Hot news at Cal Poly Engineering

Graduate degree in Fire Protection Engineering moving forward

Cal Poly’s FPE program will be the only one on the West Coast

A new and unique Cal Poly master’s degree program in Fire Protection Engineering (FPE) — one of only three such programs in the nation and the only one on the West Coast — was recently approved by the Cal Poly Academic Senate and President Warren J. Baker.

Based in the College of Engineering, the multidisciplinary program will be administered by Cal Poly Continuing Education and University Outreach. Upon approval by the CSU Chancellor and the WASC accrediting agency, the FPE program will be open to students starting Fall 2010 both on campus and online, in order to accommodate working professionals. “Full-time students should be able to complete the 45-credit degree in one-and-a-half to two years,” says Dr. Fred Mowrer, FPE acting director and visiting professor.

A former president of the Society of Fire Protection Engineers who taught fire protection engineering at the University of Maryland for 21 years, Mowrer explains that the program will focus on the built environment and include courses taught by professors in mechanical engineering, construction management, Please see FIRE, Page 5

Cal Poly’s QL+ Lab fosters multidisciplinary research projects

The new QL+ Labs are open at Cal Poly and dozens of engineering students are making news by undertaking projects that aid the disabled and, in particular, public servants and veterans who have been injured in the line of service.

Founded by alumnus Jon Monett (IE ’64), the QL+ Lab has already generated multiple multidisciplinary projects including the development of an Indoor/Outdoor Adaptable Wheelchair, an improved Prosthetic Hand, the design of a Recumbent Bicycle for a Disabled Veterans, building an Active Wheelchair Suspension System and the development of a National Prosthesis Database.

See http://www.qlplus.org/ for more information on QL+ Lab projects.

Features
- Fire Protection Engineering degree receives approval
- Applied Technologies donates scanning electron microscope
- Departments get creative with fundraising efforts

College News
- National Engineers Week activities make a big splash
- Cal Poly’s SAE Formula Car featured on magazine cover
- Concrete Canoe Team to host 2010 ASCE nationals in May

Student News
- ESC initiates new program to publicize faculty research
- BMED’s Steffi Wong is an ace in classrooms and tennis courts
- Sales Engineering Club begins to make its pitch at Cal Poly

Project-based Learning
- Reaching for the stars: Cal Poly engineering students design and build a 3-ton telescope
- Cal Poly team starts to build human-powered helicopter

Faculty News
- Dr. Hal Cota retires from CE/ENVE department
- MATE’s Trevor Harding receives Outstanding Teacher honors
- IME’s Kurt Colvin named Boeing Welliver Faculty Fellow

Alumni News
- AERO alum Eldon Price publishes his memoirs
- EE alumn Dr. Rory Cooper named Veteran of the Year
- Stefanie Goltiao (ME ’02) featured on magazine cover
Applied Technologies donates a Scanning Electron Microscope to Cal Poly Engineering

Applied Technologies Associates (ATA), a worldwide company based in Paso Robles, CA, has followed through on the intentions of its founder to further the technical education of Cal Poly engineering students by donating a scanning electron microscope (SEM) to the Materials Engineering Department.

Donald Van Steenwyk passed away in December, but his son, Brett Van Steenwyk, director of Analytical Services for the company, was on hand on Monday, March 8, 2010 to see the machine installed in Cal Poly’s Microfabrications Lab.

“My father strongly supported the advancement of science, and he knew that the SEM would be put to good use at Cal Poly,” said Van Steenwyk, who also explained that it is highly unusual for undergraduates to have access to SEM systems.

Dr. Richard Savage, who directs Cal Poly’s micro systems technology program, commented, “This state-of-the-art research equipment will enhance our student’s abilities to explore micro/nano scale technologies.” The microscope valued at $73,000 will allow students to explore material’s surface down to 3nm resolution and also provide elemental composition.

In addition to Savage and Van Steenwyk, Tim Price, ATA’s vice president of Engineering, and Dennis Buckley, director of Mechanical Engineering for ATA, attended the dedication event. Price pointed out that up to three-quarters of ATA’s employees are Cal Poly Engineering graduates.

Students Sadao Takabayashi and Patrick Hyland, members of the Micro Systems Technology Club (www.mst.calpoly.edu), helped install the SEM. “I am doing my senior project on solar cells,” said Takabayashi, “and the microscope will be extremely helpful in my research. In fact, having experience on the machine will definitely help in my applications to graduate programs.”

Cal Poly Engineering Dean Mohammad Noori thanked Applied Technologies Associates for advancing the level of research at the university. “The core of Cal Poly is its dedication to hands-on learning, but without the support of companies like ATA, we would not be able to prepare our graduates for immediate productivity in industry,” he said.

About Applied Technologies Associates

ATA designs, builds, and manufactures oil industry technology products. Borehole surveying instruments (both gyroscopic and magnetic), MWD (measurement while drilling) systems, and production logging systems comprise the bulk of its products. A sister company, Scientific Drilling (SDI), uses technology developed by ATA to provide services to the oil industry, including borehole surveying, wireline steering, MWD, production logging, and more. Scientific Drilling is an international company with offices located world-wide in most major oil producing areas.
Message from the Dean: Engineering our future


I came away from that discussion inspired about opportunities opening up for engineering and engineering education. I believe, in fact, that we are at the forefront of an era of scientific, technological, and engineering development not seen since October 4, 1957, when the Soviet Union sent Sputnik, the world’s first artificial satellite, into space.

In this and subsequent quarterly messages, I would like to tell you why I believe that the NAE’s “call to action,” as well as other developments in the national and global arena, signal a new era in which engineering plays a huge role. That role poses challenges and opens exciting possibilities for Cal Poly Engineering—challenges our college is well-positioned to accept, with the possibility of leading engineering education with new strategies, new paradigms.

You might ask why I see reason for optimism in the midst of an economic emergency unmatched since the 1930s, when we also face unprecedented environmental crises and a dire need to improve human lives around the world. In fact, these challenges have put engineering in the spotlight as never before for three reasons:

- Engineering innovation is being widely recognized as the key to bringing back economic growth and prosperity. Notable evidence for this view of engineering includes President Obama’s issuance of “A Strategy for American Innovation” that commits to “catalyze Breakthroughs for National Priorities” by emphasizing “Innovation for Sustainable Growth and Quality Jobs.”
- Not since Dwight D. Eisenhower have we had an administration as supportive of technology, science education, and innovation.
- And, for the first time, the fourteen Engineering Grand Challenges identified by the national academies have become the global roadmap for improving human lives and saving the planet.

In my message next quarter, I’d like to provide specifics underlying these bold statements. Meanwhile, I welcome your comments and participation in this discussion about how Cal Poly Engineering will move forward to embrace the opportunities and navigate the challenges ahead.

See http://ceng.calpoly.edu/about/moment/
Given the reality of reduced funding from the State, Cal Poly Engineering departments have stepped up to the “plate” with creative strategies to provide vital funding for their programs and students.

Many departments have reached out to alumni and donors with inventive giving opportunities. Likewise, generous alumni and other key stakeholders have also initiated mini-campaigns to encourage potential donors.

The Computer Science Department, for instance, combined a donor’s interest in encouraging new givers with plans to develop a very unique laboratory facility specifically devoted to interactive entertainment (IE) and Game Design and Development.

Geoff Tate, father of a 2006 CSC graduate, pledged to match each dollar contributed by new donors, up to a maximum of $25,000. The funds will go to a state-of-the-art facility that will enhance the department’s curricular emphasis in IE/Game Design-Development, an area of high interest to students and game development companies seeking well-qualified graduates.

The Tate Challenge is only available until June 30th, 2010. (See http://www.csc.calpoly.edu/tate-challenge/)

Another special department campaign is Industrial & Manufacturing Engineering’s (IME) College Based Fee Challenge. This unique effort was issued by the department’s Industrial Advisory Board (IAB) members, who hope to generate $20,000 from IME alumni. In addition, IME faculty members have pledged to provide a $5,000 match if the $20,000 goal is met by June.

The challenge originated in a presentation to the department’s advisory board by students, who are concerned that student projects and department labs that have been funded by College-Based Fees (CBF) are lacking vital support because budget cuts have resulted in the necessary diversion of CBF funds to retain lecturers.

Read more about the IME Challenge at http://ime.calpoly.edu/iab-challenge/
Concrete canoe team ready to hit the water

Cal Poly prepares to host the 2010 ASCE Nationals

Cal Poly's award-winning Concrete Canoe Team has two goals this year: go for the gold, and host the best possible 2010 American Society of Civil Engineers’ (ASCE) Annual National Concrete Canoe Competition, June 17-19 in San Luis Obispo.

Project manager Kyle Marshall sees “an exceptionally bright” season for the team, which hopes to snag first place while hosting the annual competition at Cal Poly this spring.

The canoe team is part of the Cal Poly Society of Civil Engineers advised by Dr. Gregg Fiegel. During last year's Nationals in Tuscaloosa, Cal Poly came in third place overall with their canoe “Vintage,” which won top honors in the Final Product category and earned first place in the Co-ed Sprint Races.

In addition to focusing on the upcoming race, the team is well aware of the award-winning legacy of the Cal Poly Society of Civil Engineers. In 2009, the group won the prestigious Robert Ridgway Award, bestowed by the national organization on the undergraduate student chapter deemed best in the nation. “These honors reflect Cal Poly’s exceptional educational pillars as well as the students’ will and passion to excel, affirming Cal Poly’s reputation as ‘Best in the West,’” said Marshall.

Marshall also notes that organizing a national competition in which hundreds of university students from around the country requires a collaborative effort: “As a student chapter undertaking this vast conference, we are very lucky to have the depth of support of students, faculty and sponsors. Few chapters around the nation have the ability to do what Cal Poly does year in and year out.”

Read more about the 23rd Annual ASCE National Concrete Canoe Competition at http://content.asce.org/conferences/nccc2010/

Watch a video about the Cal Poly Concrete Canoe and read an interview with Kyle Marshall at the Concrete Producer Online http://www.theconcreteproducer.com/industry-news.asp?articleID=939935&sectionID=1419
Left: Casino Night in the Bonderson Projects Center capped off National Engineers Week festivities with a big crowd of hopeful players. Participation in N.E.W. activities was at a record level, organizers said.

Above: Michael Spahn, an Electrical Engineering major, stroked to victory in the Boat Challenge. At left: Dave Thornberry, Manager of Flight Test Instrumentation for Northrop Grumman, lets an egg go at the Egg Launch on the Engineering Plaza grass. At right: The nerdy finalists in the Society of Women Engineers' “Ms. Engineer” contest were all smiles afterward. The pageant was a light-hearted way of promoting women in engineering and other technical fields.

Above: National Engineers Week organizer and Engineering Student Council member Dylan Pavelko, center, poses with representatives of Stryker Corporation, including Yasmeen Shah, right, at a N.E.W. reception. Right: Participants paddled furiously in the Boat Challenge, in which teams of students employed their engineering know-how to build boats using only PVC, duct tape and other recycled materials. Contestants raced the boats across the pool at Poly Canyon Village.
MESA Day prelims get kids excited about engineering

Cal Poly engineering students and faculty recently opened the doors to engineering - and to a future that includes college - to 250 students from Santa Maria, Guadalupe, Shandon and Paso Robles.

The Cal Poly Mathematics Engineering Science Achievement (MESA) hosted the local preliminaries for MESA Day, a statewide event in which middle and high school students compete in engineering-related activities. Under the direction of Cal Poly faculty and student volunteers, the students built bridges, dropped eggs, solved math problems, and presented their scientific findings.

The MESA program works specifically with students from underprivileged communities and those who are first-generation college students, teaching them to work together and to understand the value of competition in the real world.

To read a Santa Maria Times story on the event, see http://www.santamariatimes.com/news/local/education/article_b15ce8a4-30d0-11df-82d2-001cc4c03286.html

Biointerface bounty

Biomedical engineering graduate student Colby James earned 1st Place and a check for $1,000 for presenting the Best Student Poster at the Biointerface conference hosted by the Surfaces in Biomaterials Foundation and held in San Mateo last October. Dr. Kristen Cardinal, his faculty advisor and director of the Tissue Engineering Lab, was on hand to congratulate her protégée.

A new day for space travel

Virgin Galactic’s SpaceShipTwo — designed by Cal Poly Aerospace Engineering graduate Burt Rutan (’65) — made its first captive carry flight on March 22 at the Mojave Air and Space Port. SpaceShipTwo, which was christened the VSS Enterprise at its unveiling in December, was carried by WhiteKnightTwo on its first test flight.

SpaceShipTwo is a suborbital spaceplane currently under development by a joint venture between Rutan’s Scaled Composites company and Sir Richard Branson’s Virgin Group. The Virgin Galactic spaceliner plans to operate a fleet of five of these craft in passenger-carrying private spaceflight service starting in 2011.

“This is a momentous day for the Scaled Composites and Virgin Teams,” Rutan told the Associated Press. “The captive carry flight signifies the start of what we believe will be an extremely exciting and successful spaceship flight test program.”

For more information: http://www.spaceshiptwo.net/ or http://www.virgingalactic.com/
The Cal Poly Society of Women Engineers (SWE), in cooperation with Lockheed Martin, announced the recipients of the 2010 Outstanding Women in Engineering and Technology Award at this year’s Evening With Industry in late January at the San Luis Obispo Embassy Suites. In addition, SWE named Lee McFarland from Mechanical Engineering as “Most Supportive Professor,” and presented $30,000 in scholarships at the gala.

At the dinner banquet, those students highlighted for their outstanding accomplishments were joined by 70 industry representatives from 32 companies, including Amazon, Northrop Grumman, Chevron, Cisco, Yahoo, Lockheed Martin, Raytheon, Yahoo and the Central Intelligence Agency.

The Outstanding Women in Engineering and Technology winners were chosen using four criteria: faculty recommendations, demonstrated leadership, related work experience and grade point average. Each of the winners is actively engaged in several extracurricular activities.

The five honorees each received a $100 gift certificate to El Corral from Lockheed Martin. The winners include:

- **Jessica Paz**
  An industrial engineering senior from San Luis Obispo, CA, Jessica served as president of Cal Poly’s Engineering Student Council and worked on the interior design aspects of the PolyHouse 2009 program. Jessica is a National Science Foundation scholarship winner, a member of Tau Beta Pi and Alpha Pi Mu honor societies, and was involved with the Spanish Medical Study Abroad Program in Buenos Aires.

- **Roshani Patel**
  A civil engineering senior from Bakersfield, CA, Roshani is the Vice President of Community Service for the Cal Poly chapter of the American Society of Civil Engineers. She served as the captain’s assistant for the Concrete Canoe, which won first place in the ASCE National Daniel W. Mead Student Paper Contest in 2009. Roshani was a part of the NSF-Sponsored Seismic Soil-Structure Interaction Project, where she prepared, tested, and calibrated model instrumentation for structural models and worked with a research team to perform a dynamic centrifuge model experiment at UC Davis. Roshani maintains a GPA of 3.93.

- **Cameron Schlemer**
  A senior industrial engineering student from San Luis Obispo, CA, Cameron has been on the Industrial Engineering Student Fee Committee since 2006 and is an officer in the Institute of Industrial Engineers. Cameron was also a project manager on the PolyHouse 2008 project, and has been a Dean’s List recipient for four quarters. She interned with Boeing in Washington. She is minoring in Psychology.

- **Alyssa Daw**
  A software engineering senior from Redmond, WA, Alyssa has been active in SWE since 2006, serving as vice president of Public Relations and Network Director, among other positions. Daw competed as a Cross Country and Indoor/Outdoor Track and Field scholar-athlete, and for her commitment to women’s equality, she has won the Farrer Scholarship. She served as a Google software engineer test intern, and has achieved a 3.99 GPA to date.

- **Allison Holmgren**
  An industrial engineering graduate student from Pleasanton, CA, Allison is a five-year member of the Institute of Industrial Engineers, and participated in PolyHouse 2008, a student managed home renovation project for a deserving family. Holmgren is also a Cal Poly Dean’s List recipient (for a GPA of 3.5 or above) for 10 quarters, a member of engineering honor society Tau Beta Pi, and she served as an air warfare systems intern at Raytheon Missile Systems in Tucson, AZ, where she also earned certification as a Certified Raytheon Six Sigma Specialist.
1,324 MPG not super enough this year

The road toward designing and building vehicles that can achieve more than 1,000 miles per gallon does not come without competition, curves and potholes—just ask members of Cal Poly’s Supermileage Team.

At the first race of Titan-mileage vehicles, the Shell Eco Marathon in 2007, Cal Poly’s “Black Widow” vehicle earned 1st Place with 1,902.7 miles per gallon. In 2009, Cal Poly placed 2nd in the competition of high-mileage, fuel-saving prototype vehicles with 2,752.3 mpg.

This year, at the Shell Eco Marathon Americas on March 27, Cal Poly struggled with engine adjustments, new course challenges, and a mighty gust of wind. The team was able to complete one successful run, consuming 17.8 milliliters of fuel and achieving 1,324 mpg for a 10th Place finish out of 42 entries.

For the competition this year, the Cal Poly team worked on both Black Widow prototype vehicle and an Urban Concept vehicle. For the former, the team focused on drag reduction strategies and fuel efficiency. For the Urban Concept car, the students were challenged to consider fuel efficiency and road advantages for the typical everyday driver.

“By designing both vehicles, we hope to bridge the gap between our prototype vehicle and cars on the road today,” says mechanical engineering senior and team leader Verent Chan. “People don’t care that the prototype gets 2700 miles to the gallon because it isn’t practical, but when they see the Urban Concept vehicle, they’ll be wishing they had one.”

“To build a fuel-efficient vehicle, aerodynamics, rolling resistance and friction, weight, and waste heat all have to be addressed,” Chan explains. “By using extremely light-weight materials such as titanium and carbon fiber, we minimize our weight without sacrificing strength.” Special tires from Michelin assisted in reducing rolling resistance, while the team worked to tune and insulate the engine to have it run at the highest possible level of efficiency.

The relatively young Cal Poly team, including only three seniors and nine underclassmen, was not able to complete the Urban Concept car in time for the race; but they entered the Black Widow and headed to Houston to take their chances against new course challenges.

Instead of a speedway, the Houston race was run on city streets—a big adjustment for the track-designed Black Widow. In addition, the team had trouble getting the engine to run properly, and they almost didn’t get to make their second run, but Northern Arizona University offered Cal Poly its spot in line. Chan narrates the next race hurdles on the team’s blog: “All was looking good until the last lap, when a gust of wind blew our fairing off. We told Tim [Cal Poly’s driver] to keep going, but he couldn’t because when the fairing blew off, it also hit the external kill switch. It took us a while to figure out that the kill switch was hit, but once Tim was able to switch it back, he floored it around the rest of the track at wide open throttle. When he came in, we were 8 seconds over the time limit.”

In the end, Canada’s Faval University won the Eco Marathon with 2,487.5 mpg, but the Cal Poly students took home a lot of information for next year and a renewed determination to learn and apply their knowledge to sustainable automotive engineering.

Cal Poly’s SAE Formula Hybrid Vehicle makes cover of Momentum magazine

A 1st Place win for “Hybrid-in-Progress” in the Society of Automotive Engineers (SAE) Formula Hybrid competition earned a spot on the cover of SAE International’s Momentum magazine and a feature article for Cal Poly.

The annual competition held in early May is sponsored by SAE and IEEE and hosted by the Dartmouth College Thayer School of Engineering at the New Hampshire Motor Speedway in Loudon, NH. This is the fifth year of the competition and Cal Poly’s second year participating.

“The contest is very similar to the more well-known Formula SAE series, but we utilize a hybrid-electric drive train instead of a traditional gasoline motorcycle engines used in FSAE,” explained mechanical engineering senior Andrew Shrum, team manager.

“Last year, we won 1st Place Hybrid-in-Progress, which is for rookie teams only who have cars that do not feature an onboard energy generation system, and we placed 2nd in the endurance event, an accomplishment because this was the only dynamic event we were able to compete in because we were delayed in the technical inspection process,” said Shrum.

Read the story on pages 9-10 of Momentum and look for news of the highly competitive Cal Poly Formula Hybrid team in this year’s race. http://www.sae.org/servlets/newsletter?LINK=10MOMD0226a001&PID=66082783

Cal Poly’s SAE Formula Hybrid Team, left, employed a unique cantilever wheel design to promote stability in high-speed turns. The Cal Poly car made the cover of the March issue of Momentum magazine. Cover reprinted with permission 2010 Momentum The Magazine for Student Members of SAE International
BMED student wins writing accolades

Cal Poly Engineering students are known for their left-brained ingenuity, but biomedical engineering student Aaron Rowley recently won an award for right-brain creativity as well.

Rowley received second place honors in the 2010 Al Landwehr Creative Writing Contest for his short story “Elan and the Sun,” earning a $50 prize, publication in the Cal Poly literary magazine Byzantium, and the opportunity to read his work to a live audience this spring.

Rowley’s inspiration came from his belief in the value of human experience. “My story sort of mirrors this on a smaller scale, with the main character learning the hard way what it really means to care about another human being,” he says. A writer of fiction since the fourth grade, Rowley finds writing a “great break” from his engineering courses. Likewise, he finds his major enlightening and a creative source. “A lot of the material helps me to understand the way the universe works . . . I remember writing a bunch of thoughts in the middle of my notes while we were studying physiology in one of my BMED classes,” he admits.

Global Game Jam inspires an all-nighter for Cal Poly computer game enthusiasts

Several dozen sleep deprived, pizza-fueled Cal Poly “gamers” spent two days recently huddled around computer monitors as they raced against the clock to design the next eye-popping computer game. Their competitors in the “Global Game Jam” included thousands of other programmers from 30 to 40 nations around the world—Cal Poly was one of just three Game Jam locations in California.

Participants had exactly two days to convene with their groups and design a brand new interactive video game. Cal Poly students worked through the night on campus, and needed to think on their feet. Each team literally needed to create a video game from the ground up, which includes developing the graphic design and writing the precise code so that the game will run as planned. This year’s Game Jam theme was “deception” and all players needed to make sure their creations included the trio of “a monk, a skunk and a punk.”

The Cal Poly Game Development (CPGD) club advised by Dr. Zoe Wood (CSC), brought the local edition of the Game Jam to Cal Poly, and the event received a phenomenally positive reaction. Chris Gibson, president of the club, pointed out that “many of the students had never made a game before,” and still had a blast and came away with invaluable knowledge.

“Plenty of the students had to learn new tools such as Macromedia Flash and libraries like OpenGL in order to make the game they wanted,” Gibson noted, illustrating the intense dedication and commitment required of those students who entered into the competition.

“There was one team in particular who didn’t sleep through the entire weekend, and came out with a great looking game proof-of-concept,” Gibson recalled.

Gibson sees great potential for video game design expansion at Cal Poly, noting that more than 40 students showed up to the first meeting of the CPGD. In fact, in response to student interest and industry needs, the Cal Poly Computer Science/Software Engineering Department has developed a new focus area in Interactive Entertainment and Game Development.

To learn more about the Global Game Jam, click http://www.globalgamejam.org/
To read an article about the Cal Poly Global Game Jam in New Times, click http://www.newtimesslo.com/cover/4029/growing-up-gaming/
BMED scholar an ace on the courts

Steffi Wong likes a challenge. Not only is she a biomedical engineering major, who is considering medical school, but she earned a 3.8 cumulative GPA last quarter — and she’s a nationally ranked tennis player.

Named last year’s Big West Female Scholar-Athlete of the Year, Wong is originally from Toronto, Canada. She considered going to several universities before choosing Cal Poly.

“I was looking around at different schools in California,” Wong said. “And Hugh (Bream, Cal Poly’s head women’s tennis coach) was looking for more players. This one definitely was my favorite. I’m so glad I picked here.”

According to Shannon Stephens, director of academic services for Cal Poly athletics, Wong and three of her Cal Poly Tennis teammates are collectively a full grade point above the average. The other nationally-ranked, academically superior players include Brittany Blalock (business administration), Suzie Matzenauer (communications), and Diane Filip (international business).

Cal Poly currently has about 560 intercollegiate athletes.

Sports psychologist Jeff Troesch has worked with all four of the girls during their careers at Cal Poly.

“This has to do with the drive and the motivation levels of these four individuals,” Troesch said. “They want to be successful, at everything they do. And they’ve been putting in the work.”

A senior, Wong is anticipating her last year at Cal Poly and playing intercollegiate sports. “This year, since it’s my last year, I have a totally different perspective on tennis and life in general,” Wong said. “I want to enjoy this year. Before, the first few years, I used to get nervous before a match. But now I get excited. And it’s made me so much better. It’s kind of like an upward cycle.”

ESC connects students with faculty research

The Engineering Student Council (ESC) has initiated a new program to publicize active faculty research projects, with the goal of inspiring students and helping them become involved.

For inspiration, ESC will host lab tours once a quarter that will showcase ongoing research. The tours will allow faculty to provide overviews about their work and how students can assist. ESC has also launched a new online directory of research, where faculty can post their projects and students can get an overview of research projects and opportunities in their major.

“Discovering Research will remind students, especially underclassmen, why they got into engineering in the first place with all the cool applications and projects,” says Discovering Research director Cristine Dewar.

The Discovering Research directory can be found at http://esc.calpoly.edu/dr.php

Who you gonna call when the phones go out?

The Cal Poly Amateur Radio Club (CPARC), founded in 1947, is not only equipped to provide portable radio communication during an emergency, but they want to train others as well.

Last quarter, the group held an emergency communications demonstration on Dexter Lawn that was run completely off battery power to simulate a disaster situation in which normal communication modes would be down. The club routinely practices mock-disaster situations and has provided emergency communications during both the Highway 41 fire and the Loma Prieta earthquake.

Club members are conversant with a variety of communicating devices, including Automatic Packet Report System (APRS), Internet Radio Linking Protocol (IRLP), ultra high frequency/very high frequency repeaters, which transmit locally, and high frequency long range communications. For high-frequency transmissions, the group has an 80-foot antenna tower located outside of the Engineering East building.

Sales Engineering Club making a pitch at Cal Poly

In the mid-20th century, just about anyone could sign up to sell vacuum cleaners door-to-door. Today’s high-tech industries, however, need “sales engineers”: highly knowledgeable individuals who can sell complex and technologically advanced products ranging from computer chips to jet engines.

“Sales engineering is a huge buzzword in industry,” notes William Jamieson, biomedical engineering student and member of the Cal Poly Sales Engineering Club. Now with over 90 members, the group is one of the newest and fastest growing clubs on campus.

Established with funding from Trane Inc., a global provider of heating, ventilating and air conditioning systems, the club appeals to students who “think outside the cubic,” according to Jamieson. Club activities include working with other clubs on campus to improve networking and presentation skills, which count for points in national and regional competitions.

In addition, the Sales Engineering Club allows members a chance to feel what it’s like to head a $50 million corporation. “We break members into teams and compete in ‘Capsim,’ a business management simulation game that companies actually use to train managers,” explains Jamieson.
Mechanical Engineering student John Hygelund had an ambitious idea for his senior project in 2008 — reach for the stars. Hygelund was working as a student intern with the Las Cumbres Observatory Global Telescope Network (LCOGT) when he developed a plan to collaborate with classmate Derek Johnson (ME '08) and other ME students on the construction of a telescope for the privately-funded research company. LCOGT is attempting to develop an interactive network of robotically-controlled, research-grade telescopes around the world and were interested in establishing one observatory on the Sedgwick Reserve, a nature conservation area far from city lights and coastal fog in the Santa Ynez Valley.

ME professor Jim Widmann, who had experience with constructing large telescopes at L & F Industries, was skeptical of the idea because its scope was so vast, but agreed after the students convinced him they were fully committed. A group of four Cal Poly students — Hygelund, Johnson, John Harmon (ME ‘08), and Brian Mueller (ME ‘08) — began construction of the 0.8 meter, equatorial mount, reflecting telescope in winter quarter of 2007.

By the end of their senior project year, the students had completed the design and had built scale models for testing. The project was so successful that three of the students, Hygelund, Johnson, and Harmon, were hired permanently at LCOGT, where they completed the design and built the telescope. The observatory started earning “wows!” at a “star party” in the summer of 2009. For more information on the project see LCOGT at http://lcogt.net/ or Sedgwick Reserve at http://sedgwick.ucnrs.org/
Taking flight on pedal power

Cal Poly Engineering students are designing a human-powered helicopter aimed at winning a legendary $250,000 prize

From Leonardo da Vinci to aviation pioneer Igor I. Sikorsky, creative engineers have been working on the complicated physics of a human-powered helicopter for centuries. Now you can add the members of the Cal Poly Aircraft Construction Club.

The engineering students, who helped build and fly an RV-7 airplane that took flight in 2009, were inspired to attempt the construction of a new human-powered helicopter after hearing a contest sponsored by the Sikorsky Aircraft Corporation for such an effort was increasing the prize money from $20,000 to $250,000.

“We started out just joking about it, then we started to look into it,” said club adviser Kurt Colvin. “It’s a really difficult problem, but given Cal Poly’s past success in the 1980s, a group of students have decided to go for it and use it for their senior projects.”

Cal Poly Engineering and human-powered helicopters became linked in history when a group led by professor Bill Patterson built the first pedal-powered craft to lift off the ground in 1989. Named after Leonardo da Vinci, who conceived of a helicopter in 1493, the first flight — which lasted 7.1 seconds — was made in Mott Gym by a machine called the Da Vinci III.

“Ironically, I was an undergrad here and was always around the gym because I was on the basketball team when they were testing the Da Vinci II and III,” Colvin said. “We have been working on the design of what we’re calling the Da Vinci IV since the fall. The goal is to take the design of the Da Vinci III and try to build an improved version with better materials and a lighter structure.”

Colvin said the team contacted professor Patterson and located the archives of the project to learn as much as possible about the previous vehicles. “At this point, we are trying to build test vehicles to collect data. Once we have that data, we would design a better craft that might actually have a chance,” he said. “I don’t think we have a chance with the current vehicle, but I do think this group will lay the groundwork so that we learn something, improve the design and try with a better vehicle.”
Ahoy, pirates! CENG project tracks, captures and diverts dangerous UAVs

Imagine small, unmanned aerial vehicles (UAVs) that are cheap, easy to build and fly, and are capable of a variety of applications ranging from reconnaissance to carrying a deadly payload. Now imagine these UAVs in the hands of terrorists.

Enemy UAVs have, in fact, been seen and captured in the Middle East conflict, which is why Raytheon is funding a project at Cal Poly to develop a UAV pirating system that would make it possible to track a UAV and capture or divert it out of harms way.

Directed by EE Professor John Saghri, the Unmanned Aerial Vehicle (UAV) Pirates/SilenTrack integration project ties together Raytheon’s computer vision system (SilenTrack) and the mini radio controlled UAV Pirating system developed at Cal Poly.

“The system’s purpose is to track the UAV’s speed and position and watch how it changes as signals are sent out on different servo channels,” explains Saghri. “This information is then used to remap the controls of the UAV to a standard controller so that a UAV pilot can fly the plane out of the area.”

Saghri notes that “this method of UAV takeover eliminates the need for human visual confirmation and speeds up the process of taking over the UAV. This also allows the system to be used without extensive knowledge of UAVs or the communication signals between the transmitters and receivers used for radio controlled UAVs.”

In addition to Saghri, the Pirates project is co-supervised by Software Engineer Micheal Scott of Raytheon, who provides a corporate perspective for the student team members, including Travis Dean (CPE), Hushnak Singh (EE), Ashley Wagner (CPE), and Matt Woolridge (EE).

Singh notes not only has he learned a lot about UAVs and “the hassles of working with large software and hardware projects,” but the project has “also served as a good introduction to working on engineering projects in teams and the weekly progress reports and conference calls with Raytheon tie in that corporate feeling.”

Travis Dean also comes away from his Pirates experience with enhanced “teamwork and project scheduling skills” in addition to learning “about the creativity of problem-solving when given limited resources.” All invaluable lessons when he and his fellow “pirates” enter the professional workplace.

And, then there’s just the fascination of working on a high-tech project. Sounding like a typical—and future—UAV engineer, Singh says that a highlight of the project has been “to be able to move the wings on the airplane by simply typing in numbers on the computer.”

A team of Cal Poly researchers from Cal Poly Engineering are leading an effort to bring the advanced technology of Unmanned Aerial Vehicles (UAVs) to local search and rescue teams.

In a recent proposal submitted to the California State Park Off-Highway Motor Vehicle Recreation (OHMVR) Division’s Grants and Cooperative Agreements Program, electrical and computer engineering professor Lynne Slivovsky and aeronautical engineering professor Rob McDonald have outlined a project to develop two UAVs — including the Yamaha RMAX unmanned helicopter donated to Cal Poly Engineering by Northrop Grumman — to assist the San Luis Obispo County Sheriff’s Search and Rescue team to located lost hikers and OHMVR users.
In the center of Engineering Plaza, AERO grad students Joun Kim and Sean Stavropoulos work on a donated Boeing 376 satellite for the "CPinterSEP" project. A multidisciplinary group of engineering students plan to "design, manufacture, assemble, and integrate flight-ready spacecraft through a collaborative effort, not only between the Colleges of Engineering, Business, and Science and Mathematics at Cal Poly, but also with other reputable universities, research organizations, and industry contacts." See www.cpintersep.com for more information.

For the first time in February, Cal Poly Materials Engineering students competed in the Materials Bowl Competition at The Minerals, Metals & Materials Society (TMS) 2010 Annual Meeting & Exhibition in Seattle. Zenon Carlos, Ian Hosek, Emily Robertson, and Brian Alvarez answered materials-related questions against students from the Colorado School of Mines (the defending champions) and the University of Washington. The Cal Poly MATE students finished 2nd in their round, and look forward to next year’s competition.

Droid! CSC students learn how to make apps for Android phones

When the Cal Poly bells ring at the top of the hour and students flood the crosswalks, it seems like at least one out three have cell phones in hand. But they’re not just making a call—they’re also reading email, getting news, looking up restaurants, playing a game, checking the weather, paying bills . . . and more.

Innovative new interfaces and “apps” have made mobile devices into handheld computers—and the technology is exploding the functionality of cell phones. Thanks to Google, Cal Poly students may be designing and developing some yet-to-be-imagined apps.

A Google Faculty Research Award to Drs. David Janzen and Chris Lupo, along with the donation of 24 G1 Android phones, are giving students the opportunity to work with mobile devices. Facilitated by alumnus and Industry Advisory Board member, Mark Lucovsky, the award is powering new student projects and a new software engineering special topics course on mobile application development.

In CSC/CPE 409, in addition to lectures and labs on the Android framework, students work in teams to develop practical applications that provide humanitarian and/or entrepreneurial value, which is pretty exciting for them,” says Janzen. “The course culminates with a competition similar to the Android Developer Challenge—in fact, we welcome anyone with an Android phone to participate in judging the student apps at the end of the class."

To prepare for the course, Janzen developed and launched his own Android app. (see http://simexusa.com/cm/). Campus Maps plots your location on your campus map, and tracks you as you move.

If Janzen’s app shows you how to get where you’re going, the app being developed by Lupo’s interdisciplinary senior design students will show you how to make the most of your journey.

A five-member team of CPE, IE and BMED students is designing and implementing a heart-rate monitor and software system so that an Android phone can be used as a bicycling and athletic computer. The application will use the phone’s bluetooth and GPS systems, the touchscreen and the accelerometers to provide feedback to the athlete while riding, and data analysis capabilities to help guide an athlete’s training program. This project is in collaboration with pro cycling team Columbia-HTC and the Cal Poly Wheelmen.

But it’s not just Cal Poly students who are benefiting from the Google gift. Janzen is also using the G1 Android phones, along with the Scratch programming environment (http://scratch.mit.edu) in K-12 outreach activities. Last summer, he taught a set of labs for high school students in the College of Engineering’s EPIC (Engineering Possibilities in College).

To view CSC/CPE course materials, go to http://www.csc.calpoly.edu/~djanzen/courses/409W10/.

NASA joins CubeSat queue

Picosatellites will launch from NASA’s Taurus IL rockets in fall

For the first time since Cal Poly and Stanford University initiated CubeSat in 1999, NASA is jumping into the game. CubeSat provides standards for the design of 1 kg, 10 centimeter-cubed picosatellites. As a result, CubeSats built by students at universities world-wide are launched using a common deployer known as a “P-POD” developed at Cal Poly.

And next fall, CubeSats built by Montana State, the University of Colorado and Kentucky Space (a consortium of state universities) will launch on the Taurus XL rocket for NASA’s Glory mission. The mission is planned for liftoff from Vandenberg Air Force Base in late November.

Cal Poly is highly involved in the launch—in fact, all three universities and NASA will be coming to campus to integrate the satellites into the P-Pod deployer. “Cal Poly supports NASA in everything between integration and attaching the P-Pod to the rocket for launching,” says Cal Poly CubeSat faculty advisor Dr. Jordi Puig-Suari. “It’s the job of our PolySat students to make sure the launch goes according to plan.”

Puig-Suari credited Garrett Skroboll at NASA Kennedy Flight Center with facilitating NASA’s involvement with CubeSat. “He encouraged NASA to collaborate with the university satellite programs,” said Puig-Suari. “With his help, CubeSat increased its professionalism until it passed muster with NASA. The collaboration is great for CubeSat, great for our students, and we’re very excited to finally have a launch in our own Cal Poly back yard at Vandenberg.”
Dr. Hal Cota retires

CE/ENVE department didn’t exist when he joined Cal Poly Engineering faculty in 1966

This spring, family, friends and colleagues celebrated Dr. Hal Cota’s more than four decades of achievement as an educator and inspiration at Cal Poly. His legacy includes a Civil & Environmental Engineering program that is one of the largest and most prestigious in the nation.

There was no CE/ENVE when Cota joined Cal Poly in 1966. He became a faculty member in Air Conditioning and Refrigeration, but was immediately instrumental in developing a new program vital to public health: air pollution control.

“The Environmental Engineering program started with the idea of expanding Air Conditioning and Refrigeration Engineering into a department that dealt with the outdoor environment as well. I was fortunate to be hired to develop the program,” Cota remembers.

When the department’s name was changed to Environmental Engineering in 1968, it was one of the very first undergraduate ENVE programs in the United States. Within a short time, ENVE also encompassed specializations in wastewater management and hazardous waste management. The current Civil and Environmental Engineering Department was established in 1983.

Cota is clearly proud of the university and its students, who have been a part of his life for so long. Some of his favorite memories include working with a great faculty, seeing students win the Best Student Chapter of Air & Waste Management Association for five consecutive years over the past decade, and working with the Air Resources Board and Regional Water Quality Control Board. “I am grateful for the opportunity to develop one of a few teaching air pollution monitoring laboratories, and to work with alumni and see the significant contributions they have made,” he states.

When asked about the future, Cota explains, “Since I believe it is important for the nation to keep an industrial base, it will require good environmental engineers to protect the public health and keep costs down. What an opportunity! Unresolved problems include establishing safe environmental exposure levels, disposing of nuclear and mixed wastes, developing the best alternative energy plan and deciding how to include nuclear power and maybe breeder reactors as part of dealing with climate change.”

Cota congratulates CE/ENVE students on the “decision to help solve our country’s environmental problems.”

“We have not solved all the environmental challenges and there are new challenges on the horizon,” he notes. “Our mission at Cal Poly continues to be to insure graduates are ready to make informed decisions that will improve the environment and lead to better health both in industry and in our communities and lead to a strong economy.”

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Senior research team wins NASA’s student challenge

A senior research team from the American University of Science and Technology (AUST) in Amman, Jordan, won NASA’s Student Research Challenge (SRC) in the Earth Science and Applications division.

The team, led by senior research assistant Angela El-Attar, developed a project called “Sedimentary Sequence Analysis of the Dead Sea,” which focused on the analysis of sedimentary sequences to understand the environmental changes in the Dead Sea region. The project aimed to provide valuable information for environmental and geological studies.

The team’s project was selected from a pool of over 600 submissions from 12 countries. They were awarded $25,000 for their research and development efforts.

“Winning this challenge is a significant achievement for our team,” said El-Attar. “It not only highlights the quality of our research but also opens up new opportunities for collaboration with NASA and other international research institutions.”

The project was supervised by Dr. Ahmed Al-Sabbagh, a professor at AUST. The team consisted of senior research assistants Maria Al-Jabali and Sameer Al-Hashimi, as well as graduate students Ammar Al-Azri, Abdulsalam Al-Ma’any, and Noura Al-Faraj.

NASA’s SRC program is designed to engage students in cutting-edge research and development projects that address real-world challenges. The competition provides students with the opportunity to work directly with NASA scientists and engineers, gain valuable research experience, and potentially contribute to significant advancements in science and technology.

The winning team’s project was judged by a panel of experts who evaluated the projects based on their scientific merit, innovation, and potential impact. The selection process involved a rigorous review process and multiple rounds of judging.

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Dr. Hal Cota, right, works with a CE/ENVE student sometime in the late 1960s.

Hal Cota and family when he started teaching at Cal Poly in 1966.
Faculty News

CPE’s Hugh Smith has it wired

Dr. Hugh Smith was named the new Director of the Computer Engineering Program last fall and he relishes his newfound opportunity to have an impact on the CPE program. “It’s been a lot of fun, definitely a good experience. We’ve got excellent faculty in both Computer Science and Electrical Engineering,” he says.

After 10 years as a Cal Poly computer engineering/computer science professor, Smith accepted leadership of CPE with two key priorities in mind: to further engage students and to emphasize sustainability in the CPE undergraduate program.

One step would like to take to excite students is to incorporate a project-based, service-learning course into the freshman year. Service-learning engages students in using their CPE knowledge and skill base to provide real services to needy community clients.

These service-learning projects “could include service-based, robotics, digital entertainment (games)” and more, explains Smith, who considers the new project-based course a way to “excite our first-year students about what it means to be a computer engineer, and to get them involved with projects on a team.”

Smith believes that such a course would be “fun, educational [and would] introduce them to the topics of their major,” without overwhelming them in the first quarter of college. After their freshman experience, students, now energized about moving on to the next CPE course, will have a more specific idea of how they can use a CPE degree to further their dreams in the real world.

“In the end, the hope is...they’ve produced something which they can brag about to their family and friends,” Smith adds. “CPE hopes this new course requirement can be initiated for students in Fall 2010.”

In addition to making the CPE course of study as fun and informative as possible through student engagement, Smith, like many of his fellow College of Engineering cohorts, hopes to address the importance of sustainability in the engineering major.

Smith sees this as both a technical issue and an ethical issue: “How do you get students to think about more than just the product? What is it going to do to the environment? How much energy does it use?” he asks.

Smith has a grand plan for the CPE program, and sees the two new goals as important additions to the enrichment of the CPE major course of study: “By incorporating sustainability into the curriculum, we’d be giving it a twist and a perspective ... you’re teaching the engineering skills and saying, ‘Do this in a responsible way.’”

For more than two years, aerospace engineering professor Dr. David Marshall and student researchers have been working on a $1 million project funded by NASA Aeronautics Research Mission Directorate to develop prediction methods and design test hardware that can predict the low speed, high lift, and performance of the Cruise Efficient Short Takeoff and Landing aircraft. This technology would allow more planes access to smaller airports.

In the third and final year of the project, Marshall along with his aerospace engineering colleague Dr. Tina Jameson will conduct large-scale wind-tunnel tests and complete the predictive codes for the advanced powered-lift concepts.

You can read about their work in a recent in-depth article in Wind Tunnel International: http://issuu.com/magazineproduction/docs/wti_issue_1_embed

Lane and Marshall co-authored “Inverse Airfoil Design Utilizing CST Parameterization.”


“Computational and Experimental Comparison of a Powered Lift, Upper Surface Blowing Configuration” was co-authored with graduate student Jay Marcos.

Graduate student Travis Storm helped write “Assessing the v2 -f Turbulence Models for Circulation Control Applications.”

Rob McDonald and students presented seven papers at the AIAA Aerospace Sciences Meeting:

- Vallone, M., McDonald, R., “Parameter Estimation of Fundamental Technical Aircraft Information Applied to Aircraft Performance.”
- K. Lane, D. Marschik, B. Morham, J. Pham, R. McDonald, and B. Wright, “A Green Aircraft in Response to the ‘09 AIAA Undergraduate Design Competition.”
- McDonald, R., Wright, B., “Designing a Green Aircraft; Cal Poly’s 2009 Undergraduate Aircraft Designs.”
- Gloudemans, J., McDonald, R., “Improved Geometry Modeling for High Fidelity Parametric Design.”
Dr. Trevor Harding, chair of Cal Poly Materials Engineering, received the American Society for Engineering Education (ASEE) Southwest Division Outstanding Teaching Award.

The award is given for outstanding classroom performance and recognizes participation in course development, contributions to laboratory improvement, and service as a mentor to other faculty or participation in seminars focused on helping other teachers improve their classroom effectiveness, among other criteria.

For Harding, “Teaching is both a science and an art. The science comes in understanding how the human brain functions and the myriad different ways that students learn. The art comes in building rapport with students, getting to know them, and motivating them to see the connection between the subject matter and their own lives. My goal as a teacher is not so much to teach, but rather to change each student for the better.”

At the same conference, McDonald was a member of a panel on “Geometry Needs of Conceptual Aircraft Design,” and he presented “Error Allocation and Cost-Benefit Analysis of Error Reduction for Complex Systems” at Mississippi State University. At the NASA Subsonic Fixed Wing Round 2 NRA Annual Review in Cleveland, OH, McDonald presented a progress report on the second year of his three-year, $1 million NASA project.

Biomedical & General Engineering


Computer Science & Software Engineering

Chris Lupo was awarded a $5,000 grant from Lockheed Martin for research on “Optimized code generation for reduced energy usage.”

Civil & Environmental Engineering


Robb Moss dispatched to Chile, where he led the Advance Team for Geo-engineering Extreme Events Reconnaissance (GEER), a group sponsored by the National Science Foundation and the National Earthquake Hazards Reduction Program. GEER’s purpose is to obtain perishable data immediately following the occurrence of an extreme event (e.g., earthquake, tsunami, hurricane, landslide, or flood). Data from a major event can inform disaster planning in CA.

Computer Engineering

Chris Lupo gave a presentation to Google’s GO programming language group in Mountain View about projects he has introduced in his graduate computer architecture (CPE 520) course, thus facilitating a promising collaboration with the company on how to improve its product.

Electrical Engineering

David Braun co-authored “Teaching Sustainability in Cal Poly Electrical and Computer Engineering Programs” with John Oliver and Art MacCarley, and presented the work at the UC/CSU/CCC Sustainability Conference in Santa Barbara.

Dennis Derickson directed EE graduate student Brandon George on research that measures optical sensors using a fast wavelength-tunable laser. George presented a paper on the work at the Frontiers in Optics conference in San Jose, CA. Derickson and George also presented a paper at the Biomedical Optics Symposium in San Francisco, which addressed a method for combining the output of two tunable lasers to increase the frequency span allowing higher resolution measurements for optical coherence tomography.

IME’s Kurt Colvin named Boeing Welliver Faculty Fellow

Industrial and Manufacturing Engineering professor, Dr. Kurt Colvin is headed to Seattle this summer, where he’ll work with the Boeing Systems Engineering group as a Boeing Welliver Faculty Fellow.

The purpose of this prestigious program is to expose select professors from U.S. and international universities to key elements and the business realities of industry by working with company professionals. There have been 149 university participants in the Boeing Welliver Faculty Fellow program since its establishment in 1995.

“The fellowship will give me valuable experience and insight that will improve my systems engineering graduate courses (AERO 510/511),” says Colvin. “I also hope to make contacts that will establish a relationship between Boeing systems engineering and Cal Poly.”
Faculty News


Tina Smilkstein directed students at Cal Poly and the University of Missouri on a project on “Eldercare Monitoring for Extending Independent Living Using Ultra-Wideband Short-Range Radar” under grants from the University of Missouri State Research Board and the Research Enrichment and Dissemination (READ) Small Grants Program. The outcome of the project will be a monitoring system that will allow elders to remain in their home longer and alleviate some of the demand on caretakers and caretaking facilities. The Cal Poly students are developing a boundary detection system, which will detect if someone is within the sensing region.

Industrial & Manufacturing Engineering

Jianbiao (John) Pan was named a Fellow of IMAPS (International Microelectronics and Packaging Society) at the 42nd International Symposium on Microelectronics in San Jose. He served as chair of the student activities at that event and faculty advisor to the Cal Poly IMAPS Student Chapter, which was awarded 2nd place in the Student Chapter Booth Competition at the symposium.

Materials Engineering


Kathy Chen co-authored a poster on “A Materials Investigation of the UV Degradation of Eco-friendly, Polypropylene Polymer Composites with Kenaf Fibers” with recent graduate Christine Carpenter, R. Arens (ARCH), and E. Saliklis (ARCHE) at the TMS conference.

Mechanical Engineering

Andrew Kean was selected as one of the nation’s brightest young engineering researchers and educators in the National Academy of Engineering (NAE). He will take part in the NAE’s first Frontiers of Engineering Education (FOEE) symposium. The program focuses on effective ways to ensure that students learn the engineering fundamentals, the expanding knowledge base of new technology, and the skills necessary to be an effective engineer or engineering researcher.

William R. Murray, Joseph D. Mello, and Patrick Lemieux received three grants related to research and development on advanced rocket nozzles and hybrid rocket motors. Grant details include:
• “Design, Construction, and Flight Test of a Hybrid Rocket with a Cooled Aerospike Nozzle,” Workforce Development Award, CA Space Grant Consortium, $10,000.
• “A Rayleigh Flow Experiment on Nitrous Oxide (N2O) to Assess the Limits of N2O Cooling,” NASA STTR Phase III Grant, $70,000.
• “A Reusable, Oxidizer-Cooled, Hybrid Aerospike Rocket Motor for Flight Test,” NASA STTR Phase II Grant, $600,000.

The company partner for the STTR (Small Business Technology Transfer) grants is Rolling Hills Research Corporation, a high-tech aerospace company. The company president and CEO is alumnus Brian Kramer (AERO ’83).

Brian Self served as Zone IV Chair for the ASEE Board of Directors.


Got waste? Cal Poly team studies dairy waste management

With 1.8 million dairy cows in California, efficient recycling of manure nutrients back to cropland can be difficult to achieve. Professor Tryg Lundquist is addressing the problem by leading a research program on dairy waste management that includes treatment, recycling, and biogas power generation. The group constructed a ReCip® pilot plant at the Cal Poly dairy designed to remove excess nutrients. The project was funded by the US EPA via the NGO Sustainable Conservation and the CSU Agricultural Research Initiative.

Environmental Engineering students Seppi Henemann and Jason Kane check water bacteria levels at the ReCip® pilot wastewater treatment plant at the Cal Poly Dairy.

Professor Tryg Lundquist is leading a group studying dairy waste management on campus. Pictured below near the ReCip® wastewater plant, the group includes, front row from left: Kyle Fooks (ENVE), Shasta Billings (ENVE), Giulia Samori (visiting researcher from Italy) and research engineer Ian Woertz; back row: Seppi Henemann (ENVE), Jason Kane (ENVE), Jason Coontz (ENVE) and Lundquist.
FMC Technologies appoints Bradley D. Beitler as VP, Technology

FMC Technologies, Inc. (NYSE: FTI) has appointed Bradley D. Beitler as Vice President, Technology. Mr. Beitler will assume the position on December 1, 2009. He was previously the Director of Technology for FMC.


Writing code, reading code and blogging about the archeology of software

The name of this blog, Once More into the Code, is a modification of the opening line from William Shakespeare's King Henry V, Act 1 Scene 1 that starts “Once more unto the breach, dear friends, once more; or close the wall up with our English dead.”...Forty years ago this month, I, David Intersimone, wrote my first program as a college freshman at Cal Poly San Luis Obispo.

http://blogs.computerworld.com/14787/writing_code_reading_code_and_software_archeology

Cerebyte Inc. founders release “Strategy to Action in 10 Days”

Michael McCauley (Transportation Engineering 1978) and William Seidman, co-founders of Cerebyte Inc., a company that helps businesses develop, implement and sustain widespread performance improvement, have released “Strategy to Action in 10 Days: Creating High Performance Organizations.”


AERO alum publishes memoirs

Eldon Price’s first memory of an airplane was when a mail carrier plane made an emergency landing at his hometown in Nebraska. Price remembers he “wanted to fly one of those big machines that looked down on trains, cars, trucks and buses and could go anywhere really fast.”

In Price’s recent autobiography Senior Birdman: the guy who just had to fly, the 1949 aeronautical engineering graduate reveals how he has been involved in key programs like the Anti-Ballistic Missile, the KC-10 Supertanker and the Navy Harpoon cruise missile. His experience as a naval aviator during World War II was the starting point for his devotion to flying. In 1944 he first reported to the Cal Poly’s campus, where a flight preparatory school was located. When Price returned to Cal Poly to complete his degree, he served as the editor of the El Mustang newspaper, and became involved in intramural athletics.

Senior Birdman provides detailed descriptions of Price’s journey through flight, and how he ended up creating a patent for an invention used on the Boeing DC-10, 747 and the new 787. The device tests airspeed and altitude. He designed a cone that both retracted higher speeds, and reduced the cone dragging by using tubing with a higher strength.

With over forty years of aviation experience, Price takes his readers through the triumphant journey of flight, and explains how his patent helped the Douglas Aircraft Co. build safer planes. See the book at Amazon.com at http://www.amazon.com/Senior-Birdman-guy-just-fly/dp/0595364225/ref=sr_1_1?ie=UTF8&s=books&qid=1270159251&sr=1-1

Cal Poly Engineering + Silicon Valley = unusual success

Bay Area alumni recently gathered at NetApp in Sunnyvale to hear how Cal Poly Engineering graduates have impacted the Silicon Valley. Hosted by NetApp vice president Laura Pickering (EE ’84), the event featured a panel discussion with Paul R. Bonderson, Jr. (EL ’75), president of Lone Oak Ventures; Gary Bloom (CSC ’82), former chairman & CEO, VERITAS Software; Carson Chen (EL ’73), co-founder & CEO, Innovation Quest; and Kathleen Holmgren (IE ’80), principal, Sage Advice Partners.

NetApp vice president Laura Pickering (EE ’84) with India D’Avignon. At left: The event attracted alumni and friends of Cal Poly from all over the Silicon Valley area.
1980s

Sierra Geothermal Power appoints Bryan Bertacchi to Board of Directors

Sierra Geothermal Power Corp. has appointed **Bryan Bertacchi** (EE 1982) to their Board of Directors. Since 2008, he has been the CEO of Radback Energy Inc. He will continue acting as Sierra’s Chief Operating Officer. He brings to the company over 25 years of experience in the power sector. [Source](http://www.transworldnews.com/NewsStory.aspx?id=148796&cat=1)

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Embedded OTP Leader

Sidense hires NVM Veteran Humes for Product Engineering VP position

Sidense, a leading developer of Logic Non-Volatile Memory (NVM) IP cores announced the appointment of **Todd Humes** (EL 1987) as the company’s new Vice President of Product Engineering. [Source](http://www.design-reuse.com/news/22042/sidense-todd-humes.html)

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Mark Logic Corporation names David Martin to Vice President of Enterprise and OEM sales

Mark Logic® Corporation, a leading provider of software for information applications, announced the executive appointment of **David Martin** (CSC 1988) to vice president of enterprise and OEM sales. [Source](http://www.marketwire.com/press-release/Mark-Logic-Corporation-names-David-Martin-to-Vice-President-of-Enterprise-and-OEM-sales-1077718.html)

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**Greg Helton appointed President and Managing Director, Aptina Japan**

Aptina announced the appointment of **Greg Helton** (M.S. EE 1989) to President and Managing Director of Aptina Japan. Helton is the first appointment to this role and will be responsible for directing Aptina’s overall business development, marketing and sales support services in Japan. [Source](http://www.businesswire.com/portal/site/google/?ndmViewId=news_view&newsId=20090909005160&newsLang=en)

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**Jeff Okamoto selected for Board of Directors of Building Industry Association**

**Jeff Okamoto** (CE 1987), Vice President, Land Development for RBF Consulting (RBF), was installed on October 16 as a member of the Board of Directors for the Building Industry Association/Orange County (BIA/OC). Jeff has over 20 years’ experience as a registered Civil Engineer and has been an active member of the BIA/OC since the early 1990’s. [Source](http://www.earthtimes.org/articles/show/jeff-okamoto-selected-for-board-of-directors-of-building-industry-association-orange-county-biaoc,1055495.shtml)

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From Guyana, Cal Poly grad finds way to VAFB

As a youngster in Guyana, **George Matthews** (ME 1996) knew he wanted to be an engineer, but didn’t necessarily expect to work on rockets…After attended community college in Bakersfield, he ended up going to Cal Poly, majoring in mechanical engineering and graduating in 1996. [Source](http://www.lompocrrecord.com/news/local/military/article_09c7a5f2-bad8-11de-b461-001cc4c002e0.html)

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BioMicro Systems Announces the Appointment of Rob Parry as President and Chief Operating Officer

BioMicro Systems announces the appointment of **Rob Parry** (ME 1985) as President and Chief Operating Officer. … Mr. Parry received a B.S.M.E. from Cal Poly, San Luis Obispo, and an M.S. from MIT in Operations Management and Technology Innovation. [Source](http://www.biomicro.com/news/local/military/article_31ec4dc2-bae6-11de-001cc4c002e0.html)
OKI Data Americas names Doug Whetzel Vice President, U.S. Commercial and Public Sector Sales

OKI Data Americas, which markets its products under the OKI Printing Solutions brand announced that Doug Whetzel (CE 1987) has been promoted to Vice President, U.S. Commercial and Public Sector Sales. In his new role, Whetzel will be responsible for developing and executing the sales strategies required to achieving the Commercial and Public Sector hardware goals for the company. http://www.reuters.com/article/idUS146697+05-Nov-2009+BW20091110

Lawrence Loh Promoted to Vice President of Worldwide Applications Engineering

Jasper Design Automation, provider of advanced formal technology solutions, today announced that Lawrence Loh (EE 1993) has been promoted to Vice President of Worldwide Applications Engineering. In his new role, Loh will continue and expand his responsibility for the company’s applications engineering and methodology development. http://www.reuters.com/article/article/prweb3061374.htm

NCSD rehires former GM Michael LeBrun on interim basis

The Nipomo Community Services District has rehired one of its former general managers to fill in until the district can find someone to take the job on a permanent basis. Michael S. LeBrun (ENVE 1993) was hired Wednesday by NCSD directors to temporarily replace Bruce Buel. http://www.santamariatimes.com/news/local/govt-and-politics/article_0271a4d0-d4d5-11de-8f16-001cc4c002e0.html

1990s

2000s

Alumni's drone unmanned aircraft startup bought by Alabama Company

Chandler/May Inc. of Huntsville, Ala. has bought AeroMech Engineering of San Luis Obispo, a producer of small unmanned aircraft known as drones. The San Luis Obispo-based AeroMech was started by two Cal Poly grads on a shoestring budget 10 years ago. Cal Poly graduates Thomas Akers (B.S., Aero Engineering, 2001) and Norm Timbs (B.S., Mechanical Engineering, 1988, B.S., Engineering Technology, 1992) founded their company in 1999 with less than $1,000 of startup cash. For more on the AeroMech acquisition see: http://www.sanluisobispo.com/2009/09/24/861946/biz-buzz-alabama-firm-buys-slo.html

Entrepreneur entertains Corning Rotary meeting

Dewey Lucero (ME 2004), a Corning native and a fourth generation olive grower, may have received a degree in Mechanical Engineering at Cal Poly San Luis Obispo, but his job is in agriculture. Lucero, the third generation in olive innovation in Corning, is carrying on the family trait of a passion for olive oil with the company Lucero Olive Oil. http://www.redbluffdailynews.com/oci_13513829

Central Virginia’s People: Heritage grad rides roller coasters to dream job

Lynchburg native Josh Davis (M.S. ME 2008) designed the ‘Lights, Camera, Action!’ attraction for an amusement park in Singapore. .. Currently the project coordinator for the California-based Attraction Services Company Inc, Davis, 25, has spent the last several months designing the Lights! Camera! Action! attraction for Universal Studios Singapore. http://www2.newsadvance.com/ina/lifestyles/local/article/central_virginias_people_heritage_grad_rides_roller_coasters_to_dream_job/23926/

Ellenberger designing abort system for Orion spacecraft

Jerad Ellenberger (ME 2008) graduated from Cal Poly’s mechanical engineering program in June 2008. After a year working on the Space-Based Infrared System (SBRIS) program at Lockheed Martin, Jerad’s dream opportunity arose and he transferred to Denver, CO to work on Orion, the spacecraft currently under development by NASA. Jerad is now a mechanical designer on the Launch Abort System of the Orion project, which was featured as one of Popular Science’s Top 100 Innovations of the Year: http://www.popsci.com/bown/2009/product/nasa-launch-abort-system

ME alum subject of magazine cover story

Mechanical engineering has proved to be a discipline with many options for Cal Poly alum Stefanie Goltiao (ME 2002).

“I felt that if I went into mechanical engineering I would have a broad choice of which careers to choose,” she told Minority Engineer magazine for a cover story in the Winter 2009-10 issue. Her choice of major has paid off with jobs at Applied Biosystems during her senior year, Johnson Controls in San Francisco after graduation, and currently, Trane, a global provider air conditioning systems, services and solutions based in New Jersey.

Goltiao, a member of Cal Poly’s Society of Women Engineers chapter who is a LEED (Leadership in Energy and Environmental Design) accredited professional, currently works in for Trane in Southern California as a sales representative.

For more on Minority Engineer magazine, see www.eop.com.

Lew (CE 2001), has been named “Construction Engineer of the Year” for Caltrans District 5, the agency announced. http://www.santamariatimes.com/news/local/article_eaef69f0-2cdb-11df-b9c0-001cc4c03286.html

PicTranslator iPhone App makes foreign language translation a snap

Fotozio, LLC launched the first free iPhone photo translator application, PicTranslator, which turns the iPhone camera into a point-and-shoot translator...Founded in April, 2009, the executive team of Fotozio has a broad technology and business background, with Justin Wilcox (CSC 2003), Aaron Jensen (CSC 2003), both graduates of Cal Poly San Luis Obispo and former Microsoft employees. http://www.prweb.com/releases/PicTranslator/Fotozio/prweb3061374.htm

Mike Lew named Engineer of the Year for Caltrans division

A Santa Maria-based employee, Michael Lew (CE 2001), has been named “Construction Engineer of the Year” for Caltrans District 5, the agency announced. http://www.santamariatimes.com/news/local/article_eaef69f0-2cdb-11df-b9c0-001cc4c03286.html

An Alumni News cover page with a picture of two people and text.
CSC celebrates 40 years of excellence

It was only fitting that CSC alumni, faculty and friends gathered at the Computer History Museum in Mountain View, CA to celebrate 40 years of Computer Science at Cal Poly.

The February event featured a presentation by Department Chair Ignatios Vakalis, and honored alumni Gary Bloom, Rick Bergquist and Christine Chou provided their perspectives on the department.

The 200 attendees particularly enjoyed hearing from current undergraduate and graduate students about campus life and the department.