NATIONAL HONOR SOCIETY
TAU BETA PI INSTALLED

STUDENT-ATHLETES ARE
SHIFTING THE PARADIGM

USD HELPING WOMEN
CLOSE THE GENDER GAP

ALI ALMATROUK IS ONE
IMPRESSIVE ALUMNUS
Outstanding in Their Field

Celebrating the many achievements of USD’s Engineering program

I am excited to present our third issue of USD Engineer. With each issue, engineering at USD has continued to grow. Last year, for the first time, we crossed the mark for more than 300 students. This fall, we’ve set yet another record, and welcome more than 350 new and returning aspiring engineers to our program. In May, we celebrated the commencement of 44 freshly minted USD engineers. And, as the number of students and alumni grows, so too does the diversity of their accomplishments, both inside and outside the classroom.

The first feature story in this issue highlights the achievements of our engineering student-athletes. While it’s unusual for students majoring in engineering to participate in NCAA athletics at most schools, at USD, it’s much more common. This story reveals how their athletic pursuits complement their engineering studies, helping to make them complete engineers who can succeed both technically and professionally.

Another story recognizes the academic accomplishment of our outstanding students by chronicling the installation of a new chapter of Tau Beta Pi at USD. Tau Beta Pi is the first and most distinguished national honor society for engineering students. The formation of a USD chapter is a milestone event that gives national recognition to our engineering programs and is of great value to our faculty and staff. For several years, we’ve maintained the University of San Diego Engineering Alumni Linkedin group, and we encourage you to join us there, even if you aren’t an engineering alumnus. And last spring, we began hosting engineering social events at USD’s O’Toole’s lounge on campus, and will be adding more alumni events throughout the year. The first of these will be an inaugural Homecoming and Family Weekend event on Sat., Oct. 13. We hope to see you there.

Finally, feel free to send me or my “friend,” USD Engr, a Facebook friend request (https://www.facebook.com/usd engr), because any friend of USD Engineering is a friend of mine.

But these three stories offer just a few of the ways the USD engineers stand out in their studies, work and communities. Many other stories, as well as news from the latest graduating class and more than 60 alumni, help to complete the picture. I hope you enjoy catching up on the accomplishments of your colleagues, and I look forward to being able to include news from you next year.

Of course, as the ranks of our students and alumni continue to grow, it becomes more difficult to maintain the close relationships that enrich our programs and are of great value to our faculty and staff. For several years, we’ve maintained the University of San Diego Engineering Alumni Linkedin group, and we encourage you to join us there, even if you aren’t an engineering alumnus. And last spring, we began hosting engineering social events at USD’s O’Toole’s lounge on campus, and will be adding more alumni events throughout the year. The first of these will be an inaugural Homecoming and Family Weekend event on Sat., Oct. 13. We hope to see you there.

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Prestigious Milestone

National honor society Tau Beta Pi installed at USD

by Ryan T. Blystone

The year was 1991. USD’s first graduating class of engineering students — consisting, in its entirety, of five electrical engineers, who all followed a unique dual degree (BA/BS) curriculum taught by a small-but-dedicated group of faculty members — proudly went forth into the wider world. To say the program has been on a growth spurt since would be an understatement. Case in point: Two major disciplines — industrial and systems engineering along with mechanical engineering — have been added, graduated classes and achieved ABET accreditation. Supremely creative students have come up with ideas ranging from robots to sustainability, all the while embracing interdisciplinary projects that have impacted communities around the globe. And in late February of 2012, USD’s engineering programs took another significant step forward as current students and alumni participated in the official USD chapter installation for Tau Beta Pi, the oldest (established in 1888) and most prestigious of engineering national honor societies.

“This recognition from Tau Beta Pi is a very important milestone in the development of our distinguished engineering programs,” says USD’s Director of Engineering Programs, Kathleen Kramer. “It’s an excellent fit with our emphasis on development of the whole person, or what I call the complete engineer.” Tau Beta Pi has a strong interest in promoting the liberal education of students at schools of engineering, and emphasizes both distinguished scholarship and exemplary character.

News of the program’s chapter acceptance was particularly pleasing for Barbara Kanneman, wife of the late Thomas Kanneman, the USD engineering program’s founding director. Barbara made a generous gift to the engineering program to help pave the way for USD’s chapter and honor her husband, who came to USD in 1986 and was a Tau Beta Pi member.

“I’m just really pleased that this has finally happened,” she says. “It’s something I know that Tom always wanted to see happen at USD. He belonged to several honor societies and it was important to see the students at USD honored for their achievements.”

Kramer says the petition process to get chapter approval began in 2010 after the program met several mandatory eligibility requirements, including community service.

“Our service project this year was the FIRST Lego League Tournament at Escondido Charter High School in November,” Kramer says. “We served nearly 160 students, ages 9-15, who were discovering engineering through an engineering challenge on food safety.”

In October 2011, Petitioning President Joseph EBK ‘12 and Electrical Engineering Professor and Faculty Advisor Susan Lord presented USD’s case for final approval to the Tau Beta Pi Executive Council. Mechanical Engineering major Jessica Buckley was elected the first student president of the new chapter of Tau Beta Pi, California Alpha Epsilon. The initiation featured students and alumni, a mix that Kramer welcomed. “We’re extremely happy that so many of our finest alumni were a part of this. We definitely look forward to more alumni initiations in the future.”

The next initiation for the California Alpha Epsilon chapter of Tau Beta Pi is scheduled for Dec. 17, 2012, in the DeGheri Alumni Center.

Shining Stars

USD faculty members recognized for stellar work at nation’s top engineering education conference

by Davis Jones ’14

The USD Department of Engineering garnered an impressive pair of accolades last June, as faculty members Thomas Schubert and Susan Lord (pictured above) were honored at the American Society of Engineering Education (ASEE) conference and exposition in San Antonio, Texas. Lord’s collaborative research paper titled “Race, Gender, and Measures of Success in Engineering Education” won this year’s William Elgin Wickenden Award, which recognizes the highest standard of scholarly research among the 29 articles published in the Journal of Engineering Education in 2011. “This was indeed an honor,” the USD-optoelectronics director says. “ASEE is an important part of my professional community, so being recognized in such a forum by so many colleagues was very meaningful.”

The prestigious award is named in honor of William Elgin Wickenden, whom ASEE describes as an “engineer, educator, philosopher, administrator and humanitarian.” Schubert, who co-founded the engineering program in 1987, received the Robert G. Quinn Award for “outstanding, sustained contributions in providing and promoting excellence in education.” Among his numerous career highlights, he cites developing many of the laboratory courses and exercises in the electrical engineering program, as well as helping to develop both the industrial and systems engineering program and the mechanical engineering program, as the accomplishments he’s most proud of.

“Basically, what I have done is to dedicate my efforts as an engineering professor to creating an environment conducive for young adults to grow into engineering professionals,” he says. “To me, that means putting the welfare of the students and the quality of my courses above all else.”

Both professors’ accomplishments are reflective of a surging program that continues its rise toward national prominence. “Honors such as these help bring the university’s name to the forefront for others across the nation and the world,” Lord says.
Exercises in Ingenuity

Capstones give students room to strut their stuff

by Ryan T. Blystone

There’s nothing funny about the idea of an engineer’s mind having a creative side. Just ask senior mechanical engineering student Patrick Walton, who took “a funny idea” for a project and quickly turned serious. He and three classmates developed the Kinetic Fountain, which powers water spouts with music. That unlikely marriage between art and science was front-and-center at the engineering program’s 2012 Spring Open House.

“We’ve been building this version for four to five months. But the testing to get to this point was nine months,” says Walton, who worked with classmates William Lehman, Gabriel Mendiola and Michael Spies. “It’s been a lot of work, but it all came together and we got what we were hoping for.”

The team displayed the fountain for open house visitors in the shady, verdant Loma Hall/Warren Hall patio, and it was definitely an eye-catching display. The blue rectangular box was designed “to recreate the visual output of an equalizer with multiple fountain outputs,” explains Walton. "All jets of the fountain receive flow from one large pump that’s controlled by a ball valve connected to a CNC stepper motor. An Arduino board filters the musical input to then send the given outputs to the stepper motor controllers.”

The Kinetic Fountain was one of 13 senior capstone projects presented among the electrical (EE), mechanical (ME) and industrial and systems (IEY) engineering disciplines. There were also posters on the second and third floors of Loma Hall to showcase Six Sigma-infused products by ME and IEY students: a durable “bulletproof” school binder; tents that provide ample ground-up storage space; and a headphone storage device.

The four ME capstones, in addition to the Kinetic Fountain, were: an Energy Relay Competition where students created four self-propelled devices utilizing the contest’s theme of alternative energy sources in a relay-race styled competition; a T-shirt folding machine; creation of new tennis balls that, through testing of their spin rate and velocity, attempt to slow down the sport of tennis for the sake of crowd entertainment; and continuation of a wind tunnel project that uses lab experiments involving fluid dynamics and heat transfer.

The five electrical engineering capstone projects were: Biomedical Vision Sensor System (BioVSS); Curl Environmental Lab; Electric Magnetic Slot Racing; Emergency Vehicle Alert System; and a headphone storage device. The BioVSS team co-authored a paper on the project, “Biological Vision Sensor System (BioVSS) for Providing Live Biotelemetry and Environmental Data,” for the 2012 International Conference of the IEEE Engineering in Medicine and Biology Society. Each IEY capstone assessed ways to improve existing businesses: examining drive-thru throughput at fast food restaurants; improving overall efficiency for L&T Precision, a machining and sheet-metal fabrication company, and improved layout of operations at USD’s E-Waste Collection Center. The Kinetic Fountain, BioVSS and the fast food drive-thru capstones received special awards. Six judges determined the winners on technical merit, presentation, demonstration and a written report.

Students remarked upon how much they enjoyed creating their capstone projects, especially because the projects integrate knowledge and skills they’ve learned throughout their engineering studies. And that’s no joke.

USD engineering students showcase their skills by designing inventions that raise eyebrows, raise awareness and raise the bar. Some capstone projects include:

- Kinetic Fountain
- Biomedical Vision Sensor System
- Improving Drive-Thru Restaurant Throughput
- Wind Tunnel
- Emergency Vehicle Alert System

Support USD Engineering: Give to the Capstone Fund Today!
Bradley Chase, associate professor of industrial and systems engineering, presented “From Explicit to Implicit Speech Recognition” at the 34th Annual International Conference of IEEE Engineering in Medicine and Biology Society in August 2012. The presentation was part of his ongoing research on the use of electroencephalography and its integration in brain-computer interfaces. He continues research efforts on human physical and cognitive performance in conjunction with UC San Diego’s College of Medicine and Department of Cognitive Science, along with multiple research labs at the Naval Health Research Center in San Diego.

Ming Huang, mechanical engineering program coordinator, has published an article “A Study on Dimension Synthesis for the Peaucellier Mechanism” in the Journal of Mechanisms and Automation, which he co-authored with senior MIE student Jessica Buckley. He also recently completed an article titled “Performance Analysis and Design Optimization of SR Ranar Parallel Robot,” to be presented at the 2013 International Mechanical Engineering Congress and Exposition in Houston, Texas. This presentation is part of his ongoing research on integrating CAD, robotics and soft computing.

Frank Jacobitz, professor of mechanical engineering, published two papers on helical properties of turbulence. Mean helicity was considered in the article “Influence of Partial Mean Helicity on Homogeneous Turbulent Shear Flow,” published in Physical Review E. Local helicity was studied in an article titled “On Helical Multiscale Characterization of Homogeneous Turbulence” that will appear in the Journal of Turbulence. The articles are part of an ongoing collaboration with Kai Schneider (Marseille), Wolter Bo (Uyn) and Marie Farge (Paris), aspects of this work have been presented at a variety of conferences over the past year. Jacobitz (pictured above) also investigates properties of the microcirculation in muscle fascia with mechanical engineering senior Niko Yamamura and in the human conjunctiva with engineering sophomore Will Dow. During the past academic year, Jacobitz also taught the first honors freshman engineering pre-ceptorial and follow-up course.

James Kohl, associate professor of mechanical engineering, and Truc Ngo, assistant professor of industrial and systems engineering, along with external research colleagues, have written an article entitled “An Investigation of Scratch Testing of Silicone Elastomer Coatings with a Thickness Gradient,” published in the May 2012 issue of the Journal of Applied Polymer Science.

Susan M. Lord, coordinator and professor of electrical engineering, along with co-author from USD Sociology, Purdue, and Rose-Hulman, won the American Society of Engineering Education Wickenden Award for the best paper published in the Journal of Engineering Education in 2011. In October 2011, Lord received the IEEE Education Society Distinguished Member Award for outstanding service to the education society as an officer and society president, for service to IEEE and the profession, and for significant contributions in educational and computer engineering education as well as the Schmitt Award for outstanding service to the Frontiers in Education Conference. Lord was on sabbatical for 2011-2012, she spent the spring 2012 semester teaching electronics in Japan and presenting engineering education research at Southeast University in Nanjing, China. It was an amazing experience for her whole family.


David Malicky, associate professor of mechanical engineering, was a co-author on “Removal of Pseudobariums (Epoxies) from Silicone Coatings Using an Applied Transverse Force,” recently published in Progress in Organic Coatings. The work is part of his ongoing collaboration with associate professor James Kohl on silicone coatings research, currently developing a finite-element model examining interface stresses. He also recently developed a new professional development seminar taught in Spring 2011 for the NSF Engineer of 2030 Scholars, including topics on job searches, career development, graduate school and business practices for engineers.

Truc T. Ngo, assistant professor of industrial and systems engineering, is currently mentoring a SURE student on a collaborative research project dealing with organic thin film semiconductor processing at SAPIA/M Systems Center — Pacific (Navy research lab) in San Diego. She has also attended the 2012 Annual Institute of Industrial Engineers Conference in Orlando, Fla., where she co-presented her research study on biodegradable composite materials with a USD undergraduate engineering student.

Rick Olson, associate professor of industrial and systems engineering, has received additional funding from the San Diego Foundation to support the development and recognition of a greenhouse gas mitigation and cost effectiveness tool. This extension of a project that Olson was awarded, along with Scott Andrus in USD’s Energy Policy Initiative Center, will help communities in San Diego compare alternative strategies for meeting greenhouse gas emissions targets set for 2000 and 2010. During the coming year, he will also be the program chair for the Industrial Engineering Division of the ASEE, and will be organizing the students at the 2013 ASEE Annual Conference.

Leonard Perry, coordinator of industrial and systems engineering, conducted his research efforts in the area of system improvement via quality improvement methods, especially in the area of applied statistics, Six Sigma, and design of experiments. He recently collaborated with clinicians from Scripps Health in the area of Six Sigma to publish an article in the Journal of Nursing Administration. In the area of teaching, he co-taught the interdisciplinary technical elective in the Spring 2012 term with Mechanical Engineering Coordinator Ming Huang entitled “Product Design and Development Using Six Sigma.”

Thomas Schubert, professor of electrical engineering, recently received three awards: the American Society for Engineering Education’s 2012 Robert G. Quinn Award “in recognition of outstanding contributions in providing and promoting excellence in engineering experimentation and laboratory instruction”, the San Diego County Engineering Council named him 2012 Outstanding Engineering Educator ("In grateful recognition of outstanding academic contributions and service to the engineering profession and the community"). and the USD Trina/Ronald E. McNair Postbaccalaureate Achievement Program named him 2012 Faculty Mentor of the Year (“in appreciation and recognition of [his] dedication to our McNair Scholars”). Schubert (pictured at left) also assisted Frank Jacobitz and Ernest Kim, recently published two journal articles: “Student Perceptions and Learning of the Engineering Design Process: An Assessment at the Freshman Level” in Research in Engineering Design, and “An Assessment of Student Perceptions on the Use of Multiple Engineer Textbooks Editing to Reduce Cost to Students” in the Journal of Applications and Practice in Engineering Education.
ON the BALL

Engineering student-athletes are shifting the paradigm

by Mike Sauer

These days, it seems there are as many clichés attributed to sports as there are, well, teams themselves. We all know that there’s no “I” in “TEAM,” that you win as a team and you lose as a team, that individual success means nothing if the team fails, and, of course, that it’s a team effort. But while they can be an integral part of pre-game huddles and post-game locker room speeches, clichés have never helped orchestrate a tide-turning touchdown drive. Nor have they booted a game-winning goal, or served out a tightly contested tennis match. Come to think of it, they don’t matter one iota to a crew team member straining to cross the finish line first.

Thankfully for fans of USD Athletics, those pressure-packed responsibilities are the purview of USD’s stellar student-athletes, many of whom hail from the university’s burgeoning Department of Engineering. And whether you’re watching USD Offensive Lineman of the Year Christian Fetters (ME) protecting the quarterback, Women’s Soccer Co-Captain and All-Conference Midfielder Elissa Magracia (ISYE) delivering the perfect pass, Women’s Tennis MIke Sauer (EE) hitting winners with laser-like accuracy or four-year men’s crew team member Nick Delgado (EE) outpacing the competition, you get the sense that these are student-athletes whose drive, desire and dedication are the foundation for their success — both on the field of play and in the classroom.

“The most successful engineers are the ones that work effectively on teams with people who have different backgrounds and skills, and I’ve learned to expect that engineering student-athletes have a willingness to achieve that success," says USD Director of Engineering Programs Kathleen Kramer.

Unfortunately, it’s also cliché in some circles to assume that student-athletes who pursue degrees in fields related to STEM (science, technology, engineering and math) can’t excel in college sports, given the amount of time needed to commit to their studies. Not true, says Fetters, who managed to hold down a 3.2 grade-point average (GPA) while locking down some of the Pioneer Football League’s best defensive linemen. "You can do well at both, but you better be really good with time management. Engineering is one of the more demanding majors; given the amount of time you have to commit to labs and studies, you’ve got to be focused, because you really don’t have much free time to spare. These were definitely times where I wished I picked a major that allowed me to sleep more, but it was definitely worth it," says Fetters’ ability to balance sports and scholastics earned him selection to the National Football Foundation and College Hall of Fame Honor Society, as well as an internship with aerospace and defense conglomerate ATK, where he hopes to develop technologies that provide U.S. troops with the latest tools for success on the battlefield.

"Being in San Diego with the military presence here, it’s something I’m very respectful towards and thankful for. The idea of being able to help our troops by providing them with the most advanced technologies is something I’ve been interested in since I first got involved in USD’s engineering program." As a freshman back in 2008, Magracia knew there would be two central components to her college experience: soccer and engineering. Little did the know that in November 2011, both would play a pivotal role in helping USD’s soccer access to new heights.

Imagine this white-knuckle scenario: as the team’s co-captain, she was chosen to line up a potential game-winning penalty kick against the then No. 2 ranked UCLA Bruins. A win would advance the Toreros into the Sweet 16 of the NCAA Women’s Soccer Tournament for the first time, and in the process, hand the Bruins their first home loss in 30 playoff games. Never one to lose her cool come crunch time, Magracia calmly buried her shot in the back of the net — and did so by applying a basic engineering lecture topic to her approach.

"We always talk in class about efficiency, and when you’re looking to score a goal, most times you’re just reacting," says the senior and current member of the industrial and systems-engineering honor society. “With that penalty kick, I just tried to be as efficient as possible with my shot, put it a line towards the top left corner of the goal. I guess efficiency worked!"

Garnering maximum results in the most efficient way possible also defines Coupez’s approach to her tennis game and her studies. "It’s liberating to know how much I can accomplish despite my brain and body wanting to shut down," she says, laughing. "I’m a really positive person, which I think you have to be when the alarm goes off at 4:30 a.m., but I think the rowing has helped me develop the discipline necessary to stay focused in my classes and my labs, and I only want to get better at both my senior year." Through their successes, all four of these exceptional Toreros are helping redefine what is possible for student-athletes, and in the process, rendering old clichés obsolete.

"It seems that many people are surprised that students can successfully combine athletics with engineering," says Kramer. "These student-athletes epitomize the ‘complete engineer’ that we see as the key distinction of USD engineering."
Breaking Barriers

Helping women to close the engineering gender gap

by Karen Gross

Even though Julie Brown’s own father worked as an electrical engineer while she was growing up in the fast-paced tech world of Silicon Valley, Calif., the 21-year-old senior readily admits that when she enrolled at USD, she barely knew what he — or any other engineer — actually did. “I didn’t even really figure it out until my second semester of freshman year,” says Brown, now on the verge of becoming an electrical engineer herself. “I was thinking either math or physics, but when I started taking engineering classes, I fell more and more in love with that.”

The revelation came as a surprise to Brown. Although she excelled in math and physics, she hadn’t had any exposure to hands-on engineering during her middle- and high-school years. For girls especially, that absence of an early introduction can have a huge impact on the career path they eventually choose. “I know there are a lot of people who don’t really enjoy taking those math and physics classes,” she says. “But I’m not just talking about math and physics anymore. I’m applying it to real life situations.”

Encouraging young women like Brown to pursue the so-called STEM professions — science, technology, engineering and math — has become a passion not only for USD faculty members, but also for ranks of female scientists and researchers across the country. A sweeping research survey released by the American Association of University Women in 2010 titled “Why So Few?” found that, while the picture is improving — especially in medicine, biology and the life sciences — career opportunities for women still lag far behind in physics and engineering. And in computer science, their numbers have actually declined after rising for several years. “It’s been found that if girls are not doing extremely well, they’ll transfer to something else where they will do extremely well,” says Kathleen Kramer, professor and director of engineering programs at USD. “It’s more likely that a male student will just shrug and say, ‘I get degrees.’”

That’s not the only difference. Subtle stereotypes that still imply girls are not smart enough to push them away from the so-called “hard” sciences. And studies show that women are more inclined than men to want to see the results of their work in action, and to know that they’re making a difference in people’s lives. Explaining what engineers actually do is crucial, says Olita Kimberling, a mechanical engineer at Solar Turbines, a communications industry giant based in Silicon Valley.

“Women need to know they can make a contribution to society and that engineering is a viable field,” she says. “We need to make the link to real people!”

That link was established early on for Kimberly La Salle, a 21-year-old senior whose choice of mechanical engineering was guided by her desire to improve the world. “I’ve always wanted to help people. To see what they need, then develop something they can use.” For her senior project, La Salle knows she wants to give back, and is thinking about designing a water delivery system for impoverished villages in Third World countries. Convincing other young women and girls that they can take engineer ing and a variety of science careers in similarly impactful directions is something USD faculty take very seriously. Last spring, the university hosted the 10th annual Expanding Your Horizons conference, where more than 400 middle- and high-school aged girls took part in hands-on workshops where they tried everything from crime scene investigation to chromatography to building towers with spaghetti and marshmallows. Other outreach efforts include partnerships with the San Diego Science Alliance’s BEWiSE program, and Girls Day Out, a science and engineering fair that targets middle-school girls in San Diego.

But the hurdles remain very high. Even at USD — where numbers surpass the national average — only about a fourth of engineering students and a fifth of the faculty are female. According to the National Science Foundation, just 32 percent of undergraduate engineering degrees and 17 percent of degrees in physics are awarded to women. Getting girls past these daunting statistics and stubborn barriers, implicit bias and a mostly male workplace environ ment, can be tricky.

That jarring workplace reality hit Brown head-on, the first day of her summer internship at the offices of Encisors, the telecommunications industry giant based in Silicon Valley. “It was a little bit intimidating,” she says. “I walked through and it was all men.” Brown’s manager quickly gave her a pep talk. He told her that female engineers tend to hold back for fear of saying something wrong, and encouraged her to assert herself during meetings and conference calls.

That key piece of advice will likely be very useful to Brown and her fellow female engineers, as they bravely blaze a trail in a world that’s still quite foreign to women. They might also want to consider the wise words of Kramer, reflecting on her own very successful career as a engineer and internationally acclaimed academic: “If I were a female in this profession, I’m not used to being in the majority,” she laughs. “If this was upsetting or threatening to me, then I’d need to change fields.”
Profile

Impressive Impresario

Ali Almatrouk applies USD lessons to his Kuwaiti-based businesses

By Steve Murray

Ali Almatrouk is a busy man, and that’s just the way he likes it. The CEO of Makers, Inc. — a Kuwaiti company that Almatrouk created in 2009 — recently launched a second business venture in real estate.

“I come from an entrepreneurial family,” he says. “My grandfather was an entrepreneur, and my great-grandfather was one of the leading merchants in Kuwait from the 1920s to the 1950s. I always looked at those two great men as idols in my life, so I want to continue on their path.”

Almatrouk has already traveled quite a way down that path. “I wanted to work in big corporations first, to learn what goes on in running an organization. I also wanted to learn how to recognize what those organizations were doing that was right or wrong so I could use that experience when I started my own business.”

He started his career in the family merchandising business — Mezzan Holding Company — and then signed on at telecommunications firm Zain Kuwait before setting out on his own. Today, Makers, Inc. promotes educational technology products in Kuwait, although Almatrouk has plans to move the company into other services, too.

“We chose education first because I had some experience in tutoring at USD and we saw that this market is underserved in Kuwait. It was a real opportunity and we jumped on it,” he recalls. “I also used Texas Instruments products while I was at USD and they helped me tremendously in my engineering classes. We contacted Texas Instruments and things moved on from that.”

They certainly did. “We’re now the official distributor in Kuwait for two companies,” Almatrouk explains. “Texas Instruments Education and Vernier for Science and Technology.”

He credits the USD engineering program for helping to cultivate his personal work ethic. “We spent lots of time in the lab. We literally spent most of our weekdays, and sometimes weekends, preparing our projects and lab reports,” he recalls. “But for me, the hands-on time made for the best experiences. As students, we developed very special relationships with each other because of all the time we spent working together.”

Almatrouk also acknowledges close faculty relationships for keeping him focused on his goals. “The faculty knew us by name, and were interested in our success. I still keep in contact with them.”

“The high expectations of the engineering faculty provided lessons that still resonate. Dr. Susan Lord, for example, forced us to be as perfect as we possibly could be,” he recalls. “If you submitted something, it had better be error-free. She also pushed us to be organized. I still use her methods to organize my work today. It saves a lot of time and makes you very efficient and productive.”

Lord is quick to note that the lessons flowed both ways. “A circuit simulation tutorial that Ali developed for a homework assignment was so good that we used it to train our new engineering students.”

Almatrouk’s high standards and consistency served him well at USD. As a student, Almatrouk served as chair of the Institute of Electrical and Electronics Engineers student chapter and was president of its honor society, Eta Kappa Nu. He earned his B.A./B.S. in electrical engineering in 2007, graduating summa cum laude.

He is quick to credit his education at USD as a key component of his success and says that shaping employees into ethical and competent managers is a big part of his business strategy.

“USD emphasized ethics a lot in my courses, including engineering. To build a stable company, it’s important that people trust you. We want the common link between our partnerships to be high quality; honesty and consistency served him well at USD and they helped me tremendously in my engineering classes. We contacted Texas Instruments and things moved on from that.”

Almatrouk’s talent and drive as well. The Kuwait government recently selected him to be part of its Thukhur Promising Leaders program, established to nurture the future leaders of Kuwait.

“It’s a competitive program. I was one of 100 people selected from 650 applicants,” he says with pride. “The program, which he completed this summer, involved focused business and leadership training at Cornell University. Although he married in 2008 and welcomed the birth of his daughter, Sheikha, in 2011, family life has not slowed him down. This year, he started a new business — Oro Realty Group USA, LLC — along with his brothers, Mohammed and Hasan. Oro will manage property in both Kuwait and Southern California.

“We want to balance the risk in our businesses by diversifying our portfolios,” he explains. “It all keeps me quite busy, but it’s all really fun. The days are long, lasting until late in the evening, and I also do lots of traveling between the Middle East, Europe and the U.S.”

Despite his busy schedule, making time for USD is a priority for Almatrouk. When he learned that he would be a 2012 inductee into Tau Beta Pi, the national engineering honor society, he adjusted his travel schedule to make sure he’d be in San Diego for the induction ceremony last February.

And clearly, the university will continue to loom large in his life. In 2010, Almatrouk established the USD Alumni Association chapter in Kuwait. Given his boundless energy and esteem for his alma mater, there’s little doubt that this venture too will thrive.
Andrew Isaksen (EE) and IMBA’05) know a supply management position in an environmental analysis at Boeing Commercial Airplanes (BCA) working on the 787 Dreamliner program. He and his wife are relaxing to live and weather in Seattle.

Don Jenkins (EE) is now the director of systems and test quality at EnExTek, where he is responsible for the management of demand response portfolios that reduce energy usage when dispatched by the grid operators across the United Kingdom, Australia, New Zealand, and New Zealand. His wife, Lorrie, and daughter, Ali, are both in college pursuing their bachelor degrees. Lorrie is attending Bridgewater State University meeting in criminal justice with a minor in political science, while Ali finished her first year at Northeastern studying behavioral neuroscience.

Derek Kreager (EE) is living in Ham Lake, Minn. He went to Hamline University in 2012 on a mission trip with his church delivering water to families and visiting an orphanage as well as home for the elderly. He has been an engineer with Innovative Laser Technologies in Minneapolis for seven years.

Jona Sicily (ISEY) and his husband, Brad, welcomed their first child, Alexander Sicily, in February 2012. Jona is now based in San Diego.

Pedro Umea (EE) has been working for The Boeing Company International Corporation (SACW) for 10 years. He is now an electrical engineer for the Logistics Support Team at the United States, testing Deployable Tactical Navigation (D-TACAN) systems.

Carlos Williams (EE) joined the U.S. Navy in 2008 and is now an electrical engineer for Naval Aircraft Engineering Command in Northwood. In Bremerton, Wash. In July of 2011, he received the Certified Energy Manager designation from the Association of Energy Engineers. He and his wife, Julia, have 3-year-old twins.

Scott Chickota (EE) recently graduated with a Ph.D. degree in finance from the Royal College of Surgeons in Dublin, Ireland. He has just begun a five-year research program at Columbia Presbyterian Medical Center in New York.

Michelle Esteban (ISEY) is a patent attorney with Schwegman, Lundberg, and Woessner, and is now based in Los Angeles.

Holly Lyons (ISEY) is currently the technical lead for the Composites Innovation and Supplier Development Department at Goodrich Aeronautics, located in Chula Vista, Calif. The job requires her to travel around half of the time to different Composite sites and supplies. This has afforded her the opportunity to work with people from various different cultures and with every part of the world that she never thought she would have the chance to see.

Nathan Roberts (EE) received an MS in electrical engineering from the University of Michigan, Ann Arbor in 2011. He is now a PhD candidate at the University of Michigan studying power/FCC design. He is working with Michelle Chen.

3. After 16 years at Qualcomm, he recently became its senior director of integration management. His current position focuses onFPDs and tools in the integration of the NICX Program Office. His current job affords him the opportunity to work with various FPAs engaged in various ways.

Erik Loftis (EE)

She and her fiancé, Ben Baldwin, expect to be married in Chicago on Sept. 8, 2012.

Paula Lucchini (EE) is in her sixth year at Chevron and has just moved into her fifth role in the company. She is the competency and training coordinator for the engineering design group. She is also working in San Francisco, CA. She and her fiancé, Ben Baldwin, expect to be married in Chicago on Sept. 8, 2012.

Judy Simpson is a field applications engineer in Lotus at Catata which, working on GMs phonetics. Prior to this, he sold, the company he co-founded, Callaway Golf, and had become his senior director of integrated products. His daughter, Olivia, is 7.

Lori Rasmussen Egbers (ISEY) and her husband, Hannes, welcomed their first child, daughter Alexia Egbers (initials ISE, note how close she actually is to becoming an ISEY), born on December 13, 2011. Lori is a sales engineer at Northern Engineering Sales in Woodbury, Minn.

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In 2012, 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 (ISEs) and 19 mechanical engineers (MEs). Here’s what some of them have been up to since graduation:

Julie Birch (EE) is a hardware engineer on the Corporate Engineering Hardware Team at Qualcomm in San Diego.

Brandon Blom (EE) is working on thermal analysis, product design and acoustic analysis as an Engineer at Qualcomm in San Diego.

Jenni Bole (EE) is an electrical integration engineer at General Atomics Aeronautical Systems Inc. in San Diego.

Ryan Boufford (ME) is a strength engineer at Boeing in the San Diego area.

Allan Cadreau (EE) is an engineer at Trident Energy LLC in San Diego.

Julie Dejoux (ISE) is a quality engineer at Li-S Communications in San Diego.

Bethany Dimas (ME) is in an application engineer position at Johnson Inland Engineering in Los Angeles.

Adam “AJ” Purdy (ISYE) is a senior supply chain planner at Amazon in Bellevue, Wash.

Benjamin Fieman (ISYE) has joined the United States Marine Corps.

“I am currently enjoying life in Redondo Beach, Calif. I am working on a new line of swimwear. Go to www.kaimanabeachwear.com to learn more about design and the technology behind our products.”

Adam “AJ” Purdy (ISYE) graduated from California State University, Monterey Bay, with a BS in coastal watershed science and policy earlier this year and was accepted to pursue a doctorate in the Earth System Science program at the University of California, Irvine. He will be in the Hydrology and Climate Research Group.

Hunter Barns (ISYE) was accepted a position as an Electrical Engineering Technician at Huntington Ingalls Industries in San Diego. He is working on the advanced prototype harnessing Soldier Systems. Go to http://www.huntingtoningalls.com/aboutus for updates.

Ray Leyrer (ISE) is a program quality engineer at Hamilton Sundstrand Power Systems in San Diego.

Anthony Van Der Zee (ISE) is currently working as a research engineer on the Corporate Engineering Hardware Team at Qualcomm in San Diego.

Michael Ris (EE) is an electrical engineer at SAIC. He is scheduled to graduate and will be attending graduate school to study electrical engineering at the University of Wisconsin, Madison.

Janna Rohrbacker (ME) is a mechanical designer for Dubai Consulting Engineers Inc. in San Diego.

MacKenzie Sparks (ME) is a systems engineer for Raytheon Integrated Defense Systems’ Expeditionary Warfare Center in San Diego, working on ship self-defense systems for the U.S. Navy.

Renee Thomashow (ISE) is a subcontracts administrator for the FAA/TS at Northrop Grumman Es Segundo, Calif.

Jeff Trial (ME) accepted a position as an engineer assisting the capacitor and radiation monitoring systems group at General Atomics Aeronautical Systems Inc. in San Diego, Calif.

Colby Trueblood (EE) is a hardware engineering intern at Micron for medical school.

Andrews Warren (ISYE) is a software engineer at KAB Laboratories in San Diego.

Anthony Van Der Zee (ISE) is currently working as a research engineer for the United States Marine Corps at Quantico, Va.

Clark Yeom (ISYE) is a hardware engineering intern at Northrop Grumman in Rancho Bernardo, Calif.

Tay Young (ISYE) is a warranty and returns engineer for Skullcandy Inc. in Park City, Utah.

Michael Ris (EE) is an electrical engineer at SAIC. He is scheduled to graduate and will be attending graduate school to study electrical engineering at the University of Wisconsin, Madison. Janna Rohrbacker (ME) is a mechanical designer for Dubai Consulting Engineers Inc. in San Diego. MacKenzie Sparks (ME) is a systems engineer for Raytheon Integrated Defense Systems’ Expeditionary Warfare Center in San Diego, working on ship self-defense systems for the U.S. Navy. Renee Thomashow (ISE) is a subcontracts administrator for the FAA/TS at Northrop Grumman Es Segundo, Calif. Jeff Trial (ME) accepted a position as an engineer assisting the capacitor and radiation monitoring systems group at General Atomics Aeronautical Systems Inc. in San Diego, Calif. Colby Trueblood (EE) is a hardware engineering intern at Micron for medical school. Andrew Warren (ISYE) is a software engineer at KAB Laboratories in San Diego. Anthony Van Der Zee (ISE) is currently working as a research engineer for the United States Marine Corps at Quantico, Va. Clark Yeom (ISYE) is a biomedical engineering research technologist while he prepares to apply for medical school. Tay Young (ISYE) is a warranty and returns engineer for Skullcandy Inc. in Park City, Utah.
[SAVE THE DATE]

October 13, 2012
Engineering Breakfast for Homecoming and Family Weekend

November 8, 2012
Engineering Career Fair

December 7, 2012
Fall Open House and Senior Project Exhibits