

# CPOM

| CAL POLY POMONA |  
MAGAZINE | FALL 2018



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A collection of short stories that celebrate our diversity, creativity, polytechnic identity and location in the heart of Southern California.

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**ON THE COVER:** The cover illustration highlights Cal Poly Pomona's contributions to the state of California. The background image is derived from alumna Brie Jones' proposal for carbon-neutral and water-neutral condominium complex over the Los Angeles River, which won a major innovation award (page 22).

As part of its commitment to green printing, CPP Magazine is printed on FSC®-certified paper. The Forest Stewardship Council™ (FSC) promotes environmentally appropriate, socially beneficial and economically viable management of the world's forests.



# That's **SOCAL POLY**



## Love You, Your Son

Dear Mom,

Thank you for all the sacrifices you have made, for your commitment, for all the effort you have made and continue to make for me and my siblings. Having a mother like you growing up is the best gift I have ever received! I am where I am today because of you, because of all your hard work and all you have done to put food on the table. You told me a thousand times that you didn't want me to experience the same hardships and the difficult life you had. We left Mexico when I was 9 years old and you always told me that education was essential to a better life full of opportunities in this country.

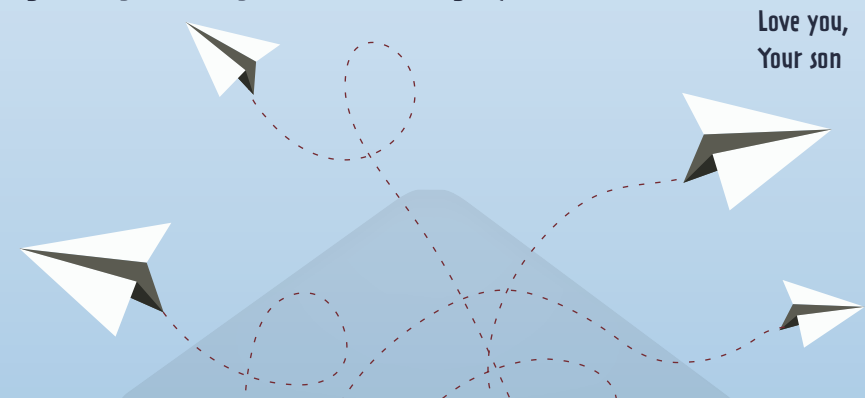
I know life has not been easy for you and even more so because you had to raise a family while being a single mother. But being a single mother was an obstacle you always overcame, and you did the best you could with what you had. I will never forget all those early mornings when I would wake up to the smell of tamales you were making to sell that day. I would watch you make those tamales with so much love and care. I remember when my younger brother and I were little, and we would go with you to the store to sell them, the store you went to every single day in order to provide for us. Those are the moments I cherish the most because, even though it was a struggle, at least we were together.

I have always admired your strength as a woman, your desire to get ahead in life, and that you always gave me and my brother what was necessary. There has not been a single day where I have not seen you work, but now there are only a few more days left. After I graduate, it's my turn to provide for you and give you everything you want. I don't want you to ever have to work again.

I hope that you're proud of me and of everything that I have achieved. I only achieved it because you gave me the opportunity. Thank you for being my mother, for always supporting me, for your unconditional love, for all those nights that you took care of me when I was sick, and for giving me life. I am very proud of you!

We left Boca del Rio with only dreams and a couple of bags in our hands. We left in hopes of better opportunities, in search of a better life. That is what you've given me, and now that I'm graduating from college that is what I will give you!

Love you,  
Your son



**ULISES LORENZO** wrote a thank you letter to his mother, Maria Lorenzo, after completing the teaching credential program this spring. He earned his bachelor's degree in kinesiology from Cal Poly Pomona in 2017.

▶ Watch him and his mother read the letter in a video at <http://bit.ly/UlisesThankYou>.

## Rain Bird BioTrek



Did you know that Cal Poly Pomona has its own rainforest? Rain Bird BioTrek Project features three learning centers and gardens: a rainforest simulation, aquatic biology research center and ethnobotany garden. More than 10,000 visitors come each year to learn about science, the environment, and various plant and animal species and how they interact.

BioTrek is also a certified wildlife habitat according to the National Wildlife Federation, which means the facility provides the essentials for animals to raise their young.



**42,000**

Square feet of learning space

**500**

Plant and animal species, including two dwarf caimans (Lara and Jacaré), a Solomon Island skink (Tinakula), red-tailed and shovelnose catfish, and red-eyed tree frogs.

**1,040**

Hours that service-learning students and academic interns devote each term to operate and maintain the facility

By the Numbers

**5**

Geographic areas represented in the rainforest: Africa, NeoTropical, Asia, Australia and Pacific Islands

## A Brief History: HOT DOG CAPER

For 35 years, the university has hosted the Hot Dog Caper, a welcome back event for students with free hot dogs, drinks, frozen desserts and wacky activities, like competitive eating. Last year in October, the Cal Poly Pomona Foundation provided 12,360 beef hot dogs and 2,100 veggie dogs to more than 10,000 students.

**1983**

Debut of the **HOT DOG CAPER**

**2006**

First **VEGETARIAN** hot dogs are served

**2007**

KIIS traffic reporter **CHUCK STREET** lands the KIIS-FM helicopter in University Park

**2013**

For Cal Poly Pomona's 75th anniversary, students participate in a **SCAVENGER HUNT** for faux diamonds and prizes

**2017**

**CIRCUS ACROBATS** entertain the crowd

# That's SOCAL POLY

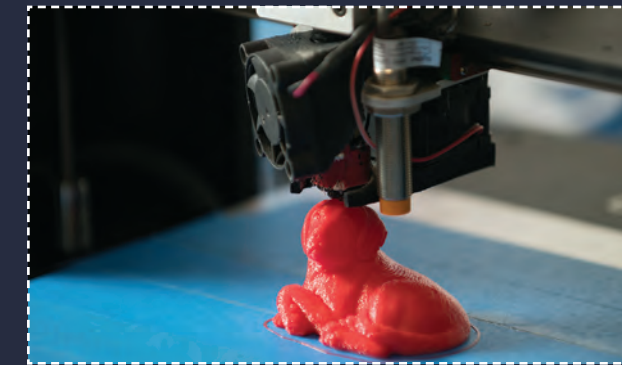


The use of 3D technology is changing the world object by object — everything from prosthetic limbs to car parts to movie props. A college student in Great Britain recently printed an underwater jetpack to swim at top speeds.

Tucker Dunbar, a junior studying mechanical engineering, is Cal Poly Pomona's resident expert on 3D printing. As the shop tech for the iLab and the new Innovation Orchard at Ganesha High, he trains students on how to turn an idea into a physical object. He breaks down the process in four steps.

## How To: 3D Printing

- 1 Come up with a design or blueprint. Websites such as Thingiverse and Pinshape offer free printable designs.
- 2 Use slicer software such as Astroprint or Craftware to adjust sizing and convert your design into a set of instructions for the printer.
- 3 Before printing, make sure the bed of the printer is clean. Rubbing alcohol works well on glass or metal. Also, the bed should be level in order for the object to print cleanly.
- 4 Hit print. Monitor the first two or three layers to make sure the object is sticking to the printer's surface and layering correctly. Blue painter's tape works well to ensure adhesion to the bed. When it's done, enjoy your creation.



## B R O N C O S A T W O R K

### DJ Norman

('93, management and human resources)  
Director, Professional Recruitment for Disney Parks & Resorts



### Jamaar Boyd-Weatherby

('00, philosophy)  
Attorney, head of Labor & Employment Group in SoCal at Jones & Mayer



#### Tell us about your career.

I have been in human resources for 25 years and I've worked for companies like Coca-Cola, The Home Depot and Ernst & Young.

#### How did your CPP experience shape your career choice?

I started in the Career Center as a student aide. CBA gave me the foundational knowledge of human resources and business. It helped me understand the value of networking and building relationships.

#### What was it like being a student-athlete?

Playing on the basketball team for four years, the biggest impacts were being on scholarship and having financial relief. I learned to lead teams in a fast-paced environment and also how to live a healthy lifestyle. I cherish the relationships I developed and still keep in contact with my teammates.

#### How do you give back to Cal Poly Pomona?

I recruit CPP students, participate on the board of the College of Business Administration and I give to the Alumni Association each year. I'm currently serving a two-year term as the CBA alumni chapter president. I also follow the various sports teams throughout the year and try to attend a few games.

#### Tell us about your career.

I've worked at a large firm and as a public defender. At Jones & Mayer, my work includes a hybrid of litigation, criminal prosecution, and labor and employment. Over time, I've focused more on labor and employment.

#### How did your CPP experience shape your career choice?

Professor David Adams and the law and society emphasis in the philosophy department were significant influencers. Model United Nations and an internship at Pomona Superior Court — I had to take a year off of basketball to do that — really shaped my path.

#### How did playing basketball shape your career?

One of my bosses said he likes working with athletes because they can take direction and know team concepts. As an athlete, I was constantly being critiqued, so it doesn't break a person to hear that they're not doing something right. It's more about improving as a lawyer, a writer or a basketball player.

#### How do you give back to Cal Poly Pomona?

I attend different philosophy events like Ethics Bowl, where I've periodically served as a judge. I've donated to scholarships for students to apply to law school, and I try to answer their questions. And I try to make it to as many basketball games as I can.

# The Engine of Success

California has always been the land of dreams and dreamers. It is home to big thinkers, truth-seekers and a spirit of optimism that binds all those who dare to believe in its promise.

Together we are **Building a Better California**. Cal Poly Pomona, along with the entire 23-campus California State University system, serves as the backbone of opportunity that runs the length of the state. Students grow and learn, employers get access to highly qualified talent, and every Californian benefits from the research, economic prosperity and community engagement our university system provides.

It's no secret that California leads the nation by example—in technology, engineering, agriculture, space exploration, environmental protection, entertainment, cultural influence, community outreach and so many other areas. We've always started the discussion, laid the groundwork and set the agenda.

We are a diverse community, unapologetically protective of our beautiful lands and oceans, and determined to give every student a chance to succeed. Californians have never looked back and never will.

Cal Poly Pomona's commitment to creativity, discovery and innovation epitomizes the California

dream. Through our polytechnic approach of hands-on and collaborative learning, our students are being prepared to lead in the 21st century. The 6,000 students who participated in commencement last spring are just the latest to carry on our 80-year tradition, and the new Broncos whom we welcome to our campus in the fall are eager to continue our proud legacy. Without a doubt, California is in good hands.

Although California is a land of great promise, it's no utopia. That's why our alumni, students and faculty are working to tackle the challenges in our state, like improving infrastructure, solving our water problems, ensuring food security and providing better educational access for underserved populations.

As we Build a Better California, the Cal Poly Pomona family will continue to dream big. After all, it's that spirit of optimism that connects us as Californians.

SORAYA M. COLEY, PRESIDENT



# A BETTER CALIFORNIA FOR EVERY PERSON IN OUR COMMUNITY



## A New Path

### Technology Nonprofit in Los Angeles Opens Doors to College and Careers

BY MONICA RODRIGUEZ

Oscar Menjivar visited his high school alma mater several years ago and found a noticeable gap in the curriculum. The South Los Angeles school lacked courses in computer technology.

The 2001 Cal Poly Pomona alumnus, who earned a bachelor's degree in

computer information systems, was convinced that technology provided a pathway to well-paid jobs and a means “to make sure our boys get to higher education instead of prison.”

Often, good boys living in South Los Angeles lack access to positive activities and instead follow a well-worn path to jail. It happened to a 16-year-old friend, Menjivar says. “He got caught up at the wrong place at the wrong time,” he says.

Those factors became the catalyst for Menjivar to establish TXT — Teens Exploring Technology. About eight years ago, he and a group of supporters began crafting a curriculum, testing pilot programs and researching how to establish a nonprofit.

TXT, which became a nonprofit about five years ago, offers technology-related afterschool activities to 800 middle and high school students annually from 30 South Los Angeles schools.

*Oscar Menjivar leads a discussion with teens about problems in their community that need to be addressed.*

*Menjivar continued on page 10*

The dreams you have can be accomplished if you put in the time.



Among the programs is a summer class that teaches low-income African-American and Latino males how to write computer code and create websites and apps that are used to address real-life issues such as neighborhood safety. At the end of the program, the participants present their projects to a panel of tech professionals, and the winner gets a \$4,000 prize to launch a business. In a recent competition, one of the student-created apps used artificial intelligence, voice recognition and a robot. The app sends parents a message when their child has arrived at school or home safely.

Participants learn about team work and develop leadership, entrepreneurial and public speaking skills. They also learn that “the dreams you have can be accomplished if you put in the time,” says Menjivar, the organization’s CEO.

Recognizing his work in tackling a critical issue in California, the James Irvine Foundation gave Menjivar a 2018 Leadership Award and a \$200,000 prize that will allow TXT to grow the program. Menjivar was honored “for preparing young men and boys of color for careers in technology.”

So far, 75 students have gone through the summer coding, web, app and entrepreneurial program and graduated from high school. From that group, 71 are attending four-year colleges and about 60 are majoring in STEM fields.

Five TXT alums are attending Cal Poly Pomona, including 24-year-old graphic design student Victor Lara.

When he was a 10th grader at a Watts charter school, Lara taught himself web design because the school didn’t offer technology-related programs, he says.

At TXT, Lara found people who nurtured his interest in web design and also a mentor in Menjivar.

Lara, a junior, dreams of eventually opening a studio that creates apps and websites and gives youth a place to interact with professionals to learn about technology, much like he did at TXT.

At Cal Poly Pomona, Lara keeps in close contact with other TXT graduates and Broncos.

“TXT sort of brings this brotherhood,” Lara says. “It feels like you have this connection that never goes away.”

Menjivar says he too found a community of students and supportive faculty during his undergraduate years at Cal Poly Pomona. The former ASI vice president and resident advisor at Alamitos residence hall discovered opportunities to develop his leadership skills and pursue his dreams. At TXT’s inception, fellow Bronco alumni comprised its initial board of directors.

Menjivar’s training and life experience have turned him into an engineer of sorts.

“I’m a human engineer,” he says. “I re-engineer the talent of people and bring the talent out. I’m blessed to be a different type of engineer.”

# The American Dream

## Connecting New Angelenos to LA’s Diverse Community

BY CLAY FOWLER

Recent changes to U.S. immigration policy have complicated and increased **Linda Lopez’s** work. But it’s all the more reason for the Cal Poly Pomona alumna to stop and admire the impact of her position as the chief of the Office of Immigrant Affairs in Los Angeles.

Lopez (’92, political science) enjoys the fruits of her office’s labor at the dozens of annual U.S. citizenship ceremonies at the LA Convention Center, a tangible and emotional event for the newly minted Americans.

“It’s really powerful. You have 5,000 people from all over the world in this space, and they’re waving their flags, and it’s this moment, this culmination,” Lopez says. “For me, it’s really empowering because it’s part of the American dream. Citizenship is that ultimate culmination.”

Facilitating U.S. citizenship is one of many initiatives for the Office of Immigrant Affairs, which Mayor Eric Garcetti re-launched after he was elected in 2013. Lopez, the daughter of Ecuadorian immigrants, was one of the first people he hired outside of his immediate staff.

In a city where one in 10 residents is an immigrant, Lopez is charged with integrating new Angelenos, both documented and undocumented, into the fabric of the city. That mission has become more complex with escalating fears among the immigrant community, which includes people from Mexico, Central America and Korea.

Lopez shepherded the New Americans Initiative, which uses public libraries to guide Angelenos through the U.S. citizenship process. It’s been so successful that New York City and Philadelphia have adopted the model.

To help quell fears and improve collaborative communication, her office utilizes trusted leaders of the immigrant community to tell their friends and neighbors about the city’s programs for healthcare, accessing food and growing their small business.

A report conducted by Americas Society, Council of the Americas and the Fiscal Policy Institute shows that 64 percent of all “Main Street” business owners in the Los Angeles metro area are immigrants. Small business is just one of many ways they contribute to the community.

“They’re the local engines of economic development for our city,” Lopez says. “How do we provide the tools needed for immigrants to scale up some of these businesses? We’re thinking through a strategy that would help support that.”





*Alumni volunteers Jon Giberson and Kay Wilson-Bolton collect and distribute food, provide housing assistance, mentoring and other services to help people in their community.*

# The Spirit of Service

## Alumni Siblings Deliver Hope to Their Community

BY MARY SHUBERT BENDER

It's a call to action often attributed to Gandhi: "Be the change you wish to see in the world."

That describes the volunteerism of two Cal Poly Pomona alumni — **Jon Giberson** and sister **Kay (Giberson) Wilson-Bolton** — who tirelessly devote themselves to community service.

Wilson-Bolton ('68, business administration) is the volunteer director of Spirit of Santa Paula, a non profit that provides showers, meals, housing assistance, utility payments, mental health referrals and laundry service to homeless residents of that Ventura County city.

Every Wednesday, the group prepares 600 dinners at First Presbyterian Church in Santa Paula and provides free diagnostic screenings, tuberculosis tests and mental health consultations.

Wilson-Bolton, a real estate agent for 40 years, makes it her off-duty mission to advocate for those without a roof over their heads. In 2002, she and five other Santa Paula residents established the charity, which broadened its outreach after a tragedy on Christmas Eve 2008.

"We found a homeless man dead in one of our churches," says Wilson-Bolton, who

previously served as city mayor. "He lived in Santa Paula. He was only 37 years old."

Spirit volunteers, among them her husband Howard, also pinpoint what each homeless client needs to regain stability and order.

Years spent untangling their chaotic circumstances have shown Wilson-Bolton that the roots of homelessness run the gamut, from substance abuse and incarceration to crumbling family structures, precarious finances, minimal education and a lack of job skills.

For someone teetering on the brink of eviction, rental assistance or help paying a utility bill can halt their downward slide. Addicts and former inmates are often harder to turn around, Wilson-Bolton says, because they've usually burned bridges, squandered opportunities, betrayed and alienated friends and relatives.

"They've stolen the rent money. They've siphoned gas out of the car," she says.

Childhood encounters with homeless people at their house in rural New Hampshire may have planted the seeds of Wilson-Bolton's advocacy work.

"My mother was always one who would feed what we'd call the 'hobos,'"

she says. The men sat on the back steps of their home while her mom prepared meals for them. "They would never look at me, so I always had a sense of their shame."

In Santa Paula, Wilson-Bolton collects surplus food for the hungry. Spirit volunteers are certified to reclaim items that supermarkets and students would otherwise throw away.

"We pick up un-served food from schools. It's the unbitten apple, the unpeeled banana, the unopened carton of milk."

Wilson-Bolton, 71, recalls living "on a shoestring" during her college years at Cal Poly Pomona.

"I worked in the engineering department, I worked in the financial aid office, and I worked in one of the big department stores," she says.

She enrolled at Cal Poly Pomona at the urging of her older brother, who already was a student there.

"Jon encouraged me to join him at Cal Poly Pomona. His wife Gail worked there and introduced me to the financial aid office," says the business alumna, who also joined the Rose Float committee and served as the senior class secretary.

Jon Giberson ('67, marketing

management), who is six years older, graduated from Redlands High School in 1958 and served four years in the U.S. Coast Guard. After his service in the military, he attended San Bernardino Valley College and worked at a small business in Yucaipa. He began dating the boss's daughter, Gail. Soon, they married and both landed at Cal Poly Pomona — he as a business student and she working in campus administration.

As an undergraduate, Giberson served as ASI vice president and, with Gail, chaperoned the men's basketball team to a tournament in Phoenix. "We rode out on the bus," he says. "That was quite an adventure."

After graduation, Giberson was recruited by Xerox Corporate in Orange County. He moved to Orange, and, with a co-worker, joined a philanthropic organization for young men. Eventually they aged out of that group, so he joined the Roosters Foundation in 1989.

Every year, the nonprofit provides about 20 to 35 grants to small, local charities, Giberson says. The Roosters select recipients that effectively fill a specific need, such as after-school tutoring, art therapy, advocating for crime victims, and career mentoring for youths leaving

the foster care system. Each cause receives \$5,000 to \$10,000 in cash grants.

"Our mission is to support needy and at-risk children in Orange County who are at risk of going hungry or at risk of having no place to sleep," he says.

The Roosters' biggest endeavor is the annual holiday food drive that Giberson, 77, chaired for 10 years.

"We fill 3,000 boxes with a frozen turkey, fresh produce and canned goods — enough to feed 10 people," he says.

Rooster activities are often a family affair: Gail, their daughter Amy, her husband Tony, and grandson Spencer, now 17, helped fill the food boxes. The Roosters rely on the Boys & Girls Clubs and 50 other organizations to identify families in need and distribute the food boxes.

"It has been a great joy of mine to teach my grandson from the age of 5 to give back," he says.

Fellow volunteers were a godsend when his wife fell ill. Rooster members and spouses visited and brought over meals.

"She passed away from brain cancer in 2016, and my fellow Roosters have been great support."

In recent years, the number of homeless encampments has ballooned, from Anaheim to downtown Los Angeles to Ventura. The sheer scope could discourage and overwhelm those on the front lines, leaving them to wonder — as the adage goes — whether they're trying to empty the ocean with a teaspoon. Not so with this brother and sister.

"We know we're making a difference, and that keeps us going," Giberson says. "We see the joy in the people who come to pick up the 40-pound food boxes and see how our grant checks are being used to help the less fortunate."

Wilson-Bolton harkens back to a Cal Poly Pomona philosophy class. Her professor assigned an essay topic that crystallized her worldview: "What should you do when you see somebody who is hungry?"

"I remember writing that our world would be a better place if we saw ourselves as our brother's keeper," Wilson-Bolton says.

"I got an A, and I never got A's! That one assignment shaped my memory and my preparation for what I would be doing in the future."





# BUILDING FOR CALIFORNIA'S GROWTH AND PROSPERITY

## The Future of Learning

By **JOSEPH J. RENCIS**  
Dean of the College of Engineering

*“The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.”*

– Alvin Toffler, writer and futurist

Cal Poly Pomona graduates are sought after and well-respected by business, industry and graduate schools. We earn this reputation due to our learn-by-doing approach to education that graduates Day One professionals. Our graduates have two feet on the ground and two hands on the problem and do meaningful work on their first day on the job.

While Cal Poly Pomona continues to produce workforce-ready graduates, we must also graduate individuals who will thrive and adapt to an ever-changing workforce that is, as University President Soraya M. Coley aptly describes it, the Future of Work and Human Engagement.

### A Forever-Changing Industry

According to the World Economic Forum, “In many industries and countries, the most in-demand occupations or specialties did not exist 10 or even five years ago, and the pace is set to accelerate.” To keep Cal Poly Pomona and its graduates continually relevant in this changing world, we must prepare high-impact graduates who not only get the jobs of today and tomorrow, but also create and lead the jobs of the future.

Based on my conversations with industry and business leaders, they consistently focus on two items. First, their most valuable asset is human capital; and second, they need to hire innovators to compete in today’s global marketplace. To meet their needs, industry recruits T-shaped graduates who have both depth (vertical stroke of the T) and breadth (the horizontal stroke of the T). The depth and breadth contribute to the creative process and collaboration across disciplines, respectively.

Now, let’s consider the need to graduate students with the three dimensions of leadership.

The first dimension, technical leadership, provides the foundation. Technical leadership with discipline-specific knowledge contributes to strong problem-solving skills, open-ended design skills, creativity and the confidence to innovate.

The second dimension, professional leadership, will ensure our graduates are well-rounded. We need to foster dynamic, agile and resilient individuals with a commitment to lifelong learning, an entrepreneurial spirit, interdisciplinary teamwork, excellent communication and high ethical standards.

Finally, the third dimension, global leadership, will embrace the world. Global leadership is essential for our graduates to build skills to address the world’s challenges that impact humankind.

### The Graduates We Must Produce

Companies today are looking to hire graduates who meet these criteria to help them innovate to continually compete in the marketplace. Failure to do so means going the way of Kodak. Fifty years ago, Kodak was a top five global company. Today, it is trying to reestablish itself after a failure to innovate led to bankruptcy in 2012.

There are many definitions for innovation, but I will focus on innovation that is so profound that you cannot remember the way life was before it. For example, the internet is an innovation my daughter has always known throughout her life.

How are these innovations produced? Based on a study by Stanford University, innovations on a large scale occur at the intersection of three components: STEM, business

*Future continued on page 44*

# Public Good

## From Intern to President — A Career Built on Integrity

BY ZOE LANCE



“Brian, what are you going to be building in five years?”

**Brian Jaramillo** ('87, construction engineering technology) frequently hears this question. As the president of Tilden-Coil Constructors in Riverside, he oversees the company's operations, managing hundreds of millions of dollars in construction projects across Southern California each year. He seems like the guy to ask for the inside scoop on what the region is building.

He responds with a laugh.

“I don't dictate the markets, but as long as we get to serve people and do good business, we don't care what we build,” he says. “I'm going to continue to build a company of integrity that people want to partner with, and I want to grow a generation of leaders who will meet the needs of California.”

Serving the state's public education sector is a significant area of the Tilden-Coil portfolio and one where Jaramillo has seen incredible growth. His first education project with the company was the \$17 million Cathedral City High School in 1989. Nearly 30 years later, high schools and community college districts continue to evolve, now with cutting-edge arts centers and technology hubs and stadiums.

“The quality of educational environments has really improved from when I was in school and even when I first started constructing schools,” he says. “That's predicated on the public's request for higher quality. STEM education has also changed this a lot. There are computers everywhere, and so the power and data needs not only make the costs of schools go up, but the overall effectiveness of the facilities.”

Jaramillo credits Cal Poly Pomona with changing his career trajectory. The Hayward native transferred to the university after taking community college courses and working full-time in construction. He wanted to be a developer but saw the value of a degree that focused on engineering as an applied science.

“I was hungry for any type of work I could get and I understood that work and school are the most powerful combination,” he says. “The polytechnic curriculum was more aligned with what I was after. I knew I needed to get a job in the industry while I was still in school.”

He worked part-time at a small masonry business but applied for scholarships to stay on top of his student expenses. A chance application for a scholarship sponsored by a general contracting foundation changed everything.



Jaramillo interviewed for the scholarship with an executive from Tilden-Coil who was helping to interview students. During the lunch meeting, Jaramillo shared his plans after graduation.

“I said, ‘I'm going to be straight with you. I want to work for a company like yours where I could learn from people with experience, make mistakes with someone else's money and then, in five years, start my own thing.’”

The Tilden-Coil executive appreciated Jaramillo's sincerity, both recommending him for the scholarship and offering a summer internship.

“Tilden-Coil took an interest in who I was and understood that I was somebody to invest in,” Jaramillo says. “And then I never left.”

Jaramillo has also seen the regulation side of his business significantly change since his early days at Tilden-Coil. On a construction site, both engineers and construction crews must adhere to many layers of rules and building codes. He says that in order to be successful, he and his competition must grasp the importance of being environmentally and socially responsible.

“The power of the Cal Poly Pomona engineering degree is the learn-by-doing aspect,” he says. “The college is producing people who are equipped to understand regulations. We have to embrace it and figure out how to protect natural resources and navigate the regulations better than any other organization.”

Over the course of 32 years, Jaramillo worked his way up the ladder from intern to president, managing multi-million dollar projects for institutional, commercial and industrial clients across the Inland Empire.

“When I advise people on their career growth, I tell them to just pour yourself into every opportunity you get,” he says. “Nothing is beneath you. Do a great job and don't complain. People will reward you with more responsibility.”

Jaramillo is deeply invested in giving back to Cal Poly Pomona and providing new generations of students with the same opportunities he had. He believes that as an industry leader and an alumnus, he needs to collaborate with the college to ensure future generations of engineers are equipped for the workforce. He will often return to see student projects and talk to faculty about fostering students' critical thinking and communication skills.

“I feel a debt of responsibility to Cal Poly Pomona, because it really allowed me to leverage myself and springboard in the industry,” he says. “Money alone isn't going to repay the opportunity that the institution gave me. The most precious thing to me right now is my time, and I'm willing to give that.”



## HOW MUCH IS 1 MILLION SQUARE FEET?

- 29 Taj Mahals
- 18 White Houses
- 5 CLA Buildings
- 1.5 Louvres

Larry Gates and DRC Engineering are shifting their focus to build mega distribution centers, like this one in Riverside.



# Prime Development

## Improving Life for the Amazon.com Generation

BY ZOE LANCE

The top-selling electronic device on Amazon.com is a Fire TV stick, a small streaming device about the size of a USB drive. Buying one is easy, especially if you're one of the 100 million people across the world who have an Amazon Prime account. Open the Amazon app on your phone, search for the device and tap on Buy Now. Two days later, a package will arrive at your doorstep.

**Larry Gates** ('87, civil engineering) and his company, the Anaheim Hills-based DRC Engineering, are immersed in the area of construction that makes this happen. Amazon and UPS each recently leased 1 million-square-foot buildings that DRC helped build on unused land at March Air Force Base in Riverside. To accommodate the high volume of products to keep the shelves stocked — as well as the space needed for employees to put shipments on conveyer belts — these warehouses must be enormous and in proximity to major metropolitan areas.

Across California, construction and engineering industries are rethinking existing spaces and practices to serve both economic and social needs. The demand for more housing is also a crucial factor in the equation.

"The big push on developers lately are these big box industrial sites

because existing buildings can't handle the work that Amazon and other retailers need," Gates says. "We're making the best use of it by putting in new apartments in the cities and then moving the industrial spaces out to the Inland Empire."

When Gates co-founded DRC in 1997, the engineering and land surveying firm's portfolio often consisted of redeveloping former military or industrial facilities into new shopping centers anchored by department stores or large retailers. In the last two decades, online shopping has radically changed the demand for retail and residential development.

To better serve both their clients and the communities, DRC has focused on building mixed-use developments where people can both live and play.

"If you could only build on open space, then we would run out of work," Gates says. "There's definitely been a change in our business, but it's nice to see redevelopment happen and how it can revitalize places."

Gates learned that there was a strong connection between engineering and business during his time at Cal Poly Pomona. He was drawn to civil engineering both because of its familiarity — his father was an engineer in the Air Force — and practicality. As a student, he explored his options on how to meld his two interests.

"Civil engineering gives you a well-rounded education," Gates says. "The Cal Poly Pomona engineering program made it so we could go to our first job and get started right away. We did

similar work in the classroom that gave us a good understanding of the principles and then applied them to the projects quicker than other students are able to."

As an active alumnus in the College of Engineering, he serves on the Dean's Leadership Council, contributes to scholarship funds and recruits students to work at DRC. Forging connections between the college and industry is important to him, as it fuels a pipeline of new professionals who aren't afraid to try new ideas and will shape the future of engineering in the state.

"A civil engineer designs the things that make your daily life a little bit easier," he says. "Cal Poly Pomona students want to get out in the field, design something and see it built. It's what Cal Poly Pomona is known for."

# The Last Perfect Place in California

## Alumni Demonstrate Their Commitment to Ecologically Vital Coastal Land

Esri founders and digital mapping pioneers **Jack Dangermond** ('68, landscape architecture) and **Laura Dangermond** ('74, social sciences) donated \$165 million to the Nature Conservancy to preserve one of California's most iconic areas. The gift, which is the largest private donation received by the nonprofit organization, was given in December 2017 to purchase and preserve eight miles of the coastline in Santa Barbara County and the 24,000-acre Cojo/Jalama Ranch at Point Conception, close to where the couple honeymooned in the late 1960s.

"This is an incredibly rare, ecologically important place with eight miles of coast and centuries-old coastal oak woodlands," Jack Dangermond said. "Conservation isn't just being nice to animals or plants, it's investing in the continued life support systems of humans and all other species on the planet. We need more people to step up to protect our last great places."

Visible from space as the exact point where the coast turns northward, the area will be named The Jack and Laura Dangermond Preserve.

The land, which includes two private working cattle ranches, is noted to be in tremendous ecological condition and features a confluence of ecological, historical, and cultural values across Native American, Spanish and American

histories. The area is also home to at least 39 species of threatened or special status.

The preserve is a rare spot where cold northern Pacific waters mix with warmer waters, creating a richly biodiverse marine environment. The coastline is marked by jagged cliffs and isolated rocky sea shelves where marine mammals swim undisturbed. Adjacent to a marine protected area, the property connects the coast to the mountains and contains crucial wildlife corridors for mountain lions, bobcats, and bears, and habitat for endangered species including the snowy plover, red-legged frog and monarch butterfly.

**TO PROTECT  
AND PRESERVE**



Aerial photo of the coast by Peter Montgomery

# Water is Life

## National Award Winner Considers the Environment an Important Client

BY CYNTHIA PETERS

In Southern California, water is the most precious commodity. Approximately 86 percent of the region's water is imported — and it costs \$4 million each mile it's transported.

Brie Jones ('17, master's in architecture) wanted to re-envision how sustainable design could help "recapture, recycle, re-stitch and reinvent" watershed management in Los Angeles.

Her carbon-neutral and water-neutral design for a 200-unit condominium complex over the Los Angeles River was one of 10 winners in the INNOVATION 2030 Competition, which received more than 1,000 entries from 57 architecture schools.

"Sustainability has always been an interest of mine," says Jones, who works at HMC Architects. "I believe it is the responsibility of architects to design for not only the health, safety and welfare of humans, but the environment as well. I wanted to see how far I could push this concept, using water as my project medium."

Sited in the Lincoln Heights-Chinatown area of downtown, the design calls for a rooftop solar array that would completely power the building, rooftop swimming ponds, vegetable gardens and water tanks that could be used for scuba diving.

A water filtration system would process 73,278 gallons daily from the LA River to irrigate the rooftop gardens and adjacent park spaces. Jones says the water conveyance system was the most difficult element of the project because of the complex calculations and research required, but it is also her favorite.

Competition judges praised the project's creative and intelligent use of water. "The student's diagrams are strong and show a commendable view of larger environmental issues. The scuba tanks are an entertaining idea on user experience which could be expanded."

Jones originally created the design, "Prescriptive Hydrologies," for her master's thesis. She was challenged to move beyond the fundamentals and be more aggressive in pursuing new ideas.

Jones' work and the other winners will be exhibited at the 2019 conference of the Association of Collegiate Schools of Architecture, which co-sponsored the competition with the American Institute of Architects Committee on the Environment.



Alumna Brie Jones stands on the Spring Street Bridge overlooking the LA River, where she envisions a carbon-neutral and water-neutral condominium complex.

## VillageLink



# Carbon-Neutral Architecture Designs Recognized as Leaders

BY CYNTHIA PETERS

Cal Poly Pomona's fourth-year studio has been recognized as a cutting-edge course "shaping the next generation of architects" by Architecture 2030, a think tank working on climate change solutions with building design.

In the LA 2030 studio, architecture students designed low-carbon, low-cost, innovative and sustainable buildings in the downtown Los Angeles area of South Park, which is just east of Staples Center. Of the 18 designs created, two are featured on the Architecture 2030 website: Air Purifier and VillageLink.

"Most sustainable buildings you see are small buildings, because it's easier to make smaller buildings more efficient," says **Professor Pablo La Roche**, who has taught the sustainable building studio for nine years. "Downtown, the challenge is designing residential buildings with more density."

During winter 2017, Student teams examined case studies, went on a research trip to Seattle, and also tested their ideas using state-of-the-art software programs to validate that their designs would work. Measurements included predicted energy use, carbon emissions and the impact of daylighting.

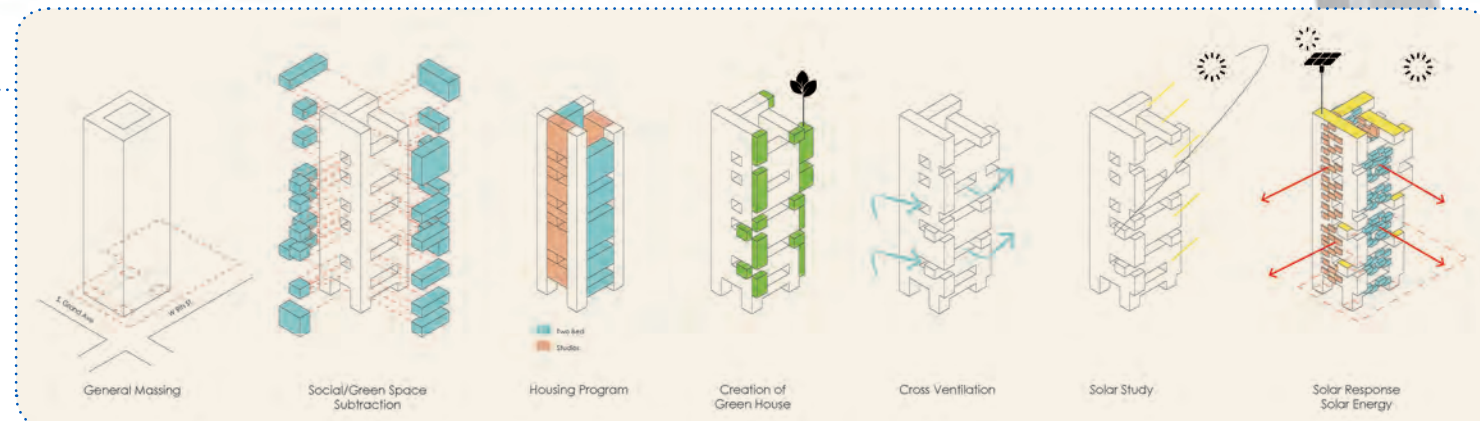
The striking 14-story Air Purifier, designed by **Stephanie Cortes** ('18, architecture) and **Carmelle Luminarias** ('18, architecture), featured 165 modular cantilevered one and two-bedroom units, each with a number of sustainable features from window glazing and

solar panels to reusable water systems and air purifying panels.

"Our goal for the project, was to get as close to net-zero carbon use as we could," says Luminarias, who is now working at Little Diversified Architectural Consulting in Newport Beach. "We got very close by combining passive strategies like natural ventilation, building orientation and optimizing daylighting with careful siting of sustainable features where they would yield the most benefits. Solar panels populated the west and south facades as well as the roof, while our wind turbines at ground level captured the prevailing northwest winds."

According to La Roche, all new residential buildings in California will be required to be zero net energy by 2020 and commercial buildings by 2030. "These students will have an edge over their peers as they begin their architectural careers," he says.

The other featured project, VillageLink, was designed by **Kayley Ryan** ('18 architecture) and **Youstina Youssef** ('18 architecture).



## Air Purifier





# If You Like Orange Juice, You'll Love This Wasp

BY DAN LEE

Cal Poly Pomona faculty and students are breeding thousands of insects a week in a bid to save California's citrus industry.

Citrus trees are under attack from a deadly bacteria called Huanglongbing, which can take years to manifest itself, has no cure and is 100 percent fatal for citrus trees. A tiny insect — no bigger than a grain of rice — known as the Asian Citrus psyllid carries and spreads the disease.

To slow the disease's spread, plant science faculty and students are working with the California Department of Food and Agriculture to produce more than 22,000 *Tamarixia radiata* wasps a week in greenhouses at Cal Poly Pomona. Since 2016, the greenhouses have produced nearly 1.2 million of the wasps. The CDFA releases the wasps throughout Los Angeles, Ventura, Orange, Riverside, San Bernardino and Imperial counties to go after the psyllids.

What happens next is like a scene from 1979 sci-fi movie "Alien."

"The wasps are parasitic: they lay their eggs on the psyllid, and when the eggs hatch, the wasps feed on the psyllids," says **Ben Lehan**, a lecturer who coordinates public outreach for the program.

At stake is a California citrus industry that generated an economic impact of \$7.1 billion in 2016-17, according to a recent UC Riverside study that was funded by the Citrus Research Board. Huanglongbing has already devastated the Florida citrus industry, causing more than \$4 billion in losses.

Complicating matters are the thousands of backyard citrus trees in Southern California. With citrus trees in 50 to 70 percent of homes, the psyllids have a vast habitat to thrive. That is why breeding the *Tamarixia radiata* wasps is so important, Lehan says.

Faculty and students have spent the past few years researching how to produce as many of the wasps as quickly as possible. For example, they have explored the impact of different diets on the insects' fertility and longevity.

Another research angle is the psyllids' mating behavior, which may involve communication through vibrational signals.

"If they do communicate this way, we may be able to mimic those signals and lure them into traps. Currently, we don't have an effective way to trap the psyllids," Lehan says. "Alternatively, we could create distorted signals that would confuse the psyllids and limit their ability to communicate when it's time to mate."

Faculty and students also are trying to educate the public. Most people have never heard about Huanglongbing or the psyllid.

"Over the past year, we have had students attend over a dozen events including the LA County Fair, the Landscape Industry Show in Ontario, and the Long Beach Landscape Expo," he says. "We have also become active with social media, using Facebook, Twitter and Instagram to help spread information that could help people better understand what we are dealing with."



A citrus plant infected by Huanglongbing (left) and the wasp (right) that could combat the Asian Citrus psyllid.

## Citrus Trees in the Back Yard? Here's What You Should Do

- Never move citrus plants, foliage or fruit into or out of the area, especially not across state or international borders because it could inadvertently spread the disease.
- Check for the psyllid and Huanglongbing whenever tending the trees. Infected trees need to be removed so the disease does not spread to neighboring citrus.
- Inspect for Asian citrus psyllids monthly. Look for small, brown pests that feed on citrus leaves with their body at a 45-degree angle. Check new flush, the smallest, tender new leaves sprouting on your citrus tree. This is a favorite spot for the pest to feed and lay eggs. Young psyllids produce a white, waxy substance to direct honeydew away from their bodies.
- When planting citrus trees, buy them only from reputable, licensed local nurseries.

For more information, visit [www.californiacitrusthreat.org](http://www.californiacitrusthreat.org).



Research on the Asian Citrus psyllid and the wasp takes place in Cal Poly Pomona's greenhouses.



Lecturer Mark Haag checks on the bees at AGRIsCAPES. A new on-campus apiary will open this fall in Ag Valley.



## Bee Students

### New Apiary Will Serve as a Vital Resource

BY DAN LEE

For years, the university's **Department of Plant Science** has taught a bee science course and used hives to help pollinate the crops it grows at Spadra Farm on campus.

But this fall, the insects will make a beeline to a new on-campus apiary behind Parking Lot M in Ag Valley. It will have hives, forage planted by students, an outdoor education center, a new honey extraction lab, classroom and an observation center.

"We're raising money right now for equipment so our students can learn how to extract honey from the hives," says **Mark Haag**, a lecturer who teaches the bee classes with colleague Melody Wallace, a veterinarian who also teaches parasitology.

And it's not just bees that are flocking to campus: the Huntley College of Agriculture has begun offering its beekeeping knowledge to the public. More than 100 people attended two beekeeping workshops held at **AGRIsCAPES** in the last year. More workshops are scheduled this fall.

Urban beekeeping is on the rise as many cities, including Los Angeles, have repealed beekeeping bans, partly due to concerns over colony collapse disorder. Many new and aspiring beekeepers don't know the regulations or best practices, and Cal Poly Pomona can be a resource for them, Haag says.

Cal Poly Pomona's beekeeping program is quickly gaining recognition: The California State Beekeepers Association invited Haag to present at its annual convention in November.

In the future, Haag hopes to offer a beekeeping course to the public through the university's College of the Extended University. The course would include training on pest and parasite treatments and an integrated pest management system, and honey extraction resources.

These plans certainly sound buzzworthy.

# TRANSFORMATION BEGINS AT CAL POLY POMONA



## Career by Design

### Architect Barbara Bouza's Career Does Not Include Glass Ceilings

BY MELANIE JOHNSON

Not many teens navigating the hallowed halls of high school know definitively what they want to do for a career.

Growing up in Santa Maria, **Barbara Bouza** ('85, architecture) loved art, creative problem solving, and math, and she also had an analytical side.

It wasn't until an architecture class in high school that Bouza realized she could pursue a profession that would tap into all of her passions.

"I took the course and I knew I wanted to be an architect," she says.

Bouza is the co-managing director and principal at the Los Angeles office of Gensler, the largest architecture and design firm in the world.

"I don't take for granted the many opportunities I've had," she says.

Wanting to stay in California for college, she enrolled in the architecture program at Cal Poly Pomona. The first year was a crowded field, as the program enrolled more applicants than it had room for. Bouza made it successfully through a rigorous freshman year and continued on.

"It was balanced," Bouza says of the university's program. "There was a strong focus on design and thinking creatively. It also had a practical component as well."

While a student, she interned with the Westwood-based architecture firm RBB, because the program required students to gain work experience in the field. After her internship ended, RBB hired Bouza part-time and she stayed on after graduation.

She worked a few years before deciding to head to London with husband and fellow architect Manuel Bouza ('85, architecture) to study for a year in the Architectural Association's graduate diploma program.

The couple stayed for 3½ years and worked with the internationally recognized firm Foster + Partners.

"I loved it," she says. "I encourage young people to travel and study abroad. It was a great opportunity. It was if we didn't do it then, we would never do it."

After coming back to Los Angeles, Bouza worked at Morphosis, then returned to RBB where she continued to focus on healthcare projects. One of her most memorable projects was the Alta Bates Comprehensive Cancer Center in Berkeley. The American Institute of Architects' San Fernando chapter recognized the project with a design award, and it was also featured in the publication *Architectural Record*.

She then took a job with New York-based Pei Partnership, serving as the Los Angeles point person for the Ronald Reagan UCLA Medical Center project, a 1 million-plus square foot, eight-story replacement hospital that was built after the previous facility was damaged by the Northridge earthquake.

Gensler, aware of her talents, approached her about a career opportunity. She interviewed on a day she will never forget because it was the day after Sept. 11, 2001. She took the job and has been at Gensler's downtown Los Angeles office for 17 years, starting the firm's health and wellness practice with a couple of colleagues, as well as focusing on media, tech, science and aerospace projects.

As a principal and one of two co-managing directors, her responsibilities include ensuring a culture of design excellence, bringing in new client business and focusing on talent development and recruiting.

*As co-managing director of Gensler in Los Angeles, alumna Barbara Bouza plays a role in major projects in the city, including the new Banc of California Stadium in Exposition Park (above).*

*The Gensler Los Angeles office, with about 600 employees and 25 summer interns, is an urban creative campus in downtown for architects, designers, planners and the community. The LEED Platinum building features flexible workspaces, a maker-model shop, wellness rooms, outdoor meeting patio, family room with a bar for coffee and snacks, and a special events space.*







*Recognizing the importance of diversity in the design professions, ENV is working to bolster the diversity of its students.*

## Culture Shift

Bouza has found great success in a field that is not very diverse.

The Los Angeles Business Journal named her the “2014 Executive of the Year – Women Making a Difference.” As a Fellow of the American Institute of Architects (AIA), Bouza will be the AIA Los Angeles chapter 2019 president.

Of the estimated 125,000 licensed architects in the United States, around 18 percent are women. For African-American women, the number is much smaller at approximately 430 or 0.3 percent, she says.

Despite the lack of representation in the profession, Bouza says through the support of colleagues and mentors, she was able to make her dreams a reality.

“As an African-American woman architect, I could look at the statistics and be discouraged that the odds are stacked against me,” she says. “But the opportunities are there, and we need to do a better job of supporting each other.”

Bouza and Gensler continue to push for diversity in the profession.

More than 50 percent of Gensler’s employees are women, including at the CEO level. Bouza has been working with other leaders at the firm to continue promoting Gensler’s Diversity Scholarship program, a university outreach effort designed to build a diverse pipeline of talent.

“The broad range of practice areas and markets we design for, such as workplace, education, retail, healthcare, sports, airports and media, provide amazing opportunities that require diverse leadership,” she says. “As a global firm, we are local first, and the cross synergy of different viewpoints has been key to our success. Diversity is a seat at the table; inclusion is having a voice.”

She also mentors young women through leadership programs such as Girls, Inc. and Dress for Success. Bouza is a longtime member of the National Organization of Minority Architects (NOMA), which offers a summer camp for high school students interested in the field. She spoke at the national conference on “How Diversity Drives Business Innovation.”

Bouza is on the board of directors of Imagine LA, a non profit organization dedicated to stopping the cycle of family poverty and homelessness through an innovative mentorship program that provides parents and their children the tools to thrive.

Experience has taught her that a little extra guidance helps those new to the world of design and community of architects.

“It doesn’t matter your background,” she says. “It’s about opportunity.

The great thing about architecture is we have the ability to create a meaningful impact in people’s lives.”

At Cal Poly Pomona, the College of Environmental Design also is striving to bolster diversity. In the architecture program, there are about 120 new undergraduate students every fall but sometimes only one or two African-American students, says **Michael Woo**, dean of the College of Environmental Design.

The university is working with NOMA and school counselors to identify African-American students at high schools and community colleges who might have an aptitude and an interest in architecture or the college’s other disciplines. An open house and breakfast for high school and community college counselors is planned in the fall.

Diversity is very important for those seeking a career in the ENV disciplines, Woo says, adding that Cal Poly Pomona’s affordability and proximity to Los Angeles give students a great opportunity to focus their work on issues they care about.

“Design professionals have a big role in developing cities and urban environments, from immigrant communities to dealing with issues like homelessness,” he says. “If we don’t have enough ethnic minorities in the architecture and other design professions, then many urban communities will be shaped by designers and policymakers who don’t really understand the people who live in them.”

*Bouza continued on page 44*

# A Turning Point

## Cristian Martinez: ‘Project SUCCESS gave me a sense of belonging at Cal Poly Pomona’

The first email I received about the **Project SUCCESS** program went ignored.

It was the summer of 2016. I had just graduated from high school and wanted to enjoy my free time before I started college. So when Byron Howlett, the former interim associate vice president and dean of students, and Tim Alexander, the coordinator of the program, emailed me to see if I would be interested in joining Project SUCCESS that fall, thinking about academic support and mentoring was the last thing on my mind.

On my first day of school, I was nervous because I had never visited the campus and had no friends. I moved to Pomona from Carson, which is about an hour from campus. That quarter, I had classes from 8 until 11 a.m. every day. I thought this would be great for me. My classes would end early, and I would have the rest of the day to study and go out.

Acclimating to the quarter system was tough. I ended up just going to class, skating home to the off-campus room I rented and completing my assignments.

After a couple weeks, I realized I never went out. I had housemates who struggled with substance abuse, which forced me to stay in my room because that was the only place I felt safe. The stress affected my mental health, and I had no one to confide in or ask for help. I was lost and alone.

Toward the end of the quarter, I received another

email from Dr. Howlett notifying me that Project SUCCESS was accepting new applicants for the winter quarter. I had let this opportunity slip out of my hands before and didn’t want to repeat that, so I applied and was blessed to be accepted into the program.

This was the turning point in my college journey and life. Project SUCCESS gave me a sense of belonging at Cal Poly Pomona that I had never had before.

In my first year, I recall my first community gathering. I was super nervous because I had joined the program late and I didn’t know anyone. I was an introvert and when I got to the event, I just sat in the corner. Tim approached me and introduced himself; he told me how excited the program was to have me.

This moment changed my life. Never once was I ever told that someone was excited to have me, let alone a program. I immediately felt welcomed and gained a sense of brotherhood and family from that day forward.

In my second year as the Project SUCCESS co-intern, I worked closely with our lead intern, Francisco Martinez, assisting him with tasks such as conducting an inventory of supplies, printing out packets and planning seating for the Preview Day and the end-of-the-year banquet. As the school year wound down and Francisco prepared to graduate, I transitioned into the lead intern position.

I have been blessed and am grateful to continue working for this amazing program in a leadership role in 2018-19.

I am thankful for the program leaders and the whole organization for everything it has done for me. The program saw something in me that I never did. Project SUCCESS gave me a second opportunity that I will cherish forever. If it were not for Dr. Howlett and Tim Alexander recognizing a need on campus for men of color and allowing me to join, I probably wouldn’t be in the position I am in now. For that I am forever grateful and will continue being an advocate and mentor for men of color.

*Cristian Martinez is a junior studying industrial engineering. He is the lead intern with Project SUCCESS.*

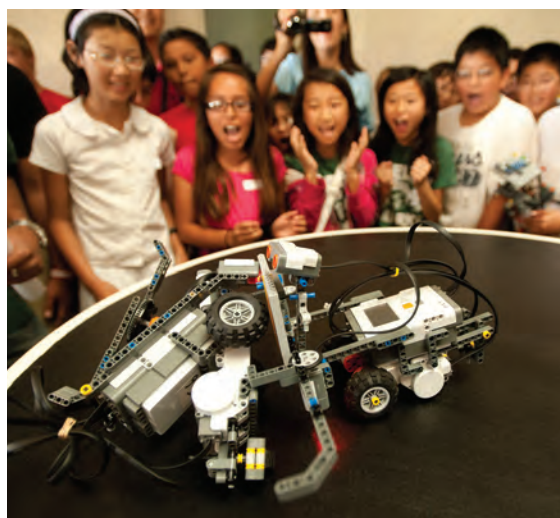


## About Project Success

*Project SUCCESS is a mentoring program designed to improve the graduation rates of African-American, Latino and Native American male students. The program received \$100,000 from the California Community Foundation.*



*In 2010, Matthew Kuykendall (yellow circle) learned about coding and robotics. His fifth-grade teacher, Shelley Andros (green circle) brought her class to Cal Poly Pomona's Robot Rally at the end of the school year.*



*Elementary students watch their Lego robots compete in the Robot Rally in 2011.*

# Real Inspiration

## STEM Education Begins with Fun and Games

BY MONICA RODRIGUEZ

**Matthew Kuykendall** was a fifth-grader at Whittier Christian School when he and his classmates were introduced to robotics.

Using Lego kits, they built robots and learned to write computer code that put their creations in motion. The experience had a lasting impact on Kuykendall and influenced his choice of high school, college and, ultimately, his academic major.

"I was challenged in a way I never had been in school. It was kind of mind blowing," he says. "By the end of the robotics class, there was a seed planted in me."

That was in 2010. Kuykendall, now an engineering student at Cal Poly Pomona, is one of thousands of kids who learned about robotics and developed an interest in STEM through mechanical engineering **Professor Mariappan "Jawa" Jawaharlal** and his program **Robotics Education through Active Learning**, or REAL.

The program launched in 2007, but the genesis for its concept dates back to the late 1990s.

"It started with a simple, selfish motivation," Jawa says.

The father of three girls saw that his children were good students but noticed something in the two younger ones who were in middle and elementary school at the time.

"They did well in all subjects, but there was no real



excitement when it came to math and science," he says.

They found the subjects dull, a sentiment he too shared when he was a schoolboy.

However, the professor who holds a doctorate in mechanical engineering and whose wife has a master's degree in the same field, wanted to spark his daughters' enthusiasm in the subjects.

Children, as well as adults, need to have a grasp of such subjects if they are to be "well-informed people," Jawa says.

With the help of a kit, Jawa built a toy robot. As he tinkered with it, he attracted his daughters' attention and sparked their curiosity in math, science and other related subjects.

"You have to make the experience enjoyable — not easy — enjoyable," he says.

The success with his daughters, who are now 26 and 24 and both mechanical engineers, inspired Jawa to share his discovery with other parents and other educators. It wasn't until 2004 that someone was interested; Pomona Unified School District administrators contacted him and asked if he would work with a handful of at-risk youth.

Jawa accepted the invitation and found that the children channeled their energy in building and programming robots, often overcoming behavioral issues, he says. That started a long relationship with Pomona Unified schools that continues today.

REAL formally launched in 2007, offering training for teachers who wished to bring robotics to their students, along with curriculum and classroom support from Cal Poly Pomona faculty and university students.

The annual Robot Rally was the program's culminating event for children to put their robots through a series of competitive exercises.

What started out as an opportunity to work with 10 children has grown into an annual program involving 1,500 youth interested in STEM and having fun, Jawa says.

The robotics program has also inspired teachers like **Shelley Andros**, who reached out to Jawa after reading about the Robot Rally in her local newspaper.

"I want to do that!" Andros recalls thinking.

Andros ('89, horticulture) knew that REAL could benefit her students and she learned from Jawa's weekly visits to her classroom at Whittier Christian. She also watched her fifth-grade students, one of whom was Kuykendall, grow as learners, set and achieve goals, work in teams and use critical thinking skills.

"I realized they weren't ever working for a grade. They were working to learn," she says.

**Ernesto de Santiago**, a sixth-grade teacher at Barfield Elementary School in Pomona, also trained with Jawa and has been teaching robotics to his students for more than 10 years. To prepare himself to teach, de Santiago built and programmed a robot himself. The experience wasn't easy.

"You're going to want to throw your robot against the wall," de Santiago tells his students.

But he also tells them they must not give up when they encounter challenges.

"It's teaching them perseverance," he says.

Robotics is also opening the door to new career paths in STEM that students had never considered. It could very well help increase the number of people of color and women who enter engineering in the years to come, de Santiago says.

Andros, now the robotics teacher at Buena Park Junior High School, says the program has been

particularly valuable for girls who become more confident as they work with the robots.

Girls, she says, are often good troubleshooters adept at identifying and solving problems. They are also skilled at creating and programming robots. In 2011, several of her all-girl teams participated in the Robot Rally and took home most of the awards.

Barfield's de Santiago, who teaches fourth- through sixth-graders, says girls take to the program enthusiastically, although they don't always start out that way.

Girls often think of Legos as a toy for boys, he says, but as they begin to use the kits, they start to see things differently. They also come to realize careers in engineering are not off limits.

"They see it's doable," he says. "This isn't just a guy thing."

Recently, de Santiago ran into one of his former students at a district-organized robot competition leading up to Cal Poly Pomona's annual Robot Rally. The girl, a high school junior, continues to be involved in robotics, he says.

Jawa has many similar stories, from playing with robots with his daughters to teaching elementary students, many of whom have gone on to college engineering programs, including Cal Poly Pomona, UC Berkeley and UC San Diego.

"That was the purpose, to get girls inspired," he says. "I have gone through these experiences and it's rewarding."

Matthew Kuykendall's experience with robotics as a fifth-grader influenced his decision to attend Troy High School, a Fullerton public school with a strong science and technology program. Although the school didn't have a robotics program, Kuykendall was active in the school's robotics club.

As a high school student, he knew he wanted to be an engineer and chose to enroll in Cal Poly Pomona's mechanical engineering program to pursue his interest in robotics. He also works on the Formula SAE car.

Kuykendall says he would like to work with Elon Musk's SpaceX and maybe even play a role in sending humans to Mars.

"He's a pretty big leader of innovation in many fields," he says of Musk.

Kuykendall also sees himself becoming the head of his own company.

"Maybe further on, I'll make my own product," he says.

# A New Trajectory

'I Was Capable of Something Greater'



BY CHRIS PARK

**Manuel Beltran** ('89, aerospace engineering) is an aerospace savant. As the chief software architect within Boeing AvionX, Beltran leads a team of engineers working around the world to revolutionize the avionics industry. His work for NASA in the 1990s was so significant that the agency still calls him to inquire about launch readiness systems he established.

Beltran's successes belie a troubled youth riddled with bad decisions that nearly wiped away his potential — and his life along with it.

Beltran's family emigrated from Mexico to the city of Santa Ana, and he was the first in his family to be born in the United States. His father owned a construction and landscape company, and his mother maintained the household. They worked hard to establish themselves, continuing a lineage of hardworking landowners, professionals and entrepreneurs. Beltran sought to model his work ethic in the same way.

When his parents divorced early in his life, Beltran and his two sisters were devastated. He says it sent him into a downward spiral. He isolated himself, avoided eye contact and dressed differently. At 12, Beltran joined a gang.

"I guess I was looking for validation and a challenge. I watched as others admired the gang jackets the guys wore," he says. "It looked like a sure way to be likewise admired by association."

That same year, he started experimenting with drugs. By 13, he received three traffic tickets. Beltran's efforts at self-sabotage were progressing apace.

But Beltran excelled academically at Santa Ana's Spurgeon Intermediate School. He was promoted from the sixth grade to the eighth grade and earned a place in a program for academically gifted students. He says the school didn't have the staff to work with anomalies like him — a very smart but very troubled kid.

Beltran had a miserable freshman year in high school. During a meeting to review his transcripts, his sophomore counselor asked what he was considering for a career. The high school student shrugged, mentioning a vague interest in drafting. His counselor said his test scores were that of an engineer.

The encouragement was the first spark in a life that had the potential to lift off.

"At that very moment I decided to align my choices to become an engineer, not because I knew what that was all about, but because someone saw in me that I was capable of something greater," Beltran says.

He began working with the city of Santa Ana and was part of the Buena Gente (translated to "good people") program as a photographer. The program brought rival gangs to meet with each other and work out their differences

with conversation instead of violence.

Things were getting better but then got a lot worse.

On the afternoon of Nov. 21, 1981, two local gangs seeking to reestablish authority went to war. Twenty gangsters descended upon Beltran and four of his friends. Beltran had the opportunity to run. Instead, he stood with his friends, ready to die. Miraculously, while two were hurt, Beltran and his friends survived.

"I should have died that day," Beltran says. "A day does not go by that I don't think about that day. I vowed to do good and make good choices from that day forward. I've kept that vow."

At 17, he entered junior college and at 23 transferred to Cal Poly Pomona. He enrolled in the aerospace engineering program with a minor in computer science. He focused on space-related courses, and with an eye to the future, he took all the artificial intelligence classes available. Beltran

envisioned that AI systems would be integral for the future of flight, and it was that vision that his senior project was predicated on. His faculty advisor was unsure but took a leap of faith.

Beltran and his professor's trust were vindicated. For his project, Beltran developed a system designed to help test pilots reduce their workload in the assessment of an airplane's flying qualities. It was a hit with the alumni review panel and got him his first engineering position at Rockwell International.

"My Cal Poly Pomona education literally made my dream come true," Beltran says. "Each school has a particular emphasis, tradition or niche. Because of the rich aerospace history of the greater LA area, Cal Poly Pomona has a distinct advantage over many schools."

He made use of his advantages. Early in his career, he built a neural network (a computer system with an underlying structure similar to how a human brain operates) for NASA at a time when AI was nascent. The system evaluated the health of a space shuttle's auxiliary power unit in real time to help the launch operations teams determine whether or not to

launch a shuttle within 20 seconds of take-off. This system would prove to be critical for NASA and became part of the launch readiness checklist.

Cal Poly Pomona helped Beltran discover his best self and grow beyond what he thought was possible. He urges today's students to tap into their own potential.

"Commit yourself to a lifetime of learning, growing and giving. Start making better choices today. Have the confidence that you have something to contribute to the solution," he says.

"Don't let yourself be intimidated by old ways of thinking. The most valued engineers are the ones that innovate within the constraints of form, fit or function. Most importantly, own it.

Be the expert within your domain. Don't settle to just be one of the team. Rise to lead that team to excellence."

*Manuel Beltran, a Santa Ana native, says his education at Cal Poly Pomona "literally made my dream come true." His career includes work on space vehicles, high-energy lasers, fighter jets and commercial airplanes.*





Marie Royce, accompanied by her husband, Rep. Ed Royce, was ceremonially sworn into office as U.S. Assistant Secretary of State for Educational and Cultural Affairs by Supreme Court Justice Anthony Kennedy in May.

## alumni

### WE ARE THE WORLD

#### MARIE ROYCE LEADS INTERNATIONAL EDUCATION AND EXCHANGE IN THE STATE DEPARTMENT

BY ESTHER CHOU TANAKA

Growing up in Pomona, **Marie Royce** ('84, marketing management and management human resources) read books and periodicals about the world and dreamed of visiting those international destinations.

In her new role as U.S. Assistant Secretary of State, the Cal Poly Pomona alumna is living her dream. Not only is she traveling the world, she is providing students and leaders in the United States and internationally opportunities for education, scholarships and exchange. It's a chance to inspire in others what she's been passionate about her entire life — building partnerships, strengthening engagement and addressing complex problems.

Royce draws upon her academic and career experience from Fortune 500 companies, start-ups, nonprofits and education to lead the Bureau of Educational and Cultural Affairs (ECA). She was also a full-time faculty member in The Collins College of Hospitality Management and the College of Business Administration.

"Exchanges and alliances between people are aligned with the U.S. national security strategy," says Royce, who was sworn into office in May. "When people are self-reliant and interconnected, it makes for a more peaceful world. That's why we want more students to go to school overseas or have students come here. It'll make those relations better and help with global security."

As an undergraduate, Royce joined Rose Float and connected with students from different colleges and majors. For example, she helped bring in donations of whatever the engineering and decorations teams needed, from hydraulic equipment to Kodak film to flowers.

Her desire to serve her community began early, and she joined the campaign trail for candidates running for Pomona city mayor, school board and state assembly.

After college, Royce realized her dream of international travel. She was selected for an American Council of Young Political Leaders program through the State Department to visit Poland and Hungary. The nine-person delegation met with nongovernmental organizations and national leaders, including the mayor of Warsaw.

As the Assistant Secretary of State, Royce focuses on providing students and emerging leaders with opportunities for education and international exchange through scholarships, fellowships and exchange programs. Since 1961, the ECA has served over 1 million people globally, including 75 Nobel Laureates and nearly 450 current and former world leaders.

Throughout her career, Royce has strived to learn from others, grow from every opportunity and expand her network. Having a clear vision and written goals goes a long way, she says.

"If you want to be a manager, you should ask for a project to manage. Whatever it is, you have to ask," she says. "When you have some experience, they'll give you more authority, and you'll learn a lot along the way."

"If you use those opportunities to learn, you can contribute more. You'll be promoted if you make a greater contribution. A career isn't just one thing. It is one of many things in your life. I don't think there is a limit to what people can do."

#### 5 THINGS TO KNOW ABOUT MARIE ROYCE

••• College of Business Administration Distinguished Alumna and Commencement speaker in 1994.

••• Earned her MBA in international business from Georgetown University.

••• At Pomona Catholic High School, she was class secretary and home room president.

••• Throughout her career, she has worked to advance women, minorities and people from underrepresented groups.

••• Married to Congressman Ed Royce (R-39th District).

## giving

### PATRONS OF MODERN ARCHITECTURE SECURE A LEGACY OF LEARNING

BY SAMANTHA GONZAGA

Not many people had a math class like the one **Steve Dodge** took in high school — the kind that connected numbers and design, sparking a lifelong appreciation of modern architecture.

"I had been exposed to the Eames House in high school," Dodge says. "Our teacher had a very different kind of math class. We would see Eames films every Friday. It was just enhancing."

His wife, **Marian Dodge**, was drawn to the clean design of modern architecture. The couple spent their early years together touring Los Angeles, mapping their way with David Gebhard and Robert Winter's "An Architectural Guidebook to Los Angeles."

The drives, the math class and architecture tours fostered the couple's mutual love affair with modern architecture. When it came time to buy a house, the Dodes had researched 10 to 12 modern architects. They knew what they were looking for. Their realtors did not.

"We saw a two-line ad in the Los Angeles Times, and it said 'Soriano.' We jumped on it, looked at it, and I fell in love the moment we walked through the door. That's as far I got, we walked through the front door, and that was it," Marian says.

"Modern architecture emphasizes the house blending in with the landscaping. That's the other thing that really attracted me to the house we bought. It was adjacent to Griffith Park. Our view is the whole park."

In 1987 the Dodes bought the Schrage House and began its restoration. They relied on their private collection of Raphael Soriano drawings and those kept in the College of Environmental Design Archives and Special Collections, a repository of work by Soriano (who was also an adjunct faculty member in the architecture department in the late 1980s), Craig Ellwood, Richard Neutra and Donald Wexler.

In 2011, the Dodes pledged \$3 million through an estate plan to establish the Dodge Institute of Modern Architecture at Cal Poly Pomona. In 2018, the couple finalized the second installment, giving the university 60 percent majority ownership of the home through a retained life estate plan.

"We wanted to make sure the Soriano house is preserved, not bought by somebody who doesn't care and tears it down," Marian says. "The second goal was to preserve our assets instead of giving it all to Uncle Sam. It turned out to be a win-win."

#### About the Schrage House

The Schrage House in Los Feliz was designed by renowned midcentury modern architect Raphael Soriano, a former faculty member at Cal Poly Pomona. Built in 1952, it is the only steel-and-glass Soriano residence still existing in its near-original state. It bears the hallmarks of his pioneering style: modular, incorporating prefabricated steel, glass and resin-bonded plywood. Historians consider it one of Soriano's finest designs.



#### What is a Retained Life Estate?

Working with the university, the Dodes have planned for their home to be a permanent lab to enhance students' learning experience. Through the retained life estate, they donate their home and retain the right to live there as part of their financial and estate plan. This thoughtful and strategic planned giving technique maximizes the charitable income tax deduction and reduces their taxes over 18 years.



Marian and Steve Dodge in ENV's Building 7.

# CAL POLY POMONA NIGHT AT DODGER STADIUM

NEWS



*Staff member Edith Ramirez ('16, management and human resources) and her husband, Richard Martin, with their nephew and niece at Dodger Stadium.*

The first-ever Cal Poly Pomona Dodgers night was truly historic. With 4,000 Broncos filling the stands in right field, it was the largest university night in the history of Dodger Stadium.

Sporting CPP-branded Los Angeles Dodgers hats, the crowd cheered the home team to a 3-0 victory over the Colorado Rockies.

▶ More photos and video are online at <http://bit.ly/DodgersCPP18>.



## Alumni Brick Dedicated to Victim of San Bernardino Terrorist Attack

**Bennetta Betbadal** ('03, biotechnology) never lost her connection to Cal Poly Pomona.

It was on the keychain she carried, the university gear she wore and the relationships she nurtured by coming back to campus often to work with her former professor, Jill Adler-Moore, in the science lab.

"It was everything to her," said her husband, **Arlen Vedehey**. "She loved the atmosphere at the university, the professionalism of staff and faculty, and the education she received."

Now, the memory of Betbadal, who was one of 14 killed in a terrorist attack in San Bernardino in 2015, will have a permanent marker on campus. The university has dedicated a brick in her honor, placing it on the alumni walk near the W.K. Kellogg Rose Garden.

Betbadal, a member of the Assyrian Christian ethnic minority group, fled to America from her native Iran with her family when she was 18 to escape the persecution of Christians in the wake of the Iranian Revolution.

She later met Vedehey, a police officer, at a cultural convention for Southern California's Assyrian community. They became best friends.

"Then one day I told her it's time for the next step," he said. "We were married for more than 18 years."

The couple had a daughter and two sons.

"She was the full package," Vedehey said. "She was good at whatever she did. She was smart. She was a good wife, a good mother and she had a good family background. She and her mom and dad were very close. She was an only child."

Betbadal also loved her job. She worked as a San Bernardino County health inspector and led a team of restaurant inspectors. On the day of the shooting, she was to give a presentation to her colleagues.

For Vedehey, the brick dedication and other efforts to honor the 14 victims, such as the planting of a heart-shaped garden at Pikes Peak Park in Norco, are about not letting their lives be lost in vain.

"It's not about the 14," he said. "It's about not letting the candle die, so no one else will get hurt."



## A Bold New Look and an Unwavering, Deep Commitment



Cal Poly Pomona has an 80-year legacy of transforming lives with an educational model that is second to none. Now it has a new logo to match.

It is the result of a yearlong branding initiative that explored the university's rich history; its mission; its vital role in the region, economically and socially; and its commitment to be the epicenter for creativity, discovery and innovation.

The logo includes an octagon that reflects the eight elements of an inclusive polytechnic education, described in the university's Academic Master Plan. The multiple facets symbolize the interdependent elements of a Cal Poly Pomona education inside and outside the classroom.

There's also a new color palette, which introduces blue as a primary color. The green and gold remain, found in the arrow portion of the octagon, which conveys forward movement.

"The new logo is the result of a process that included voices from all constituencies in our university community," said Tim Lynch, associate vice president for strategic communications and marketing. "We included faculty, staff, students, administrators and alumni on a steering committee and seven working groups, and their insights led to some lively discussions."

Cal Poly Pomona partnered with Selbert Perkins, an international design firm with deep experience in higher education.

President Soraya M. Coley unveiled the logo at Fall Conference, along with a new seal and a new motto. The seal pays homage to the university's unique history, and the motto — "I'm Ready" — affirms an attitude of confidence and commitment that spans the spectrum from prospective students to alumni.

To learn more about Cal Poly Pomona's new brand, visit [www.cpp.edu/brand](http://www.cpp.edu/brand).



*This view of the train crossing at Temple and Pomona no longer exists because of the completed train diversion this summer.*

## If You're Late to Class, You Can't Blame the Train Anymore

A new, permanent freight train diversion near Cal Poly Pomona will relieve traffic, blocked crossings and train horn noise at one of Pomona's busiest streets and a major campus thoroughfare. It may also save a few students from being late to class.

Trains will no longer cross Temple Avenue at Pomona Boulevard and instead cross over university farmland. The intersection is the busiest thoroughfare in Pomona with 33,800 daily vehicles and serves as a campus gateway for 27,000 students and employees.

"The completion of the Temple Avenue crossing is a significant game changer for Cal Poly Pomona," said Cal Poly Pomona President Soraya M. Coley. "By eliminating collision hazards and blocked crossings, the train diversion makes it safer and easier to get to campus, and the end of the locomotive horn blasts will greatly improve the quality of life at the nearby student residences and for those who work in the area."

Managed through the Alameda Corridor-East program, the 2.3-mile diversion cost \$94.8 million and received funding from federal, Los Angeles Metro, Union Pacific Railroad and state sources.

## Cal Poly Pomona Makes 2 Lists of Best Value Colleges

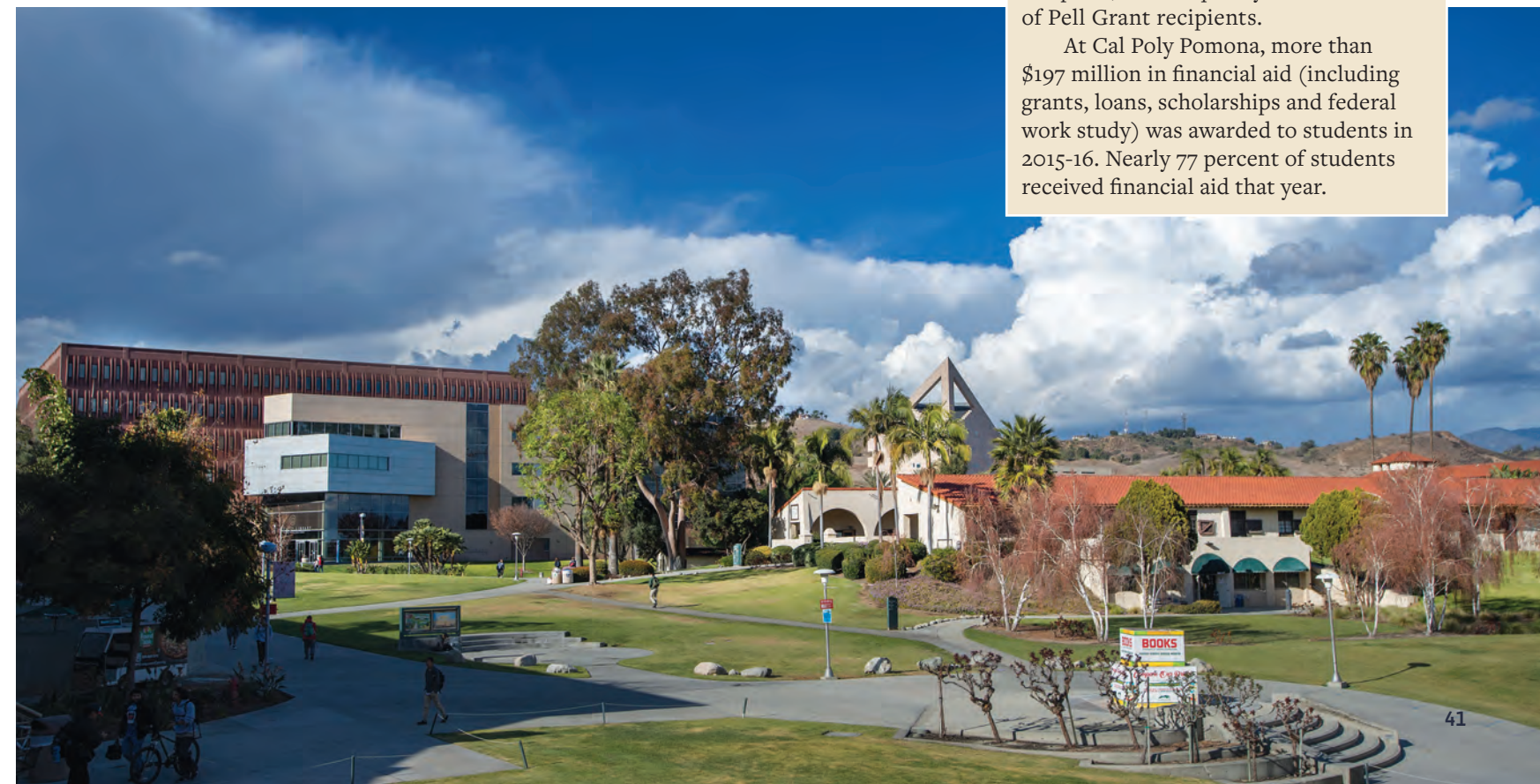
**Forbes** and **Payscale** both named Cal Poly Pomona as one of the best values in the country, calling it an investment worth making.

**Forbes'** third annual America's Best Value College list ranks the university at No. 66 among the 300 schools that made the list. On **PayScale's** 2018 College ROI Report, the campus is No. 96 nationally based on in-state tuition.

"College is an investment — both time and money," notes the **PayScale** study. "The benefit to this particular investment is that there are returns far beyond the obvious monetary ones. However, the financial aspects of evaluating college return on investment cannot be ignored. And some schools are simply doing a better job of setting their alumni up for success in the job market."

The rankings are based on a variety of metrics, including alumni earnings, net price, school quality and the number of Pell Grant recipients.

At Cal Poly Pomona, more than \$197 million in financial aid (including grants, loans, scholarships and federal work study) was awarded to students in 2015-16. Nearly 77 percent of students received financial aid that year.





## Common Read Announced for 2018-19

First-year freshmen and transfer students will read Jon Ronson's "So You've Been Publicly Shamed," a nonfiction book that delves into the phenomenon of public humiliation on the internet.

It's a book that current students can relate to and have thoughtful dialogue about authenticity on social media.

The CPP Common Read is a way for students to have a shared experience and foster friendship, according to Dora Lee, who oversees the **First Year Experience** as director of Academic Support & Learning.

"Our goal is to bring the CPP community closer together by creating a common ground for discussion," Lee said. "We're excited to see how our incoming students react to "So You've Been Publicly Shamed" and the conversations they have with their instructors around social media habits and their past experiences."

## Research Explains How Microbes Hitch Rides into Space

Spacecraft assembly facilities harbor a low but persistent amount of biological contamination despite the use of clean rooms.

**Rakesh Mogul**, a biological chemistry professor, was the lead author of an article in the journal *Astrobiology* that offers the first biochemical evidence explaining the reason the contamination persists.

In the clean room facilities, NASA implements a variety of planetary protection measures to minimize biological contamination of spacecraft. These steps are important because contamination by Earth-based microorganisms could compromise life-detection missions by providing false positive results.

Despite extensive cleaning procedures, however, molecular genetic analyses show that the clean rooms harbor a diverse collection of microorganisms, or a spacecraft microbiome, that includes bacteria, archaea and fungi, explained Mogul.

"There's always stuff coming into the clean rooms, but one of the questions has been why do the microbes remain in the clean rooms, and why is there a set of microorganisms that are common to the clean rooms," Mogul said.

Chemistry Professor Gregory A. Barding Jr., was a collaborator and second author on the paper. The remaining 22 co-authors are all Cal Poly Pomona students — 14 undergraduates in chemistry, three chemistry graduate students and five undergraduates in biological sciences.

## 2018 Giving Day is a Success

The most generous day of giving in the history of Cal Poly Pomona raised \$679,462 in April.

Scholarships, programs, clubs and numerous initiatives across the university received an abundance of support from the 760 people who donated, a 135 percent increase in the number of donors from the previous year's Giving Day.

A total of 835 gifts were made to 27 different campaigns. The biggest donation came from an alumni couple who gave \$500,000 donation to the university's Big Data Analytics Initiative.

Giving Day results can be viewed in detail at <http://givingday.cpp.edu>.

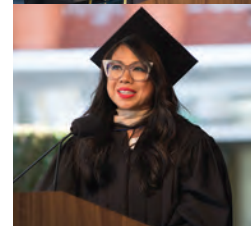
## High-Profile Guest Speakers at 2018 Commencement



Two top Disney executives, Chipotle's chief of HR and the president of Harvey Mudd College were the featured guest speakers at Cal Poly Pomona's 62nd Commencement ceremonies.



**BOB WEIS**, president of Walt Disney Imagineering, spoke at the College of Environmental Design ceremony. He received a bachelor's degree in architecture from the college in 1980.



**MICHELE GENDREAU**, director of food and beverage and experience integration at Disneyland Resort, spoke at The Collins College of Hospitality Management ceremony. She received her bachelor's degree from the program in 1983.



Chipotle's chief of HR, **MARISSA ANDRADA**, was the guest speaker at the College of Business Administration ceremony. The alumna earned her bachelor's degree in management and human resources in 1989.

The College of Engineering invited Harvey Mudd College President **MARIA KLAWE**.

## Community Comes Together for a Good (and Tasty) Cause

More than 1,000 people and about 50 restaurants, wineries and breweries gathered in the Rose Garden for the premier spring celebration to support higher education.

**Cal Poly Pomona Tasting & Auction** guests sampled a wide range of dishes, including crab ceviche, BBQ chicken and pulled pork, Louisiana crawfish cakes and short rib mac and cheese.

Popular auction items included a dinner for eight prepared by Collins College students, a signed Muhammad Ali poster, and a pair of tickets to the "Tag" movie premiere and after party. The silent auction offered a framed piece of the 2018 Cal Poly Universities' Rose Float, original art by College of Environmental Design faculty, and sports and entertainment memorabilia.

Live music was provided by the student ensembles Mariachi Los Broncos de Pomona and Mariachi Los Caballeros de Cal Poly Pomona. Student groups, such as the Liquid Rocket Lab, Baja SAE and the Rose Float team, shared their projects and hands-on learning experiences with guests.

Winners of the People's Choice Awards include The Restaurant at Kellogg Ranch, RA Sushi Bar Restaurant, Scoops on Tap, Bronco Wines, Innovation Brew Works, Kikori Whiskey, Deep Eddy Vodka and Drripp.

The 2019 event is scheduled for Sunday, May 5.

Visit <http://tasting.cpp.edu> to see photos and video of the 2018 event.



*Eddie Gomez ('16, aerospace engineering) and Reeza Demonteverde ('16, aerospace engineering) enjoy a glass of wine in the Rose Garden during the Tasting & Auction.*

**FUTURE** continued from page 15

business and the liberal arts. STEM focuses on feasibility of ideas (i.e., is it feasible to do this based on what we know about the natural laws.) Business curriculum focuses on viability (i.e., what does this do to produce dollars? Do you have enough capital? Is it legal to do this and how can you sustain it over time?) The liberal arts curriculum focuses on what is desirable to people (i.e., what is the meaning of truth, what is the meaning of beauty, etc.)

Students should be exposed to all three components, but it appears to me that our traditional educational model prevents us from producing innovators. When students go to college and choose a major, they are isolated into expert groups on campus. To graduate innovators on a large scale, all three silos must come together.

I do not purport to have a solution on how to update our models of education. Instead, I hope to encourage conversation on why we should update our models and eventually, how to do it. Humanity requires that Cal Poly Pomona graduate individuals who can articulate and think within the three components of innovation and expertise. They will make significant contributions for the betterment of humanity and advance society on a daily basis. They will not only be prepared for the Future of Work and Human Engagement, but will also define and lead it.

***“The future of work consists of learning a living.”***

– **Marshall McLuhan**, professor and public intellectual

**BOUZA** continued from page 30

## Holistic Approach

Bouza has learned that architects need to look at communities as a whole, not just the buildings. It’s a message she tries to impress upon students and younger architects.

In Gensler’s work with Netflix, understanding the client’s business has been key. Her team came to recognize that the DVD-by-mail-technology-company-turned-media-empire has a strong culture

of “freedom and responsibility” and incorporated those values in the design of several local and global projects.

“They are an amazing company, and their space needs to be able to evolve as they continue to look to the changing landscape of media platforms,” she says.

Gensler also has done a range of projects for Duarte-based City of Hope, including a medical office building, new workplace offices and a campus master plan. The firm’s strategy and brand design team helped City of Hope develop the communications and graphics materials for its Diversity and Inclusion Strategy program to best align itself to the population it serves.

“Architecture is beyond designing buildings,” she says. “You have to look at the overall client relationship. I always encourage those entering the profession to look at architecture more holistically.”

The ability to collaborate, communicate effectively and listen are as important as the practical skills related to design, she says. In an architecture class, students might work alone on a project; in the working world, it’s about collaboration and the exchange of ideas.

“So much today is about conveying an idea,” she says. “The world is less patient. You have to be quick and to the point, nimble to change and articulate. Know your audience.”



# What's up?

## October 6 & 7

### Pumpkin Festival

A sea of orange pumpkins in every size and shape will blanket the Farm Store’s field at the annual Pumpkin Festival. Bring the family to pick the perfect gourd, wander through the corn maze, stop by the Insect Fair and enjoy other festival activities. If you can’t attend the festival, you can visit the pumpkin patch through Oct. 31.

[cpp.edu/pumpkinfestival](http://cpp.edu/pumpkinfestival) or 909-869-6722

## October 19-28

### Someone Gets Catfished in this Shakespeare Classic

Shakespeare penned nearly a dozen comedies, but “Twelfth Night” stands out as a masterpiece. Shipwrecked on the shores of Illyria, Viola disguises herself as a boy and works in the court of Count Orsino. He attempts to woo the unresponsive Olivia but Viola falls in love with the count, upping the stakes in this classic comedy.

[cpp.edu/class/theatre-new-dance](http://cpp.edu/class/theatre-new-dance)

## November 1

### CPP Night at Honda Center

Last year, 1,000 Broncos and friends watched a hockey game and scored an exclusive Cal Poly Pomona-Ducks hat. This year, attendees can get the limited-edition green and gold Ducks-CPP beanie. Tickets are limited, and the event will sell out.

[cpp.edu/alumni/events](http://cpp.edu/alumni/events)

## September 1

### Cal Poly Pomona Day at the Fair

If you crave fried foods on a stick, carnival rides and farm animals, Cal Poly Pomona Day at the Los Angeles County Fair is the cure. Student clubs will display their work, and the university will be featured in the parade. You can also visit the goats, sheep and other cute animals, many of which are on loan from the Huntley College of Agriculture.

[lacountyfair.com](http://lacountyfair.com)







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— Money Magazine, August 2018

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