

usd engineer

FALL 2011
UNIVERSITY OF SAN DIEGO



**STUDY ABROAD ADDS
GLOBAL PERSPECTIVE**

**MOVING BEYOND THE
ENGINEER STEREOTYPE**

**PROJECT PLANS TO TURN
ON THE LIGHTS IN SUDAN**

**GOING GREEN REMAINS
CRUCIAL FOR STUDENTS**

Solving Global Challenges

Engineering effective solutions to some of the world's biggest problems



I am excited to present this second issue of *USD Engineer*, which brings together stories that illustrate what is so special about the University of San Diego approach to engineering: graduates emerge from our programs not only as engineers of the first order, but also as complete engineers who are thoughtful, informed and engaged

participants in the global community.

To USD engineering students, “Be Blue, Go Green” isn’t just USD’s environmental mantra; it’s an everyday pledge. In fact, for many of our seniors, sustainability became a key design element for their 2011 capstone projects. Students rose to the challenge and created their own collaborative solutions to the challenge of providing renewable energy and water to environments as close as Loma Hall and as far away as Africa and South America. These multidisciplinary teams worked together to integrate their engineering knowledge to develop sustainable solutions, accomplishing more than they could have with the perspective of just one discipline.

Engineering effective solutions to global problems requires engineers to tackle many economic, societal and global challenges as part of their design process. One of this year’s most compelling stories of USD engineers making things work in the real world is the subject of an article in this magazine: “Light Bringers” explores how a team of four senior electrical and mechanical engineers are determined to “engineer a brighter Sudan” and bring power to a school in the village of Theou, in the south of that turbulent country. The yearlong capstone design experience for these young men illustrates that technology can be life changing for those who are served by engineering solutions.

As our engineering students prepare to solve these global challenges, they are eager to participate in international study and research experiences. I am very pleased by the increasing opportunities students have to explore the world and experience different cultures while studying engineering at USD. Read more about their engineering study abroad journeys in the story “Up, Up and Away.”

But it isn’t just our students who are having a global impact. Our latest alumni and faculty news touches on international experiences in countries all over the world: Australia, China, Germany, France, Korea, Kuwait, New Zealand, Nicaragua, Qatar, Saudi Arabia, Taiwan, the United Arab Emirates, the United Kingdom and beyond. USD engineering alumni are working to improve energy efficiency, develop renewable sources of power and manage water resources on a truly global scale.

I’m proud of the important work that is being done by all of our alumni, students and faculty and look forward to hearing about even greater accomplishments in the future.

A handwritten signature in black ink, reading "Kathleen". The signature is stylized and fluid, with a large loop at the beginning and a long, sweeping tail.

Kathleen Kramer, PhD

Director of Engineering Programs

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Going, Going, Green

Eco-friendly projects dominate student efforts

by Liz Harman

A system to make USD's carpool system more efficient and a smart shower that makes people more mindful of the water they're using were just two of the 15 projects demonstrated at last spring's Engineering Open House.

Seniors work with professors all year on their capstone projects, and this year "there was a clear sustainability theme across the majority of the projects," says program director Kathleen Kramer. Many of the projects had sponsors who provided financial, in-kind or mentorship support.

Andrew Byrne, Joe Ellis, Trevor Fortuna and Josh Lubawy worked with Electrical Engineering Professors Susan Lord and Chuck Pateros on a project that would use sensors to monitor carpool parking space occupancy.

The smart shower system, created by Matt Gigli, Allison Harms, David Hopkins and Chris Steward, with Electrical Engineering Professor Ernest Kim, records shower times of bathers and communicates wirelessly with a server to send and store shower data every 24 hours. The USD Office of Sustainability sponsored the project.

Deep Bedi, Chayne Johnson, Tiffany Mendoza and Tony van der Zee worked with Associate Professor of Industrial and Systems Engineering Rick Olson on recommendations to reorganize the infrastructure, policies and transportation systems to increase bicycle usage. The university, along with Director of Sustainability Michael Catanzaro, sponsored the project.

Associate Professor of Mechanical Engineering Matthew McGarry guided Ryan Boufford, Bethany Dimas and Benjamin Whitt in creating a solar chimney.

Evan Brunye, Rocky Nankani,

Jenna Rohrbacker and Trevor Yamamoto worked with Assistant Professor of Mechanical Engineering David Malicky and McGarry on a kinetic energy device that converts rainwater into energy to propel a vehicle. The American Society of Mechanical Engineers, Associated Students and the USD Provost Office were the project sponsors.

The Cycle to Sustain project by David Leyva, Nichole Norby, Javier Flamarique, and Marilyn Smith, aided by Professor Lord, converts the mechanical energy from the wheel of a spin bicycle into electrical energy that powers a display screen. San Diego Gas & Electric was the project sponsor.

James Cook, David Morales,

James O'Hara, William O'Quinn and Brian Taylor, along with Professors Lord, Pateros and McGarry, created an energy management laboratory. The automated workspace teaches energy efficiency by demonstrating control systems. Siemens Industry was the project sponsor.

The Appropriate Technology Stirling Engine by Noel Aniekan, Pat Castagna, Joseph Emery, Will Hoppe and Anthony Riesch, guided by Professors Olson and Malicky, would be built using only materials found in developing countries.

And Emmett Perl, Enrique Rayon, Michael Rios, and Mou Riiny, assisted by Professor Lord, want to create a brighter Sudan with a solar energy project for an elementary school in



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□
The Cycle to Sustain Project (shown at right) was a collaboration between USD's departments of electrical and mechanical engineering.

the village where Riiny was born. AMSOLAR and the Institute of Electrical and Electronics Engineers were the project sponsors.

Andrew Arcidiacono, Julio De Jesus, James Keegan and Timothy Roe worked with Professor Olson to analyze patient flow and reduce patient waiting time at the Rady Children's Hospital Fresh Start Clinic. The hospital and Abby Marquette were the project sponsors.

Roy Leyrer, Renee Thomashow, Andrea Warren and Tay Young worked with Professor Olson on ways to improve courier services at the hospital. The hospital and Rachel Webber were project sponsors. Tiara Chapel, Rodrigo Diaz, Andrew Disotell and Brian Partida, assisted by Professor Olson, helped redesign facility layout and packaging operations to improve packaging and shipping processes at L&T Precision Corp. The firm and Tien Nguyen, quality control manager, were the project sponsors.

Several innovative projects would improve or provide new products and services. Joe Andow, Chris Hawkins, Shauna Peterson and Clark Yin worked with Professors Malicky and McGarry on an assistive grabber that would make it easier for persons with disabilities to open a door or reach for an object.

Brandon Blom, David Cardinale, Edmon Rubi and Anthony Toops worked with Professor Malicky to create a computer-controlled plasma cutter for precise and complex cuts for a variety of metals. USD's Engineering Programs was the project sponsor.

And Sam Green, Jeff Inlow, Regina King and Jeff Trial, worked with Professors McGarry and Malicky on a rapid refrigeration device aimed at cooling a one-liter beverage in less than five minutes.

"This kind of learning, where students need to come up with their own collaborative solution to an important problem and demonstrate real results, is the most challenging part of their degree," Kramer says. "I am really thrilled for them as they mature into true engineers by doing work at this level." 📍



RYAN T. BLYSTONE

A Perfect Fit

USD engineering major takes top prize in Business Plan Competition

by Ryan T. Blystone

David Hopkins' graduation from the University of San Diego puts him in a situation that's simultaneously unique and all too familiar. Like many recent college graduates, Hopkins is trying to launch his career. But to do it, he's targeting fellow new graduates turned job seekers.

Hopkins — who earned a dual BA/BS degree in electrical engineering from USD last spring — is launching Well Suited, a web-based retail business that specializes in competitively priced, custom-fit dress clothes for male college students and budding professionals. The idea, born while taking an Intersession study abroad class to Hong Kong in January 2010, got a boost from his participation in the School of Business Administration's fourth annual Undergraduate Business Plan Competition on May 6.

Hopkins, sporting a custom-fit suit, delivered a 15-minute presentation for his business venture to

four competition judges. His ability to "think fast on my feet" when judges, including alumni Tom Breitting '91 and Tres Conrique '03 (MS), peppered him with questions, earned him \$3,000 of the \$5,000 total prize money.

To beat out two other USD business student ideas was motivating. "This is something I'm pursuing," he says. "Some see (this competition) as an exercise, to see what it's like to create a business idea, but for me, I'm going for it. Winning the business plan competition is great. It's exciting, but it's only the beginning."

"I think the judges were most impressed with David's command and poise," says Helder Sebastiao, PhD, associate professor of management and business plan competition director. "He had a well organized and appropriately informative and detailed presentation, but the way he delivered it made you confident he really could be successful with this venture."

Hopkins said his competition prize money would offset the cost of summer travel to Vietnam and China to meet with a current business supplier in Vietnam. He also plans to bolster attempts to establish additional tailoring contacts overseas.

The bottom line is for Well Suited to assist college students and young professionals in obtaining an affordable, well-made, custom-fit suit, both to build their wardrobe and make a good first impression for a big job interview.

"We like to say get Well Suited for life," Hopkins says. "This is an investment in your career."

He surveyed 60 local students and included his findings in his business plan. Eighty percent said they thought that wearing a suit could help them land a job and 80 percent said having a custom-fit suit was important. Sixty percent said it was difficult to find a suit that fits well.

"This is a generation of personalization," he says. "One size or budget does not fit all. We want to provide our customers with a custom-made suit for the same price as an off-the-rack suit."

Hopkins' victory, the first by an engineering student in the competition, completed a busy final year on campus. He also worked on his "Smart Shower" senior engineering project, a sustainable system promoting water conservation by letting users set a shower timer and track water usage from any location. He furthered his web skills through an internship as a search engine optimization specialist for San Diego's Internet Marketing, Inc.

He praised USD's engineering program for its role in his development. "The engineering program has prepared me to be a problem solver and to really think things through. I came to USD thinking I'd major in business administration, but because I liked math and science in high school, it was recommended to me to consider a major in engineering. It's like getting a degree in problem solving." 📍



Electrical engineering senior Joseph Ellis (at left, below) is excited about his undergraduate research. "It's an amazing feeling to know that you've created something from nothing," he says.

On the Cutting Edge

Student research yields impressive results

by Liz Harman

Engineering students at the University of San Diego are an adventurous bunch. They're helping to pioneer innovative technologies while riding new waves of science.

Electrical engineering senior Joseph Ellis, for example, is making strides in video tracking technology. Using Matlab, a sophisticated computer language, he created a program to follow an image as it moves and changes in size and perspective. He was one of 10 finalists and only

one of two undergraduates chosen for the finals of the fifth annual National Security Innovation Competition held this spring at the U.S. Air Force Academy in Colorado Springs, Colo.

In his presentation, he demonstrated a USD Torero logo moving toward and away from a video camera, thus changing its size. He was even able to follow and generate a map of where the logo traveled and changed by updating the template image as the object moved in the video.

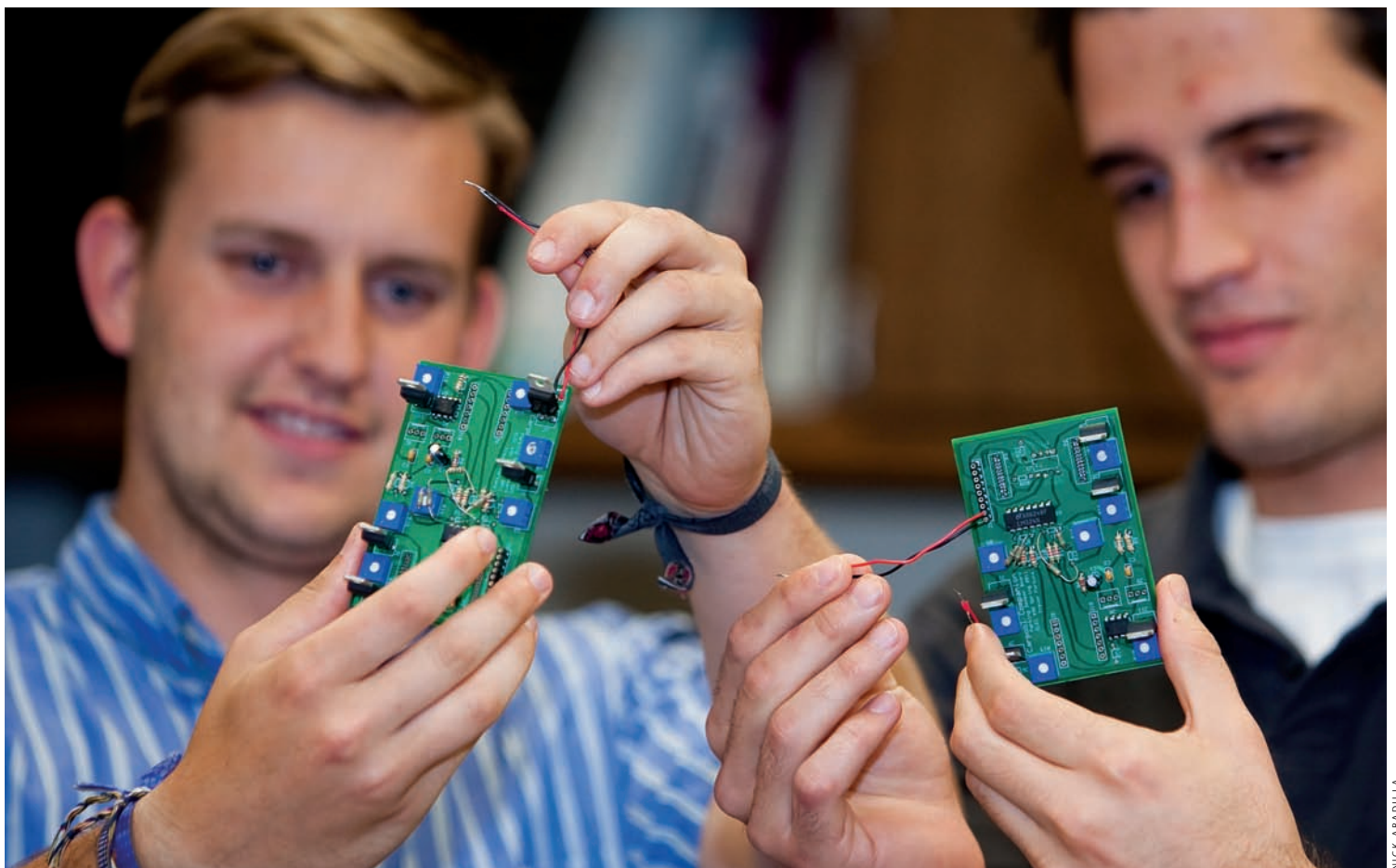
"Joe's work has brought a distinct new line of research into video tracking," explains program director Kathleen Kramer, his faculty adviser on the project. In fact, at the national security competition a lawyer interested in helping him patent his work approached Ellis.

"It's an amazing feeling to know that you've created something from nothing," Ellis says.

Before he graduated in the spring of 2010, Justin Hall worked with Truc Ngo, USD assistant professor of indus-

trial and systems engineering, on a biodegradable surfboard. The project involved studying the biodegradability of a board being produced by a manufacturer, Ocean Green, in Nicaragua.

The company's idea is to keep discarded boards — typically made from polyurethane or polystyrene — from being buried in landfills forever. Student and professor developed a compostability procedure to test out the biodegradability of individual components of the "green" surfboard compared with



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traditional boards and published a paper in the peer-reviewed journal, *Sports Technology*.

"By participating in research on a topic that sounds appealing to them, students have the opportunity to explore this field in depth, work with people from different backgrounds and organizations, and see the problem from different perspectives," says Ngo.

The opportunity "benefited me in all sorts of ways," says Hall, who is now working as an equipment engineer at Solar World in Portland, Ore. Along with exposure to a different culture, Hall got to study the process of using sustainable balsa wood from tree farm to the finished product.

Jessica Buckley's project analyzed Peaucellier mechanisms, whose purpose is to draw the straight lines needed for assembly line and other industrial applications. She is working with Ming Huang, USD professor of mechanical engineering, on identifying the correct ratio of linkage lengths to produce the longest straight line stroke.

Buckley has been awarded a \$15,000 Achievement Reward for College Scientists scholarship and presented her research in March at the National Conference on Undergraduate Research in Ithaca, N.Y.

"The project has really given me a feel for independent research and a taste of what grad school may be like," says Buckley, who'll graduate in January 2013. "Focusing on one particular topic has allowed me to realize that I enjoy working with machine design and would enjoy working with or researching it in the future." 

Impetus for Success

Scholarships develop "complete engineer"

by Ryan T. Blystone

When Tiara Chapel was deciding which college she wanted to attend, she had two important criteria: she wanted a small campus environment and to study her passion, engineering.

She found both at USD. Here, there's an emphasis on small class size, faculty who know your name, have flexible office hours and offer support. The industrial and systems engineering discipline interested Chapel (pictured at left, below) most among the programs offered. She also learned that at USD she'd earn a dual BA/BS degree, thus combining technical skills with a liberal arts education, a pairing Director of Engineering Programs Kathleen Kramer says "develops the complete engineer."

Chapel, who graduated in May, certainly had a complete undergraduate college experience at USD. She was student president of USD's chapter for the Institute of Industrial Engineers, was involved in Greek life, worked with local middle-school-aged science and engineering students and took a study abroad trip to Duncans, Jamaica, where she and other USD students worked alongside the community on improvement projects.

"My experience here has been very memorable," Chapel says. "It's given me the opportunity to grow in three ways: leadership, scholarship and service."

Chapel, who began a master's industrial engineering program at the University of Oklahoma in August, spoke at USD's annual Scholarship Appreciation Luncheon last April. Engineering was the event's featured academic program. Kramer provided an overview of USD's electrical, mechanical and industrial and

systems programs and showed a video that connected the audience with engineering students.

Chapel, who was included in the video, has accomplished a lot at USD, finishing her engineering program in four years instead of the typical 4½ years. It's been achieved through a combination of hard work and engaging with engineering faculty for an undergraduate program that is ranked 21st in the nation by *U.S. News & World Report*. She also credits her success to motivation instilled by her mother that she could achieve anything she wanted in life.

Advice and hard work are great, but they're not the only things college students need to succeed. It takes people and organizations both inside and outside USD to provide scholarship support.


Chapel and Michael Rios, another standout engineering student who is working with three classmates on a project to provide solar energy for a Sudan village, spoke at the luncheon. The two McNair Scholars shared their stories, explained why USD has been the right place for them

and expressed appreciation to those who have helped them realize their educational goals.

Chapel was the recipient of the National Science Foundation Engineering Scholarship and a USD Trustee Scholarship. Rios, who will graduate at the end of this year, received support from the Theresa and Edward O'Toole Scholarship Fund.

University President Mary E. Lyons, PhD, who thanked the many donors in attendance at the luncheon and praised the support of all who contribute to the university, reminded them that their support "doesn't just invest in the student; it's an investment in all of our futures."

Ron Fowler, chair of USD's Board of Trustees, voiced his appreciation for the accomplishments of Chapel and Rios, students he said contribute to his vision of USD as a "university of difference makers."

Chapel concurs. She is eager to provide the same opportunity for others: "Something I can't wait to do is to give back to USD for all that it has given me." 



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Chris Steward (pictured below) was one of a dozen students who traveled to Australia in January 2011. "We were learning about some really interesting circuits and saw a beautiful country at the same time," he recalls.

Up, Up and Away

Study abroad gives engineering students global perspective

by Karen Gross

Travel is most definitely broadening. For proof, look to a paper co-authored by two USD engineering professors, which concludes that the department's first intensive, Intersession study abroad electives were successful, both academically and culturally.

The research was presented in June 2011 at the annual conference of the American Society for Engineering Education, and suggests that such opportunities will encourage even more engineering students to cover part of their course work outside of the country.

In the past few years, USD has seen a burst in the number of undergraduates it sends abroad, with 78.5

percent of students participating. But because of strict and demanding course requirements, engineers have previously found it difficult to participate; a decade ago, just 10 percent took part. But the Class of 2011 saw nearly 40 percent participation; clearly, such opportunities enhance the student experience. "I have a lot of friends that aren't engineering majors and everybody studies abroad," says junior Leah Fairhead. "I wanted the same opportunities."

Faculty stepped in. Professors Frank Jacobitz and Thomas Schubert took two separate groups of students to France and Australia, respectively, for Intersession courses


in January 2010 and January 2011. Jacobitz taught his group of four students a senior-level mechanical elective at the University of Provence Aix-Marseille, where the group lived and studied for their entire three-week stay. Schubert's group of eight seniors and four juniors took a whirlwind trip through three Australian cities — Sydney, Newcastle and Canberra — while covering all the course material for their senior electrical elective.

"It was hard," Schubert says with a laugh, recalling days brimming with lectures, tours, travel and homework. "Basically, we're trying to teach a full semester's course condensed into a class that meets

for 18 days." Judging by the results, Schubert succeeded admirably. His students earned high marks, and all of them seemed thrilled with the experience.

"I think the grades were a little bit better because we always had him there," says junior Scott Gump. "We had full accessibility to him every day." In fact, as the group moved from city to city and dormitory to hostel, Schubert was ever-present, holding office hours in his room, sometimes late into the evening.

Schubert and Jacobitz are convinced that what's been dubbed the Compact International Experience (CIE) offers USD engineering students the chance to absorb another country and culture while still fulfilling the core requirements of their degree. The cost is comparable to that of a regular Intersession course held on campus, excluding airfare and some meals. And the university has partnered with programs that are specifically targeted to engineering students, including Australia's University of Technology (Queensland and Sydney), Queen Mary University in London, as well as schools in New Zealand and Scotland.

At the urging of his current students, Jacobitz is already planning another trip to Marseille, in January of 2013. He'd like to see the CIE offered formally, as a permanent part of the engineering curriculum. Taking it to that next level may take some time, as well as the cooperation of other faculty members. But Schubert and Jacobitz are ready to start packing their bags right now. 



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- + Engineering a Brighter Sudan
- + Rapid Refrigeration Device
- + Computer-controlled Plasma Cutter for Metals

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faculty notes

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Every full-time member of the University of San Diego Engineering Program's faculty has not just a PhD, but a breadth of practical experience along with a strong commitment to student learning and scholarship. The quality of USD's faculty is one of the reasons the program is so highly rated among its peer institutions.



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Ming Huang, professor of mechanical engineering, recently published an article, "A Study of Workspace and Singularity Characteristics for Design of 3 Degree-of-Freedom Planar Parallel Robots," in the *International Journal of Advanced Manufacturing Technology* (2010), 51:789-797. He also published another article, "Use of Course Clustering Strategy to Enhance Relational Learning: A Case Study of Curriculum Experimentation," in the 2010 *International Journal of Mechanical Engineering Education* with James Kohl, associate professor of mechanical engineering, and Veronica Galvan, assistant professor of psychology. He is scheduled to go on sabbatical leave in the Fall term of 2011, and will travel to Taiwan, his native country, to visit a number of engineering schools and participate in a research project on development of a training and simulation system for dental surgery applica-

tion at the National Chung-Chen University (NCCU) in Minshong, Taiwan.

Frank Jacobitz, professor of mechanical engineering, returned to the University of San Diego after a sabbatical leave at the Universite de Provence in Marseille, France. Recent publications include "On the Structure and Dynamics of Sheared and Rotating Turbulence: Anisotropy Properties and Geometrical Scale-Dependent Statistics," in the 2010 *Physics of Fluids*, with Kai Schneider (Marseille), Wouter Bos (Lyon) and Marie Farge (Paris) as well as "Exploring Three-Phase Systems and Synchronous Motors: A Low-Voltage and Low-Cost Experiment at the Sophomore Level," in the 2011 *IEEE Transactions on Education*, with Thomas Schubert and Ernest Kim. He was invited to speak at the Institute for Advanced Study in Berlin, the German Aerospace Center in Gottingen,

Germany, and the University of Southern California. His current research interest includes helical properties of homogeneous turbulence, structure formation in magneto-geostrophic flows and the microcirculation in rat spinotrapezius muscle and muscle fascia.

Susan Lord, professor of electrical engineering, finished her two-year term as president of the IEEE Education Society in December 2010. In this role, she enjoyed working with IEEE members around the world including traveling to Argentina, Spain, Hong Kong and China. Lord was an invited guest editor of a special issue of the *International Journal of Engineering Education* on Applications of Engineering Education Research, which appeared in 2010. She has continued her NSF-funded collaborative research on persistence among engineering students, lifelong learning and transitioning veterans to engi-

neering. Along with colleagues at USD and Purdue University, Lord had articles based on her persistence research appear in the April 2011 issues of the *Journal of Hispanic Higher Education* and the *Journal of Engineering Education*. She is the 2011 National Effective Teaching Institute (NETI) fellow and helped facilitate a workshop for engineering faculty in Vancouver, British Columbia, in June 2011.

David Malicky, associate professor of mechanical engineering, recently had two papers appear in print: One with co-authors James Kohl and Ming Huang in the *International Journal of Mechanical Engineering Education* on "Integrating a Machine Shop Class into the Mechanical Engineering Curriculum: Experimental and Inductive Learning;" the other with lead author Kohl and student co-authors Adam Jones and Stephen McGee in *Progress in Organic Coatings* on "Removal of Pseudobarnacles (Epoxy) from Silicone Coatings with a Thickness Gradient Due to an Applied Transverse Force."

Kathleen Kramer, professor of electrical engineering, has been pursuing a line of technical research to incorporate uncertainty into data association technique that is based upon optical correlation and image representations of multisensor data. She is presenting on this work at the IEEE MultiConference on Systems and Control in Denver, Colo., this fall. She was invited to the National Science Foundation headquarters to present as a model success story for the accomplishments associated with the grant that she, Susan Lord and Rick Olson were awarded to connect veterans to engineering majors at USD.

Michael Morse, professor of electrical engineering, has continued to focus on electrical safety

and legal issues associated with engineering design. He remains a sought-after expert, having been asked quite often to provide forensic expertise in electrical injury cases around the country. He has also been a frequently invited author by *EC&M* magazine; in the past year, Morse authored two articles for the publication. The first was a forensic case note, looking at issues of electrical safety at marinas. The second was an article on how to mitigate liability exposure as part of the engineering design process. Morse anticipates continuing his work in this area with specific emphasis on issues of forensic engineering and techniques to elevate electrical safety at the interface between humans and the technologies that humans create.

Truc Ngo, assistant professor of industrial and systems engineering, has recently published an article titled "Green Surfboards: Investigation of Product Biodegradability at End of Life" in *Sports Technology*, an international peer-reviewed journal. She will

also be presenting another research paper titled "Processing Behaviors of Thin-Film Pentacene and Benzene-1,4-Diboronic Acid in Supercritical Carbon Dioxide" at the 11th International Conference on Carbon Dioxide Utilization in France this June. During Summer 2011, she worked with a USD undergraduate engineering student on a research project involving green composites.

Rick Olson, associate professor of industrial and systems engineering, was recognized by USD's TRiO McNair Scholars Program as one of three 2011 Faculty Mentors of the Year. He has been appointed to the search committee to identify a director of USD's Office of Undergraduate Research. This new office will coordinate programs that encourage student and faculty research, such as the annual Creative Collaborations event held every spring. He will also serve on the advisory board for the new office.

Leonard Perry, associate professor of industrial and

systems engineering, has concluded his experimental design research with Biogen IDEC by publishing an article called "Using Partition Designs to Enhance Purification Process Understanding," in *Biotechnology and Bioengineering*. That piece is part of his ongoing research that is pushing the envelope on innovative techniques for complex multiunit processes. Perry is also heavily involved in health care due to his partnership with Scripps Health. He has been instrumental in the restructuring of their quality systems and the spread of Scripps' new performance improvement methodology, which is heavily based on Lean and Six Sigma practices. His efforts include facilitating and mentoring more than 20 health care projects and training in excess of 70 participants on the Lean and Six Sigma tools and methods. Since 2005, Perry has offered Lean and Six Sigma programs at USD to more than 50 San Diego organizations trying to improve their operations. 



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Light

BRINGERS

Ambitious plan to bring solar power to Sudan

by Kelly Machleit

The story of how Mou Riiny '11 got from Theou, a village in Southern Sudan, to Alcalá Park begins with a single step. It was a journey that took him through the desert to Kenya, then to Boston, and finally to San Diego.

Riiny's journey to America is similar to that of other survivors of the 1987 civil war in Sudan that drove an estimated 20,000 young boys and girls from their families. As young as six or seven years old, they wandered more than 1,000 miles, across dangerous terrain, until they reached U.N. refugee camps in Kenya, where they came to be known as the Lost Boys of Sudan. Many died along the way, but some of the survivors were eventually relocated to the United States.

Riiny's own story echoes that of other Lost Boys. When his village of Theou was unexpectedly attacked, his family scattered. "I ended up running away with two of my cousins, later joining thousands of other boys who were running away to avoid persecution," he recalls. "For more than three months, we walked toward the Kenyan border, where help from the United Nations waited."

He spent five years at northern Kenya's Kakuma Refugee Camp, where he received a primary school education provided by the United Nations. In 1999, he got a spot on a coveted list that offered some of the Lost Boys relocation to various cities

throughout the U.S. He was subsequently placed in a foster home in a suburb of Boston. There, he continued his education. In 2007, Riiny was accepted and admitted to USD; he'll earn his degree in Electrical Engineering in December 2011.

Now he wants to give back. Twenty-four years after Theou was attacked, the village still stands. But a dire need for electricity, clean water and a space for children to learn remains. With these necessities in mind, a new school is being built, under what's come to be known as the Theou Village Project, a nonprofit foundation led in part by Riiny's cousin, Bol Thiik Riiny. It is in this village and at this school where Riiny and three other USD engineering students aim to provide electricity to the entire community.

Riiny is leading the endeavor dubbed "Engineering a Better Sudan" — alongside Emmett Perl '11, Enrique Rayon '11 and Michael Rios '11. The primary goal of their senior project is to design and build a power generation storage system for the Theou Village School.

And best of all, this source of power will be sustainable.

Solar panels have been decided upon since they provide the community with a clean, renewable source of power that takes advantage of the region's abundant sun. "This project is the true meaning of engineering: to build a system to help a community and provide

clean, sustainable, reliable energy with as little maintenance as possible," says Rios.

He explains that the project has three parts: Step one is to create a proposal that describes the system, its goals, requirements for funding and logistics. Step two is to build a scale prototype of the system on campus. And the final step will be to actually install the device in Sudan.

The four students have successfully completed a prototype of the project, which was showcased at USD's Spring Engineering Open House. With this crucial phase in place, they're eager to move onto the final phase: installing the device at the school in Theou.

While the perseverance and resolve behind this project is admirable, difficulties continue to arise. A historic referendum took place in January of 2011, in which South Sudan voted for independence from the north; the political climate of the country since the split has been complicated by disputes over where to draw the common border and how to divide oil revenues. Various clashes between bordering cities and the military have broken out, and the region continues to be volatile.

Nonetheless, the students remain optimistic. "We are fully committed to the realization of this project and want to assure that we can bring electricity to Theou

□
A group of engineering students have an ambitious plan to provide electricity to a community in a small village in southern Sudan. Without the group's efforts, the village might remain in the dark. They are (from left to right): Enrique Rayon, Emmett Perl, Mou Riiny and Michael Rios.



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in a safe and intelligent manner," the students explained in a recent email update to supporters.

Though they hope their journey to Theou in South Sudan will take place in Winter 2011 or Summer 2012, plans are contingent on both the political situation and travel logistics. Additionally, determining the details for shipping all of the equipment to Sudan is something that needs further research. "We cannot make many significant logistical advances before then because all the legal aspects of shipping equipment to South Sudan is somewhat unknown," Rios says.

Without the group's efforts, it's possible the village might remain in the dark. "Many people in the world have never been around electricity," says Perl. "What's so tremendous about our project is that we'll be giving the people of Theou electricity when they might never have access to it otherwise." More than 20 percent of the global population — 1.4 billion people — lack access

to electricity, according to the International Energy Agency (IEA). While the other 80 percent are being sent the message to turn off the lights, reduce water consumption, to reuse and recycle, the IEA data is a stark reminder that for some, just flicking on a switch is a luxury.

Regardless of the obstacles still to overcome, Riiny is excited about the potential benefits for the people of Theou. "Our project will power indoor and outdoor lights for a picnic area and community meetings," he says. "It will power charging stations so people can charge batteries, laptops and cell phones." Neighboring villages will be able to make use of the power source as well.

Electrical Engineering Professor Susan Lord recognizes the ambitious nature of this project, especially given the logistics of sending a system of this scope and size abroad. Yet Lord remains optimistic. "Having firsthand knowledge of the local culture and situation allows the team to

avoid common pitfalls of doing such projects in developing countries," she says. "Mou can provide guidance on the needs of the community and the appropriateness of the solution."

A project of this scope and size has required a fair amount of support, including financial. But training students to come up with real world answers to complex problems — including finding funding — is an invaluable life skill. "This is a project that makes us stand out," says Rayon. "We have some of the most ambitious goals because this project extends beyond the end of the academic year."

To help cover some of the costs of creating, building and ultimately shipping the solar panel project to Sudan, the four engineers have recently partnered with AMSOLAR, the company that has provided USD with nearly 5,000 photovoltaic solar panels on top of 11 buildings throughout campus.

"AMSOLAR offered a match-

ing grant, so any money we raise through USD will be matched by AMSOLAR up to a certain amount," says Rios. AMSOLAR has also secured the donation of all the solar panels for the Sudan installation.

In addition, Precision Paragon [p2], a leader of efficient lighting, has offered to donate the lights and fixtures. The students have also secured funding from the Institute of Electrical and Electronics Engineers, USD Associated Students, Student Technology Exchange, the Lambda Chi Alpha fraternity, USD Engineering and West Coast Iron, Inc.

"As with any service-learning project, it's important that academic goals are being matched with authentic community needs," Lord says.

In total, the team has raised nearly \$70,000. That, along with four students' visions and dreams, is more than enough to change thousands of lives. All by capturing a small piece of the sun.

Time to turn on the lights. 



"I know that for me, and a lot of my classmates, we really enjoy getting involved and studying all types of subjects from all types of disciplines. It's not like we're holed up in a cubicle somewhere poring over data."
— Deep Bedi '11

The People Person

Budding entrepreneur never met a problem he couldn't solve

by Mike Sauer

We all know that, in a perfect world, we're not supposed to form opinions based on preconceived notions or stereotypes. We're to listen without prejudice, accept without reservation, and, as the time-honored tales of Aesop teach us, never judge a book by its cover.

But maintaining that type of objectivity every minute of every hour of every day is easier said than done. So when, for example, Deep Bedi introduces himself over the phone as an industrial and systems engineering major at the University of San Diego, you certainly could be forgiven for thinking the voice on the other end of the line belongs to a fellow outfitted in coke-bottle glasses, suspenders and the prerequisite pocket protector; someone who is much more interested in discussing data analysis and quantitative methods than his personal journey and professional aspirations.

But when Bedi and his ample supply of charisma breeze into the Student Life Pavilion on the USD campus for a sit-down chat, it takes about two seconds to realize those prognostications couldn't be further from the truth ... and that, much to your first-grade teacher's chagrin, you really need a refresher course on Aesop's fables.

"I don't know. Is there a stereotype for engineers?" Bedi inquires, seemingly unaware that he looks more like a college quarterback than an aspiring systems analyst. "I'm not really sure. I know that for me, and a lot of my classmates,

we really enjoy getting involved and studying all types of subjects from all types of disciplines. It's not like we're holed up in a cubicle somewhere poring over data."

In truth, a cramped and isolated workspace is about the last place you'd imagine the 22-year-old Bay Area native setting up shop. Bedi thrives on interaction, which may help explain his tendency to develop business plans that, among other things, encourage community involvement.

Take for example his fledgling business venture Cloudeas.com, an online community for young professionals and students who have great business ideas, but who need help in bringing those ideas to life.

Bedi didn't need to look far to find inspiration for the creation of what he sees as a sort of Facebook for young entrepreneurs. "I'm not a finance guy. I know how to build stuff, but I don't know how to do a lot of computer programming and I don't know how to do finance," he explains. "The idea behind Cloudeas is to go outside of your scope of expertise and bring you together with like-minded people who want to create these ideas. I like to call it social idealism."

Navigating uncharted entrepreneurial landscapes is nothing new for Bedi, who was in the business of creating his own businesses as far back as high school. It was there where he built a thriving T-shirt company, as well as the belief that the best boss he could ever have would be himself.

"Being my own boss ... yeah,

that would really be the ideal situation for me," he offers. "My high school business really made me realize how much I enjoyed running a business. Guess I've always had that entrepreneurial spirit."

While the degree Bedi leaves Alcalá Park with would seemingly suggest he's headed for a career in the engineering field, his former professor, Rick Olson, would be surprised if that were the case.

Actually, shocked might actually be the more appropriate word.

"It was pretty obvious when Deep was a freshmen that he wasn't going to be the typical engineer," laughs Olson, whose general teaching and research interests are in the area of applied operations research.

"As engineers, we tend to be overly analytical. But Deep is bulletproof, and he's willing to take on problems and deal with the problems as they appear, and not get stuck on what-ifs."

He proved he had a certain level of fearlessness when he got on a plane bound for one of the most conflict-ridden regions on the planet. As president of USD's Student International Business Council, that's what Bedi and a select group of Toreros did in 2010 when they visited the war-torn West African country of Sierra Leone.


The student-led constituency arrived with the intent of helping aspiring female entrepreneurs learn how to create and manage a business centered around the production of the Gara, a traditional piece of clothing commonly worn

throughout the nation. They left with a much deeper understanding of the power of the human spirit, as well as a heightened appreciation of just how fortunate they are in their own lives.

"I know it sounds a little cliché, but seeing what those women go through on a day-to-day basis really made us appreciate just how good we have it living in the U.S.," Bedi says. "They would travel up to six hours a day to learn about basic educational subjects like accounting and marketing. It makes you connect with them on a very personal level seeing how much they want to make their lives better."

Helping improve the lives of those less fortunate undergirds the philosophy behind another of Bedi's business ideas, a project he has dubbed Charge Social. The business's function would fuse finance and philanthropy, providing credit and debit card users with the opportunity to contribute small percentages of their purchases to the charitable organization of their choice.

"The customer can choose where they want their money to go specifically, or they can defer it to us and we can choose for them based on the category of the purchase," he explains. "So if you buy groceries at a store, your donation would go to a nonprofit that's created to fight world hunger."

"The idea for Charge Social really came from USD's commitment to social innovation and connecting students with a broader global perspective." And for Deep Bedi, connections are what it's all about. 



class notes

□
 Mission Statement:
 USD Engineering is
 distinguished by
 student-centered
 education that
 emphasizes modern
 engineering skills and
 development of the
 whole person.
 We are dedicated to
 innovative teaching,
 meaningful
 scholarship and
 compassionate service.

[1992]

Glenn Hickok (EE) is a vice president at Cross Match Technologies, a leading provider of biometric solutions. He runs the company's Federal Affairs division and leads efforts related to government markets in the United States, Canada, the United Kingdom, Australia and New Zealand. He and his wife, Shannon, have been married for almost 14 years and they have a 4-year-old son, Chuck, and a 2-year-old daughter, Reagan.



GLENN HICKOK

1992

Michaella Wright Wittman (EE) is living in Omaha, Neb., with her husband, Dan, and their two children. Their youngest, Roman Walker, arrived earlier this year, and joins older sister Eliana Kate. "My husband turned a hobby into a business last year, starting by selling breakfast burritos at the local farmer's market," reports Michaella. "They were wildly popular, so he's expanding and being a part-time stay-at-home dad."

[1994]

Daniel Ettlich (EE) and his family are moving to Washington, D.C., where he will be stationed as submarine safety and quality assurance division director at the Washington Navy Yard, Naval Sea Systems Command (NAVSEA).

Dominic Pimentel (EE) and his wife, Arlene, just celebrated their 15th anniversary. Their three children — Alisa, 12; Troy, 9; and Luke, 3 — are growing fast.



DOMINIC PIMENTEL

[1996]

Daniel Leuthner (EE) and his wife, Kim Lickteig, live in the north suburbs of Chicago and anticipated the arrival of their second child in May 2011, to join big brother Maxwell, 2. Leuthner is an account engineer for Affiliated FM, a subsidiary of FM Global.

[1997]

Lt. Cmdr. Tom Mack (EE) recently returned from a one-year tour in Saudi Arabia and settled down with his family in Carlsbad, Calif. Mack now serves as a project manager at Space and Naval Warfare Systems Center Pacific (SPAWAR-SSC) in San Diego.

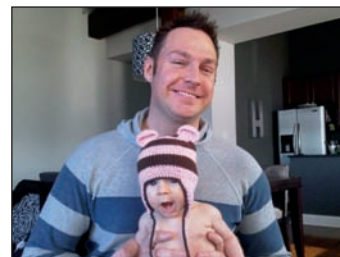
[2000]

Ricardo Valerdi (EE) is the co-editor-in-chief of the *Journal of Enterprise Transformation*, an official journal of the Institute of Industrial Engineers (IIE) and the International Council on Systems Engineering (INCOSE). He is transitioning from MIT to the University of Arizona, where he will be a tenured associate professor. Valerdi also holds a master's degree and a PhD from the University of Southern California. He and his wife, Briana, have two sons, Rocco and Lucca, and they are expecting a new baby in November 2011.

[2001]

Amanda Bishop (EE) launched the public beta of the WhitePages' Hiya networked address book application early in 2011 and is now senior product manager of a secret new consumer device at Amazon. The Hiya launch generated some good press coverage and, as the senior product manager, she was quoted in *The New York Times* and *Forbes*.

Mark Heffernan (EE) is the LITENING program manager for domestic and international customer logistics support at Northrop Grumman Electronic Systems. He and his wife, Jenni, welcomed their first child, Brynley Jane, in November 2010.



MARK HEFFERNAN

[2002]

Jacalyn Thomas Azevedo (EE) graduated with an MBA from San Diego State University in December 2010.

She is transitioning from a project hardware engineer to an engineering program manager at Motorola Mobility, San Diego. Spouse and fellow alum, Alcino Azevedo '02 (EE), has a new job as a test and integration engineer on cellular communications equipment with TRABUS Technologies San Diego. The Azevedos are celebrating their five-year wedding anniversary this year and recently traveled to the Islands of the Azores, Portugal.



AL AND JACALYN AZEVEDO

Bill Bachman (ISYE) earned an MBA from the University of Southern California. He accepted a consulting position with Ernst & Young in Los Angeles, working on the performance improvement team in the Advisory Services division.

John Duca (EE) recently earned Technical Honors at Raytheon, an award voted by the leadership and peers there. He and his wife, Kelly, have a 3-year-old daughter, Addison, and look forward to welcoming their second daughter, Ava, quite soon. They live in Newbury Park, Calif.



JOHN DUCA

Ian Nauhaus (EE) is a postdoctoral neuroscientist at the Salk Institute for Biological Studies in La Jolla, Calif., where he does research on visual neurophysiology. He has been there since he completed his PhD in biomedical engineering at UCLA in 2008. Transitioning from computational backgrounds, such as physics or engineering, has become a fairly common academic route within neuroscience.

Chris Smith (EE) works on the Airborne and Maritime/Fixed Station (AMF) Joint Tactical Radio System (JTRS) program at Northrop Grumman. He and his wife are expecting a second daughter this fall. Their oldest daughter, Presley, recently turned 2.

Jaclyn Sonico (ISYE) has been a management consultant with Accenture for two years and now works in the Process and Innovation Performance service line. Sonico also enjoys applying her career skills to nonprofit organizations in the Washington, D.C., area through Accenture's skills-based volunteering initiative. At press time, she reported that she and her military husband expected to complete their tour in Washington, D.C., at the end of July 2011 and were waiting on final orders to San Diego.

Michael Spencer (EE) is in the second quarter of a distance-learning master's degree program in systems engineering at the Naval Postgraduate School. He is engaged to Jennifer Ruark and they plan to marry next year at The Immaculata.



MICHAEL SPENCER

[2003]
Matthew Craig (ISYE) and his wife, Jessica, expected to welcome their second daughter, Madison Camille, in June 2011. Matt completed his MBA at Michigan State University in April 2011. This year, he accepted a new position at Meijer — a grocery and supercenter retailer — as market director for the Michigan Lakeshore area.

Andrew Shelley (EE) joined Northrop Grumman in Palmdale, Calif., this year as a graphic artist. He creates the graphics and technical illustrations for training lessons. His "Beyond the Chair" movie is in negotiations with production companies for theatrical and television release.

[2004]
Melody Ablola (ISYE) is an operational logistics consultant in London. She has contributed to building projects around the world in California, London, Qatar and the United Arab Emirates. She has started work on her dissertation for a master's degree in international transport and logistics at the University of Glamorgan in Wales. Ablola was recently profiled on Real-World Geography, the National Geographic Society education website. She planned to attend the USD European alumni reunion in Germany in June 2011.

Nicholas Barker (ISYE) earned an MBA and an MS in mechanical engineering at MIT. Prior to graduate school, he worked on the Space Shuttle program as a payload mission engineer and mechanical assembly engineer at Kennedy Space Center. His master's thesis was on Amazon's operations, and afterward he worked for Amazon as an operations manager in Seattle. Most recently, Barker has chosen to follow other entrepreneurial pursuits.

Jared Smith (ISYE) took a systems engineering position at Northrop Grumman Information Systems in Kearny Mesa, Calif., where he is the lead systems engineer for the Broad Maritime Surveillance System Intercommunication System. This allows pilots and other operators to communicate with other crew members that are collocated and remote as well as remote users such as air traffic control or tactical edge warfighters. After he received his master's degree in systems architecture and engineering from the University of Southern California, Jared was able to do a turn teaching ISyE 320: Introduction to Systems Engineering at USD as an adjunct professor.

Phillip Thrash (EE) lives on the island of Maui with his wife, Larissa, and 2-year-old son, Emry. He and his wife are expecting their second child in October 2011. Phillip has worked for Swinerton Builders for five years and is presently a senior project engineer. Swinerton Builders Hawaii is a general contracting company that delivers construction projects ranging from \$200,000 to \$110 million in the commercial, federal, medical and hospitality markets. The company has a presence in seven states on the West Coast, including an office in San Diego. Phillip and his family have no plans to return to the mainland just yet.



PHILLIP THRASH

[2005]
Matthew Dominick (EE) completed two combat deployments on the USS Eisenhower flying the F/A-18E Super Hornet in support of Operation Enduring Freedom. He moved to Monterey, Calif., where he is pursuing a master's degree in systems engineering at the Naval Postgraduate School. He will then move to Maryland for Naval Test Pilot School.

Michelle Esteban (EE) is a patent attorney for Kilpatrick Townsend & Stockton LLP in San Francisco.

Brian Momeyer (EE) is a patent engineer at Qualcomm and pursuing a JD/MBA at USD.

Doulan Reis (ISYE) is at Lockheed Martin in Sunnyvale, Calif., where he's worked since graduation. This year, he moved from a floor quality engineer to a supplier quality engineer. Reis has two daughters, ages 5 years and 6 months. He also earned master's degrees in both business administration and engineering at San Jose State.

[2006]
Tolu Abe (ISYE) left Scripps Health Care and began graduate study in industrial engineering at the University of Washington.

Erika Lopez (ISYE) will be based for the next three years in Hong Kong, where she is a financial transformation platform manager at HSBC, working on process improvement in the financial sector. In June 2010, Lopez married Manuel Cardoso de Sousa in London.



ERIKA LOPEZ

Nathan Roberts (EE) earned a master's degree in electrical engineering from the University of Michigan, Ann Arbor. His studies concentrated on circuits and microsystems.

[2007]
Ali Almatrouk (EE) is a Next Generation Networks (NGN) engineer with Zain Kuwait, a telecommunications service provider. He also co-founded a small company, Makers Inc., to provide schools in Kuwait with technology that enhances the students' learning. They currently focus on math and science. Ali and his wife, Maiss Marafie, anticipated the arrival of their child in August 2011. In addition, Ali co-founded the Gulf Cooperation Council

(GCC) chapter of the University of San Diego Alumni Association. The GCC is a political and economic union of the United Arab Emirates, Bahrain, Saudi Arabia, Oman, Qatar and Kuwait. Their first event was in December 2010 with School of Business Administration Dean David Pyke.

Alfredo Bermudez (EE) is the communications officer for Marine Air Control Squadron 2 from Marine Corps Air Station Cherry Point, N.C. He has completed three CONUS deployments to support the MACS-2 communications network in the Yuma, Ariz., desert, and he is finishing a project management certificate from Boston University. Alfredo and Julie Amanda Morton from Jacksonville, N.C., planned to marry on June 25, 2011, in Camp Lejeune, N.C.

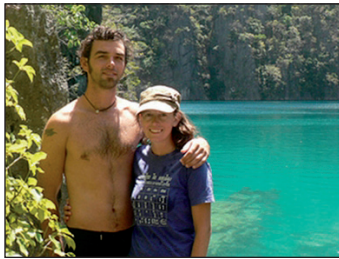


ALFREDO BERMUDEZ

Cheryn Engebrecht (ME) and Ian Metzger '07 (ME) will be married in Walnut Creek, Calif., on May 13, 2012. Cheryn earned a master's degree in mechanical engineering from the University of Washington and Ian earned a master's degree in building energy systems from the University of Colorado, Boulder. Cheryn is at the National Renewable Energy Lab in Golden, Colo., as a project manager and research coordinator for Building America, a nationwide residential energy efficiency program. Ian got a new job in February 2011 as a test and integration engineer on cellular communications equipment with TRABUS Technologies in San Diego. They have both come a long way since meeting at USD in their freshman physics class!

Ben Fieman (ISYE) finished his MBA at Pepperdine and is back home in Hawaii creating his own bikini brand at his father's company, Loco Boutique, where he is also the area manager for his line.

Stephanie Hay (ISYE) returned from her six-month tour of Southeast Asia and works for BikeBandit.com — billed as "the web's largest powersports store" — where she does everything from revising the layout of the warehouse to implementing systems that detect credit card fraud. Stephanie shared her experiences with freshmen in the fall and with IIE (Institute of Industrial Engineers) in the spring. She is engaged to Gabe Graham.



STEPHANIE HAY

Matt Petrucci (ME) married fellow USD alum Samantha Pisani '07, on June 27, 2009, at Founders Chapel. They live in Champaign, Ill., where Matt is pursuing a PhD in neuroscience within the interdisciplinary neuroengineering IGERT program at the University of Illinois Urbana-Champaign (UIUC). Matt is also at UIUC pursuing an MD/PhD in neuroscience.

Joe Quiroz (ISYE) works on the Global Hawk program at Northrop Grumman, specifically on production logistics and execution for the Euro Hawk. This past year, he has been on the team responsible for planning and executing the logistics of exporting all the ground support equipment to Germany; he looks forward to the international travel involved.

[2008]

Eddie Barboza (ISYE) works on the new A350 XWB Nacelle at Goodrich Aerostructures. The plane is in the ground and flight testing phase and will enter service in 2013. Eddie is a manufacturing engineer liaison for supply chain and travels around the country visiting suppliers to make sure that parts meet standards and that the components will be delivered on time. He is engaged to marry Salma Medellin.

Lt. Shawn Lyons (EE) is a signal intelligence/ground electronic warfare officer in the United States Marine Corps, stationed at 1st Radio Battalion, Camp Pendleton, Calif. From August 2010 to February 2011, Shawn was operating in Southern Helmand Province, Afghanistan, with 1st Radio Battalion Forward. There he was tasked with providing indications and warnings on enemy movements and whereabouts to include providing force protection for U.S. and coalition forces. Shawn is preparing for his next deployment with the 15th Marine Expeditionary Unit (MEU) as the detachment officer in charge (OIC) of the 1st Radio Battalion Detachment headed

for the Western Pacific sometime in 2012. During this upcoming deployment with the 15th MEU, Shawn will be applying to attend Naval Postgraduate School for a master's degree in electrical engineering with an emphasis in signal intelligence.

Alex Perez (ME) and wife, Christina, are expecting their first child, Ayden Matthew. They married earlier this year in Temecula, Calif. Alex, who works in the aerospace industry, graduated from Mount St. Mary's College with an MBA in May 2011.

A.J. Purdy (ISYE) is working toward a master's degree in coastal watershed science and policy at California State University, Monterey Bay. He expects to graduate in the spring of 2012 and hopes to do water resource management and hydrologic modeling. In the summer of 2011, he planned to intern with a NASA co-op, where he would work to accurately estimate crop irrigation demands at the individual field scale, using satellite imagery of crop cover and weather conditions.

[2009]

Yasser Abdulfattah (EE) returned to Saudi Arabia in 2009 after his four unforgettable years in San Diego. In Saudi Arabia, he joined Schlumberger's logistics department as a segment logistics specialist. He thrives within the company's competitive atmosphere and works to improve methods and efficiencies. Yasser was promoted to logistics manager in charge of all domestic and international logistics movements within Saudi Arabia. He manages a team of 20 and oversees thousands of trips per month.

Nate Allera (ME) is a project engineer at GEA Process Engineering in Columbia, Md. The company specializes in the design and development of process solutions for the dairy, brewery, food, pharmaceutical and chemical industries.

Spencer Anderson (ME) has filed a patent for a thermal inkjet nozzle health maintenance solution. He is a systems integration engineer for Hewlett Packard in industrial and mail printing/VDI, specializing in the design of thermal inkjet servicing algorithms and printing system qualification testing. For the past two years, he has worked as a system integrator through a full project development

cycle, planning and executing efficient tests to characterize and qualify a mail printing system. He remains active in ASME and also coaches Little League baseball and basketball.

Louis Barrios (ME) joined Teach for America after graduating from USD. He became a high school math and physics teacher in East Palo Alto, Calif., and later was promoted to math and science lead teacher. In the fall of 2011, he plans to return to San Diego as a math and science teacher at High Tech High Middle Media Arts in Point Loma, Calif.

Agnes Castillo (ISYE) is an industrial engineer with General Atomics Aeronautical Systems in Poway, Calif. They provide unmanned aerial vehicles and radar solutions for military and commercial applications worldwide, including the Predator A, Predator B, Sky Warrior and Predator C. Agnes is engaged to fellow USD alum John Daniel Martinez '10. They planned to marry at Founders Chapel in July 2011.



AGNES CASTILLO

Chris Gianelli (EE) received a master's degree in electrical engineering from the University of Florida in December 2010. He works full time for a startup company, Integrated Adaptive Applications, and takes doctoral research hours at the university as part of his work experience.

Ensign Ben Hunter (ME) transferred into the Civil Engineer Corps in the U.S. Navy. He is stationed in Port Hueneme, Calif. In June 2010, he began an eight-month deployment in Afghanistan.

Megan Menconi (ISYE) celebrated the new year in Paris by becoming en-

gaged to Wesley Rothman. They plan to marry in Brown's Point, Wash., next fall.

Michael Nieman (EE) is an electrical engineer with Amonix Inc. in Seal Beach, Calif. He works in the systems engineering group supporting the design of power systems. Amonix is the leading designer and manufacturer of concentrating photovoltaic commercial solar power systems.

Jarrod Pitts (ME) is a sales and business development engineer for MiaSole, a solar panel manufacturer in Santa Clara, Calif. His work has given him the opportunity to travel all over the world to Australia, Europe and India.

Karl Riesen (EE) is a senior electronics applications engineer at Western Digital in Orange County, Calif.

[2010]

Anastacia Bronner (ISYE) is an energy analyst at Itron in San Diego. The company delivers end-to-end smart grid and smart distribution solutions to electric, gas and water utilities.

Luma Desautel (ISYE) is an industrial engineer at BAE Systems Inc. in Greenlawn, N.Y. She is in her first rotation in Long Island, N.Y., as part of their Operations Leadership Development Program. Luma plans to study for an MBA as part of this program.

Justin Hall (ISYE) is a wet-etch equipment engineer at SolarWorld U.S.A. in Hillsboro, Ore.

Zachary Lamar (ME) is in flight school for the U.S. Marine Corps in Pensacola, Fla. He married Rebecca Malone in April 2011.

Rachael McKay (ISYE) returned to Seattle and is an industrial engineer at Boeing on the 787 program, a new composite-material-based commercial airplane. Her focus is process improvements and she works on the flight line, so during the day she can walk out to the runway and watch a plane run engine tests or even take off for the first time.

Averi Thomas (ME) is working toward a master's degree in mechanical engineering as a Stanford Graduate Fellow at Stanford University.

In 2011, USD's School of Engineering conferred diplomas to 44 students, making it one of our largest graduating classes ever. The class was comprised of 14 electrical engineers (EEs), 11 industrial and systems engineers (ISYEs) and 19 mechanical engineers (MEs). Here's what some of them have been up to since graduation:

Andrew Arcidiacono (ISYE) is a field engineer at Schlumberger in Houston.

Deepkarn Bedi (ISYE) has started his own Internet company, Cloudeas.com, in San Francisco. See story on page 12.

Andrew Byrne (EE) is an electrical integration engineer at General Atomics Aeronautical in Poway, Calif.

Patrick Castagna (ME) is a staff mechanical engineer at PDG Oncore in San Diego.

Tiara Chapel (ISYE) has been accepted for graduate studies in industrial engineering at the University of Oklahoma.

James Cook (EE) is working as a systems specialist for Siemens Building Technologies in Cypress, Calif. He is operating energy management and control systems for schools, office buildings, factories and airports all around the greater Los Angeles area.

Rodrigo Diaz (ISYE) is a Lean and Six Sigma consultant at the Lean Six Sigma Institute in San Diego.

Allison Harms (EE) will be studying toward a JD at the University of California Hastings College of the Law in San Francisco.

David Hopkins (EE) won USD's Business Plan Competition and is launching Well Suited, a web-based retail business specializing in competitively priced, custom-fit dress clothes for men. See story on page 3.

Michael Jarosinski (ME) has accepted a position with General Atomics Electromagnetic Systems in Lakehurst, N.J. He will be a test operator for their Electromagnetic Aircraft Launch System.

Adam Jones (ME) is working in Alaska's North Slope with Fairweather,



LLC, a company providing drilling support for oil rigs. He plans to begin medical school next fall.

Regina King (ME) is a field engineer at Schlumberger. After completing training in Oklahoma, she will be based in Conway, Ark., working on hydraulic fracturing in their well service unit.

Sam Levine (ISYE) is the operational excellence analyst in the Cost Reduction/Ops Strategy and Development departments at Hamilton Sundstrand in San Diego. She will be responsible for communicating cost reduction activities to senior leadership as well as developing the necessary processes to align the reporting of the global supply base.

David Leyva (ME) is a mechanical engineer at Cognitive TPG in San Diego, an integrated supplier of printing technologies.

Joshua Lubaway (EE) is a test engineer at Western Digital in Orange County, Calif.

Tiffany Mendoza (ISYE) is a systems engineer at Raytheon Integrated Defense in San Diego.

Melissa Mulvaney (EE) is a software test engineer at SONY Electronics. She is doing work with home entertainment products.

Nichole Norby (EE) is working at Stonebarns Center for Food and Agriculture. Stonebarns is an educational farm and farm-to-table restaurant that promotes sustainable, local and organic food.

J.D. Norris (ISYE) is a quality engineer at L&T Precision in Poway, Calif. L&T Precision provides sheet metal and machining services to commercial and aerospace industries.

Brian Partida (ISYE) is a value stream leader at GKN Aerospace.

Kimberly Perkins (EE) is now a second lieutenant in the U.S. Air Force and is set to report to Wright-Patterson Air Force Base in Ohio as a developmental engineer.

Emmett Perl (EE) was awarded an NSF Graduate Research Fellowship and will be attending graduate school in electrical engineering at the University of California, Santa Barbara.

Enrique Rayon (ME) is a design engineer in the Thoraco-Lumbar Fixation division at Nuvasive in San Diego. He will be developing spinal implants, instruments and techniques for minimally invasive spinal surgery.

Bryan Reed (ME) is now an ensign in the U.S. Navy and is set to report to Pensacola, Fla., to begin flight training.

Alisa Sieber-Johnson (ISYE) is now a second lieutenant in the U.S. Marine Corps and is set to report to The Basic School in Quantico, Va. Upon completion, she will be stationed in Pensacola, Fla., to attend flight school.

Marilyn Smith (EE) has joined Teach for America, and will be working as an elementary school teacher in Colorado Springs, Colo.

Chris Steward (EE) is working at SAIC in San Diego.

Javvad Syed (ISYE) is enjoying his job in process development at Hunter Industries, leaders in irrigation systems. Brian Taylor (EE) is an applications engineer for Instrumart in Carlsbad, Calif. He will be specializing in flow measurement and water quality instrumentation.

Chase Tushaus (ISYE) is a quality engineer at L-3 Communications in San Diego.

Casey Weiss (ME) is a mechanical engineer at General Atomics in La Jolla, Calif. He is part of the Bluegrass Chemical Agent Pilot Plant System team. They work to neutralize the inventory of chemical warfare agents and explosives at the Bluegrass Army Depot in Richmond, Ky.



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