twenty years later, two other Cal Poly graduates—Judy Ledford Staley and Fred Sisson—rode a similar train of thought into the world of alternative energy. Today, these alumni are making major impacts in solar power and making a difference in the world.

Emrich moved back to the Central Coast and founded Solarponics in 1975. Since then, he has expanded and diversified his company. Solarponics now offers a spectrum of energy efficiency solutions: solar electric systems (including do-it-yourself kits); solar water heating systems; radiant heating systems; and wind energy solutions for Central Coast homes and businesses.

Solarponics is the longest continuously owned and operated solar company in California, with more than 3,000 customers. Experiential learning remains a core value for Emrich. “You’re not learning if you’re not trying new things,” he said—even if occasionally that means you “learn by failing.” Emrich urges his employees to experiment, he said. And he has set up a demonstration center in Atascadero to encourage customers to see and touch solar equipment and learn about energy options.

CHANGING PERCEPTIONS
In 1997, Staley and Sisson felt the solar-power market was ready to take off. Photovoltaic (PV) systems that convert solar energy into electricity were approaching general affordability, the utility industry was about to de-regulate, and the California Energy Commission was preparing to offer rebates on solar system purchases.

Staley, an environmental engineer, and Sisson, a mechanical engineer, combined their skills and founded REc Solar in San Luis Obispo, aiming to make PV systems commonplace. Staley’s passion for solar drove her to figure out how to start a company from scratch. “Cal Poly taught me how to solve problems,” she said. “I felt I could apply critical thinking principles to any challenge I encountered – like teaching myself accounting. Learn by doing gives you the confidence that you can solve almost any problem.”

The solar industry appealed to Sisson as a place to make a difference in the world by leveraging his interest in all things new and creative. That’s just what the industry needed, the duo said. They set out to change the market’s perception that solar technology was unreliable and risky. They developed standardized engineering practices, worked on bringing solar components to a cost-effective price point, and provided pre- and post-installation support.

As their company grew, Staley and Sisson hired other Cal Poly grads. Cal Poly students come in a step ahead of grads from most other universities, Sisson said. “Learn by Doing encourages you to play around with things, but in a real way,” he said. “It creates technical common sense.”

Today, the California Energy Commission rates REc Solar one of the leading installation firms in California. The company does business in five other states as well and employs more than 500 people. Its partnership with Costco is testament to Staley and Sisson’s vision. REc Solar equipment is now on the rooftops of 25 Costco stores.

HARNESSING THE SUN

GREEN GRADS USE THEIR LEARN BY DOING EXPERIENCE TO MAKE THEIR MARK IN THE SOLAR INDUSTRY
MARINE SCIENTIST MATTHEW OLIVER WINS MAJOR RESEARCH AWARD, THEN LAUNCHES A SATELLITE-BASED OCEAN ECOSYSTEM STUDY IN ANTARCTICA

BY TOM NUGENT

TWO MONTHS AFTER HE WON a coveted $300,000 research grant and shook President Barack Obama’s hand, oceanographer Matthew Oliver (B.S., Ecology and Systematic Biology, ’99; M.S., Biology, ’01) decided it was time to pack up and get to work.

It would be a very long commute. The 35-year-old University of Delaware assistant professor traveled more than 7,000 miles to settle down in his new office – a laboratory at a National Science Foundation weather station on Antarctica’s west coast.

With his trusty laptop computer and a couple of digital cameras, the former Mustangs football standout launched a three-year oceanographic project through the NASA Biodiversity research program.

His mission: Chase a crew of hungry penguins back and forth across the Antarctic waters and analyze the ecological implications of their movements with the help of environmental data from half a dozen orbiting U.S. satellites.

For Oliver, a cutting-edge oceanographer fresh off a prestigious Presidential Early Career Award for Scientists and Engineers (PECASE) in November, that meant spending January monitoring vast quantities of NASA satellite data from the heaving ocean waters surrounding his outpost.

By attempting to relate the information contained in his satellite data stream to the movements of several electronically tagged Adelie penguins as they foraged for food, Oliver hoped to gain a better understanding of how ecosystem factors (such as ocean temperature, color and changes in currents) affect the birds’ foraging habits.

“In many ways, this kind of three-dimensional study of the penguin ocean habitat has never been attempted before,” Oliver said from Antarctica’s Palmer Station weather outpost.

“We hope to open a window on how penguin habitats are affected by changes in things like temperature and salinity.”

“By comparing the data stream from the satellites with information from the ‘tagged’ birds and also our fleet of Underwater Gliders (motorized micro-subs equipped with sensors), we can begin to better understand how all these complex relationships are at work in the penguin ecosystem.”

BREAKING NEW GROUND

Headquartered at the NSF-operated Palmer Station on Anvers Island, Oliver’s five-year project is also breaking new ground in the study of how climate change can affect marine ecosystems.

“The signs of climate change’s impact can be seen everywhere in West Antarctica, as glaciers retreat and the loss of massive amounts of sea ice becomes increasingly evident,” Oliver said. “One of the most exciting things about this project is that it seems likely to help give us a better understanding of how climate change actually affects these Antarctic ecosystems. That could prove to be very important, scientifically, because it could help us to better prepare for the impact of climate change on all the oceans.”

The work presents a challenge, but one right in line with the passion that brought Oliver to Cal Poly in the first place: marine science.

“The challenge we face in studying these seascapes is that they aren’t landscapes, and so they’re always moving on you,” said the Southern California native, who earned an oceanography doctorate at Rutgers University in 2006 after leaving Cal Poly. “To understand what that means, imagine trying to study a forest that drifts for miles each day, so that every time you look at it, the ecological dynamics have changed completely.”

That means Oliver must carefully track the vast data streams that flood continuously from the satellites and underwater gliders into his computers.

continued on next page…
COLLABORATION

Because of all these variables, understanding the ecological factors at work is extremely challenging. As a result, almost every time we run an analysis of the data, we find something new," she said. "I don't think there's any doubt that these kinds of three-dimensional studies are going to help change the way we think about the world's oceans."

Oliver grew up in the Los Angeles area and then headed for San Luis Obispo to pursue his passion in marine science at Cal Poly. Under the guidance of "inspiring mentors" Tom Richards and Mark Moline (a 2001 PECASE winner now studying the Antarctic penguins with Oliver – see sidebar) Oliver said he was "hugely motivated" by a Cal Poly research voyage he took across the Pacific.

"Dr. Richards got me hooked up with the 'Golden Bear' training ship (now part of the Cal Poly at sea program). We sailed from San Francisco to Hawaii and Australia and Japan," Oliver said. "I remember approaching Alaska on the way home, and our ship was getting crushed by these monster waves. I looked at them and thought: 'Man, I love this stuff! This is where I want to spend my career!'"

After nailing down his doctorate, Oliver launched a series of studies on ocean currents along the East Coast. Last fall, his highly regarded research landed him a visit to the White House – where Barack Obama shook his hand and urged him to use the PECASE award (the highest honor bestowed by the U.S. government on young professionals in the early stages of their independent research careers) to help improve the U.S. fishing industry, among other scientific goals.

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**ALUMNI IN THE NEWS**

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**THE ICEMAN CALLS IT QUITS AFTER 12 YEARS IN UFC**

Chuck Liddell (B.S., Business Administration, 1995) has retired after a long and successful Ultimate Fighting Championship career that included a nearly two-year reign as light heavyweight champion. The 41-year-old Hales, nicknamed “The Iceman,” will remain involved with UFC as the company’s executive vice president for business development.

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**AG BUSINESS GRAD SUCCESSFULLY GROWING EXOTIC CROP IN CALIFORNIA**

Coffee has proven all but impossible to grow commercially in California. But don’t tell Jay Ruskey (B.S., Agricultural Business, 1997), who’s pulling it off at his ranch in Goleta. While coffee growers and experts from around the world visit his operation to see how he’s doing, Ruskey is selling his locally grown coffee at farmers market in Santa Barbara.

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**FORMER FOOTBALLER SCORES ON “GLEE”**

Jon Hall (B.A., Music, 2010) appeared on Fox’s hit TV show “Glee,” playing a member of a team singing in a show choir competition. Hall, who ran for 1,300 yards and scored 11 touchdowns during his college football career, also sang back-up during the national anthem on national television during Major League Baseball’s All-Star Game.

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**ALUMNUS APPOINTED SAN JOAQUIN COUNTY SUPERIOR COURT JUDGE**

Bret Morgan (B.S., Social Sciences, 1985) has been appointed to the San Joaquin County Superior Court bench by Gov. Arnold Schwarzenegger. Morgan has worked as chief of staff for the California Department of Corrections and Rehabilitation, as well as chief deputy for the Office of the Inspector General, a government agency charged with watchdogging California prisons for waste, fraud and abuse.

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**SPACE SHIP DESIGNER RUTAN TO RETIRE IN 2011**

BurT RutAn (B.S., Aerospace Engineering, 1965) founder and chief technical officer of Scaled Composites in Mojave, Calif., plans to retire in April. The EAA plans to celebrate the 25th anniversary of Rutan’s Voyager aircraft around-the-world flight while hosting a “Salute to Burt Rutan” at its AirVenture Oshkosh 2011 event.

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**TWINS TAKE THE CAL POLY APPROACH**

Nick Davis (B.S., Wine & Viticulture, 2008) and Brian Davis (Agribusiness and Wine & Viticulture, 2008) built their business, Twin Pomegranates, on Cal Poly’s learn by doing motto. The company’s wine is now in 70 locations across California, and the brothers serve as their own distributors and operate without a traditional tasting room.

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**GRAD NAMED CHIEF FINANCIAL OFFICER FOR AMN HEALTHCARE SERVICES**

Brian M. Scott (B.S., Business Administration, 1993) has been named chief financial officer for AMN Healthcare Services. Scott joined AMN in 2003 and has been senior vice president of operations finance and business development.

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Before there was such a thing as women’s athletics programs or Title IX, Evelyn Pellaton championed women in sports, first as a P.E. teacher at Cal Poly and ultimately as the director of women’s athletics.

Now retired, Pellaton continues to support student athletics programs. After a recent change to her will, that support will continue into perpetuity.

When she started here in the 1960s, women’s teams didn’t have official games or league competition; they just had “play dates.” She had virtually no budget for her programs and little support, but she never let that interfere with the chance to participate. When the ladies needed uniforms to play in a national tournament, Pellaton repurposed men’s track suits from the prior year and took her team to Oregon.

Women’s sports enjoy much greater support at Cal Poly these days, which only serves to fuel Pellaton’s enthusiasm. Recently, she turned to Cal Poly alum and estate planning attorney John Ronca (B.S. Business Administration, 1975) to update her will, pledging part of her estate to an endowment that will benefit the field that defined her career.

Ronca said being an estate planning attorney is satisfying because he can help his clients in obvious ways: avoiding court, minimizing taxes and helping people take care of their families. But there are more subtle ways, as well, he said.

“Many of my clients are the history of Cal Poly,” he said. “They’ve done so much, but they’re so modest and they’re not going to be around forever. If you don’t ask them about their story, you’ll miss it.

“I’ve also seen the process create relationships that help donors renew their involvement with the campus,” Ronca added.

When considering her options, Pellaton kept asking herself, “What can I do?” Ultimately, she worked with Cal Poly’s Planned Giving Office to develop an agreement that stipulated her bequest would be used to support student scholars.

While Pellaton is quite cheerful about the obstacles she overcame, and the personal and professional experiences that ensued, she hopes her gift will mean that others don’t have to face the same hurdles. With this provision in her will, she’s giving something back and paying it forward.

If you are considering a charitable bequest like Pellaton’s, here are a few things to consider:

• Working with the Planned Giving Office helps the university develop guidelines for how your gift will be used.
• It can also help you incorporate provisions that allow for changes in university programs. For instance, after the Home Economics major was absorbed by another department, it took the courts several years to determine an acceptable substitute for bequests made to that major.
• Some people leave a percentage of their estate to charity, rather than a fixed dollar amount. “That provides an element of protection if the estate increases or decreases in value,” Ronca said. After that, he said, “You can basically forget about it.”
• An endowment may be established in which the principle must remain intact into perpetuity or for a defined period of time.
• If your situation or interests change, you can change your will at any time during your lifetime.

For additional information about charitable bequests or other planned giving to Cal Poly, contact the Planned Giving Office at 800-549-2666 or visit www.giving.calpoly.edu/plannedgiving.

For more than 30 years, physics professor Art Rosen practically lived in the lab, transforming the lives of thousands of students through education. Thanks to a bequest made with a simple direction in his will, his generous and supportive spirit lives on in those same classrooms and labs. Remembering Cal Poly in your estate planning is an effective way to support Learn by Doing, the cornerstone of a Cal Poly education.

Our planned giving experts can help friends and alumni like you leave a lasting legacy that will support the next generation of innovative leaders and resourceful professionals.

For sample bequest language you can share with your estate planning advisor, visit www.plannedgiving.calpoly.edu or contact Cal Poly’s Planned Giving Office.

PHONE: 805-756-7125 | TOLL-FREE: 800-549-2666 | EMAIL: plannedgiving@calpoly.edu
Cal Poly's 2011 Rose Float became yet another in a long list of award winners, capturing two trophies at the Tournament of Roses Parade in Pasadena, Calif. on Jan. 1.

The float — "Galactic Expedition," created by students at Cal Poly and the university's sister campus in Pomona — captured the "Fantasy Trophy" during pre-parade judging as well as taking the "Viewer's Choice" award for the third straight year. The honor was created in 2009, and Cal Poly has won it all three years it has been awarded.

"Galactic Expedition" depicted seven childhood friends building the rocket ship of their dreams and taking their imagination to soaring heights. An operative crane, a spinning planet, moving child workers and a full complement of tools and toys were all situated on an airy cloud high above the earth's surface. The float was decorated with more than 12,000 roses, 8,500 mums and approximately 9,500 carnations. (Photo courtesy Cal Poly Pomona)