

IMAGINE. INNOVATE. INSPIRE.

I³@USD

SHILEY-MARCOS SCHOOL OF ENGINEERING
UNIVERSITY OF SAN DIEGO, FALL 2018

*We are an innovation hub, moving beyond boundaries
into a mindset where anything is possible.*

Innovation

Imagine. Innovate. Inspire.

It is an extreme honor to be the dean of the Shiley-Marcos School of Engineering and to be entrusted with helping develop the next generation of engineering leaders. Perspective matters to me. It is easy to look through a lens where I see the world as beset with conflict, greed and injustices at the hands of those whom we entrust to lead. At times, I must be reminded of what is good and why I have chosen this vocation. I prefer to look through a lens of optimism, where I see dedicated faculty engaging deeply and personally with students. A lens where what we do as a school makes a difference, where we work diligently to develop Changemaking Engineers who are ethical leaders.

We are a young and small private school residing on one of the most beautiful campuses in the world. Walking around the USD campus gives me a sense of peace and fills me with a desire to spread what is good. This magazine offers you a snapshot of who we are and some of what we do.

Our alumni honoree, Rasheed Behrooznia, is a great example of the type of engineering leader we are proud to have had as a student. While well accomplished technically and professionally, it is his character and goodness that stand out to one who gets to know him personally. You will also be introduced to some special people who believe in our vision and who see a difference in the type of students we have. They have given generously.

We have an exciting entrepreneurial program with external mentors, a rapidly growing cybersecurity program and a growing list of industry partners who make significant investments of time and resources to make us better engineers.

We have a very active student body, highly engaged in clubs, community service and in filling their lives with passion beyond the technical degrees they are earning. We provide you with a snapshot of our faculty activities and alumni successes.

The last five years since I arrived at USD have passed in a flash. It is with great pride to say that, regardless of the immense growth and change that has taken place, one constant remains: our students continue to receive a values-based education with personalized guidance. And all of this is possible because of the extraordinary vision and generosity of Darlene Marcos-Shiley and her late husband, Donald, whose gift is a true inspiration that resonates in our hallways, our communities and our hearts.



Chell Roberts
Founding Dean,
Shiley-Marcos School of
Engineering

A blue ink handwritten signature of Chell Roberts, followed by a horizontal line.

Chell Roberts, PhD
Founding Dean, Shiley-Marcos School of Engineering



Darlene Marcos Shiley established the Shiley-Marcos School of Engineering in 2013 with a transformational gift that honors the philanthropist's dedication to education and pays tribute to her late husband, Donald P. Shiley, renowned engineer and inventor of the tilting disc artificial heart valve. Her gift gives USD engineering and computer science students the chance to be true Changemakers.

USD's Shiley-Marcos School of Engineering

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Leading the Next Generation



2018 Alumni Honors recipient Rasheed Behrooznia helps design the transit systems that get commuters where they need to go. His own road to success began on the second floor of Loma Hall and flourishes as he serves as a role model for USD engineers.

faculty was stellar. They really gave of themselves. I truly believe the access they provided helped me learn at a much higher capacity.

"At USD, I learned how important it is to view problems through many lenses, to get that 360-degree view. Of course, there are technical aspects to every engineering project, but there are humanitarian dimensions and practical application issues that are so important to consider."

Behrooznia smiles as he considers the tools available to today's students at the Shiley-Marcos School of Engineering.

"There is so much here: Donald's Garage, the machine shop, the wood shop. I would have loved to have had the 3D printers when I was here! There are so many fun gadgets that encourage students to build out the things they have in their heads. It's a much faster process to get to advanced prototypes."

Something else that helps today's students is ready access to alumni like Behrooznia who provide encouragement and industry insight. It's a role he treasures.

"I've always looked for leaders to model myself after," he says. "I've had such incredible mentors at every stage of my career, and that really began with the faculty at USD. If I can pay that back and be of help to the next generation of USD engineers, I feel like that's the least I can do."

—Timothy McKernan

It seems that Rasheed Behrooznia has always had an idea of what he wanted to do with his life.

"As a kid, I wanted to be an architectural engineer, even though I confess I really didn't know what that meant," he says with a laugh. "I remember spending hours drawing buildings on graph paper and got it in my head that it was what I really wanted to do."

Behrooznia went on to earn a dual BS/BA degree in electrical engineering from the University of San Diego in 2002, with minors in computer science and mathematics, and a subsequent master's degree in systems engineering from George Washington University. He developed his skills writing software for the U.S. Army and Air Force, and defense contractors including Lockheed Martin and Orincon.

Today, as vice president of engineering for the Americas of Cubic Transportation Systems, he leads a multidisciplinary team of roughly 200 engineers that design and develop fare-collection systems for mass transit

entities in some of the biggest and most iconic cities on the globe. Some 38 million people in places including New York, Chicago, Los Angeles, London and San Diego travel on Cubic technology.

One innovation developed by Behrooznia and his team is the card-based "tap technology" that dispenses with tokens and other cumbersome fare-collection methods. Also of note are mobile technologies that link all available transportation options. Riders can pay for public transit, but also integrate fees for toll roads, parking and third-party services such as bike and car sharing.

The foundation of Behrooznia's success was built on the second floor of USD's Loma Hall, soon to be renamed the Belanich Engineering Center. Then part of the School of Business Administration, the engineering program was tucked away on a single floor of one of the original buildings on campus. The donation from Darlene Marcos Shiley that would create the Shiley-Marcos School of Engineering was still years in the future.

"It was a different time, that's for sure," remembers Behrooznia, who now serves on the school's advisory board. "But just as it is today, the



Behrooznia was the 2018 recipient of the Shiley-Marcos School of Engineering's Author E. Hughes Career Achievement Award. See a video celebrating him at www.sandiego.edu/behrooznia.

The Best Is yet to Come

A transformative gift from La Jolla residents John and Raffaella Belanich provides state-of-the-art classrooms, laboratories and student innovation spaces for the university's Shiley-Marcos School of Engineering — where students can practice being the Changemakers that will change the world.

Engineering Dean Chell Roberts. "Our students need spaces that allow for creating, designing, trying new things, prototyping and ultimately learning how to use their skills to make the world a better place."

The expansive, 74,500-square-foot complex will also include space to develop academic studios for programs in cybersecurity, design and mechanical engineering, as well as a



As John Belanich announced he and his wife's \$10 million gift to the Shiley-Marcos School of Engineering, he held up a slide rule. The calculation relic, virtually unknown to today's students, shows how far engineering has come and how far it can go in the digital age to create a more innovative, prosperous and sustainable world.

"I show this to you because maybe it will be a in a museum someday," said Belanich, a successful engineer and real estate developer. At a campus ceremony last spring, he told the audience that he and his wife, Raffaella, a USD alumna, are happy and proud to be part of the school that will help discover and invent new products and services for a better world. "The best is yet to come!" he exclaimed.

The transformative gift will allow the school to complete extensive renovations in Loma and Guadalupe Halls, including the former USD bookstore, adding state-of-the-art classrooms, laboratories and student innovation spaces. Upon completion, the combined Guadalupe Hall and Loma Hall complex have been named the Belanich Engineering Center.

"This amazing gift will give us space where our students can practice being the Changemakers that will change the world," added a jubilant Shiley-Marcos School of



new industry conference room and new faculty and administration offices.

Established as a school only five years ago, the Shiley-Marcos School of Engineering is ranked 11th in the nation for non-doctoral-granting engineering programs by *U.S. News & World Report*, noted USD President James T. Harris.

The school's graduates "do not fit the stereotype of what many people

imagine when they think about engineers," he added. Nearly one-third of them are women, higher than the national average, and all engineering graduates earn a dual BS/BA degree, giving them impressive writing and speaking skills and making them "strong critical thinkers with global awareness who are receptive to diverse cultures."

"John is a very successful engineer

and Raffaella is a very successful USD alumna who traces her experiences back to our founder. Raffaella actually worked with Bishop Buddy. I want to express my deep appreciation to John and Raffaella for their truly inspirational leadership, foresight and generosity in providing such an amazing gift to USD at this precise moment in our growth and development." — *Liz Harman*

Link: www.sandiego.edu/belanich



At the announcement ceremony on campus last spring, President Harris recognized John and Raffaella Belanich's '61 (BA), '77 (MA) longstanding commitment to USD. "The Belanich's generosity also is reflected in the naming of the Bishop Buddy Sala in Mother Rosalie Hill Hall and the Bishop Buddy Scholarship Endowment, which has greatly benefited many deserving USD students."

Grit and Heart

DONOR PROFILE: Ten years ago, if someone had asked Dominick (Don) De Sanctis his opinion about higher education and engineering, he would likely have dismissed the question. He didn't have time for academia. He was running the multimillion-dollar business he built with his own hands from the ground up.



If a company wants to reduce logistical costs, increase production and get their products to stores more efficiently, SDI can provide the solution. SDI has been a leader in this sector for decades.



DON AND KAREN DE SANCTIS

Although, if he had addressed the question at all, he probably would have expressed criticism for the lack of business training that he received while pursuing his industrial engineering degree at New York University. He was taught the engineering curriculum, but received no guidance about how to put that knowledge into practice in the business world. This lack of knowledge allowed his first business partner to take advantage of him, leaving Don with no business assets from his first venture, even though he had been the brains and hard work behind its success.

This was his first experience in managing a company.

Not to be dissuaded, Don was more determined than ever to try again. After all, he was used to working hard. Born in the Bronx in 1932 to an Italian father and an Italian-American mother, both his parents worked hard just to put food on the

table. Don got his first job at the age of 12, working at a bakery before school from 4 a.m. to 7 a.m.

As Don set out to restart the business that would eventually become SDI (Systems Design, Inc.), he refused to take handouts from anyone. His parents raised him to never borrow money.

What is SDI? In simple terms, SDI designs and builds distribution systems for major retailers, such as Nordstrom or Abercrombie and Fitch. Only a few years after launching SDI in 1977, the company was already bringing in close to \$7 million in sales. A little over a decade later, in 1990, SDI brought in \$35 million in sales and had several offices throughout the U.S. But it didn't stop there. They began to open locations around the world. Between 2001 and 2007, SDI averaged between \$75 million and \$120 million in sales annually.

With these kinds of business chops, it was clear that Don could be an excellent mentor for the engineering and entrepreneurship students at the Shiley-Marcos School of Engineering. But would he be interested? At first, Don only reluctantly agreed to pay the school a visit, as a favor to a friend. What he encountered surprised him.

He started spending more time on the USD campus, providing guidance to student teams and getting a better understanding of the engineering and entrepreneurship program, called the Renaissance Initiative, that Dean Chell Roberts and Subramanian "Venkat" Shastri, PhD, were building. Here was an engineering curriculum that also provided real-world business training for young engineers — the kind that

Don himself never received. And the students were respectful and grateful for his support. He was hooked.

Don has provided invaluable mentorship to engineering student teams as they turn their concepts into technological products. He guided students Andrew Billigmeier and Connor Schofield from the beginning of their AgriShield project. With Don's help, AgriShield developed a solution for improving the agricultural yield on cherry, citrus and other fruit and vegetable farms. Don has also provided mentorship to student Ryan Hayes, whose Precision Metrics product is a solution for training war fighters to improve their shooting performance.

When Don's wife, Karen, saw how rejuvenated Don was by spending time on campus, she said it became obvious to her that this was another way for Don to create his legacy. She suggested that he make a major gift to support the program. "Here was this school that has real integrity and self-awareness. And it could benefit from some more financial support. This was a way for Don to pay it forward."

He liked the idea.

Not one to mince words, Don sat down with Dean Roberts and said, "I'm thinking of giving you a million dollars. What would you do with it?"

Before long, the idea of a named professorship was born. With a generous plan to gift his IRA (valued at \$1.1 million) to the school, along with the annual distributions, the Dominick

and Karen De Sanctis Professorship in Engineering and Entrepreneurship was created. Dr. Venkat Shastri, the faculty director who has led the program since it first began, will fill this professorship for the foreseeable future.

Shastri sums it up this way: "SDI was all about Don's achievements. USD is about his spirit."

Special Thanks to the Robbibaro Family

Phillip and Michelle Robbibaro — parents of Eric, who graduated from the electrical engineering program in 2016, and Ryan, who graduated in May 2017 with a degree in mechanical engineering — made a \$50,000 pledge to name one of the new faculty offices in the Phase II renovations at USD's Shiley-Marcos School of Engineering.

The remodel has transformed the former campus bookstore into new academic studios for programs in cybersecurity, design and mechanical engineering, along with a new industry conference room and new faculty offices.

When asked what motivated their generosity, the Robbibaros said, "Making this contribution for the continuing growth and success of the Shiley-Marcos School of Engineering gives our family an opportunity to give back to USD for the wonderful experiences, excellent academic tools, personal growth and career opportunities it has provided to our sons and their futures." — *Elisa Lurkis*

Leading Change Campaign Update

USD's Shiley-Marcos School of Engineering is a community of Changemakers, knowing it takes resources and commitment to turn good intentions into good deeds, to improve lives locally and globally and to ensure a brighter future for all.



Final Campaign Raised: \$317.3 Million

This fall, the close of the campaign was celebrated on September 14, 2018. And thanks to the generosity of our alumni, donors, friends, faculty, staff, families and our community partners, the goal of \$300 million was not only met, but exceeded!

Engineering Raised: \$35.8 Million

As a result of the Leading Change Campaign, the Shiley-Marcos School of Engineering was able to build a 74,500-square-foot complex, including the Cyber Innovation Center, academic studios for programs in design and mechanical engineering, the ASML Innovation Space, the Clarity Design conference room, the Robbibaro Family office, new faculty and administration offices and much more.

Thank you

Your continued support helps us develop innovative, changemaking leaders with technical expertise, creativity and global awareness. Please contact Elisa Lurkis at (619) 260-7913 or elurkis@sandiego.edu or visit www.sandiego.edu/engineering/connect/give.php to give today!



RYAN, PHILLIP, ERIC AND MICHELLE ROBBIBARO

Engineering an Entrepreneurial Mindset

USD's engineering entrepreneurship program is developing a highly valued entrepreneurial mindset that infuses the ideas of curiosity, connections and creating value with broader innovative thinking in the workplace — not only benefitting graduates who will become founders of new companies, but also those who will join organizations after earning their degrees.



Kheperah Ray came up with the idea for Hive Soundz based on two concepts — his parents, both DJs, who could utilize portable speakers to amplify sound, and a documentary on honeybees where he noticed that the cohesive hexagon shape held more honey. Thus, all Hive Soundz speakers are hexagon-shaped and can hold more sound.

Electrical engineering senior Kheperah Ray grew up in Chicago and it stimulated his entrepreneurial spirit. “We didn’t have much. I learned if I wanted something, my parents weren’t going to do it, so I needed alternative ways. I was a video gamer and I really wanted a PlayStation 3, so I developed a small contracting business, mowed lawns and painted to raise the money. When I wanted a camera, I got a job at a hardware store. I found I liked building things and working with my hands, but I also put in the effort to get the camera.”

Ryan Hayes got the engineering — and entrepreneurial — bug early. “It’s the classic story, really,” the University of San Diego senior mechanical engineering student recalls. “As a kid I played with Legos, took apart a motorcycle and similar things that make you feel mechanically inclined. It doesn’t necessarily mean you’re going to be an engineer, but it definitely puts you on a pathway.”

Today, both students are star examples in the Shiley-Marcos School of Engineering’s thriving entrepreneurship program, the Renaissance Initiative. It’s a resource to help engineering students develop their entrepreneurial skills and ventures.

Hayes, who joined the Army out of high school — first as a medic and then in the Green Berets, the Army’s special forces — developed Precision Metrics, a weapon-mounted shot-timing device that collects data related to the axis orientation and angular velocity of the weapon system in the critical moments before and after the trigger squeeze. Ray created Hive Soundz, the first portable speaker allowing users to play one unified audio signal via either Bluetooth or Wi-Fi.



SCOTT MATTHEWS AND CHRIS SZCZUR WITH THE TREK MODULAR CAMERA SLIDER SYSTEM

“An entrepreneurial mindset,” says Engineering Dean Chell Roberts, PhD, “is a skill that differentiates engineering graduates and is highly valued in our growing entrepreneurial economy. This skill is not only valuable for those who’ll become founders of new companies, but to infuse broader innovation thinking into any company or organization our graduates join.”

Trek’s Success

The first entrepreneurship project in the 2015-16 senior design capstone curriculum — the Trek Modular Camera Slider System — was done by mechanical engineering students Chris Szczur, Scott Matthews, Sarah May, Alex Benson and Tyler Lagomarsino. Szczur and Matthews then launched Trek publicly as Dyno Equipment, Inc., with support from Venkat Shastri, PhD, and Clarity Design president and USD professor of practice, Tom Lupfer. Trek is the world’s first portable, app-connected modular camera slider system designed for cameras, smartphones and GoPros.

The duo began selling the patent-pending initial product in October 2017 and raised more than \$160,000 on an Indiegogo crowdfunding campaign. They went to Las Vegas



for the 2018 Consumer Electronics Show and met with companies, including Apple, which invited them for a follow-up meeting at its headquarters.

"It was an incredible experience," Szczur said. "It's amazing to go from being school engineers to having a business meeting at Apple. We're excited to see where it goes."

In March, Szczur and Matthews presented Trek to USD's Board of Trustees and presented Darlene Marcos Shiley, Board of Trustees Chair Emerita and Shiley-Marcos School of Engineering benefactor, with a Trek.

The symbolism was palpable. Szczur and Matthews said the product's origins came from time spent in Donald's Garage in Loma Hall, soon to be renamed the Belanich Engineering Center, a space named for Marcos Shiley's late husband, Donald, who co-invented the Bjork-Shiley prosthetic heart valve and had worked on inventions in his own garage.

"The fact that this is emanating from Donald's Garage is very important to me," Marcos Shiley said. "I can't tell you how proud I am. This is why people give money to schools and education — you get to see the process roll out. Kids learn, they get an idea and go forward. Thank you."

Trek isn't alone as a project standout coming out of the Renaissance Initiative. Others include Darroch Medical Solutions, Inc., a system that aggregates data from multiple medical devices and secures the transfer of information across information systems; Cherry Tree Cover, a low-cost, physical cover for cherry trees that displaces rainwater that can devastate crops; Trash Tracker, a waste-tracking system that weighs trash, recycling and green waste on a per-household basis; and M.O.V.E., a humanitarian project that seeks to alleviate physical limitations of those without full use of their lower extremities to use a pit latrine.

Going Forward

"I think entrepreneurship is pervasive across the university, but I think we're just scratching the surface. We have the entrepreneurial competitions at USD, but not the training," Shastri says.

That will change. A certificate in engineering entrepreneurship is being planned for a launch this year, with courses in business and engineering available during a student's junior and senior years, along with a senior design project. Courses include law, marketing and finance for practical experience building an idea, doing customer market research and gaining business experience.

"This will provide our engineers with an entrepreneurial experience, whether or not they become entrepreneurs or launch a startup," Shastri says. "Students not only know how to engineer a product, but now think about it. What's the market? What customers benefit from the product and why? This can help them build a foundation as a leader and gain more experience."

The certificate is another tool the engineering school has grown under Roberts' leadership. "Chell is a nontraditional dean," Shastri says, "naturally entrepreneurial, he's a tremendous person who looks for value in nontraditional ways to build the school of engineering. He gives us resources to succeed in things we're passionate about."

Dean Roberts' appreciation for the engineering entrepreneurship pathway recently came in the form of a new job title for Shastri. A \$1.1 million gift created the Dominick and Karen De Sanctis Professorship in Engineering and Entrepreneurship, and it will be occupied by Shastri.

"We've hired several faculty members that have immense industry and entrepreneurial experience, such as Venkat," Roberts said. "He brings to our students and external partners an ability to bridge traditional academic learning with opportunities to innovate and connect to others. Thanks to Venkat, our faculty and our partners, we can expect many successful projects to emerge from our students." — Ryan T. Blystone

Video: www.sandiego.edu/trek



"The Engineering and Entrepreneurship Program runs in parallel with USD's required senior design capstone course. In addition to the design and prototyping, student teams engaged in entrepreneurship learn and apply business principles. Each team receives funding to develop their technology solution and their business plan. An external mentor in each team guides the students so they can shape their idea into a viable business opportunity."

— Venkat Shastri, PhD

Meaningful Industry Partnerships

When Dean Chell Roberts first arrived at USD five years ago, he spent time meeting with local industry leaders. Almost without fail, he was greeted with some version of this question: “USD has an engineering program?”



Tina Beranbaum, PhD, is a behavioral scientist bringing over 25 years of experience in organizational development and executive coaching to her role as trusted advisor to senior executives and their teams. Dr. Beranbaum is one of the Shiley-Marcos School of Engineering's dedicated executive advisory board members who helped create the school's Industry Scholars Program.

True, USD's engineering programs were small by comparison with other local universities. However, they were, at that time, nonetheless ranked 22nd in the nation by *U.S. News & World Report*, among engineering programs that do not offer a PhD (the Shiley-Marcos School of Engineering is now ranked #12 in the nation).

Regardless, Dean Roberts was determined to establish relationships between the Shiley-Marcos School of Engineering and local businesses. And little by little, one company at a time, the school's reputation has grown locally and nationally.

First on the agenda was to establish an industry partnership program to link students to real-world engineering projects. He believed students should experience engineering outside of the classroom. It was a fairly easy sell — for under \$20,000 per year, a company receives a team of four to five senior engineering students to work on a project of the company's choosing for an entire academic year.

Since the program's inception in 2014, the school has had eight or nine industry partners that sponsor senior design projects each year, including Clarity Design, Cubic Transportation, General Atomics, L-3 Photonics, PrimoWind, SDG&E, Solar Turbines, ThermoFisher Scientific and Vildosola Racing.

The next step was to create an industry advisory board to help guide the school's strategic direction. The advisory board meets three times each year and has representatives from local companies, along with USD alumni and parents.

As the advisory board members can confirm, this is very much a working board. Just ask board members Tom Lupfer or Tina Beranbaum or (former



VILDOSOLA RACING

board member) Khaled El-Maleh, who took it upon themselves to create a new program, called the Industry Scholars Program. This program identifies students who show early promise and provides them with training in professional networking, interviewing, emotional intelligence and other soft skills not typically taught as part of the engineering or computer science curriculum. The goal is to train students as early in their college years as possible, so that they can hit the ground running when they graduate.

Tom Lupfer, president of Clarity Design, states, “There is a wonderfully synergistic collaboration between the Shiley-Marcos School of Engineering and its industry partners that ensures students are receiving an up-to-date and highly relevant engineering education. Industry partners provide project sponsorship and volunteer

their time to be on the advisory board, and to participate in the Industry Scholars and Industry Mentors programs. In return, the school raises industry standards through the hiring of its highly trained engineers who graduate with a strong humanitarian sensibility and a broad worldview.”

After running the Industry Scholars Program for two years, Dean Roberts and several advisory board members

have now added a mentorship program, where many of the students in the Industry Scholars Program will be paired with a professional mentor for one year. Students will define between two and five measurable and realistic goals with the assistance of their mentors. The program launched in Fall 2018.

After leading the industry outreach for five years, Dean Roberts states, “We are exceedingly happy with the overwhelming support and growth of our industry partners, who have renewed and increased their commitments each year. We expect that, as we grow, these partnerships will also continue to grow, not only in supporting student projects, but in faculty research and our emerging programs.” — *Elisa Lurkis*

Seizing the Dream



In the spring of 2018, Ross Dwelley '18 (ISyE) beat unfathomable odds to become the third Torero to suit up with the San Francisco 49ers.

Dwelley — not your typical engineer — is a 6'5", 240-lb. tight end from El Dorado Hills, California, who finished his engineering degree this spring, alongside an awe-inspiring final football season at USD.

He received his only Division I football offer from the University of San Diego and fell in love with San Diego on his first campus visit.

Dwelley was red shirted his freshman year to develop his skills and extend his playing eligibility, and was named All-Conference Second Team. It

was during his first year that he decided to major in engineering. "I've always had a fascination with space," admits Dwelley.

Assistant professor of industrial and systems engineering, Jae Kim, PhD, describes Dwelley as being very professional — a polite, respectful young man. "Despite his busy athletics schedule, he was organized and always coordinated his studies in advance of his athletic events. Ross was very gracious and always showed gratitude when you helped him out."

For Dwelley, time management was his biggest struggle — and his key to success. "Balancing my studies and football was the most difficult thing I have ever done. It is indeed possible, but you can't get down on yourself in the tough times." He elaborates, "Manage your time and stay ahead of things because they can go downhill

Recent industrial and systems engineering graduate and University of San Diego tight end Ross Dwelley continues his football career as he signs an undrafted free agent contract with the San Francisco 49ers.

quickly. If you fall behind either in the classroom or on the football field, there are no shortcuts because you are an athlete. Graduating in May was really important to me and I am really proud of it."

On the field, Dwelley had a phenomenal Torero career with 197 receptions for 2,305 yards and 26 touchdowns. His 197 receptions rank second all-time in the Torero record books. He ranks fifth in touchdowns and seventh in receiving yards. Dwelley was named All-Pioneer Football League Second Team during his sophomore and junior campaigns.

In his last season with USD, Dwelley was named to the All-Pioneer Football League First Team after hauling in 50 balls for 663 yards and 10 touchdowns. He was named a STATS All-American. Collectively, he was part of four straight PFL Championship teams.

There are no guarantees that Ross Dwelley will ultimately make the 49ers team. Regardless of how it plays out, he is a driving force to be reckoned with — saddled with an invaluable degree — and will go down in the USD records with an undeniable "win," by all accounts, for joining an elite group of athletes who have signed on with an NFL team.

"It's a lifelong dream," beams Dwelley. "I never thought I'd be in this situation to make it to the NFL. I'm just trying to seize the dream."

— Michelle Sztupkay

Video: www.sandiego.edu/rossdwelley



"The 49ers got a good player and they will be very happy with him. Ross is a guy that loves football and he will go to work for them. He was one of the main cogs that drove this program the past three years that reached new heights of winning double-digit seasons. He was an impact player for us and always came up with the big plays during the game when we needed it." — USD Head Coach Dale Lindsey



ROBERT JACKSON



RIGHT, CECILIA BARNHILL



DANIEL MYERS



CHRISTINA KOZLOVSKY

The Flip Side of Computer Science and Engineering

If you think all engineering and computer science students are too focused on their studies — too busy to “have a life” — think again. From drag racing to singing to playing the cello to community outreach, our students are busting stereotypes and redefining cool.

Robert Jackson '18 (ME)

Growing up in Los Angeles, Robert Jackson raced remote-control cars and spent countless hours sanding, painting and building plastic models. At USD, he played football for two years. “I started out as a computer science major, but my friends said based on my hobbies I should be a mechanical engineer.”

Jackson embraced the suggestion and graduated in May. As part of the SAE Baja team, Jackson helped design and build this year’s entry for the international competition in Portland, Oregon. “It took every single thing we learned as mechanical engineers and compiled it into one project,” he says.

Jackson’s job as a student technician in USD’s IT department ultimately led him to Google, where he now works as a support analyst. “People I come across say I’m not a typical engineer. I play sports, I have hobbies and I have a social life,” he says. “But you can’t just live in a bubble. It’s great to branch out and experience different things.”

Video: www.sandiego.edu/ExSJ-kumeyaay

Christina Kozlovsky '20 (ME)

Christina Kozlovsky, a mechanical engineering major with minors in computer science and math, joyfully lends her soprano to the Choral Scholars and Founders Chapel choirs at USD. “Music makes me a more holistic

engineer,” she says. “It gives me a creative outlet and helps bring people together. There are great opportunities here because of the Changemaker campus. We are working as a whole community to better the lives of the people around us.”

Kozlovsky, 20, fills every inch of her calendar with activity. “Engineering has always been about the human side,” she says. “Even in high school, I wanted to be an engineer who helped people, to directly impact somebody’s life in a positive way.” She already is. Along with fellow student Cecilia Barnhill and several professors, Kozlovsky is involved in developing USD’s Engineering Exchange for Social Justice (ExSJ) through a grant from the Changemaker hub. “The idea is having engineers in college use our skills to actually better somebody’s life,” she says. “We’re aiming more toward the underserved communities. We want to help them thrive, to help them access the same opportunities as everyone else.”

Video: www.sandiego.edu/ckozlovsky

Cecilia Barnhill '20 (CS)

“There are so many things I love to do,” says Cecilia Barnhill, a captivating sophomore from Austin, Texas. “A lot of them just involve trying to do good.” How does Barnhill, 20, fit all her activities, classes, lessons and work into a crammed honors track academic schedule that has her double majoring in computer science and music, with minors in Spanish and math?

“I’ve played cello since I was three. Music is an amazing way to communicate,” she says. “It crosses so many boundaries.” In addition to performing in small ensembles and larger orchestras, Barnhill tutors high school math students, teaches a weekly math lesson at a local elementary school and is working alongside Kozlovsky at the Engineering Exchange for Social Justice. “I think USD does an amazing job getting people involved, but I want to boost that in the engineering school,” she says. “I’d really like to connect with the people that I’m trying to effect change for.”

Daniel Myers '18 (CS, Music)

“The story my parents like to tell is that I came out of the womb humming,” says Daniel Myers, 25. “I was always putting on shows with costumes and all sorts of fun props and songs. Always songs.” There were also robotics and photography and film and puzzles. He solved them and created them. Which all led to a career in computer science.

Myers channeled his passions into a double major in computer science and music, and is now pursuing an MS in cybersecurity engineering at USD. He practiced and performed with the Choral Scholars on and off campus, while also interning as a software engineer.

He now works at Fuse Integration, where he hopes to continue to merge his talents through the applications he develops. “There have been so many ties that I’ve been able to find already,” he says. “If they’re not in a company that already exists, perhaps I’ll create it myself.” — Karen Gross

Video: www.sandiego.edu/dmyers



“Computer science is simply finding ways to make a solution more efficient, or to create a solution for a puzzle. And I think music is another way to create puzzles. When you change lines of code, you actually see a difference on the screen. When you manipulate music, you hear the difference.”

— Daniel Myers

An Eye on Cybersecurity

Eight years ago, the number of unfilled cybersecurity jobs was estimated at 60,000. In 2021, that shortage is projected to be a staggering deficit of more than 3.5 million cyber professionals needed to combat the growing number of cyber attacks that are threatening our national, corporate and personal security.



But the urgency is not merely in the numbers — it's about academic institutions producing thoroughly trained cyber professionals who know how to both manage and engineer security to effectively address this growing national need.

The University of San Diego's Center for Cyber Security Engineering and Technology (CCSET) is positioning itself to do just that. And leading the way is veteran Gordon Romney, PhD — director of the CCSET and an early adopter of cybersecurity with over 25 years in the field and 18 years in academia.

"The CCSET distinguishes itself by focusing on engineering, which was a major

factor in my coming to USD," explains Romney. "What you see in other spaces is purely information technology — they teach where the problems occur, rather than build better and more secure systems. You can count on one hand how many cyber-engineering programs there are in the world. USD's program is very unique."

USD's CCSET was launched in July 2016. Today, the center is becoming more responsive through a threefold mission: education and academic programs, outreach and research.

Education

The CCSET serves as an umbrella for two academic programs. USD's Shiley-Marcos School of Engineering offers an on-ground Master of Science in cybersecurity engineering and undergraduate coursework for computer science majors. USD's Professional and Continuing Education offers an online Master of Science in cybersecurity operations and leadership. Academically, the school of engineering oversees both programs.

Romney has assembled an advisory board of 12 industry partners — the Center Advisory Council — to evaluate and propose curriculum improvements.

"The board wants an engineering focus," reports Chell Roberts, dean of the Shiley-Marcos School of Engineering. "We are reviewing all curriculum, going through each course systematically and redesigning it with a certified designer."

"Unlike most cybersecurity master's programs that focus only on compliance," explains adjunct professor Douglas Magedman, "our graduates will be the future policymakers, software

development process reformers, network defense designers and cybersecurity tool developers who will not only provide industry with talented individuals to provide compliant cyber assurance, but they will be the ones establishing the standards and processes for designing cybersecurity into systems from the ground up, as opposed to today where cybersecurity comes after the design."

With a generous gift from John and Raffaella Belanich, a virtual cyber lab was completed in Fall 2018, with a flexible classroom configuration and a server room that holds six racks of equipment with vertical columns that can plug in servers and routers. The school is actively seeking a naming gift for this state-of-the-art lab space.

The lab space serves as a cyber innovation center and is maintained by an innovation architecture.

"The innovative physical architecture is nothing short of amazing," adds Magedman. "It is designed to provide a



cutting-edge means not only to facilitate applied practical knowledge, but support highly complex Red/Blue Teaming capability and to innovate in ways that will improve how cybersecurity is taught."

Future use for the architecture includes telemedicine — changing the way medicine diagnoses take place by using artificial intelligence to compile and accumulate telehealth.

Research

The CCSET's faculty and contributors are engaging in research activities at the unclassified and classified levels, with a focus on trusted systems and proven verifiable protection of trustworthy high-assurance security designed to address the problems of adversarial attacks that include software subversion.

"Cybersecurity research in academia is nearly nonexistent. We are working to increase our presentations, conferences and papers, and are encouraging our students to publish," urges Romney. "A major function of our corporate outreach is to source grants to fund our research and get companies more involved with the center's research endeavors."

Outreach

"Our goal is to provide cybersecurity education, research and outreach to high school and university students, as well as working professionals, to increase their awareness and knowledge and to become better stewards of cybersecurity safety," explains Jodi Waterhouse, director of engineering and technology outreach.

On campus, the center is developing cybersecurity programming with other schools, including a Cyber Supply Chain Summit with the School of Business, pedagogical training sessions for cybersecurity faculty by the School of Leadership and Education Sciences and collaboration with the School of Law to roll out a certificate in cyber law and policy in Fall 2018.

In the community, the CCSET has been awarded funds from the National Security Agency (NSA) for three years running to host the GenCyber summer camps, where high school students gain hands-on experience with cyber defense tools and work in teams to solve real-world cybersecurity problems.

For the past two years, the CCSET has been awarded grants through the Department of Homeland Security (DHS) to facilitate a six-week executive

cybersecurity program in conjunction with the FBI, InfraGard and the Law Enforcement Coordination Center.

In May 2018, the first cyber industry affiliates program was launched to unite academia, government and industry to solve some of the most difficult issues surrounding cybersecurity. "Our reputation in the community is strong," says Romney, "and we are working hard to build partnerships."

Looking to the Future

With much at stake for the CCSET and for the nation, Romney has lofty aspirations.



First, the CCSET is on a path to achieve accreditation by the DHS, of which the first step is for the university to have an established center.

Additionally, industry certification is critical. It means you have an expertise. "We can build that into the courseware," says Romney.

Lastly, the CCSET is working to align the curriculum with the requirements of the NSA/DHS Center of Academic Excellence designation to promote higher education and research, and produce talented cyber professionals to defend the nation.

"We are designing for the future of cybersecurity," boasts a confident Roberts. "The jobs being filled need to be intentionally designed, and we are at the leading edge of cybersecurity engineering with a more rigorous approach." — Michelle Sztupkay

Video: www.sandiego.edu/genocyber2018

The USD GenCyber camp is a unique setting for high school students to be educated and inspired about cybersecurity and the various opportunities this booming industry provides these students in the future," says Jodi Waterhouse, director of engineering and technology outreach at the Shiley-Marcos School of Engineering. "They come in on Monday naïve about cyber and leave on Friday as newly formed cyber warriors."

Faculty Achievements

Every full-time faculty member of USD's Shiley-Marcos School of Engineering has a breadth of practical experience as well as a strong commitment to student learning and scholarship. The quality of our faculty is one of the reasons the program is so highly rated among its peer institutions.

Daniel Codd, PhD, assistant professor of mechanical engineering, has been leading a team of USD engineering alumni and students in development of a hybrid solar converter. The collaborative research with Tulane, SDSU and commercial partners is funded by a \$3.3 million grant from the Department of Energy, and is in the outdoor phase of testing on the roof of Shiley-Marcos School of Engineering's Loma Hall, soon to be renamed Belanich Engineering Center. The work was recently published in *Applied Energy and Solar Energy*.

Odesma Dalrymple, PhD, associate professor of industrial and systems engineering, was part of

two strategic initiatives: collaboration with colleagues in the creation of a STEM (Science, Technology, Engineering and Math) outreach hub at USD and collaboration with colleagues as part of the Community Engagement Collective. She also established a two-year Exploratory Pathway project to promote STEM interest among middle school students in a primarily Hispanic-serving area. She serves as lead faculty for USD's Engineering Exchange for Social Justice. In addition, Dr. Dalrymple and colleagues from the College of Arts and Sciences and the School of Leadership and Education Sciences were awarded a \$300,000 NSF grant, Bridging the World of Work and Informal STEM Education.

Video: www.sandiego.edu/odalrymple

John Glick, PhD, professor and chair of computer science, has led the computer science department in a redesign of its curriculum that will be released with the 2018-19 catalog. Among other changes, the new

curriculum will include a new BS option for students in addition to the current BA degree that will continue to be offered; concentrations that allow students to explore more in-depth areas of computer science; and a full-year senior project experience.

Video: www.sandiego.edu/jglick

Mark Heckman, PhD, professor of practice, was invited to present

"Where are the holes in a 'holistic' view?" at the Maritime Risk Symposium at Tiffin University. He led a cybersecurity personal and home awareness workshop on campus as part of the Center for Cyber Security Engineering and Technology's recognition of National Cybersecurity Awareness Month. Dr. Heckman also presented "The Seven Habits of Highly Effective Home Computer Security" to the Bridges Academy on the USD campus, taught in the inaugural USD cybersecurity executive program and attended the NSA/NSF GenCyber Conference.

Gordon Hoople, PhD, assistant professor of general engineering, presented two conference papers at the American Society for Engineering Education (ASEE). One paper, titled "Engineering Empathy: A Multidisciplinary Approach Combining Engineering, Peace Studies and

Drones," was coauthored by Austin Choi-Fitzpatrick, PhD, of the Joan B. Kroc School of Peace Studies. The second paper, co-authored by Diana Chen, PhD, was titled "Contextualizing a New General Engineering Curriculum in the Liberal Arts."

Video: www.sandiego.edu/ghoople

Frank Jacobitz, PhD, professor and chair of mechanical engineering,

developed a new Honors team-taught course with Jennifer Prairie, PhD, of Environmental and Ocean Sciences at the intersection of fluid mechanics and environmental science. He obtained a faculty development grant from the Israel Institute to develop a water technology course to be offered in Spring 2019. Additionally, Dr. Jacobitz is collaborating with undergraduate students on three projects, was recognized by Mortar Board, was elected to Sigma Xi and began serving as chair of the mechanical engineering department on July 1, 2018.



Imane Khalil, PhD, assistant professor of mechanical engineering, started the spring semester teaching Computational Fluid Dynamics using ANSYS FLUENT. The Undergraduate research office funded the construction of a tilt tube used to study the Kelvin-Helmholtz instability at the interface of two fluids. She continues her collaboration with Professor Roger Ghanem at USC, working on a novel method that incorporates uncertainty quantification into the heat transfer modeling inside



ODESMA DALRYMPLE

IMANE KHALIL

the fuel assemblies used in a nuclear reactor. Their research was published in the *ASME Journal of Heat Transfer* and received a Best Presentation award at the 19th International Conference on Nuclear Fuel Cycle and Fuel Management.

Video: www.sandiego.edu/ikhalil



ERNEST KIM

Ernest Kim, PhD, professor of electrical engineering, taught ENGR 121 in London during Intersession 2018. The students visited exhibits to incorporate developments in modern computing in England into coursework using the Raspberry Pi single board computer as the programming platform. Dr. Kim has challenged his ENGR 102 students to integrate IoT internet-controlled cars into the course and they are achieving immense success.

Susan M. Lord, PhD, professor of electrical engineering and chair of general engineering, has given invited talks at Tufts, Kansas State and the Western Electrical and Computer Engineering Department Heads Association. She and coauthors won the 2017 Best Paper Award in the ASEE Military and Veterans Division. Dr. Lord also worked with other electrical engineering (EE) chairs across the U.S. on iREDEFINE, an NSF-funded program to support EE graduate students from underrepresented groups in learning about careers in academia, and published an article about iREDEFINE in the *Proceedings of the IEEE*.

Video: www.sandiego.edu/slord

Thomas Lupfer, professor of practice, an adjunct professor since 2016, was named to professor of practice in Spring 2018. He holds seven patents, worked with colleagues to create courses on embedded software development and was invited to speak at the 2018 Mortar Board initiation. As an active industry partner, Lupfer is president of Clarity Design and has hired 10 USD engineering graduates since 2015. He is a member of the Industry Scholars committee and serves on the Shiley-Marcos School of Engineering executive advisory board.



THOMAS LUPFER, CHELL ROBERTS

Alex Mejia, PhD, assistant professor of general engineering, has co-published an article titled "Culturally Relevant Pedagogy: An Approach to Foster Critical Consciousness in Civil Engineering," in the *Journal of Professional Issues in Engineering Education and Practice*; obtained approval for "GENG 350 — Engineering and Social Justice" for the Level 2 Diversity, Inclusion and Social Justice (DISJ) flag for the USD Core; and was awarded two NSF grants and another grant through the USD Strategic Initiative with Odesma Dalrymple, PhD, and Alberto Pulido, PhD, professor of ethnic studies.

Video: www.sandiego.edu/amejia



ALEX MEJIA

Truc Ngo, PhD, professor and chair of industrial and systems engineering, published four research articles in peer-reviewed journals in 2018, including *Renewable Energy*, *Journal of Supercritical Fluids*, *Journal of Materials Research* and *International Journal of Modern Engineering*, sharing co-authorship with 11 USD students and research collaborators. Dr. Ngo and Jae Kim, PhD, also presented a talk at the 2018 ABET Symposium, titled "Alternative Approaches to Integrating Sustainability into Engineering Education."

Gordon Romney, PhD, director of the Center for Cyber Security Engineering and Technology (CCSET), joined the Shiley-Marcos School of Engineering in Fall 2017 to spearhead the center's cybersecurity education, research and outreach programs. He formed the 12-member Center Advisory Counsel of industry partners, is working with faculty and a certified designer to enhance the existing curriculum and is partnering with industry to outfit the new cybersecurity lab and server room located in the former Annex space.



GORDON ROMNEY

Engineering and Computing Showcase

Shiley-Marcos School of Engineering students imagine, innovate and inspire to create solutions to any number of societal challenges. Their work was on display at last spring's Engineering and Computing Showcase, which featured over 30 entrepreneurship, community, student and industry-sponsored projects.



LEFT PAGE

Top left: Close up of SDG&E's EV PALS — an efficient Electrical Vehicle Power Allocation System.

Top right: Custom-designed guitars crafted by USD's guitar club students are demonstrated by Jose Luis Estrada.

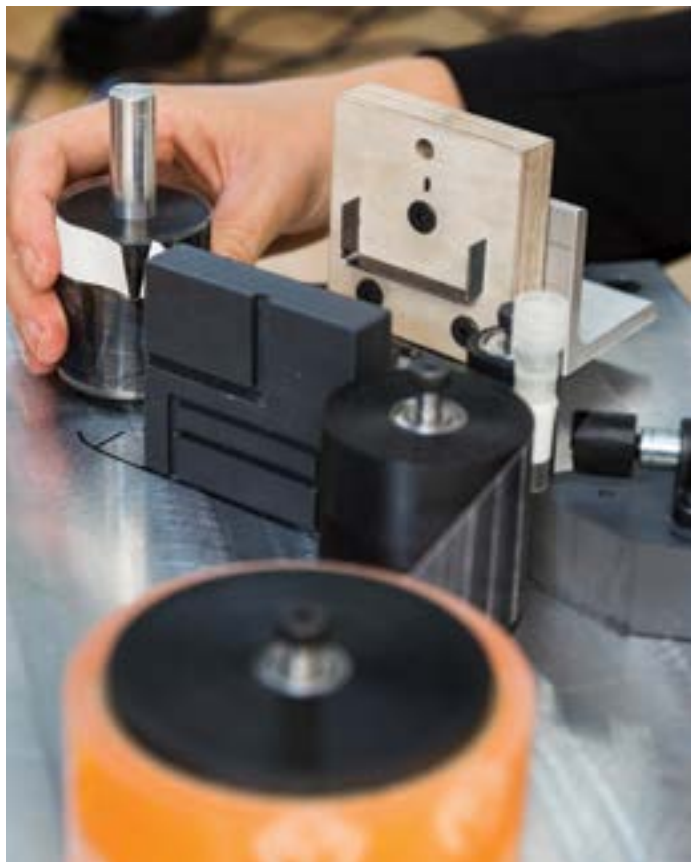
Bottom left: The Precision Shot Timer was one of six entrepreneurship projects on display at the showcase.

Bottom right: Gautam Daryanani demonstrates Clarity Design's lightweight digital stereoscopic microscope.

RIGHT PAGE

Top: The ASME human-powered vehicle was designed as a sustainable, practical mode of transportation.

Bottom: Motorized adhesive roller component on Thermo Fisher's delabeling machine.



Graduate Employment

The USD Career Development Center compiles data on students completing their undergraduate degrees. This data, gathered from multiple sources, reflects the initial career destination for 78.6 percent of the 103 students who graduated from the Shiley-Marcos School of Engineering between August 2016 and May 2017.

Graduate Outcomes

96.3% of 2016-17 respondents are employed, in graduate school, in the military or in full-time volunteer service.

80.2% Employed Full Time **3.7%** Military Service **2.5%** Employed Part Time
9.9% In Graduate School **3.7%** Seeking Employment

Sample Employers of Graduates

Cubic Transportation	Intuit	Solar Turbines
General Atomics	Lockheed Martin	SpaceX
Google	Microsoft	Tesla Motors
Illumina	NAVAIR	ViaSat

First Job Offer

100% of 2016-17 School of Engineering respondents that are employed full-time reported that they received their first job offer within three months of graduating (87.8% before and 12.2% within three months).

Annual Salaries

\$70,416 **\$30,000–\$120,000**
 Average Salary Salary Range

Full-Time Employment by Industry

56.8% Engineering and Design
18.9% Technology
8.1% Marketing, Sales and Consumer Products
2.7% Science and Research
2.7% Energy and Utilities
2.7% Public Service, Government and Nonprofit
2.7% Finance and Banking
2.7% Transportation
2.7% Other

Additional Data

41.2% of 2016-17 respondents who are employed full-time reported that they received more than one job offer before accepting a position.

73.9% of 2016-17 respondents reported that they participated in at least one experiential learning activity such as internship, research opportunity, community service or mentorship.

Alumni Notes

USD's Shiley-Marcos School of Engineering is nationally recognized for developing world-class engineers and computing professionals empowered to become leaders with global perspective and social awareness.

I³@USD, the University of San Diego's engineering magazine, is published annually each fall. Alumni notes are solicited each spring/summer from alumni of the USD Shiley-Marcos School of Engineering. Notes submitted should total 50 words or less and include professional and personal updates. Photos submitted should be high resolution (300 dpi). To submit your professional update, email elurkis@sandiego.edu.

To submit a class note to **USD Magazine**, which is published three times a year, please email classnotes@sandiego.edu.

COMPUTER SCIENCE

1991

Jeff Youel is currently vice president of software engineering at MODit3D, Inc.

1996

J. Steve Correia, Captain, U.S. Navy, recently assumed command of U.S. Naval Computer and Telecommunications Station Far East in Yokosuka, Japan. He married the former Ms. Courtney Coe in May 2017.

2000

Joel DeConcini is a pilot with the Arizona Air National Guard in Phoenix, currently flying the KC-135 tanker. Prior to his current job, he was a lawyer and flew F-16s at Andrews Air Force Base in Washington, D.C. He and his wife, Wendy, live in Scottsdale, Arizona.

2001

Jeff Wagner is working at Netflix as a director of engineering in Los Gatos, California. Jeff and his wife, Patricia '01 (School of Business), live in San Carlos, California, with their two daughters, who are 10 and 8.

2004

Ryan Van Arnem is the vice president director of the Southeast Division for Brown-Forman. He will be moving to Atlanta, Georgia, with his wife and two daughters.

2005

Michael Malone is a lead software engineer at NuVasive in San Diego. He and his wife, Christina, welcomed their first child, Hailey, in August 2017.

2012

Jun Ryan Delacruz recently finished two overseas sea tours as part of Forward Deployed Naval Forces, Japan. He is now working staff duty at Commander Naval Surface Forces Pacific back in San Diego, and he and his wife, Tanya, are expecting their first child.

2017

Hayden Clevenger recently traveled to New Zealand and is currently living out of his car while he spends his time surfing and doing menial labor, completely ignoring his expensive and complex degree — nice work if you can get it!

Eugene Prokopenko continues to enjoy drafting patent applications for computer technology inventions in the Silicon Valley office of Patterson & Sheridan.

ENGINEERING

1994

Don Jenkins (EE) started a data science PhD program at UMass Boston last fall, now that he and his wife, Lorrie, have watched their daughter Alex grow up, finish college and move to Sydney, Australia. They did get to spend Christmas with her in Aruba.



Setareh Lotfi is a software engineer at Google. She works with the Google hardware team and helps to create a home that takes care of the people inside of it and the people around it. Since graduation, Setareh helped to release Google Assistant on Nest Cam IQ and Nest Security system with the Google hardware team at Nest.

2000

Mark Heffernan (EE) accepted a program management role at Thales Aerospace in December and recently started a ginger beer company called Zingabrew.





Ricardo Valerdi, PhD, (EE) is currently a visiting professor at the United States Military Academy at West Point as part of his sabbatical. Last summer he worked as a production consultant at SpaceX and in the fall was on sabbatical at Madrid Polytechnic.

2003

Carlos Williams (EE) continues to work for Naval Facilities Northwest in Bremerton, Washington as an electrical engineer, performing in-house designs for power substation construction projects.

2004

Melody Ablola (ISyE) is an associate logistics consultant for ARUP in San Francisco, California. She recently received the 2018 Consulting-Specifying Engineers 40 under 40 award. <https://www.csemag.com/single-article/2018-40-under-40-melody-ablola-cmilt-35/>.



Samuel Stewart (EE) and Mary Stewart (formerly Zangari) '03 (Mathematics) welcomed the birth of their third son, Michael Edmund Vicente Stewart. Samuel celebrated his 14th year as a design engineer at GA-ASI, and Mary is on leave from teaching at Palomar College.

2005

Thomas Congdon (EE) recently accepted a senior engineering position with Google in the Nest division. He will be leading the design and implementation of next-generation Nest products.

John Crawford (ISyE) continues to work for Blue Origin, where he is the manufacturing engineer for the final assembly/integration of the BE-4 engine.

Erik Loftis (EE) continues to work for Northrop Grumman in San Diego as a program control analyst supporting F-35 CNI programs.

2006

Joe Quiroz (ISyE) continues to serve as a project engineer at General Atomics Aeronautical in Poway, California. He looks forward to finally paying off his USD school loans within the year.

2007

Ali AlMatrouk (EE) is vice chairman and managing director at the Jadeite Group, a family-owned business focused on real estate ownership and development. Additionally, Ali is participating in an Innovation Challenge program coordinated between the Kuwait Foundation for the



Advancement of Science (KFAS) and the UCLA Anderson School of Business to implement a culture of innovation within the Jadeite Group. He moved into a new house with his wife, Maiss, and his daughter, Sheikha, age 6. He was also blessed with a baby girl, Noura.

Robert Jones (EE) just reached his 10th year at Raytheon Missile Systems in Tucson, Arizona. He recently entered the role of hardware design lead for a team developing test equipment for weapon subsystems. In 2017, he received his master's degree in Christian apologetics from Luther Rice College and Seminary. He is married to Charlene with two daughters, Anastasia and Sophia-Dei.

2008

Matt Irwin (ISyE) is an officer for the U.S. Navy's bomb squad currently stationed in Ostend, Belgium. He is an instructor at the Belgian-Netherlands Naval Mine Warfare School, EGUERMIN, and a representative of the NATO Naval Mine Warfare Centre of Excellence.

AJ Purdy (ISyE) married Katherine Hulbrook in September 2018. They currently reside in Long Beach, California. After finishing his PhD in earth system science from UC Irvine, AJ now works as a postdoctoral scholar at NASA's Jet Propulsion Laboratory.



Tyson Vogel (ME) has relocated to Dresden, Germany, to take on new challenges abroad, working in the medical device industry.



2011

David Leyva (ME) was recently admitted to the University of Hawaii and will be pursuing a master's degree in ocean and resources engineering beginning in August 2018.

2009

Logan Johnston (ME) works at General Atomics as an integration harness design supervisor. He married USD alumna Crystal Peterson in April 2018.

Karl Riesen (EE) is working as vice president of business operations at Awarepoint in San Diego. He and his wife, Kat, welcomed their first child, Nicholas, in March 2017.

2010

Justin Hall (ISyE) has started a graduate program in sports and recreation administration at Eastern Washington University. When he's not busy leading, teaching and guiding in the rivers and mountains, he's busy playing in the rivers and mountains.

Lauren Kennedy (formerly Cronin) (ISyE) continues to work for BAE Systems as a program manager in San Diego. She married James Patrick (JP) Kennedy on February 22, 2018.



LAUREN KENNEDY

2011

Michael Rios (EE) had a busy summer finishing his PhD in electrical engineering from the University of Wisconsin-Madison in May, and starting a new job in Detroit in electric vehicle development at General Motors in June. He is conducting research on foil-concentrated windings in electric motors.



2012

Karly Jerman (ISyE) finished her master's degree in management science and engineering at Stanford University, and started as a fintech data scientist at Vanguard in spring 2018.

2013

Christian Fetters (ME) continues to work for Orbital ATK where he was recently promoted to program manager. Christian also graduated from the USD evening MBA program in May 2017 and welcomed a beautiful baby girl, Abigail, on October 7, 2017 with his wife, Julie.

2014

Harmonie Jacobson (formerly Edelson) (ISyE) moved from San Diego to Chapel Hill, North Carolina, in fall 2018 to pursue her MBA full time at UNC Kenan-Flagler as a Consortium Fellow.



ALLYSON WARD

Philip Metzger (ME) passed his PE exam in December 2017 and is currently working at BSE Engineering in San Diego.

2015

Jeff Cefalia (ME) has been running his own real estate development company in Orange County. He is managing architects, mechanical engineers, civil engineers, structural engineers, electrical engineers and all stages of construction. He has built and sold six homes in the last two years with eight other homes currently under construction.

Nicholas Clements (ME) recently went on a three-week vacation to Europe. He visited Iceland, France and Italy. He is currently working at BSE Engineering doing HVAC design. In January, he obtained his EIT and he will be taking his PE this fall.

Tawni Paradise (ISyE) recently moved to Virginia and enrolled in a PhD program for engineering education at Virginia Tech.

Allyson Ward (EE) is currently working at General Atomics as a project engineer creating new innovative products with user experience and automation to control remotely piloted aircraft. She is also pursuing a master's degree in technical management at Johns Hopkins University in the Engineering for Professionals program and is planning to graduate in December.

Kim Woodbury (ISyE) graduated from the Operations Rotation Program in 2017 and has been promoted to plastics sourcing specialist within Thermo Fisher Scientific in Carlsbad, California. In her spare time, she is trying to travel as much as possible — from Miami to San Francisco, and her first international trip to Spain!

2016

Hector Barboza (ISyE) works for Palomar Technologies in Carlsbad, California, as a manufacturing engineer when he isn't hiking or traveling.

Louis Benson (ME) continues to work for the U.S. General Service Administration as a project manager, except now he is living in Colorado! He has been recently accepted into the University of Colorado's graduate program to study hydrology and hydraulic engineering. He enjoys making jokes and wandering.



RACHEL STEIN

Rachel Stein (ME) has commissioned as an officer in the United States Navy and is working as an instructor at the Naval Nuclear Power Training Command in South Carolina.



LOUIS BENSON

Filipe Calixto (EE) continues working at General Atomics-ASI. He's been working on the Type-Certifiable Predator B aircraft, a remotely piloted aircraft that meets all NATO airworthiness requirements.

Amanda Gates (ME) continues to work for Idaho National Laboratory when she isn't snowboarding, ice-climbing or summiting large mountains.

Brandon Huang (ME) continues to manage manufacturing at Durabag in Tustin, California. Additionally, he has co-founded WorkWell, a coworking space, in Irvine, California.

Ailsa Tirado (ISyE) and Joshua Greene '15 (College of Arts and Sciences) married this summer and are living in Maryland, where Ailsa continues working in the biotech industry and Joshua is pursuing his master's degree in theology.

2017

Brandon Prussak (EE) is an operations program manager for ViaSat, working on the company's in-flight Wi-Fi program.

Engineering News Briefs

National Rankings

For five years running, USD's Shiley-Marcos School of Engineering has been steadily achieving greater national recognition under the direction of inaugural dean Chell Roberts. This year, the school has moved up yet another spot to #11 in national rankings by *U.S. News & World Report* for best undergraduate engineering programs across the country for schools that do not offer a PhD program. Roberts proudly exclaims, "I am elated that our programs and faculty members are consistently recognized nationally, as evidenced by our continual rise in rankings."

New Faculty Chairs

After 10 years serving as program coordinator and chair of the industrial and systems engineering program, Leonard Perry, PhD, officially stepped down on April 1, 2018, making way for Truc Ngo, PhD, to serve as the new department chair. Additionally, Ming Huang, PhD, has returned to full-time faculty service effective July 1, 2018, after serving as chair of mechanical engineering for more than 12 years — starting initially with three students in the department and growing to over 300 to date. Frank Jacobitz, PhD, has taken on the role as the new mechanical engineering chair, and together he and Dr. Ngo are committed to finding new ways to encourage and develop Changemaking Engineers. They have both won awards for their work with students, and the school is looking forward to seeing how they build on the foundations left by Dr. Huang and Dr. Perry.

Link: www.sandiego.edu/newfacultychairs

New Faculty Hires

In a quest to build a cohort of teacher-scholars who will advance the reputation of USD in the areas of design thinking, intelligent systems, bioengineering and related practices, a new cluster hire of three faculty members will work within the school of engineering to build faculty-student collaborations and promote interdisciplinary endeavors. G. Bryan Cornwall, PhD, PEng, who served as an adjunct faculty member since Fall 2017, hired on as an associate professor of mechanical engineering effective Fall 2018. Melissa Gibbons, PhD, joined USD as a visiting professor in Spring 2017, and effective Fall 2018 now serves as an assistant professor of mechanical engineering. Mark Chapman, PhD, will join USD in Spring 2019 as an assistant professor of general engineering. In addition, Chuck Bane joined USD's CCSET as a professor of practice in June 2018.

Engineering Exchange for Social Justice

The Shiley-Marcos School of Engineering, in collaboration with the Karen and Tom Mulvaney Center for Community Awareness and Social Action, has created the Engineering Exchange for Social Justice (ExSJ) — a program through which USD faculty across the campus, led by Odesma Dalrymple, PhD, and Caroline Baillie, PhD, along with students and external volunteers, work collaboratively with diverse marginalized community groups to co-create alternative solutions to problems which are technical in nature. Through this exchange, we are turning community-defined "problem briefs" into actionable student assignments, design projects, research theses or extracurricular pro bono engineering projects that are supported by local professional engineers.

Video: www.sandiego.edu/ExSJ

Class of 2017 and 2018

In 2017, USD's Shiley-Marcos School of Engineering graduated 105 students. The class was composed of 15 computer science majors (CS), 25 electrical engineers (EE), 13 industrial and systems engineers (ISyE) and 52 mechanical engineers (ME). Here is what some of them have been doing since graduation.

ASML CYMER

ASML Cymer is proud to partner together with the University of San Diego to develop the next generation of high tech industry professionals in San Diego. ASML Cymer offers a complete range of light source technologies for semiconductor manufacturing applications.

Link: www.cymer.com

COMPUTER SCIENCE

Julia Cassella received two exciting offers after graduation and selected to work with Cisco as a software engineer with the user experience team in San Jose, California.

Spencer McDonald received three job offers and accepted a position as an application security analyst for Avalara in San Diego, where he worked as an intern his senior year.

Jack Miller received two job offers and accepted a position with Net App in Durham, North Carolina, as a solutions engineer.

Sean Mulvey accepted a position with Vektrex in San Diego as a software engineer. He worked as an intern for the company his senior year.

Erick Perez received three outstanding job offers and elected to join Clarity Design in San Diego as a software engineer.

Matthew Saiki is a software engineer intern with Instrumentation Laboratories in San Diego.

Maia Thomas was offered two internships after graduation and accepted a position as a mobile app development intern for SAP Labs, Inc. in Carlsbad, California.

ELECTRICAL ENGINEERING

Yousif Al Bader is working as an engineer for KNPC in Kuwait.

Richard Burgo is working as a firmware engineer for Hewlett-Packard in Boise, Idaho.

Jesse Kotsch is working for Northrop Grumman in San Diego and plans to attend graduate school in Fall 2019.

Chandler Rogers was offered three positions after graduation and is working for the hydroelectric division of Black and Veatch in Lake Oswego, Oregon.

INDUSTRIAL AND SYSTEMS ENGINEERING

Travis Agbayani serves as a process engineer for Azimuth Electronics in San Clemente, California.

Julianmarie Cuomo is working for Taylor Farms in Salinas, California as a procurement operations analyst.

Katelyn Dallmus is an ensign, surface warfare officer for the United States Navy out of Washington, D.C.

Ross Dwelley signed an undrafted free agent contract with the San Francisco 49ers in Santa Clara, California.

Andrew Garcia is an engineer in training at Hunsaker and Associates in Irvine, California.

Kimberly Ramirez is working for Lean for Watkins Wellness in Vista, California.

Lisette Vasquez had two job offers and accepted work in the Operations Rotational Program at Thermo Fisher Scientific in Carlsbad, California.

Robert Walker is working as a marketing specialist for the Better Foundation, LLC in Boulder, Colorado.

MECHANICAL ENGINEERING

Derek Arthurs accepted a position as a project manager for Taricco Corporation located in Long Beach, California.

Tabitha Ary began working as a mechanical engineer associate at Lockheed Martin in Littleton, Colorado.

Gregory Barr had an internship with SPAWAR Systems Center Pacific in San Diego during his senior year and accepted a full-time position with the company as a mechanical engineer.

Dario Caminite was commissioned in the Air Force and is going to flight school.

Austin deCaussin received two job offers and accepted work with Solar Turbines in San Diego. As a field service representative, Austin will participate in a three-year rotational program.

Maverick Hall is working as a manufacturing engineer for Navair in San Diego.

Meredith Hoggatt went to Officer Candidate School, was commissioned as an ensign in the Navy and is sitting on a ship in San Diego.

Robert Jackson started working as an IT support analyst for Google in the main headquarters located in Mountain View, California.

Jeffrey LaRocco is attending grad school at Cornell University for aerospace engineering and was commissioned as an ensign for the U.S. Navy, serving as a Naval Flight Officer controlling navigation, communication and weapons systems of aircraft.

Todd LeMay is working in the new graduate program for SPAWAR Systems Center Pacific in San Diego.

Jasmin Meza had an internship with General Atomics in her senior year and accepted a full-time position as a depot mechanical engineer with the company in Poway, California.

Kennet Pipe joined Fox Racing Shox out of El Cajon, California, as a mechanical engineer.

Connor Reuss serves as a mechanical plan examiner intern for EsGil Corporation in San Diego.

Ryan Robbibo received three job offers and elected to work for the Lee Company in Huntington Beach, California as a sales engineer.

Christopher Sheehan joined Teach for America as a math teacher and is working in Memphis, Tennessee.

Jack Sheffield had two job offers and accepted a position as a sales engineer for Keyence in Laguna Hills, California.

Kendall Slaughter joined Northrop Grumman Corporation after graduation and is working as a manufacturing engineer I in Baltimore, Maryland.

Michael Yassar is working as a field engineer for Turner Construction. He discovered the job opportunity while attending the NSBE Fall Convention.



CLASS OF 2018 VALEDICTORIAN

Anthony Shao graduated with a 3.94 GPA and a double major in electrical engineering and finance while minoring in math. He continues his senior design entrepreneurial work with Darroch Medical Solutions, Inc., a company he and fellow teammates formed, in pursuit of revolutionizing the way health status updates for medical practitioners are conducted.

Video: www.sandiego.edu/ashao





University of San Diego
**SHILEY-MARCOS
SCHOOL OF ENGINEERING**

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October 13, 2018

Alumni Homecoming
Brunch

December 7, 2018

Engineering and
Computing Expo

May 10, 2019

Engineering and
Computing Showcase

May 26, 2019

Commencement