CAL POLY

ENGINEERING Advantage

College of Engineering, Cal Poly, San Luis Obispo, California, Fall 2009

"Cal Poly is positioned to be a leader in the 21st century because of its commitment to hands-on, undergraduate learning."

— Matthew Cottle, assistant dean for advancement, Page 2

Cal Poly SWE makes history with Team Tech 1st place finishes

Society of Women Engineers section again best in the nation

Cal Poly Society of Women Engineers (SWE) has again set the "gold standard" for university SWE chapters across the nation with four 1st Place awards at the SWE National Conference held October 15-17 in Long Beach.

Cal Poly brought home the Gold Level Award as the nation's top Outstanding Collegiate Section, and 1st for Outstanding Outreach Event/Series.

Cal Poly also made history as the only university to have two teams tie for 1st in the Team Tech competition.

"Nationals has never had two teams from the same school compete before, and there has never been a tie for first before," states Cal Poly

Please see SWE, Page 4

CENVE professor Jim Hanson and Dr. Nazli Yesiller survey solid waste at the Cold Canyon Landfill in San Luis Obispo.

GWRI: One person's trash is another's educational treasure

"Transforming waste into opportunities."

That's the motto of the new Global Waste Research Institute (GWRI), a collaborative effort between Cal Poly and industry that will promote the development of sustainable waste treatment technologies and advance current practices in resource management through the investigation of all aspects of wastes and byproducts from initial generation to final disposal.

When you consider the size of the issue — the state of California must deal with more than 50 million tons of solid waste a year — GWRI's potential for Cal Poly Engineering students is clear to GWRI interim director **Nazli Yesiller**, a geoenvironmental engineer.

"With GWRI, I see great opportunity for students to become involved in projects that are outright world-changing," says Yesiller. "The international partnerships will increase the impact of the research conducted through the Institute and provide global exposure to Cal Poly."

Please see GWRI, Page 7

Matthew Cottle, CENG's new Assistant Dean/Director of Advancement, chats with Kerri Bennet of Northrop Grumman at the company's showcase.

Matthew Cottle named Assistant Dean/Director of Advancement

This summer, Cal Poly Engineering welcomed **Matthew Cottle** as the assistant dean for advancement. He brings more than 20 years of advancement experience in engineering and science organizations to the position.

Cottle recently served as vice president for Institutional Advancement at West Liberty State College, and as the founding vice president for advancement at Franklin W. Olin College of Engineering. He also established new development programs and led capital campaigns for the University of Idaho's College of Engineering, Princeton University's School of Engineering and Applied Science, and the National Academy of Engineering.

In his new position at Cal Poly, Cottle will be responsible for securing private support for Cal Poly Engineering and working with the dean, college administrators, advancement staff and faculty on outreach and partnership efforts with alumni and corporate constituencies.

"I have a passion for engineering and am delighted to join Cal Poly's premiere program. Engineering is ubiquitous in our society and our engineering expertise defines America's position in the world today. Cal Poly is positioned to be a leader in the 21st century because of its commitment to hands-on, undergraduate learning," comments Cottle.

Engineering Dean **Mohammad Noori** states, "We are confident that Matthew Cottle will help us reach out to alumni, industry partners, and friends, who know how vital it is that we educate an elite engineering corps to address the global challenges of our era."

Cottle holds a bachelor's in business administration from the University of Kentucky, and an MBA in production/operations management from the University of Cincinnati. ■

Cal Poly Engineering On-line

CENG WEBSITE

http://ceng.calpoly.edu/

Cal Poly Engineering alumni are making news—and we are posting and updating their stories daily. Stay in touch by logging on at:

ALUMNI IN THE NEWS

http://ceng.calpoly.edu/alumni/in-the-news/

You can also keep abreast of all the activities happening on campus at:

CALENDAR OF EVENTS

http://ceng.calpoly.edu/event-calendar/

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AERO professor Dave Esposto, a former Boeing engineer, stands in front of parts to a Boeing 376 spacecraft donated to Cal Poly for multidisciplinary projects. The estimated value of the hardware and tooling donated by Boeing is $2.5 million.

Boeing spacecraft gift = multiple engineering projects

Can Cal Poly Engineering students build and launch a satellite?

A recent gift of tooling and hardware from Boeing will enable students to build a replica of the versatile Boeing 376 (BS-376) spin-stabilized spacecraft. The estimated value of the hardware and tooling is $2.5 million.

According to AERO professor **Dave Esposto**, a former Boeing engineer, the equipment will generate countless, ongoing multidisciplinary projects and could lead to a full-sized satellite launch.

"Students from many different disciplines will have the opportunity to help assemble a duplicate BS-376," says Esposto.

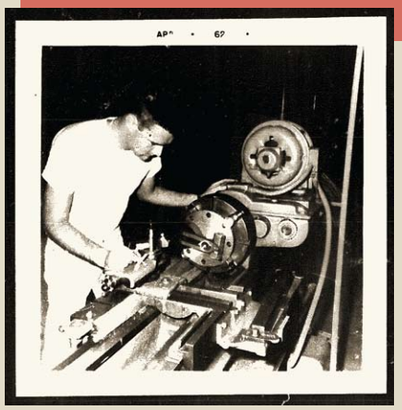
"By learning how to meet the same requirements as professional Boeing engineers, students will not only have a serious leg-up in the aerospace industry, but they will help pave the way for Cal Poly to eventually launch a satellite into space. We've done it with our CubeSat program—why not become one of the only universities in the world to build and launch full-sized spacecraft?"

Esposto credits VP Art Rosales and Bob Damskey of Boeing Satellite Design Center with facilitating the equipment donation. ■

Corporate leaders tee it up for Cal Poly Engineering

On July 24, executives from Boeing, Cannon Associates, Fluor, Northrop Grumman, Parsons, Raytheon, Solar Turbines, Quality of Life Plus, and Telemus Solutions, spent a day on the links a the San Luis Country Club for some serious competition and to generate support for Cal Poly Engineering. The four-player scramble tournament ended in a winning tie with 10-under scores of 62. ■

The winning teams included, above: Jon Monett (Quality of Life+ Labs); Cal Poly President Warren Baker, ME Professor Tom Mase, Dave Rasley (Telumus Solutions); and at left: John Matthews (Raytheon), Jerry Roehning (Raytheon); Lou Entin (Raytheon) and ME student Nickolai Volkoff-Shoemaker.



A shot from Jerome Prior's senior project in 1962.

Alum's $1.5 million bequest to fuel hands-on learning

During his high school years in Manhattan Beach, CA, **Jerome Prior** was a "car guy," and finished rebuilding a '35 Ford Flathead before he even had a learner's permit. His interest and aptitude marked him as a future engineer.

To pay for college, Prior worked at an oil refinery, eventually becoming a Pipefitter helper. It was the words of a personnel recruiter at the refinery that led Prior to Cal Poly. "He said, 'We get these guys out of Cal Poly and they're essentially ready to go to work when they walk out the door,'" remembers Prior. "So, I went, and he was right—my senior project helped me immensely later on when I worked on nuclear reactors for the Navy."

That senior project involved building a rotary-type Wankle engine from scratch—hands-on experience that would eventually inform Prior when he had to design tools to work around the reactors on the Navy's fleet of nuclear submarines based at Pearl Harbor, where he spent the bulk of his career, retiring as head of the Nuclear Fluid Systems and Mechanical Engineering Division.

Even though it's been 47 years since Prior (ME '62) completed his senior project, he still believes strongly in Cal Poly's learn-by-doing education. "Cal Poly students will always find in their senior projects a lesson they never expected," he says. To ensure that senior projects live on, Prior recently made a $1.5 million bequest to establish the Jerome Prior Mechanical Engineering Endowment to support a Professorship focused on research and development of energy technologies, a field, notes Prior, "in which I expect Cal Poly grads to make very valuable contributions." ■

Cal Poly earns a B+ for sustainability

GreenReportCard.org has named Cal Poly a Campus Sustainability Leader for 2010 for its ongoing efforts in sustainable campus practices.

The university moved up to an overall B+ for 2010 on the annual College Sustainability Report Card, from a B- in 2009.

Cal Poly was graded on eight of nine possible categories. The university earned A's in Administration, Climate Change & Energy, Student Involvement and Transportation and B's for Food & Recycling, Green Building and Endowment Transparency. In the Investment Priorities category, the university earned a C. According to greenreportcard.org, the university was not eligible to be graded in the Shareholder Engagement category because "it does not have the ability to vote proxies, as the entire endowment is invested in mutual funds or other commingled funds."

GreenReportCard.org is an interactive Web site that provides in-depth sustainability profiles for hundreds of colleges in all 50 U.S. states and in Canada. The Report Card is designed to identify colleges and universities that lead by example in their commitment to sustainability.

Cal Poly was the only California State University campus named a sustainability leader.

Larry Kelley, Cal Poly's vice president for Administration and Finance, said he is pleased the university moved up by two grades this year. "We work very hard to meet and exceed standards in our sustainable campus practices. The dedication of our students, faculty and staff to support Cal Poly's excellence in sustainability is evidenced in our report card this year."

To view the report card visit, www.greenreportcard.org. ■

The Cal Poly Society of Women Engineers chapter won four first place awards at the SWE National Conference held October 15-17 in Long Beach. Chapter members included Lesley Telford (BME), Nadia Shraibati (BME), Alan Tepe (ME), Nate Hague (ME), Eric Davis (LAES), Laura Harris (IME), Kendra Rowley (CE), Michael Gage (IME), Randi Shiromizy (BME), Stephanie Smith (ME) and Stephanie Long (SE).

SWE

From Page 1

SWE president, **Lesley Telford**. "But our teams did so well that they came up with the same amount of winning points—both the judges and other university team members were impressed."

The Team Tech competition involves a year-long, multidisciplinary, industry-sponsored project. Cal Poly worked with Lockheed Martin on a Hinge Moment Measuring System, and with Walt Disney Imagineering on a Vertical Drop Test Tower. **Nadia Shraibati**, a senior biomedical engineering student, led the Lockheed Martin project, while mechanical engineering senior **Nate Hague** and **Eric Davis** from Liberal Arts & Engineering Studies served as team leaders for the Disney Imagineering project.

Telford noted that since 2007, when Cal Poly ranked third in the nation, the group has been expanding its programs, especially outreach to K12 students. "Building An Engineer Day (BAE)," is one SWE program that brings high school students to campus to expose them to engineering. Last year, the event was so popular, SWE held it twice during the year to accommodate all the interested students.

"It made me incredibly proud to see that the work our officers did on BAE was recognized on the national level with a 1st Place award for Outreach," said Telford. "Each year, we try to do more and do better, which is why we have reclaimed our title as best collegiate section in the nation, which we've held from 2002 to 2006, and 2008 to 2009." ■

Cal Poly Engineering again top-ranked in *U.S. News & World Report*

Year after year, Cal Poly Engineering makes the grade, according to *U.S.News & World Report*. Last year, the college was named Number One for schools whose highest degree is a bachelor's or master's. This year, Cal Poly Engineering was bested only by the U.S. Military and Naval Academies.

"In the last 11 years, we've ranked among the top four spots in the nation, and we've captured the top ranking five times during that span," notes **Mohammad Noori**, Engineering Dean. "This consistent recognition of excellence is remarkable and a wonderful tribute to the quality of our faculty and students. I'm particularly gratified by this year's achievement, given the severe budget cuts we've endured."

College of Engineering programs also made the list of Best Undergraduate Engineering Programs. Industrial and manufacturing, computer, electrical and mechanical engineering programs were each ranked as the top program at a public university, while Cal Poly's civil and environmental engineering program was ranked the second best program at a public university.

And, for the 17th year in a row, the university as a whole was rated the best public-master's university in the West.

The U.S. News rankings are available at www.usnews.com. ■

Cal Poly named 2nd in the nation for aviation industry workforce recruiting

Aviation Week & Space Technology recently named Cal Poly second in the nation for industry workforce recruiting. The publication is the largest multimedia information and services provider to the global aviation, aerospace and defense industries.

Cal Poly tied for the number two ranking with Purdue and Penn State, while Virginia Tech ranked first. According to Aviation Week's study, the ranking was based on lists of the top five schools from industry organizations. The study states, "...rationale for ranking rests on three core themes: the reputation and ranking of the university; the performance of alumni from that institution within the organization; proximity of institution to the organization/job."

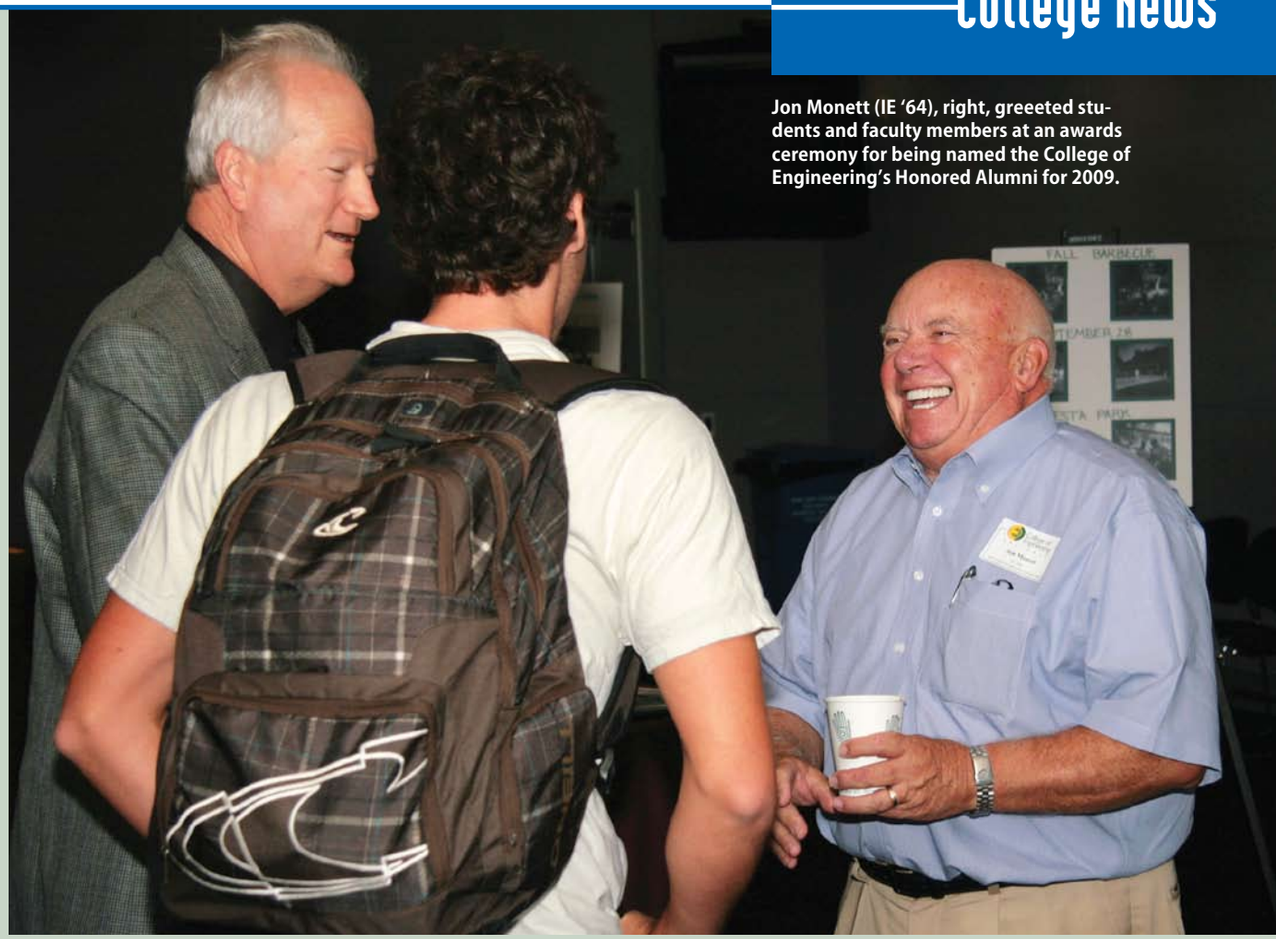
Cal Poly Engineering Dean **Mohammad Noori** called the #2 ranking "another testimonial to the significant role that Cal Poly Engineering plays in fueling the engine of economy of our country and the State of California."

"We are humbled to be in this group," said Noori, "and we especially congratulate our colleagues in Cal Poly's Aerospace Engineering Department." ■

NetApp provides CENG with storage space

We're not talking about the "Final Frontier," but space that is, indeed, out of this world.

NetApp—a leader in breakthrough technologies to store, manage, protect, and retain data—made shared storage an affordable reality in 1992 with the world's first networked storage appliance. The company recently provided Cal Poly Engineering a gift of storage arrays. With a commercial value of $246,178, the technology provides *virtual* space to store student projects, research, and various web-based facilitated activities related to senior projects, theses and project-based learning activities. The gift will help cut the college's IT costs and help save the valuable research and project work done by students and faculty. ■



Jon Monett (IE '64), right, greeeted students and faculty members at an awards ceremony for being named the College of Engineering's Honored Alumni for 2009.

QL+ Lab founder Jon Monett named Honored Alum

After a distinguished 26-year career with the CIA, alumnus Jon Monett (IE '64) found a way to pay back both his alma mater and the men and women who serve their country.

He founded Cal Poly's Quality of Life Plus Laboratory (QL+), a multidisciplinary facility dedicated to the development and application of technology to improve the quality of life of wounded and disabled veterans.

Staff, faculty, family and friends gathered in the ATL to honor Jon Monett at an awards ceremony in September.

Monett's visionary gift is one of the reasons he received the Honored Alumni Award, the highest honor bestowed upon Cal Poly alumni by the university's Alumni Association.

His work for the CIA included directing a world-wide network of people and facilities in support of agency efforts in operations, engineering support, technical collection, counter terrorism and counter proliferation activities. He received numerous awards including the Intelligence Medal of Merit. On his return to civilian life, Monett started Telemus Solutions, a global security consulting and intelligence advisory services provider.

In founding the QL+ Laboratory, Monett hopes to establish "an important center where not only regular students but also military veterans will get involved in developing meaningful products and techniques to improve lives." ■

An E.P.I.C.* time was had by all

**Engineering Possibilities in College camp allows high school students to learn about engineering and experience hands-on labs in a university atmosphere.*

One hundred and forty high school students spent a week at Cal Poly's EPIC camp this summer.

Left and above: During EPIC week, high school students programmed software for autonomous robotic cars on computers and held races for both speed and accuracy. At right, the competition winners were Oscar Gates-Kemp, left, and Alice Chen.

GWRI From Page 1

Interim GWRI Director Nazli Yesiller, right, and CENVE Professor Jim Hanson inspect the trash at the Cold Canyon Landfill in San Luis Obispo.

Yesiller says the Institute, which is funded by an initial $1 million grant from Waste Connections, Inc., fits in perfectly with the college of engineering's emphasis on multidisciplinary project-based learning.

"The Institute will provide training for various stakeholders — students, professional community, regulators, general public — in sustainable waste and byproduct management in California and elsewhere, and contribute to the overall educational focus and 'Learn by Doing' mission of Cal Poly," she says.

"The establishment of the institute will facilitate multidisciplinary collaborative research beyond the College of Engineering. An ongoing project on the reuse of corrugated board in civil engineering applications represents an example of the benefits of working on inter-departmental collaborations — in this case, Industrial Technology in the College of Business and the Civil and Environmental Engineering Department — to tackle big problems related to life cycle considerations of products and minimizing the detrimental effects of wastes."

Civil and environmental engineering professor **Jim Hanson** adds: "I look forward to pursuing multidisciplinary teaching opportunities as well. Students interacting on projects across campus will have great potential for exciting learning opportunities."

Hanson, who serves on the GWRI Executive Committee with Yesiller and Cal Poly professors **Yarrow Nelson** (CENVE), **Sam Vigil** (CENVE), **Linda Vanasupa** (MATE), **Bruce Golden** (Dairy Science), **Christopher Kitts** (Biological Sciences) and **Jay Singh** (Industrial Technology), says ongoing work at Cal Poly "will provide momentum for the Institute right out of the gate."

Examples of ongoing projects include:

• *Temperature and gas monitoring at landfills in different climatic regions.* Yesiller Hanson have been conducting this work for more than a decade and the resulting database is the largest of its kind in the world.

• *Beneficial re-use of wastes and byproducts in civil engineering applications.* (Hanson, Yesiller and **Dan Jensen**).

• *Analysis of recycling and composting regulation and infrastructure in California.* (Hanson, Yesiller, and Vigil).

"The Institute will represent the only example of its kind in California," Yesiller noted. "Waste is present in all aspects of society and to approach problems and solutions from a broad perspective will permit the Institute to live up to its motto." ■

GWRI co-founder is a math major proud to be a "Pseudo Engineer"

When **Bob Davis** talks trash, he gets passionate. He talks about energy. He talks about resources. He talks about the potential for engineers and scientists, agriculturists, manufacturers, business planners, and entrepreneurs to work together to not only better manage our trash, but to make something out of it.

He talks about the Global Waste Research Institute (GWRI), which he has just helped launch at Cal Poly. GWRI is the product of Bob's 35 years in solid waste management and recycling and his Cal Poly foundations.

Although a math major as an undergraduate, Bob has always felt close to engineering—he's proud of the "Pseudo Engineer" ("P.E.") plaque presented to him by the engineering group at Browning-Ferris Industries (BFI), where he was vice president of Recycling. And his roommate at Cal Poly is an engineer, **Conrad Young** (ME '66), now president and owner of Century Tubes. It was on a 2006 road trip with Conrad that GWRI was hatched.

"We spent three days driving cross-country and visited a couple tire recycling plants I had managed," says Bob. "That sparked an ongoing conversation about waste. Conrad has a materials engineering perspective, while I have the hands-on resource management background.

Bob Davis
(Math '65)

"Both of us agreed that Cal Poly has the brightest students and faculty, who could be at the forefront in developing sustainable technologies and management policies for waste. Knowing that there is no such broad-based institute in the nation, we thought, 'Why not establish one at Cal Poly?'"

Bob promoted GWRI among his considerable connections in waste and recycling as a collaborative effort between academia and industry. Currently the president of Waste Systems International, he is also a partner in Rubber Recovery, Inc., a board member of Waste Connections, Inc., and a board member of effENERGY, LLC, an alternative energy company.

With his encouragement, Waste Connections provided $50,000 in seed money for GWRI, with a total gift pledge for $1 million. It's money that will propel Cal Poly as a lead institution in multidisciplinary research, development, education, and policy assessment and implementation in an area that impacts us all: trash management. It's an investment in what Bob calls "grave-to-cradle" innovation. ■

Cal Poly is newly "Knighted"

Designed by Cal Poly alumnus Burt Rutan (AERO '65), the White Knight One, renowned for its role as the "mothership" for SpaceShipOne, is back in the air, this time as a high-altitude aerodynamic test bed in support of the Air Force Research Lab and Northrop Grumman Corporation. Alumnus Pete Siebold (AERO '01) is the pilot of White Knight One. At left: The Cal Poly logo now appears on White Knight One. At right: The aircraft in flight over Southern California.

Cal Poly, UCSB begin new Center for Collaborative Engineering & Education

Cal Poly and UC Santa Barbara are joining forces with their respective engineering programs, linking together a prominent undergraduate curriculum with a highly-ranked graduate research institution to expand opportunities for students and faculty.

Cal Poly and UCSB have founded the Center for Collaborative Engineering Research and Education, allowing Cal Poly engineering students access to greater research opportunities according to Cal Poly Engineering Dean **Mohammad Noori**.

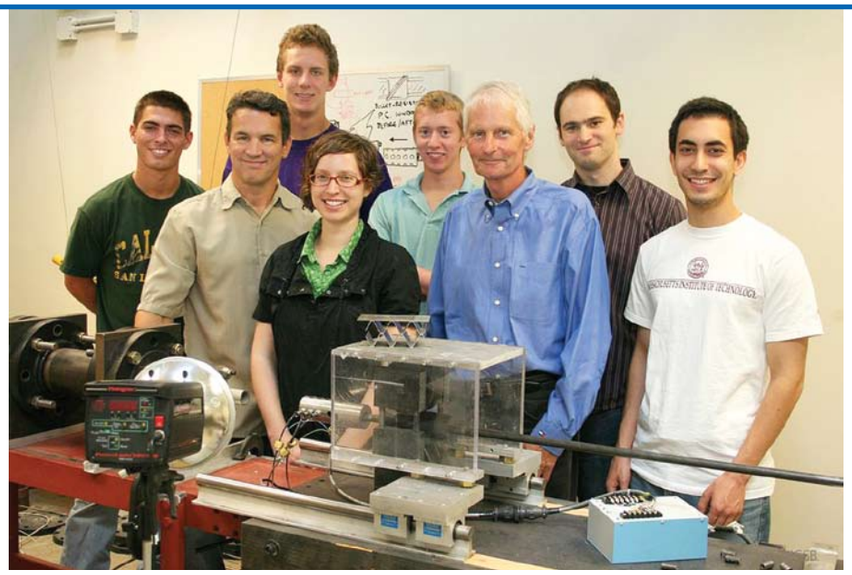
"This center extends the partnership between Cal Poly and UCSB to a new level of national eminence, the first research center of its type between a UC and CSU campus that brings together the unique strengths of both institutions," said Noori. "Instead of duplicating programs, it complements strengths, providing our students access to UCSB's labs and research infrastructure and allowing our faculty to work with doctoral students."

Matt Tirrell, dean of UCSB's College of Engineering, said Cal Poly's stream of undergraduates is attractive to UCSB. "For us, it's access to their students, but particularly the solidly educated brand of students that Cal Poly produces at the undergraduate level with an emphasis on project-based learning," said Tirrell.

The center is envisioned as a vehicle for cooperative educational and research initiatives at both institutions. One example is creating a stream of highly qualified graduate students from the Cal Poly masters programs to the UCSB doctoral program, a formalized undergraduate research program that prepares undergrads for careers in research and development.

Cal Poly alumnus **Paul Bonderson** recently funded a joint M.S./Ph.D. in biomedical and materials engineering, providing fellowship and research support for students to complete their masters at Cal Poly and subsequently transfer into the materials Ph.D. program at UCSB. Students will be advised by joint Cal Poly/UCSB faculty committees throughout the five year fellowship period.

Cal Poly has incredible capability for design, fabrication, testing and implementation of devices and systems according to Cal Poly Mechanical Engineering Professor **Thomas Mackin**. The complementary capabilities at UCSB are simulation, device design and process science. "The synergy from the center will greatly enhance the scope of projects available through government funding agencies and from industry," said Mackin.

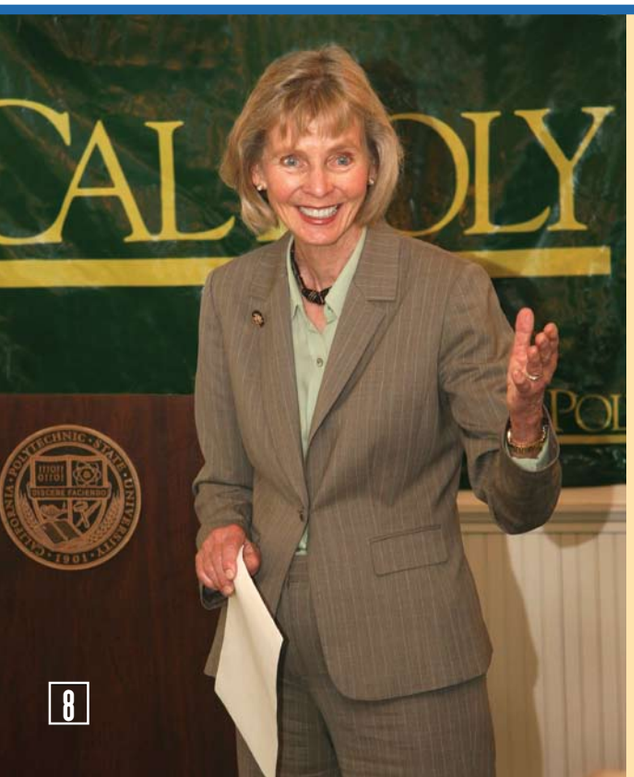


From left, David Lavelle (Cal Poly) Tom Mackin (Cal Poly Co-Director: CCERE), JJ Seiffert (Cal Poly), Natasha Vermaak (UCSB), Dan Fisher (Cal Poly), Tony Evans, Noah Phillips and Oshin Nazarian (UCSB).

The center will have components on both campuses and will focus, initially, on aerospace themes that include electronics, polymer science, morphing structures, high heat flux systems and control algorithms.

Center research projects would be granted to either UCSB or Cal Poly and administered by their respective research offices, with sub-contracts to the secondary institution. "The center is intended as a framework for cooperation across campus and is not limited to an aerospace focus," said Mackin.

The center will be largely self-supporting through external contracts and grants. It is expected to operate with an annual budget in the range of $3 to 4 million. ■



Congresswoman visits campus to detail study grants

Cal Poly professors and students joined Congresswoman Lois Capps at a press conference on campus in July to outline university funding awards from the American Recovery and Reinvestment Act.

By August, Cal Poly professors and students had received more than $500,000 in federal economic stimulus funding to help pay for research and teaching opportunities at the university over the next two years.

Stimulus funding awarded to Cal Poly included a $26,000 grant from The National Institutes of Health to fund high school and college student research opportunities at the university, which is renowned for its cutting-edge research. The total allocation of $26,543 allowed the university to hire one high school student and one college undergraduate to conduct original research at Cal Poly during the summers of 2009 and 2010. ■

Congresswoman Lois Capps spoke at a press conference at Cal Poly in July.

Capps, right, met with Dr. Scott Hazelwood, ME student Stephanie Smith and Dr. Steve Klisch who were able to undertake projects funded by the federal stimulus package via the National Institutes of Health.

Cal Poly Engineering

2008-2009 Student Awards Banquet

Outstanding students and scholarship donors honored at annual event

OUTSTANDING GRADUATING SENIORS: Kurt Spaeter of Raytheon, left, and Cindy Campos of Lockheed Martin presented the Outstanding Graduating Senior awards. The topmost, college-wide winners to Justin Rucker (EE), Nicole Stromsness (CE), Joel D. Hanson (EE) and Anthony Gurrola (ME).

SERVICE TO THE COMMUNITY: College of Engineering students honored for Service to the Community were, from left: Chad Worth (IME), Erik Brockman (CPE), Justin Rucker (EE), Karen Keese (GEN), Matthew Goebel (MATE), Kaitlin Rathe (CE), Stephen Barr (ENVE), Lauren Tsung (CSC) and Matthew Graves (IME). Not pictured: Joshua-Jed Fadriquela (AERO) and Joshua Roth (ME).

HVAC&R SCHOLARSHIP: Wingate HVAC&R scholarship winner Adam Loeffler, right, receives recognition from mechanical engineering professor Jesse Maddren.

CONTRIBUTIONS TO THE UNIVERSITY: Joining College of Engineering dean Mohammad Noori, left, were students honored for Contributions to the University. They included, from left to right: Robert R. Peterson (IME), Brett N. Bojduj (CSC), Ericka Wagner (GEN), Mallory Embree (BME), Christina F. Carpenter (MATE), Amber D. Iraeta (ME), Erica Janoff (IE), Jessica L. Kiefer (EE), Ryan Morton (CPE), and Nicole Stromsness (CE). Not pictured: Joseph Salvador Sanchez (AERO) and Joshua Shiffrin (ENVE).

Cal Poly's ASCE chapter pose in Engineering Plaza after winning the 2009 Robert Ridgway Award.

Society of Civil Engineers wins national award

The American Society of Civil Engineers (ASCE) deemed Cal Poly the winner of the prestigious ASCE Robert Ridgway Award, given to the most outstanding chapter out of the 280 student groups across the country.

Cal Poly has received this award twice before, in 1993 and 1999. It is based on evaluation of the group's annual report of activities.

Gregg Fiegel, Cal Poly faculty adviser, said the award is a tremendous honor. "The award is only given to those student chapters that go above and beyond in providing for their members, their university and their local community," he said.

Cal Poly Engineering Dean Mohammad Noori, an ASCE member with a doctorate in the field, said the Ridgway Award is not a typical first-place success. "It is a huge accomplishment, on the order of a Pulitzer or an Academy Award in the world of engineering. It means our students have truly distinguished themselves. We're very proud of them." said Noori.

The ASCE also recognized individual Cal Poly civil engineering students. Senior Sheila Shideh and spring graduate J.W. Mattina received student leadership awards. Both have been club members for four years and have held three officer positions.

Cal Poly's ASCE chapter also received a letter of recognition for community service. Chapter service activities include "Building Big," an outreach program for local middle and high schools, and the popular annual Popsicle Stick Bridge Contest, which allows local students to compete at Cal Poly's Open House.

In addition to the student awards, Fiegel was recognized as Outstanding Faculty Adviser in ASCE Region 9. ■

PolyHouse 2009 renovates home for disabled teen

Cal Poly Engineering Professor **Roya Javadpour** and her project management class took on their annual home renovation service project this spring, this time for a 16-year-old disabled girl and her aging grandparents.

According to Javadpour, the girl was born with a heart defect and is confined to a wheelchair. She became severely and permanently disabled after falling into a coma. Her primary caregivers are her grandparents, who have also parented more than 20 foster children.

"The planned PolyHouse renovations will enhance their home environment, help them manage physical care for their granddaughter and provide an emotional boost after years of care giving," said Javadpour before the work commenced.

Javadpour's students raised more than $50,000 in donations of cash, building materials and other assistance for repairs and improvements for the home of the young woman and her grandparents. Goals for the project included improving the accessibility, safety and comfort of the home and completing repairs that would otherwise go undone.

Each year Javadpour and her students work with social service agencies to find potential PolyHouse project clients.

"There are a lot of families who have a need for help, but we also have to find someone with a home that offers a suitably complex set of issues for the students to tackle in a renovation," she said. "The project opens students' eyes to social need and community service."

The educational purpose of the class is to give students hands-on experience planning and managing a technical project involving fundraising, scheduling, supply management, team recruitment, resource allocation, time and cost budgeting, risk assessment, task coordination and project monitoring.

Central Coast businesses and construction companies give the PolyHouse project much needed support. For information on the project and a complete list of supporters go to www.polyhouse.org. ■

Engineering students work on the bathroom of the San Miguel home rennovated in the 2009 PolyHouse project.

Patent portfolio keeps growing at Cal Poly Engineering

Cal Poly's Research and Graduate Programs Office has reported that two of its pending patent applications have received formal notice of approval from the United States Patent and Trademark Office. The first patent, "Field Water Purification System," is a lightweight water-treatment system for field environment water purification. It was designed particularly for use in the wake of major disasters, when access to clean drinking water is critical.

Trygve J. Lundquist, assistant professor of civil and environmental and engineering invented the technology. The purification system improves three vital steps in the provision of potable water in disaster relief – the transport, treatment and safe storage of the water.

The low-cost, compact design is superior to treatment systems currently used, such as 5-gallon containers air-dropped to sites, iodine tablets, hand-pumped filters, and various high-tech, high-cost devices. The design integrates techniques used at water-treatment plants into a personal water bag that enables collection, treatment, transport and storage in a single unit. The current design can treat enough water to supply a family of five for up to 10 days.

Potential users of the product may include the U.S. government agencies such as FEMA and the National Guard and international relief organizations such as the Red Cross/Crescent.

In fall 2008 Cal Poly graduate student **Tricia Compas** was awarded $14,500 from the Clinton Global Initiative and the Wal-Mart Foundation for her work testing the effectiveness of the purification system

The second patent, a "Procedure for RFID Tagging of Reusable Plastic Containers (RPCs)," identifies and tracks reusable plastic containers and their contents. By employing radio frequency identification (RFID) the tags can be read in a variety of environments when barcodes and other optical technologies are not options.

The technology was invented for the agricultural industry by **Tali Freed**, director of the Cal Poly multidisciplinary center Poly-GAIT (Global Automatic Identification Technologies).

By tracking food routes — from the grower/processor, to the distribution center, and to the retail store — RFID technology can provide a traceable audit trail for contaminated foods.

Once issued, these patents will add to the university's current portfolio of 11 patents and nine patents pending. Licensing opportunities are available through the offices of the California Central Coast Research Partnership (C3RP) at www.c3rp.org. For more information, contact Jim Dunning, C3RP Project Administrator, at 805-756-5551 or jdunning@calpoly.edu. ■

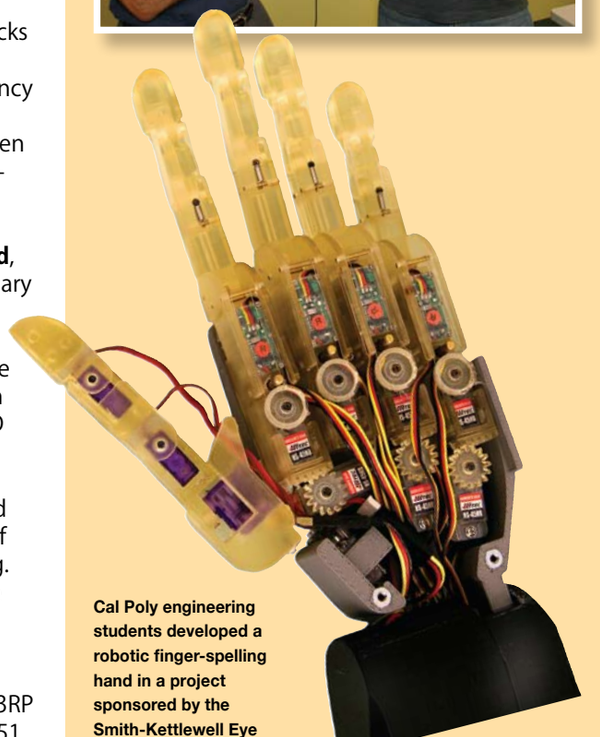
Polytech Waterbag Team

Cal Poly's Polytech Waterbag team, at top, which recently received a patent for its "Field Water Purification System," included: Tricia Compas, (CE/ENVE), Maggie Herzog (ENVE), Stephen Barr (ENVE), Adam Wegener (IME), Casey Kelleher (ENGR), Kylie Hensley (ENVE), Tomiko Oden (GRC), and Chris McCann (BUS). Not pictured: Morgan O'Hare (ENVE) and faculty adviser Tryg Lundquist.

Finger-spelling robotic hand assists the deaf and blind

Sponsored by the Smith-Kettlewell Eye Research Institute, the Robotic Finger-Spelling Hand project had Cal Poly Engineering students developing a second-generation hand that can form the letters of a one-hand manual alphabet, making it possible for deaf-blind individuals to receive communication from anyone who can type. The project also provides deaf-blind people who don't read braille with computer access for the first time.

Below: Professor Saeed Niku, left, and Mario Garcia, point out the features of their hand design. "This hand is lightweight and smaller than previous designs so it's more portable and practical," Niku says. "We showed the hand at an expo in June and received many positive comments." ■



Cal Poly engineering students developed a robotic finger-spelling hand in a project sponsored by the Smith-Kettlewell Eye Research Institute.

LEED leader: Student works on improving building blocks made from straw

Rather than going for the gold, civil and environmental engineering graduate student **Robbie Camann** is working on a project that could take home the platinum. And when you're talking LEED construction, that's a good thing.

LEED (Leadership in Energy and Environmental Standards) certification measures building sustainability—it is designed to promote design and construction practices that reduce the negative environmental impacts of buildings. LEED ranks buildings according to metrics that include sustainable materials, energy savings, water efficiency, CO2 emissions reduction and improved indoor environmental quality.

Camann's project — which he calls "straw bale construction 2.0" — has involved testing the design and seismic performance of walls made with composite rice straw building blocks. His project fits into the LEED rating system beautifully.

"A structure made of rice straw blocks would be LEED Platinum, the highest rating, because you'd get points for diverting waste, for greater insulation, for energy efficiency, and even, as we're finding, for seismic protection," Camann says. "The Stakblock potential for LEED points is huge."

Camann says the Stakblocks he's testing are environmentally sound from the beginning because they are made from leftover straw from harvested rice plants that farmers, who burned it off before air quality laws prohibited the practice, now have to pay to have removed from their fields.

"My work will help a lot in getting the Stakblocks accepted as a building code material — the mass marketing could be five years down the road," says Camann, who spent two years in industry as a structural design engineer. "I came to Cal Poly to learn more about LEED-certified building design, so this project is perfect." ■

CENVE professor Dan Jansen, left, and grad student Robbie Camann hoist Stakblocks made from rice straw before conducting seismic tests.

ME graduate student Bryan Edwards holds up his carbon-fiber "e-glass" propellor he designed for the Cal Poly Wind Power project.

Cal Poly's wind power project is picking up speed

These days, it's easy to see the winds of change at Cal Poly Engineering.

Professors **Patrick Lemieux**, **John Ridgley** and **Joe Mello** have spearheaded the creation of the Cal Poly Wind Research Center and have involved nine mechanical engineering students in the development of technology that could affect the world's energy future. The students are designing and building a 3-kilowatt wind turbine that will power a water pump on Cal Poly's Escuela Ranch. Based on a commercial wind turbine designed by ME alum Dean Davis, the project involves engineering the complete package: propellor blades, 70-foot tower and the "nacelle," which holds the generator.

The group built an 80-foot tower on the ranch to measure wind speed and direction and were surprised at gusts up to 75 mph. "We have measured some pretty amazing wind speeds up on Escuela Ranch," Lemieux says. "It has proven to be an ideal site."

The project, which included **Alvaro Martinez**, **Bryan Edwards**, **David Nevarez**, **Zachary Taylor**, **Devin Gosal**, **Christopher Nosti**, **Francisco Martinez** and **George Katsanis**, and is sponsored by the California Central Coast Research Partnership and the Chrones Chair of Mechanical Engineering, is central to the Wind Research Center's mission of training graduate and undergraduate engineering students for utility scale wind energy jobs.

"Our students are already collaborating with industry leaders, using proven results to benchmark their own work," says Lemieux. "It's all in the best tradition of 'Learn by Doing." ■

Foam Wars!

Working with Special Olympics, six engineering students designed a "Foam Wars" attachment for a universal play frame (UPF) that allows wheelchair athletes to fire foam balls at each other. The project included Garth Will Young (MATE), Adam Hudson (ME), Kevan Turner (MATE), Jenee Hughes (SE), Ruben Garcia (BMED) and Vikramaditya Mediratta (BMED).

Concrete Canoe team finishes third in the nation

Maggie O'Hagan, left, and Sheila Shideh paddle Cal Poly's Vintage canoe at the American Society of Civil Engineers annual National Concrete Canoe Competition.

Clouds, rain, and thunder over Tuscaloosa's Lake Nicol did not deter Cal Poly's Concrete Canoe team from paddling to 1st Place in both the Men's Endurance and Co-ed Sprint races, and capturing 3rd Place overall place in the American Society of Civil Engineers' Annual National Concrete Canoe Competition held June 11-13.

During the three-day event, Cal Poly's 246-pound, 20-foot-long Vintage canoe also took 1st in Final Product. The elegant canoe featured an elaborate mural created with acid stains and recessed colored slurried tiles depicting local San Luis Obispo wineries. The canoe was designed and built by a team of 50 civil engineering students, who spent a total of 4600 hours on the project.

"The team did a fantastic job, besting our 2008 fourth place finish and bringing home a $1500 scholarship for 3rd Place this year," said faculty advisor Dr. Gregg Fiegel. "The top three teams were only separated by fives points in the overall standings, making this the closest competition in recent memory."

First and second overall winners were UC Berkeley and École de technologie supérieure from Montreal, respectively.

Commenting on the material specifications required in the competition, Kyle Marshall, civil engineering junior and team captain, commented, "The guidelines required maximum cement to cementitious materials ratio and incorporation of recycled aggregates—this focused our research on sustainability and implementation of new materials."

"Over the past three days, these outstanding civil engineering students have shown that technical skills combined with an innate sense of creativity can turn a seemingly impossible task into a reality," said ASCE president D. Wayne Klotz, P.E., D.WRE, F.ASCE. "With the innovative thinking we saw during the competition in Alabama, I can't wait to see what's to come from these students in the future as they begin their professional careers."

The races, both endurance and sprint combined, counted for only 25 percent of the teams' overall score. The remaining 75 percent was based equally on a technical design paper that highlighted the planning, development, testing and construction of the team's canoe; a formal oral presentation, in which the team had to detail their canoe's design, construction, racing ability and other innovative features, as well as defend their choices to the judges during a question and answer session; and the end product -- the final racing canoe and project display, which were scored on aesthetics and visual presentation.

For more information on the National Concrete Canoe Competition, including downloadable high-resolution photos, please visit http://www.concrete-canoe.asce.org. ■

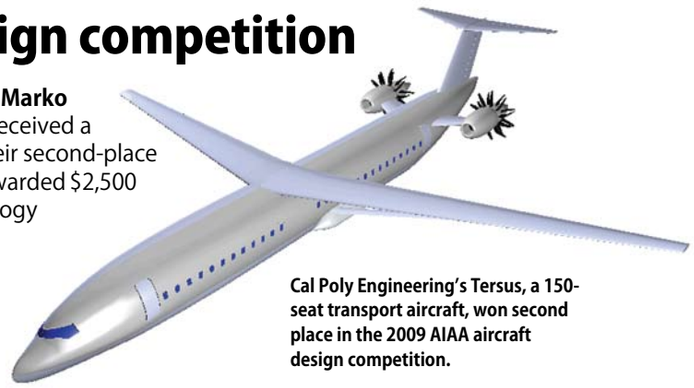
Cal Poly team finishes second in AIAA aircraft design competition

Student aircraft designers from Cal Poly continued to soar at the American Institute of Aeronautics and Astronautics (AIAA) annual Undergraduate Team Aircraft Design Competition. Cal Poly's Hummingbird Aeronautics won second prize at the 2009 competition for its design of the Tersus, a 150-seat "environmentally compatible" transport aircraft.

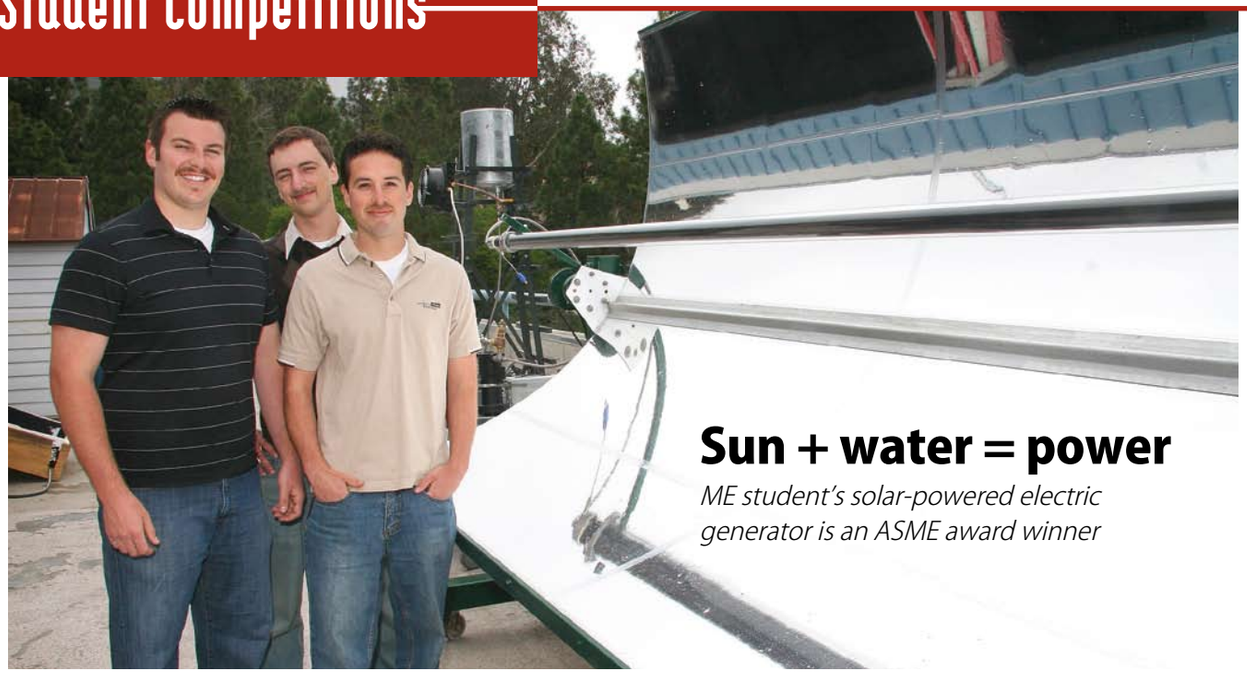
"There were 22 entrants from 10 universities including some international schools this year and that made for a very, very tight competition," said Cal Poly's faculty adviser **Robert McDonald**. "Once again, we're very proud of our team's strong effort."

Hummingbird Aviation, which included aerospace engineering students **Ashley Evans**, **Kevin Lovell**, **Marko Pavlov**, **Jason Stavro** and **Jonathon Wilson**, received a $1,500 prize from the AIAA Foundation for their second-place design. Virginia Polytechnic University was awarded $2,500 for first prize and Georgia Institute of Technology received the $1,000 award for finishing third.

The AIAA is the world's largest technical society dedicated to the global aerospace profession and includes more than 35,000 individual members and 90 corporate members worldwide. For more information, visit www.aiaa.org. ■



Cal Poly Engineering's Tersus, a 150-seat transport aircraft, won second place in the 2009 AIAA aircraft design competition.



Sun + water = power

ME student's solar-powered electric generator is an ASME award winner

Mechanical engineering students J.P. Meckel, Anthony Gurrola and Eric Maneely with their steam-powered electric generator.

Fueled by an anonymous sponsor who donated $10,000 to inspire work in solar energy, three mechanical engineering students developed a steam engine powered by the sun. **J.P. Meckel**, **Anthony Gurrola** and **Eric Maneely** built the engine by modifying an existing solar parabolic concentrator they found in the Thermal Science Laboratory, purchasing a new 100-watt piston-cylinder steam engine, and designing a system to power an electric generator.

"This project was a great learning experience for our team, not only from a technical standpoint — power generation, heat transfer, solar power, etc. — but also from a more general project experience," Meckel said. "We saw the value of actually producing a design. Just because something works on paper does not mean it will be the same in reality."

Meckel won a first place award at the American Society of Mechanical Engineers (ASME) North American Pacific District Student Professional Conference for his oral presentation of the project. ■

Engineering team wins national HVAC design contest

Students from Cal Poly's Mechanical Engineering Department took first place in a national collegiate competition involving designing heating, air conditioning and ventilation (HVAC) systems.

The Mustang student engineers were competing against teams from 32 colleges across the United States. The Cal Poly team took first place in the HVAC System Design category, besting Kansas State University, among others. Winning team members were **Craig Allen**, **Brian Sybesma**, **Chan Kim**, **William Raschefsky** and **Elyse Widin**, advised by Professor **Jesse Maddren**.

The competition featured a 15,650-square-foot office building with first floor parking, second floor retail and office space and third floor offices. The Cal Poly HVAC team chose a ground-source heat pump with an energy recovery ventilation system for the building, citing the benefits of a GSHP's minimal energy use and long life-span.

"The primary driving factors for the GSHP system were its low life cycle cost and minimal energy consumption," the students wrote. "Combining GSHPs with an energy recovery ventilator reduces the size of the equipment needed, thus lowering the strain on natural resources and keeping energy costs low," they added. ■

Engineering students' project is a crash-course in avoiding crashes

When you're driving a big rig truck, another pair of eyes out the back sure would come in handy. Three Cal Poly mechanical engineering students developed a crash avoidance system based on that simple idea that earned them an invitation to Stuttgart Germany to compete in the International Student Design Competition at the 2009 Enhanced Safety of Vehicles Conference.

Mario Garcia, Stephane Roussel and Joey Marino traveled to Stuttgart, Germany, to compete in an international design contest with their Truck Crash Avoidance System.

Working with professors **Charles Birdsong**, **Peter Shuster** and **Hemanth Porumamilla**, **Stephane Roussel**, **Mario Garcia** and **Joey Marino** were invited to Germany after winning the North American regional competition with their design of a Truck Crash Avoidance System.

"The system integrates different types of low-cost sensors with an intelligent algorithm to provide big rig truck drivers with enhanced information about their surroundings especially behind the vehicle and in blind spots," says Birdsong. ■

Stephane Roussel (ME) works on his Truck Crash Avoidance System mounted behind the cab of a Cal Poly truck.

Cal Poly helicopter aloft

AERO professor Rob McDonald wheels Cal Poly's RMAX helicopter out on the runway of a flight test facility north of Cuesta College. On top, AERO student Aaron Ells videotapes the flight designed to test autonomous software.

A gift from Northrop Grumman, the Cal Poly RMAX helicopter flew autonomously for the first time in late September. The flying field is just north of Cuesta College. "It is now a fully operational robotic helicopter," AERO professor Rob McDonald said. "The autopilot is an off-the-shelf unit designed specifically for the RMAX helicopter by Viking Aerospace."

The group at the flight test included AERO students Ryan Halper, Aaron Ells and Brian Borra, Lance Holly of Viking Aerospace, AERO professor Rob McDonald, Paul Kendrick of AeroMech Engineering, CPE professor Lynne Slivovsky and Richard Colgren of Viking Aerospace.

$1.4 million award sparks new M.S. specialization in stem cell research

Cal Poly is poised to become a leader in regenerative medicine as a result of a $1.4 million Bridges to Stem Cell Research Award to establish a master's degree specialization in stem cell research.

"The grant not only promotes sophisticated research undertaken by Cal Poly students at partner research institutions, but it also means Cal Poly can now help address the critical need for professionals capable of translating research discoveries into stem cell based therapies," states Dr. **Trevor Cardinal**, BMED professor and coordinator of the new program. Other faculty who helped develop the specialization includes biomedical engineering professors Drs. **Kristin Cardinal** and **Lily Laiho**; Dr. **Dan Walsh**, associate dean; biological sciences professor Dr. **Nikki Adams**; and animal science professor Dr. **Matthew Burd**.

The Bridges Award comes from the California Institute for Regenerative Medicine (CIRM), the state agency created to distribute nearly $3 billion in bond funding approved by the passage of Proposition 71 in 2004. CIRM is the largest source of funding for human embryonic and multi-use stem cell research.

Cal Poly's new Master's of Science degree specialization in Stem Cell Research will be offered to ten students each year. The program has three main components: coursework, a research internship, and a Master's project. According to Cardinal, the built-in internship makes Cal Poly's program unique. "The grad students will spend nine months working with one of our partner institutions on a rigorous project in a research-intensive environment," he explains. "And when they return for the culmination of their degrees, they will integrate their experience into the framework of research projects existing on campus."

Cal Poly's stem cell research partners include Stanford, the Salk Institute, Scripps Institute, UC San Diego, and Novocell, a company that manufactures insulin-producing cells for diabetics.

Prop. 71 provided hope to millions who suffer from diseases or injuries that are currently incurable, including cancer, diabetes, heart disease, Alzheimer's, Parkinson's, spinal cord injuries, blindness, Lou Gehrig's disease, HIV/AIDS, mental health disorders, multiple sclerosis, Huntington's disease, and more than 70 other diseases and injuries.

With its new focus on stem cell research, Cal Poly is part of the cure for these devastating illnesses.

For more information about CIRM see http://www.cirm.ca.gov/ ■

A group of Environmental engineering grads including Rich Zuromski ('95), Kim Sakata ('94), Doug Wolf ('78), Steve Martin (Jason Waudby's father-in-law), John Quiel ('75), Jason Waudby ('03), and Jeff Clarin ('98) played some golf as part of the department's 40th anniversary.

ENVE grads tee it up for 40th anniversary of the department

The Nation's First Environmental Engineering Program Celebrates 40 Years

1968 was a tumultuous, but one of the best things that happened that year at Cal Poly was the establishment of an undergraduate Environmental Engineering degree program—the nation's first.

Last June, 42 ENVE alumni traveled to campus from Oregon, Colorado, and all over California to celebrate the program's 40th anniversary with a day of golf, the beach, tours of labs, and a banquet. ■

Engineering students enjoy weightless experience in new YouTube video

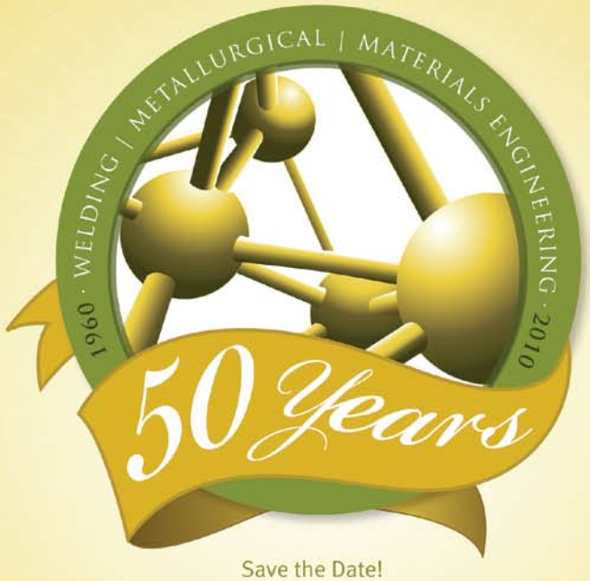
"Six Cal Poly students got the ride of their lives in the spring of 2009 when NASA accepted electrical engineering student John Abel's 2008 research proposal postulating the effects that zero gravity would have on a satellite application (particle damper) being developed thanks to a grant from Northrop Grumman." That's the description of a short (1:41) video now playing on You Tube. Check out this link:

http://www.youtube.com/watch?v=3DOV8y09bRY

For details on the Cal Poly CubeSat project, go to: http://polysat.calpoly.edu/CP7.php

MATERIALS ENGINEERING DEPARTMENT

50TH ANNIVERSARY CELEBRATION



Save the Date!

APRIL 17, 2010

Join us for a reunion during the **Cal Poly Open House** (formerly known as Poly Royal) to share the great memories and see how the department has evolved. Lab tours will be given and a special Forgeng Memorial plaque will be dedicated in the Metallography lab. We will also have a dinner celebration that evening *(with more details to come)*.

For more information and to RSVP, please contact
Noni Smyth | nsymth@calpoly.edu
MATE Department Office | 805-756-2568
MATE Department Website | ww.mate.calpoly.edu
You can also update your information at: mate.calpoly.edu/alumni/update

Faculty Notes

Dean's Office

Mohammad Noori, dean, was asked to serve as a member of the American Society for Engineering Education (ASEE) Engineering Deans Council (EDC) Executive Board and was elected the Program Director for the ASEE Graduate Studies Division. He served as a member of the international scientific committee of the International Conference on Structural Safety and Reliability (ICOSSAR), where he also chaired a symposium on "Novel Approaches for Reliability Analysis and Statistical Structural Health Monitoring." He published "Application of Support Vector Machine for Reliability Assessment and Structural Health Monitoring" in the conference Proceedings. Noori has been appointed Associate Editor of the *International Journal of Engineering under Uncertainty: Hazards, Assessment, and Mitigation*.

Multidisciplinary

Rob McDonald (AERO) and **Russ Westphal** (ME) received a $41,000 grant from Edwards Air Force Base for a research project on "Cal Poly Flight Test Platform and Instrumentation Development."

Jianbiao Pan (IME), **Al Liddicoat** (EE/CPE), **Andrew Farris** (MS EE'08), graduate students **Michael Krist** (IE) and **Nic Vickers** (MATE), and co-authors B. J. Toleno, D. Maslyk, D. Shangguan, J. Bath, D. Willie, and D. A. Geiger published "Drop Impact Reliability of Edge-bonded Lead-free Chip Scale Packages" in *Microelectronics Reliability* (Vol. 49, No. 7, 2009, pp.761-770).

Brian Self (ME), **Lynne Slivovsky** (EE/CPE), and **Kevin Taylor** (Kinesology), and **Jim Widmann** (ME) presented "Aligning Goals of Capstone Design, Service Learning and Adapted Physical Activity" at the ASEE Annual Conference in Austin, TX.

Fred DePiero (EE) and **Chris Pascual** (ME) presented two papers at ABET's Best Assessment Processes Symposium in Indianapolis: "Centralization of Assessment Efforts at the College-Level for Sustainability" and "Defining and Measuring Outcome Skills for a Large Mechanical Engineering Program."

Chris Lupo (CSC), **Brian Greenwood** (Natural Resources Management), and **Jennifer Becker** (Sociology) presented "College 'Kids These Days!'" (co-authored with Brian Greenwood and Jennifer Becker) at the 12th CSU Regional Symposium on University Teaching held at Cal Poly.

Professor Liz Schlemer holds up her IME students' design for a homeless shelter in Oceano, Calif. Schlemer received the President's Community Service Award for Significant Faculty Contribution for the Service Learning project.

Schlemer receives President's Community Service Award

Liz Schlemer's students get more out of their industrial engineering design class than simply the opportunity to work on a complex facilities design problem. Because Schlemer has focused the class on service learning, students also get an eye opening experience and a chance to contribute to the community.

Last spring, Schlemer arranged for a group of five seniors and two freshmen to work on a complete design of a homeless shelter campus in Oceano. The campus design included a foodbank, People's kitchen, an emergency shelter, and a transition shelter. The plan was received with enthusiasm—so much so that Schlemer has developed a plan to incorporate other non-profit projects into the curriculum.

Schlemer's contributions to service learning earned her the President's Community Service Award for Significant Faculty Contribution. ■

Aerospace Engineering

Rob McDonald helped secure a gift of a quarter-scale, unmanned Yamaha RMAX™ Helicopter from Northrop Grumman, and additional support from C3RP to purchase and install an autopilot for the vehicle. (See photos of the RMAX helicopter on P. 15). He presented "Cost-Benefit Analysis of Error Reduction for Complex Systems, AIAA-2009-6903, 2009" at the AIAA Aviation Technology, Integration, and Operations Conference (ATIO) in Hilton Head, SC, and co-authored "Multidisciplinary Design Optimization of an Extreme Aspect Ratio HALE UAV, AIAA-2009-6949, 2009" with AERO graduate student **Bryan Morrisey**, which Morrisey presented at the same conference.

A gift from Northrop Grumman supported McDonald's ongoing research in the area of Multidisciplinary Design Optimization (MDO) and Error Propagation in Complex Systems Design.

Biomedical Engineering

Scott Hazelwood co-authored several papers presented at the 55th Annual Meeting of the Orthopaedic Research Society in Las Vegas, including :"Alendronate Effects on BMU Steering, BMU Velocity, and Osteonal Area in Cortical Bone," "Simulated Bone Mass Preservation and Fracture Risk Assessment with Bisphosphonate Therapy during Spaceflight" (presented by graduate student Chris Gardina), and "Reduced Resorption Cavity Area in Canine Lumbar Vertebra Following Bisphosphonate Treatment."

Kristen Cardinal co-authored two papers: "Assessment of the Intimal Response to a Protein-Modified Stent in a Tissue Engineered Blood Vessel Mimic" (Cardinal KO, Williams SK.) published online for Tissue Engineering (http://www.ncbi.nlm.nih.gov/pubmed/19563259?ordinalpos=2&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum);

and "A Concentric three element radial scanning optical coherence tomography endoscope" (Bonnema GT, Cardinal KO, Williams SK, Barton JK) published in *Journal of Biophotonics* (June 2009, pp. 1-4).

Civil & Environmental Engineering

Tryg Lundquist was awarded grants for three projects. The Polytech Waterbag project won a grant from the National Collegiate Inventors and Innovators Alliance; the California Energy Commission funded a research project on algae biogas production; and a dairy waste treatment pilot plant received continuation funding from the Agricultural Research Initiative.

Lundquist, **Yarrow Nelson**, Cal Poly research engineer **Ian Woertz** (CE '08, M.S. CE/ENVE '08), and **Adam Feffer** (M.S. CE/ENVE '07) published two papers on algae biofuel in the *Journal of Environmental Engineering* (Nov. 2009). Lundquist also wrote the wastewater treatment section of the U.S. Department of Energy Algae Biofuels Research Roadmap.

Bing Qu published two conference papers: "Innovations in Steel Plate Shear Wall Design" (with Bruneau, M., Purba, R., andTsai, K.C.) at the 6th International Conference on Urban Earthquake Engineering in Tokyo, Japan; and "Seismic Design of Boundary Frame Members of Steel Plate Shear Walls" with Bruneau, M., at the 6th International Conference on Behavior of Steel Structures in Seismic Areas - STESSA 2009 in Philadelphia. He received NSF funding to participate in two workshops organized by the George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES): "Simulation & Large-Scale Testing of Near shore Wave Dynamics" held in Corvallis, OR; and the "Lifelines Research and Training Workshop" held in Ithaca, NY.

Anurag Pande, recently selected as an American Society of Civil Engineers (ASCE) ExCEED teaching fellow, received a three-year NSF grant for a project on "New Methods for Measuring, Evaluating, and Predicting the Safety Impact of Road Infrastructure Systems on Driver Behavior," a collaborative effort between Cal Poly, Louisiana State University, and George Washington University. He also received a grant from Mineta Transportation Institute. Pande published "A novel approach for analyzing severe crash patterns on multilane highways" in *Accident Analysis & Prevention*, "Using conditional inference forests to identify the factors affecting crash severity on arterial corridors" in the *Journal of Safety Research*, and "Safety evaluation of multilane arterials in Florida" in Accident Analysis & Prevention.

Robb Moss received an $85K NSF grant for a joint project with UC Berkeley on seismic earth pressures on retaining structures. He co-authored "Re-Investigation of Liquefaction and Nonliquefaction Case Histories from the 1976 Tangshan Earthquake," a Pacific Earthquake Engineering Research (PEER) Center Report (No. 2009/102).

Computer Science & Software Engineering

Ignatios Vakalis, chair, co-authored "A Shared Undergraduate Minor Program in Computational Science" in Computing in Engineering and Science (Vol. 10, No. 5, p. 12-16). As a member of the Society of Industrial and Applied Mathematics (SIAM) Working Group on Computational Science and Engineering, he co-authored a national report on "Undergraduate Computational Science and Engineering Education." Vakalis also reviewed papers for SIGCSE 2009 and serves as a disciplinary editor for the American Journal of Undergraduate Research.

Christopher Clark travelled to the Arctic to participate in the first NORUS workshop. NORUS is a novel research-based higher education program focused on climate-induced differences in marine key environmental variables in the Arctic and its effect on bio-diversity. It represents an international partnership between Norway and the United States (Cal Poly and Rutgers University). Clark also travelled to Hawaii to deploy an underwater robot for tracking and monitoring the behavior of shallow water squid.

Clark co-authored "An Adaptive Niching Genetic Algorithm Approach for Generating Multiple Solutions of Serial Manipulator Inverse Kinematics with Applications to Modular Robots" published in *Journal Robotica*, 2009; and "Development of a Systematic and Practical Methodology for the Design of Vehicles Semi-Active Suspension Control System" in *Journal of Vehicle Dynamic Systems*, 1744-5159. He gave two presentations at the International Symposium on Unmanned Untethered Submersible Technology (UUST 09) held at the University of New Hampshire: "Assigning Closely Spaced Targets to Multiple Autonomous Underwater Vehicles," and "The Malta Cistern Mapping Project: Expedition II."

John Clements and **David Janzen** received a $150K NSF grant to create a web-based Integrated Development Environment (IDE) for use in the first several weeks of introductory computer programming courses. Clements served as Program Chair of the Scheme Workshop, a peer-reviewed workshop held at

George Leone

Leone receives Outstanding Staff award

Chances are if you've spent time working on a project up in the Aero Hangar, you've been helped by **George Leone**, equipment technician for the Mechanical Engineering Department. The recipient of the university's Outstanding Staff Award, Leone was recognized for his dedication to the educational goals of the department and his availability to students, helping with projects and sharing technical advice. For the last 20 years, Leone has also mentored Cal Poly's award-winning Human Powered Vehicle (HPV) team. ■

Porumamilla named for Chrones endowment

Hemanth Porumamilla (ME)

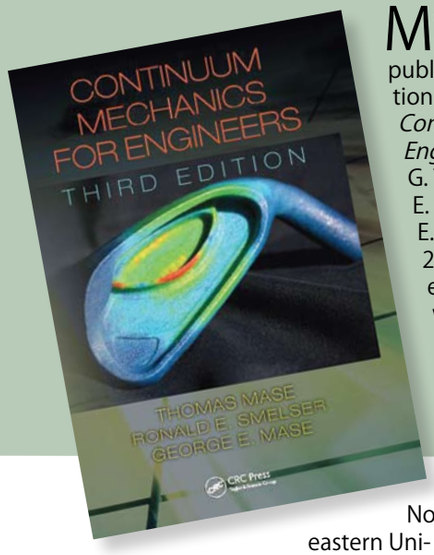
Dr. **Hemanth Porumamilla** was named the Chrones Professor of Mechanical Engineering. The endowed professorship in the ME Department supports faculty research and development. As the Chrones Professor, Dr. Porumamilla will focus on several projects, including active damping for wheel chairs and magnetic sensor work. He was chosen by a vote of the ME faculty. ■

Chris Clark (CE/ENVE)

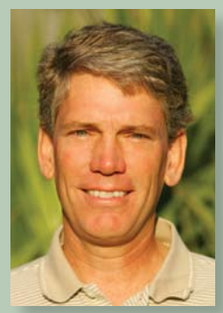
Clark receives Distinguished Educator award

Dr. **Chris Clark** received the Distinguished Educator Award from the Cal Poly chapter of the California Faculty Association. Recipients are nominated by students and faculty members to recognize teaching excellence, professional development and service to the university. ■

Mase's textbook in third printing



Mechanical engineering professor **Tom Mase** published the third edition of his bestselling text, *Continuum Mechanics for Engineers, Third Edition* by G. Thomas Mase, Ronald E. Smelser, and George E. Mase (CRC Press, July 2009). The book provides engineering students with a complete, concise, and accessible introduction to advanced engineering mechanics.



Tom Mase
(ME)

Northeastern University, and he led one of the five nationwide TeachScheme, ReachJava! workshops, a training session for college-level instructors from around the nation.

Alex Dekhtyar co-authored "Toward Automating Requirements Satisfaction Assessment," which was presented at the 17th IEEE International Requirements Engineering Conference in Atlanta, GA. He published "Planning for success: The interdisciplinary approach to building Bayesian models" (with Judy Goldsmith, Beth Goldstein, Cynthia Isenhour and Kevin Mathias from the University of Kentucky) in the *International Journal on Approximate Reasoning 9* (Vol. 50, Issue 4).

Dekhtyar, **David Janzen**, and Jane Hayes (University of Kentucky) presented "Towards Traceable Test-Driven Development" at the 5th International Workshop on Traceability in Emerging Forms of Software Engineering held in Vancouver, Canada.

Joe Grimes and colleagues made the following presentations: "Innovative Faculty Teaching and Student Learning at a Polytechnic University" at Polytechnic Summit 2009 hosted by the University of Wisconsin-Stout; "Using Web-based, Media Rich, Case Stories to Encourage Innovation in Teaching" at the Merlot International Conference in San Jose; "Using Multimedia to Meet Diverse Faculty Needs in Faculty Development" at the Professional and Organizational Development Network in Higher Education International Conference in Houston; and "The Use of Student Teams at Cal Poly" at the CSU University Symposium on Teaching & Learning at Cal Poly.

Grimes co-authored "The Hybrid Course: Facilitating Learning through Social Interaction Technologies" in the *Handbook of Research on Social Interaction Technologies and Collaboration Software: Concepts and Trends* (July, 2009).

David Janzen co-authored the following papers: "Engaging the Net Generation with Evidence-Based Software Engineering through a Community-Driven Web Database" published in the *Journal of Systems and Software* (Vol. 82, No. 4, April 2009); "Implications of Integrating Test-Driven Development into CS1/CS2 Curricula" written with **John Clements** and CSC graduate student **Chetan Desai** and presented at the Technical Symposium on Computer Science Education (SIGCSE) in Chattanooga, TN; "Design Patterns Go To Hollywood: Teaching Patterns With Multimedia" with M.S. student **Adam Dukovich** and "Evaluating Test-Driven Development in an Industry-sponsored Capstone Project" with CSC master's students **John Vu** (lead author) **Niklas Ake Frojd** and **C. Shenkel-Therolf**—both papers were presented at the International Conference on Information Technology: New Generations in Las Vegas. At the TEFSE, 2009 ICSE Workshop on Traceability in Emerging Forms of Software Engineering, Janzen's graduate student **Jane Hayes** presented "Towards Traceable Test-Driven Development" co-authored with Janzen and **Adam Dekhtyar**.

Franz Kurfess presented "Learning styles and tablet PCs" at the Educause Western Regional Conference in San Francisco. The work is based on the thesis of EE graduate student **Ngan Phan**.

Chris Lupo received an Academic Excellence Grant from Sun Microsystems for research on compiler tuning for power efficiency. He and co-PI **David Janzen** received research grants from Google to introduce Android-based mobile computing at Cal Poly through the creation of a new mobile application development course, and integration of mobile projects in the computer engineering capstone course.

Phillip Nico was invited to conduct a workshop on "Where does it all fit? Taking inventory of computer security curricula" at the second workshop on Curriculum Development in Security and Information Assurance (CDSIA 2009).

Electrical Engineering

Dennis Derickson co-authored "Characterization of Wind Turbine Blades Using a Single Chip Wavelength Tunable SGDBR Laser Interrogator" with EE graduate student **Brandon George** and senior **Octavio Rico**. George presented the paper at the Optoelectronics Industry Development Association's "OPT-Omism: Powering the Green Revolution through Photonics" Executive Forum and Conference in Santa Clara. The paper addressed the construction of a low-cost wavelength-scanning tunable laser for applications in sensing of strain in wind turbine blades.

Xiaomin Jin helped select National Science Foundation Graduate Fellows as a member of the NSF Graduate Research Fellowship Program Panel. She co-authored the following papers:

- "International Engineering Research and Educational Activity on GaN Lasers and LEDs" by X. Jin, B. Zhang, F. Wang, J. Flickinger, S. Jobe, T. Dai, and G.Y. Zhang, *International Journal of Engineering Research and Innovation* (Vol. 1, No. 1, pg.5, Spring/Summer 2009).
- "Relative Intensity Noise Study in the Injection-locked Integrated Electroabsorption Modulator-Lasers" by X. Jin, B. Y. Tarng, and S. L. Chuang, *Solid-State Electronics* (Vol. 53, pp. 95-101, 2009).
- "The Effects of Thermal Annealing on Obliquely Deposited Ag-Ge-S Thin Films" by F. Wang, W. P. Dunn, M. Jain, C. De Leo, N. Vicker, R. Savage, X. Jin, S. Mamedov, and P. Boolchand, *Journal of Physics and Chemistry of Solids*, (Vol. 70, pp. 978-981, 2009).

Jin and co-authors presented papers at the following conferences: the International Conference on Solid State Lighting, SPIE Symposium on Optical Engineering + Applications in San Diego; the International Symposium on Photoelectronic Detection and Imaging in Beijing, China; the CSU Regional Symposium on University Teaching held at Cal Poly; the American Society for Engineering Education - Pacific Southwest (ASEE/PSW) Conference in San Diego; and the International Conference on Information Technology: New Generations, in Las Vegas.

John Saghri co-authored "Balloonsat: Design, Implementation, and Application of a Low-Cost Tethered Weather Balloon Remote Sensing Station," with EE students **John Hupton**, **Robert Hursig**, **Jessica Kiefer**, **Matt Schlutz**, **Scott Seims**, and AERO student **Dustin Blackwell**, and published in the Cal Poly Honors Undergraduate Research Journal (2009). He presented "An Adaptive 2-stage KLT Scheme for Spectral Decorrelation in Hyperspectal Bandwidth Compression" co-authored with EE student **Seton Schroeder** at the 2009 SPIE Optics and Photonics Conference on Applications of Digital Image Processing XXXII in San Diego. The paper was published in the conference Proceedings (Vol. 7443, No. 39).

For the sixth year in a row, Saghri received a $20K grant from Raytheon Space and Airborne Systems to do research and lead senior and master's theses projects in the area of Synthetic Aperture Radar Automatic Target Recognition (SAR ATR). This year, the SAR ATR team includes EE graduate students **Cindy Romero**, **Zheng Zho**, **Amin Shoelehvar**, and **Eric Pettijohn**.

Taufik co-authored numerous papers that were published in the Proceed-

Mackin a member of *The Colony*

Tom Mackin
(ME)

Reality has changed radically for mechanical engineering professor **Tom Mackin** and everyone can see how Tuesday nights on the Discovery Channel.

Mackin was chosen to be an on-camera commentator and technical engineering expert on the Discovery Channel's reality show *The Colony*, a controlled experiment about what it takes to survive and re-build after a catastrophic global viral outbreak. The show features experts in homeland security, engineering and psychology who are isolated in an urban environment outside of Los Angeles. To quote the show's official website: "With no electricity from the grid, no running water and no communication with the outside world, all the volunteers have to work with are their skills and whatever tools and supplies they can scavenge from their surroundings." For more on *The Colony*: http://dsc.discovery.com/tv/colony/about/colony.html ■

TEACHING WITH PROJECTION: ***Mechanical engineering professor John Chen displays a robotic car before a group of high school students participating in EPIC (Engineering Possibilities in College), a one-week summer program for students in 9th to 12th grade. EPIC allows the students to learn about engineering and experience hands-on labs in a university atmosphere.The students attend labs in Aerospace, Biomedical, Civil, Computer, Electrical, Environmental, Industrial, Manufacturing, Materials, Mechanical, and Software Engineering.***

ings of the Asia Modeling, including the following: Taufik, E. Schaefer, M. Anwari, and M. Taufik, "Performance Analysis of Shunt Reactive Power Compensators"; Taufik, A. Oi, M. Anwari, and M. Taufik, "Modeling and Simulation of Photovoltaic Water Pumping System"; and Taufik, B. Butterfield, M. Anwari, and M. Taufik, "Modeling and Simulation of Multiple-Input Converter System with Equally Drawn Source Power." He also co-authored "Power Quality Analysis of Grid-Connected Photovoltaic System with Adjustable Speed Drives" presented at the IEEE - PES/IAS Conference on Sustainable Alternative Energy in Valencia, Spain.

Taufik also provided consulting to Enerpro on the design of transformers and inductor for locomotive power electronics, and to Partoe, Inc. on a system architectural analysis for a photovoltaic system.

■ ■ ■

Xiao-Hua (Helen) Yu presented "A neural network receiver for EM-MWD baseband communication systems" (co-authored with EE graduate student **Tim Whitacre**) at the IEEE International Conference on Neural Networks in Atlanta, GA. She also chaired two sections and presented "Electrocardiogram (ECG) signal modeling and noise reduction using wavelet neural networks" (co-authored with EE graduate student **Suranai Poungponsri**) at the IEEE International Conference on Automation and Logistics in Shenyang, China. At the International Conference on Natural Computation in Tianjin, China, Yu co-chaired a section and presented "Traffic signal control with swarm intelligence" (co-authored with EE graduate student **David Renfrew**).

Industrial & Manufacturing Engineering

Jianbiao Pan won 1st Place for his poster on "The Calculation of Liquidus Temperature for Various BGA/CSP Assemblies" at the international IPC APEX EPO®. He also presented "The Calculation of Liquidus Temperature for Various BGA/CSP Assemblies" at the conference.

Pan co-authored "The Effect of Ultrasonic Frequency on Gold Wire Bondability and Reliability" with **Ming-Nhat Le** (M.S. ME '09) and **C.V. Pham**, and published in IMAPS Journal of Microelectronics and Electronics Packaging (Vol. 6, No. 1, 2009, pp. 89-95). He co-authored "Finding and optimizing the key factors for the multiple-response manufacturing process" printed in the *International Journal of Production Research* (Vol. 47, No. 9, 2009, pp. 2327-2344). He published "Effects of Reflow Profile and thermal Conditioning on Intermatallic Compound Thickness for SnAgCu Soldered Joints" with **Tzu-Chien Chou** (ME, IE '06) and others in *Soldering & Surface Mount Technology* (Vol. 21, No. 4, 2009, pp. 32-37).

■ ■ ■

Dan Waldorf attended the 3rd Haas Technical Education Center Educator's Conference in Greensboro, NC, where he was invited to give a presentation on Cal Poly's manufacturing programs, "Cal Poly Update: Reaching Out."

Materials Engineering

Kathy Chen co-authored "Inspiring a diverse population of high school students to choose engineering as a career path" (K.C. Chen, D. Belter, T. Fredeen, S. Magnusson, and Heather Smith) published in ASEE Annual Conference Proceedings, Austin, TX (June 2009). Chen also attended the Nanoscale Informal Science Education Annual Meeting in San Francisco and organized NanoCafé, an interactive science café at the Cal Poly library that featured a two-story nanotube model made of balloons and hands-on demonstrations of nano-scale science and technology.

Chen worked with Prof. **Ed Saliklis** (ARCHE) and Prof. **Robert Arens** (ARCH) on a project using eco-friendly composites with agricultural wastes for emergency shelters along with MATE student, **Christy Carpenter**.

Mechanical Engineering

Roger Ludin wrote a textbook, "Annotating Engineering Drawings," which is now used in ME152.

■ ■ ■

Saeed Niku presented "Design Education at Cal Poly: Why We Do What We Do" at the American Society for Engineering Education (ASEE) conference in Austin, TX. He also presented a poster on "Creative Design Education at Cal Poly" at the Annual National Collegiate Innovators and Inventors Alliance (NCIIA) Conference in Washington D.C.

■ ■ ■

Chris Pascual was named director of the Donald E. Bently Center for Engineering Innovation.

■ ■ ■

Jim Widmann was elected to serve as the Treasurer/Secretary for the ASEE Design in Engineering Education Division (DEED) for 2009-2010. ■

Alumni in the news

2000's

Two '06 engineering alumni become Certified Professional Engineers

Fred W. Porter II (B.S., Civil Engineering, 2006) and **Matthew V. Carson** (B.S., Civil Engineering, 2006) have become registered with the state of California as professional engineers. Both men work for Porter & Associates Inc., Engineering & Surveying in Bakersfield. Porter has worked for the firm for eight years as a draftsman. Carson has worked for the firm for four years as an engineering intern and, since July 2006, as an engineer. Read about the two in the *Bakersfield Californian* (August 28, 2009)

GENE alum joins Stockton optometry practice

Optometrist **Josephine Vo** (B.S., General Engineering, 2004) has joined the practice of Craig Hisaka and John Fujii in Stockton as an associate doctor. She received her doctor of optometry degree at the UC Berkeley School of Optometry. Read the story in the Stockton Record at http://www.recordnet.com/.

Gutierrez (CE '05) helps rebuild Iraq

Navy LT. j.g. **Daniel Gutierrez** (CE 2005) helped rebuild Iraq as an Individual Augmentee to the Army Corps of Engineers. Working with Iraqi engineers, the Army Corps of Engineers (ACE) and the Iraqi Navy, Gutierrez helped to build a state-of-the-art berthing facility for the Iraqi Navy. Other reconstruction projects include primary healthcare clinics, power substations, water treatment facilities, courthouses, police stations, roads and bridges.

Gutierrez also visited an Iraqi orphanage, to hand out toys and school supplies. "I honestly was a little overwhelmed," he noted. "Their kindness was truly a delight and is by far the most wonderful experience I've had in Iraq. We traveled to Al Zahara Orphanage with the idea of handing out gifts from the United States, but instead, I was touched by the gift of trust they extended to each of us."

Shaw works on Orion, the new generation of NASA spacecraft

The future of NASA is in the hands of **Brandon Shaw** (ME 2005). The Golden West High School graduate works for a NASA contractor, Jacobs Engineering in Houston, and is involved with one of its biggest projects: the Orion spacecraft. ... Brandon Shaw graduated at the top of his Golden West class in 2000. He went on to California Polytechnic University, San Luis Obispo to study mechanical engineering. For more, see the Visalia Times-Delta website: www.visaliatimes-delta.com/.

CE's Alberto Lopez now licensed in four states

Alberto Lopez (CE 2001) has obtained engineering licenses in Colorado, Arizona and New Mexico. Lopez is also licensed in California, where he works as director of engineering for DeWalt Corp., a civil engineering, land surveying and land planning firm in Bakersfield. ... He earned a bachelor's degree in civil engineering at Cal Poly San Luis Obispo. http://www.bakersfield.com/news/business/economy/x1419967136/People-in-Business-A-whos-who-for-May-29

1990s

New NanoLogix science advisory board includes engineering alum

NanoLogix, Inc. has announced the creation of its Science Advisory Board to help evaluate and target research and development efforts for products. The new NanoLogix Science Advisory Board Members include **Chris Novak** (M.S., Electronic and Electrical Engineering, 1998), NanoLogix director of Intellectual Property. He is a registered patent attorney and is licensed to practice law in several states. He earned his law degree from Marquette University, where he also earned a bachelor's in mechanical engineering. Novak is currently working toward a degree in biotechnical science. Read the story on *NanoWerk* (May 11, 2009).

Startup: Vital signs of a young regional company

Sitka Technology Group * Portland * Formed April 2008 ... The founders: **Matt Deniston** (ENGR 1994), 37, was born in suburban Chicago and has an engineering degree from California Polytechnic State University in San Luis Obispo. ... Read more in the *Oregonian* (Aug. 8, 2009). Read the entire article at: http://www.oregonlive.com/business/index.ssf/2009/08/startup_vital_signs_of_a_young_8.html

Alum's book on Thoreau's political essays published

David Gross (CSC 1993) edited the new book *The Price of Freedom: Political Philosophy from the Journals of Henry David Thoreau* which uses excerpts from Thoreau's journals to explore his views on civil disobedience, conscience, law, government, slavery, war and economics. Gross has edited and published books on the history of American Quaker war tax resistance and several other other anti-war subjects.

1980s

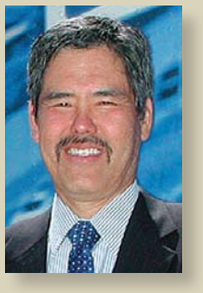
Alum named co-chair of San Luis Obispo County Bar Association

Thomas Lebens (EL 1989), a partner at the law firm Sinsheimer Juhnke Lebens & McIvor, has been named co-chair of the San Luis Obispo County Bar Association's Intellectual Property Section. Lebens (B.S., Electronic Engineering, 1989) practices intellectual property law with

Cal Poly alum named director of Caltrans

Civil engineering graduate **Randell H. Iwasaki** ('82) was named director of the California Department of Transportation (Caltrans) by governor Arnold Schwarzenegger.

"Randy brings a tremendous amount of knowledge and practical experience at Caltrans to this position and I am confident he will be an effective director. He shares my commitment to updating and investing in our state's infrastructure to meet California's growing needs and to create jobs at a time when we need them most."



Randell H. Iwasaki (CE '82)

Iwasaki has held several engineering and managerial positions at Caltrans over the past 26 years, including chief deputy director since 2005. For the first year in this position, he also was program manager for the $8.6 billion toll bridge seismic retrofit program. Other positions in Caltrans held by Iwasaki include director for maintenance and operations, and director of transportation for several Caltrans districts.

He is the recipient of the Charles H. Purcell Award, given annually by Caltrans in recognition of managerial excellence; the Thomas H. McDonald Award, considered the highest award presented by the American Association of State Highway and Transportation Officials for "rendering continuous outstanding service over an extended period of time or have made some exceptional contribution to the art and science of highway engineering;" and most recently recognized as one of twenty-five people recognized nationwide as a 2009 Doer, Dreamers & Drivers by Government Technology Magazine.

"I am incredibly honored Governor Schwarzenegger has asked me to take on this position and lead Caltrans," said Iwasaki. "I look forward to continuing to work with the Governor and his Administration to advance the state's leading position in global commerce and enhance the quality of life of all Californians."

Rick Sturkow (ME '84) smiles aboard the Space Shuttle Discovery. (Photo: NASA)

Rick Sturckow (ME '84) blasts off as shuttle commander in September

Colonel **Rick Sturckow** (ME 1984) commanded the Space Shuttle Discovery on his fourth trip to space. Discovery blasted off Aug. 29 on a mission to dock with the International Space Station. Sturckow, 48, flew combat missions during Operation Desert Storm in 1991, then went on to become a test pilot. He became an astronaut in 1994 and made his first space shuttle flight four years later on the first assembly mission for the international space station. He credits one of his Cal Poly professors for encouraging him to join the Marines and become a pilot — instead of a race car mechanic. For more, check out http://www.nasa.gov/. or the San Diego Union Tribune website http://www.signonsandiego.com/.

McCain remains in U.S. Navy

Mike McCain (ENVE 2000) is a lieutenant with the Navy Corps of Civil Engineers. He sent this photo of himself on assignment in Afghanistan in 2005-06. McCain's unit is in charge of logistics, engineering support and project management for Navy and Marine Operations. He's still serving in the Military.

Sixth graders receive science help from NFL standout

Chris Gocong (GENE '06) worked with sixth-grade students

Building a bridge takes knowledge, preparation, and the melding of many separate pieces to forge a connection between two ends. A football team is similar, and linebacker **Chris Gocong** (GENE 2006) is one of those pieces on the Eagles' defense. Gocong, who holds an engineering degree, lent a bit of sporting celebrity to a sixth-grade class lesson in applied science. ... Mr. Wink and Gocong, who holds a degree in general engineering from Cal Poly, prepared the lesson together. Read the entire story in the *Philadelphia Enquirer*, http://www.philly.com/inquirer/sports/20090507_Sixth_graders_get_science_help_from_an_Eagle.html

expertise in business strategy, licensing, infringement and validity analysis, patents, infringement and copyright for artistic works and computer software. He earned his law degree from University of San Diego School of Law, where he also taught as an adjunct professor of law. Read the business item in the *Santa Maria Times* at www.santamariatimes.com.

Commander Cameron Weaver calls it a career in the Navy

Navy Commander **Cameron Weaver** (ME 1986) was honored June 12 at a formal retirement ceremony at the Portsmouth Naval Shipyard in Kittery, Maine. [He and his wife] Mary Beth ... met while they were students at Taft College where they earned Associate of Arts degrees before transferring to Cal Poly San Luis Obispo. Both earned bachelor's degrees. ... After earning an engineering degree from Cal Poly, he was unable to find a job in the oil industry, so he enlisted in the Navy... Read the story in the Midway Driller (July 6, 2009) http://www.taftmidwaydriller.com/news/x488827531/Commander-Weaver-calls-it-a-career

EE's Chamitoff selected for second space mission

Cal Poly alum **Greg Chamitoff** (B.S., Electrical Engineering, 1984) is heading to the International Space Station for the second time. Chamitoff will be a mission specialist on the crew for space shuttle mission STS-134, headed for the International Space Station. NASA announced the crew assignments for the mission in early August. In addition to his Cal Poly degree, Chamitoff earned a master's degree from the California Institute of Technology, a second master's degree from the University of Houston Clear Lake and a doctorate from MIT. He served aboard the International Space Station for six months in 2008, and came to Cal Poly to talk about his experiences in spring 2009. Read the story on Newsblaze.com or SpaceRef.com. See *Cal Poly Magazine*'s video interview with Chamitoff aboard the space station in 2008

Technology entrepreneur encourages others to 'go for it'

Doug Goodman (EE 1985), CEO of Ridgetop Group, moved to Tucson after 23 years in Portland, Ore., where he earned his MBA degree. Earlier, Goodman completed a degree in electrical engineering from California Polytechnic State University in San Luis Obispo. It should be no surprise that combination of degrees yielded a technology entrepreneur. See ASBIZ.com for more. http://www.azbiz.com/articles/2009/09/16/news/ceo_innerview/doc4aaa94e6443a8049493222.txt

Helton appointed President and Managing Director of Aptina Japan

Aptina announced today the appointment of **Greg Helton** (M.S. EE 1989) to President and Managing Director of Aptina Japan. Read the story at http://press-releases.techwhack.com/40809-aptina.

Alum is new President of Minneapolis-St. Paul Society of Hispanic Professional Engineers

Charles Garcia (ENGR, 1987) is the new president of the Twin Cities Professional Chapter of the Society of Hispanic Professional Engineers in Minneapolis-St. Paul. Garcia is a business development manager at Minnetronix, a medical device design and manufacturing firm in the area. He was a member of Cal Poly's award-winning SHPE student chapter

during his time on campus. Read the story on Garcia in *The Medical News* (August 29, 2009).

Mancebo appointed interim head of Amador Water Agency

Amador Water Agency's manager of engineering and planning **Gene Mancebo** (ET 1985) has been appointed by the AWA Board of Directors as the interim general manager of the Agency. Mancebo, a licensed civil engineer, graduated with a mechanical engineering degree from Cal Poly, San Luis Obispo and has specialized graduate training in water and wastewater engineering. For more: http://www.ledger-dispatch.com/news/newsview.asp?c=260338

John Presleigh (CE 1983) took the place of retired Public Works Director Tom Bolich starting May 16. John, an 18-year veteran of the department, is currently assistant Public Works Director. John earned his Bachelors Degree in Civil Engineering at Cal Poly San Luis Obispo in 1983 and a second Bachelors in Water in Soil Sciences from UC Davis in 1990. For more: http://www.mcpost.com/article.php?id=1980

1970s

Growth of EE grad's firm reflected in new website

Thoma Electric Co. is an electrical engineering, design and construction firm based in San Luis Obispo and headed by alum **Bill Thoma** (B.S., Electrical Engineering, 1977). Its new corporate Web site reflects the company's evolution toward sustainable electrical engineering practices and the wide range of projects it recently completed. The site includes project images and descriptions for some of the firm's work, including the recent re-engineering of the Mission San Luis Obispo de Tolosa lighting systems, the new Santa Maria Public Library and the electrical design and construction project for Rabbit Ridge Winery, as well as some of the most environmentally significant buildings at Cal Poly. Read the Santa Maria Times story on Thoma Electric at santamariatimes.com.

1950s

Cable channel 11, Taft TV, has been around since the 1980's. It's had 3 different channels since then, channel 2, channel 15, and finally channel 11. According to **Don Gillespie** (EE 1958), the man in charge of Taft TV, Taft was the first place in the nation that had cable television. ... Gillespie left Taft to attend college at Cal Poly San Luis Obispo. He graduated in 1958 with a degree in electronic engineering. http://www.taftindependent.com/news/view_article/1061 ■

openhouse

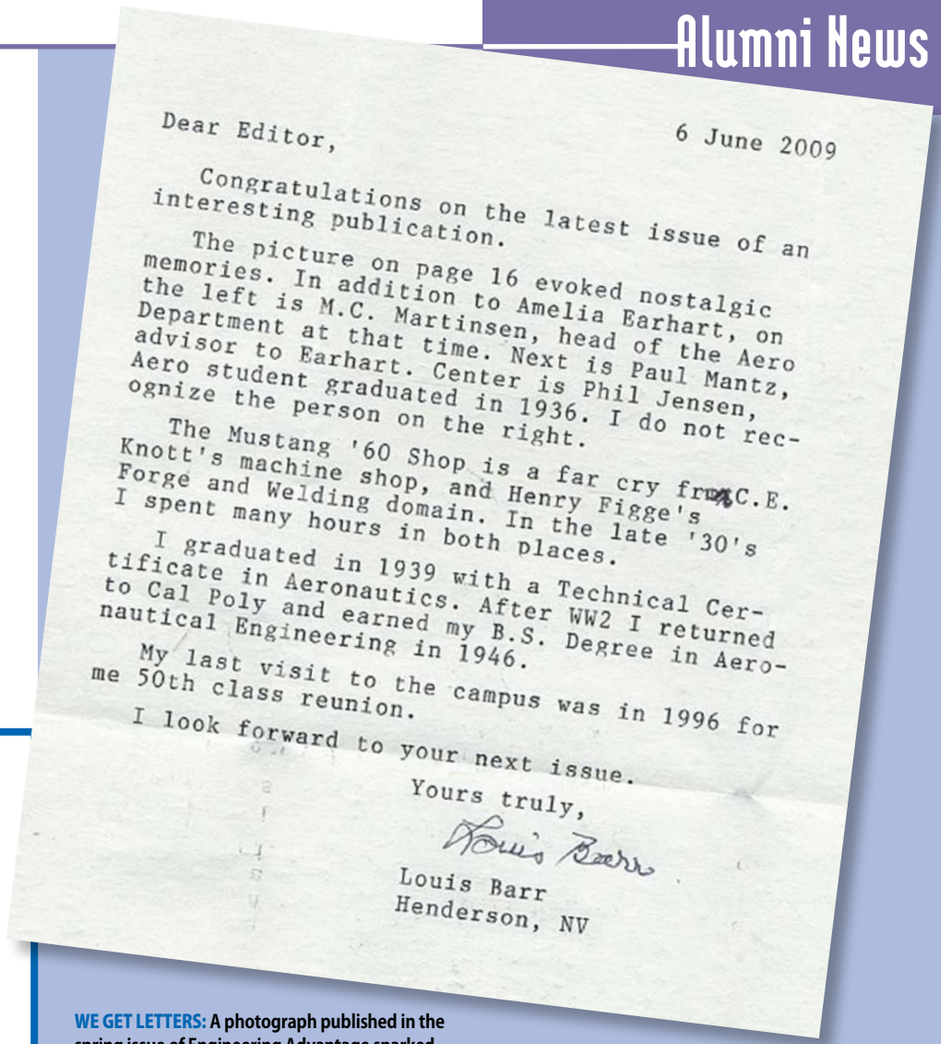
Mark your calendars!

Open House 2010
Cal Poly Engineering
Alumni Reunion Day

April 17, 2010

- **Reconnect with your department**
- **Tour department labs and see project displays**
- **Visit club booths and more!**

To see photos of the 2009 Open House, go to PolyLink (www.calpolylink.com), Cal Poly's online alumni community, and open the album posted under University Photos.



Dear Editor, 6 June 2009

Congratulations on the latest issue of an interesting publication.

The picture on page 16 evoked nostalgic memories. In addition to Amelia Earhart, on the left is M.C. Martinsen, head of the Aero Department at that time. Next is Paul Mantz, advisor to Earhart. Center is Phil Jensen, Aero student graduated in 1936. I do not recognize the person on the right.

The Mustang '60 Shop is a far cry from C.E. Knott's machine shop, and Henry Figge's Forge and Welding domain. In the late '30's I spent many hours in both places.

I graduated in 1939 with a Technical Certificate in Aeronautics. After WW2 I returned to Cal Poly and earned my B.S. Degree in Aeronautical Engineering in 1946.

My last visit to the campus was in 1996 for me 50th class reunion.

I look forward to your next issue.

Yours truly,

Louis Barr

Louis Barr
Henderson, NV

WE GET LETTERS: A photograph published in the spring issue of Engineering Advantage sparked memories for Louis Barr (Aeronautics 1939).

Northrop Grumman hosts Cal Poly alumni

More than 75 Cal Poly alumni, all employees at Northrop Grumman, enjoyed a reception at Northrop Grumman's Space Technology Sector in Redondo Beach in October with the deans of Cal Poly Engineering and the Orfalea College of Business. Northrop Grumman has long been a partner with Cal Poly and a major employer of its graduates. Executives in attendance at the event included **Ron Smith** (EL '83), vice president of NG Information Systems and event host, **Kraig Scheyer** (ENVE '78), vice president of NG Corporate, and **Ray Haynes**, director of University Alliances for Northrop Grumman and a strong Cal Poly advocate. Speakers included Engineering Dean **Mohammad Noori**, Business Dean **Dave Christy**, and recent alumni **Brian Smith** (CPE '09) and **Melanie Ervin** (Business '07). ■

New England alumni gather

On a bright summer afternoon in Norwell, MA, Cal Poly Engineering alumni and their families gathered at the home of **Sheikh A. Rahman**, P.E. (CE/ENVE '67), president & CEO for SAR Engineering Inc. Rahman enjoyed hosting dozens of grads, who were treated to a live address from Dean Noori. To see more photos from the event, go to PolyLink (www.calpolylink.com), Cal Poly's online alumni community, and open the album posted under University Photos. If would like to learn about future events in the New England area, be sure to update your contact information by visiting http://ceng.calpoly.edu/alumni/update/. ■

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ENGINEERING Advantage

Photo courtesy of Josh Cho

Hold the phone!

The bi-annual Cal Poly Phonathon is underway.

Twice a year, enthusiastic Mustangs dial alumni to ask for donations that are the "bread and butter" of external support for the university. Thousands of alumni respond with gifts that support student clubs, scholarships, departments, labs, and student projects.

Cal Poly Engineering counts on your Phonathon participation to help raise more than $400K in vital funding.

But if you miss the call, you can make a secure gift at any time online at: http://www.giving.calpoly.edu/

COLLEGE OF ENGINEERING DIRECTORY

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Women's Engineering Program	**(805) 756-2350**	
Karen Bangs, Director		krbangs@calpoly.edu