

# InSights

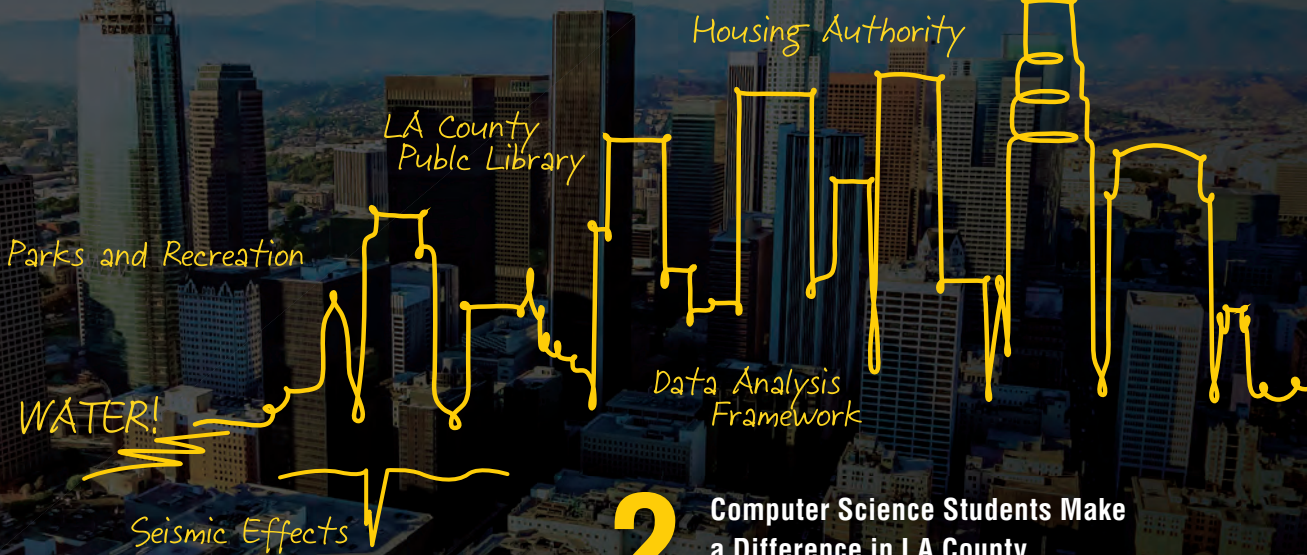
A PUBLICATION OF THE COLLEGE OF ENGINEERING,  
COMPUTER SCIENCE, & TECHNOLOGY

CALIFORNIA STATE UNIVERSITY, LOS ANGELES



## CHANGING LA

ECST STUDENTS, FACULTY,  
AND ALUMNI ARE LEADING  
CHANGE AND MOVEMENT IN A  
RAPIDLY SHIFTING LANDSCAPE



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**Computer Science Students Make a Difference in LA County**

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**Shake. Rattle. Learn!** — Students put their LA knowledge to work at Undergraduate Seismic Design Competition

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**Getting it Right: Water in LA** — ECST alumni and professors are helping to lead an “aqueous awakening”

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# DEAN'S PERSPECTIVE

Dear Friends,

Welcome to our latest issue of *InSights*. We had a fantastic year which culminated with 667 new ECST graduates. While some are launching their careers in aerospace, aviation, computing, engineering, and dozens of other industries, others are celebrating a few weeks off before they dive into advanced degree programs. Through it all, so many of our alumni — so many of you — were right there to mentor them and contribute to our school in a variety of ways, from giving your precious time to donating dollars and materials. Thank you!

Today, Cal State LA is in the midst of the Campaign for Cal State LA — our first ever comprehensive fundraising campaign, with the goal of raising \$75 million by our 75th anniversary in 2022. This year, ECST raised more than \$1.3 million (see page 21) from individual donors, foundations, and corporations. Every single gift matters, and will help us touch our students and transform our programs.

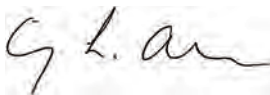
Evidence of this transformation can already be found in every corner of campus — from influential research projects to the MakerSpace — as well as in the classrooms and labs where the next generation of scholars and leaders study and dream.

At ECST, our engaged students, esteemed faculty, and alumni and industry partners alike are engaging with our communities and empowering each other to share, connect and thrive in the notion that We are LA. The work we do has a profound impact on our LA community, and I'm thrilled to share some of that with you in this issue.

Your support of ECST keeps us united in a common purpose: to help advance our academic programs, research, scholarships, campus life and work of consequence to better not just our LA community, but also the world. Alumni giving is also an important vote of confidence in the direction we have chartered for the future.

If you've ever thought about giving, please reach out to me. You can give to the Dean's Fund for Innovation or the Student Success Fund, provide supplies for our MakerSpace, or help student scholars succeed. If you are considering making a significant gift, please reach out to us directly. Your commitment will help educate the next generation of leaders, expand the reach of our work, and contribute even more boldly to our LA community.

Together, let's see how far we can go. Thank you for being part of our journey.



Emily Allen, Ph.D.  
Dean  
College of Engineering, Computer Science, and Technology



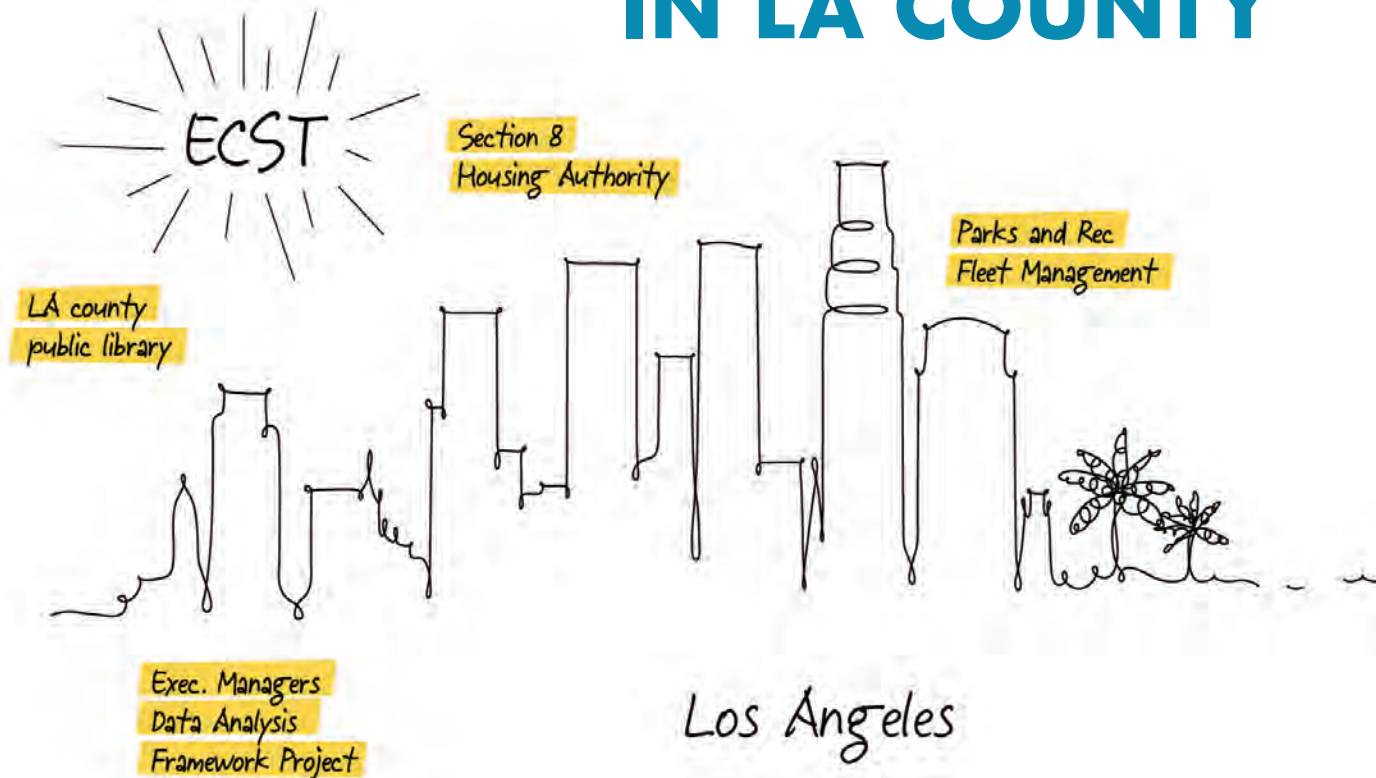
Emily Allen, Ph.D.

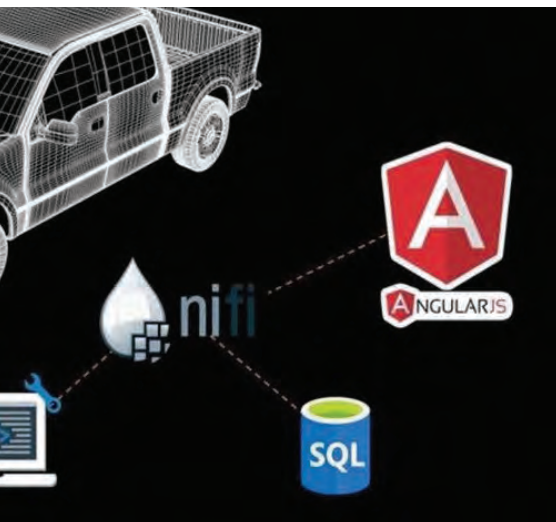






# COMPUTER SCIENCE STUDENTS MAKE A DIFFERENCE IN LA COUNTY





## ECST CAPSTONE SENIOR DESIGN STUDENTS HELP MODERNIZE LA COUNTY THANKS TO BLOSSOMING PARTNERSHIP

Since 2008, ECST's Capstone Senior Design Program has been providing students with exciting opportunities to apply their education to real world applications. Teams of four-to-six students are matched with a faculty advisor and a customer that sponsors a year-long project to create and deliver a technology-based solution — from physical prototypes to software packages, operational algorithms to resolution of customer issues. At the end of the year, students present their work to hundreds of alumni, faculty, sponsors, and clients.

Today, LA County is one of the Capstone program's biggest sponsors with ECST computer science students applying their knowledge to create innovative, technology-based solutions for real issues facing LA County.

**Mohammed Al Rawi**, former Chief Information Officer (CIO) of the LA County Parks and Recreation Department and now CIO for the County's Public Defender's Office, was instrumental in fostering this blossoming partnership.

As an ECST Computer Science major, Al Rawi led a design project his senior year to build a geographical archive system for the LA County public library. The success of this project inspired what has since become a fruitful partnership between the College and the County.

"In the beginning, students are apprehensive and don't necessarily know the right thing to do or say," Al Rawi says. "Then a few months after diving in, they're standing before the LA County board, speaking confidently about the issues

they are tackling and how we should fix them. It's just a phenomenal experience and I'm very proud to be a part of it."

He also praises the program's hands-on approach — "a great way for students to get real world business experience while being exposed to the career opportunities that are available to them in the County," he adds.

**“Then a few months after diving in, they're standing before the LA County board, speaking confidently about the issues they are tackling and how we should fix them. It's just a phenomenal experience and I'm very proud to be a part of it.”**

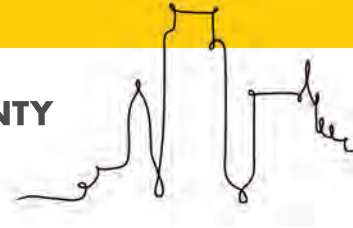
**Michael Thorburn**, Associate Director of the Capstone Senior Design Program, says Capstone is also an effective recruitment and talent acquisition opportunity: the County gets to see the students in action for a year and then decide if they'd like to offer them jobs once they graduate from ECST.

"It's a mutually beneficial relationship; the county needs the help and we need the projects," he says. "There is a high demand for computer science professionals and our projects are cost effective, a great way for the county, and really any company, to get solutions to their issues at a reasonable rate."



# COMPUTER SCIENCE STUDENTS MAKE A DIFFERENCE IN LA COUNTY

Continued from page 3



Computer Science senior **Juan Orozco** appreciates that his Capstone project with LA County Section 8 Housing Authority (see sidebar below), has provided him with a unique way to gain new technical skills in a real-life working environment.

"I've learned so many new frameworks, new software products I didn't even know existed," he says. "It made me appreciate the difference between school projects and real-life projects, which are a lot more detailed and intense."

**Russ Abbott**, Professor of Computer Science and co-advisor on a number of projects, says he has seen students of all GPAs find success and the value of teamwork.

"Students learn how to deal with real customers, not to mention presentation software and public speaking skills," he says. "In some cases, it's the first time they've had to work together with other students in a team for such an extended period of time." ●

*“It made me appreciate the difference between school projects and real-life projects, which are a lot more detailed and intense.”*

## ECST AND LA COUNTY — PARTNERSHIPS PAST AND PRESENT

This year there are 11 Computer Science Capstone Senior Design Projects sponsored by LA County. Here's a look at a few of those projects, past and present:

### Executive Managers Data Analysis Framework Project

An all-female team of students is currently analyzing and modeling the financial and payroll data of the Auditor-Controller with the goal of providing dashboards that include predictive insight into cost saving opportunities. The goal, says Computer Science senior Kaylee Guzman, is to provide executive managers with the information they need to make more effective decisions: "I hope that eventually all county executives will use this dashboard, so that the County can budget contracts more effectively and save money for other important projects."

### Parks and Recreation Mobile App Project

Also in the works is the development of a mobile app for the County Parks and Recreation Department to make it easier for park-goers to search for parks near a certain location or with specific amenities. Computer Science senior Abel Salinas says the project is a hands-on way to demonstrate what he's learning in class and put into practice collaborative software engineering. "Building this mobile app is a huge responsibility, and every day we work on this project, the more we understand the impact that parks have on our communities," he says. "It's given my team the opportunity to reflect on community problems and find creative solutions to make our community better."

### Section 8 Housing Authority Project

Computer Science senior Juan Orozco and his team are working on a project to upgrade tenant and owner portals to the Section 8 Housing Authority website. The existing portals developed in 2010 do not meet today's technology standards for data security and lack a user-friendly interface for mobile devices. The team is working on a portal redesign, with a modern web interface, to improve browser compatibility and mobile-responsive web pages. "Not everyone has a computer at home, especially lower income families," he says. "This new portal will give people a way to submit their paperwork to the County when they only have cellphones. I grew up using Section 8; they helped my family a lot, so I feel like I'm really giving back to the County with this project."

### Parks and Recreation Fleet Management Project

Last year, a team of students automated the process used by the Parks and Recreation department to operate its fleet of 600 vehicles. By employing a microcontroller with a radio frequency identification card reader, the team transformed a dated process the County was using to check-out fleet vehicles — which included a lengthy paper form — to better track vehicle usage, obtain real-time vehicle status updates, run predictive analytics, and monitor driving behavior. Since being implemented, the project has helped LA County reduce costs and liability.



# SHAKE. RATTLE. LEARN!

## ECST STUDENTS PUT THEIR LA KNOWLEDGE TO WORK AT UNDERGRADUATE SEISMIC DESIGN COMPETITION

One of the many ways Cal State LA ECST students get hands-on learning experience is through the Undergraduate Seismic Design Competition. The event takes place every year in conjunction with the annual Earthquake Engineering Research Institute (EERI) conference.

At this year's event, held in early March, more than 20 upperclassmen from the EERI

Cal State LA Student Chapter traveled to Vancouver to design, construct, and test a building model made of balsa wood, strategically placed on a shake table to simulate an earthquake. Some buildings collapsed while some withstood the quake — all part of the tense and exciting competition.

Participating teams from universities around the country are judged on their building's structural performance, architectural finish, cost effectiveness, and prediction accuracy of how the building holds up during the 'shake'.

"Doing this project requires a lot of skillsets," says ECST senior **Steven Perez**. "It's about architects and engineers finding a nice medium between the aesthetic of the building and if the building will actually survive against an earthquake."

The EERI Student Chapter also creates and gives a presentation to conference goers, anywhere from 50 to 100 faculty and students.

"It can be nerve wracking, but the students come out of it with a good public presentation under their belts," says **Tonatiuh Rodriguez-Nikl**, associate professor of Structural and Earthquake Engineering. "It's a challenging competition, with undergraduate students stretching their abilities to work at a graduate level."

To add complexity, the framework of the competition changes each year, presenting students with unique — and always changing — parameters as part of the hands-on practice in architectural design, structural analysis, construction planning and seismic design. Bringing a project to completion on schedule also teaches them about project planning.

"I've learned that you can never prepare too early for anything," says Maria Torres, EERI Student Chapter president and a



ECST upperclassmen test their balsa wood building model at the Undergraduate Seismic Design Competition.

*"The competition allows our students to apply the Structural Engineering principles learned in their classes to design, build, and test model structures for seismic safety so they can better serve our local communities to be seismic resilient."*

current senior. "Even if you plan everything out and have a set schedule, things come up, so you have to think on your feet and work as a team."

Attending the conference also opens students' eyes to a community of other earthquake engineers and gives them perspective about career options after graduation.

"The competition isn't about winning or losing," says **Rupa Purasinghe**, current advisor to the team and Professor of Civil Engineering, Interim Chair, Department of Technology. "More importantly, it's a great way for students to apply the Structural Engineering principles learned in their classes to design, build and test model structures for seismic safety so they can better serve our local communities to be seismic resilient."

He adds, "This experience helps them be ready for tomorrow's workforce."

"The real-world exposure is the best part," echoes Perez. "In civil engineering we have this concept of 'design build,' when a company is given the opportunity to design a building and then are involved all the way from the design to the actual building. This competition parallels that experience." ●

## FACULTY SPOTLIGHT

# TED NYE

## Beloved mentor, teacher and friend Ted Nye retires after seven years at ECST to return to Northrop Grumman

This summer, instructor **Ted Nye** will retire from what started as a volunteer position in 2012 and turned into a full-time role as Director of the Capstone Senior Design Program. His leadership and passion for students over the last seven years has changed the course of ECST and significantly increased student success.

“When I first retired as Director of Spacecraft Technology from Northrop Grumman in 2012, one of my colleagues asked me if I wanted to go with him to Cal State LA to meet some students who were working on their senior design engineering projects,” he explains. “I quickly saw they didn’t have the support or the tools they needed to be successful out in the real world, and knew I wanted to help.”

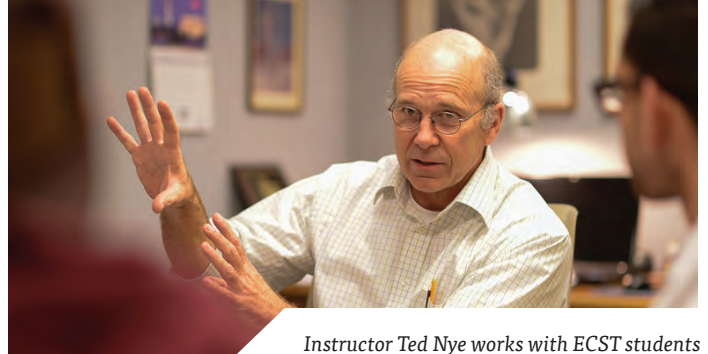
After just a few months, Nye took over teaching the Electrical and Mechanical Engineering Senior Design course with 60 students and a mission to give ECST students the kind of hands-on learning experience he had experienced as an undergraduate student at Purdue University and as a graduate student at MIT.

*“It wasn’t about creating the most beautiful lab or machine shop, it was about giving these students practical experience with real tools in a space where they could go out and build what they were designing, because that’s where the magic of learning happens.”*

By last school year, the program had nearly quadrupled, and in the 2019-2020 school year will continue with 250 students who now have access to an abundance of resources and tools, industry experts, and the kind of hands-on learning that Nye set as his goal in 2012.

Much of that is thanks to Ted and his wife Ann. In addition to Ted’s gift of time, the Nyes and their trust have donated more than \$276,000 toward creating a senior design lab, building ECST’s new MakerSpace, granting scholarships to deserving students, and supporting Project Mexico, a capstone project which is coordinated with Cal State LA’s Engineers for a Sustainable World to design a self-sufficient and stand-alone solar power system for six schools in rural Mexican villages.

Building a collaborative learning environment with space to do hands-on work was particularly important to Nye, which is how the senior design lab grew from a barren and dusty room to 1,700 square feet of bustling space with 3D printers, parts and motors, computers and even coffee.



Instructor Ted Nye works with ECST students

“Students helped me rip out carpet, paint walls, move desks, shop for tools and turn it into a space that made sense for their learning, a totally organic process,” Nye explains. “Then when Dean Allen came onboard in 2015, we were able to tap money from a Northrop Grumman endowment to improve the space even more, adding additional 3D printers, data acquisition equipment, and state-of-the-art instruments.”

An additional gift from Ted and Ann allowed the College to engage an architect to create a conceptual design for a future very large Innovation and Design Center, which will further support the Capstone Program. These spaces, Nye says, rival those in even the best engineering programs around the country. “We have full machine shops and big spaces where students can run their tools and get their hands dirty; there’s always activity, even at night. When I think about where we were six years ago to today, my heart soars.”

“Ted has changed everything from the bottom up and made it his mission to laser focus on the success of students,” says ECST Communications lead **Hasmik Simon**, who has known Nye since his first days on campus. “He led programmatic and academic changes to make the senior design experience impactful...everyone learned something through hands-on, real-life experiences and every student was noticed and given the space to try anything. He will be missed.”

**Michael Thorburn**, who will take over the Capstone program in the Fall, agrees. “Over the last seven years, Ted has found so much pleasure in helping students; his enthusiasm is contagious.”

For Nye, the decision to return to Northrop Grumman stems from a once-in-a-lifetime opportunity to lead the build of a multi-million-dollar micro-robot that will help repair space satellites. “Building is my passion, and I’m excited about this next adventure,” he says. “But the success of ECST and its students will always be important, and I will continue to support this amazing community in every way I can.” ●



# FACULTY ACCOMPLISHMENTS

## Recent Faculty Research Awards (since Fall 2018)

### **Mohammad Pourhomayoun (CS)**

"Instrumented District Pilot Project: Artificial Intelligence for Traffic Monitoring and Management," with LADOT & ITA, TOYOTA (\$825k)

### **Paul Liu (Tech)**

"Mentor-Protégé Program - CMI," Northrop Grumman Company (\$130k)

### **Sonya Lopez (co-PI, CE), Barry Hobbs (PI, GeoSciences)**

"REU Site: Changing Dynamics of Hydrological Systems in Urban Areas: Response To Human Disturbance and Climate Change," National Science Foundation (\$360k)

### **Chris Bachman (PI, ME), KiMi Wilson (CCOE), Jai Hong (Tech), Ted Nye (ECST), Mike Thorburn (ECST), Nancy Warter-Perez (ME), and Jane Dong (ECST)**

"Innovation and Design Center: Building Capacity for Hands-On Learning," W.M. Keck Foundation (\$325k).

### **Emily Allen (ECST)**

"The Acceleration Initiative," Weingart Foundation (\$525K)

### **David Blekhman (Tech)**

"Fulbright Distinguished Chair in Alternative Energy Technology," Sweden, Chalmers University (\$125K)

### **David Blekhman (Tech)**

"Hydrogen Fuel Cell Vehicle Emergency Water Generation," Metropolitan Water District (\$10K)

### **Navid Amini (CS)**

Vodafone Americas Foundation (\$67K)

### **Raymond, Dave Raymond (ME)**

"Investigating the Biomechanical Response of the Canine to Blunt Impact," Center for Pet Safety (\$10k)

### **Hassan Hashemian (CE)**

"National Summer Transportation Institute," California Department of Transportation (Caltrans)/ Federal Highway Administration (\$70k)

### **Hassan Hashemian (CE), with Mehran Mazari (CE)**

"Infrastructure Academy Transportation Program (IATP)," Mineta Transportation Institute (\$75k)

### **Hassan Hashemian (CE)**

"Ladders of Opportunity," California Department of Transportation (Caltrans) (\$400k)

### **Mehran Mazari (CE)**

"Dwight David Eisenhower Transportation Fellowship Program-2019," U.S. DOT (FHWA) (\$49k)

### **Mehran Mazari (CE)**

"Developing Specification for Use of Intelligent Compaction Technology to Improve the Construction Quality of Earthwork and Granular Pavement Layers," California State University Transportation Consortium (\$75k)

### **A. Pacheco-Vega (ME), N. Li (ME), J. Kuo (ME), J.C. Bachman (ME) and J.S. Santner (ME)**

"CREST Partnership Supplement: Development of Clean Power Technologies," HRD-CREST, National Science Foundation (\$100k)

## Grants from within Cal State LA:

### **Travis Shihao Hu (ME)**

"Nanomechanics and Water Interfacial Behaviors on Bio-Inspired Hierarchical Fibrils," NSF PREM SEED Award (\$11k)

### **Areezoo Khodayari (CE)**

"Development of an Environmental Energy Portfolio Management Tool for Cal State LA", Sikand Faculty Research Endowment (\$32k)

### **Mohammad Pourhomayoun (CS)**

"Using Artificial Intelligence and Deep Learning for Early Diagnosis of Cancer in Women," RSCA-Minigrant (5k)

### **Mohammad Pourhomayoun (CS)**

"End-to-End Traffic Vision and Monitoring Using Artificial Intelligence: The Challenges in Real-Time Processing," RSCA-Assigned Time

### **Welson Kwan (CE)**

"Strength-Based Correlation with Imperfect Height Control in Soil Direct Simple Shear Test", RSCA-Assigned Time

# NEW FACULTY: FIRST IMPRESSIONS

We welcomed five new faculty members to ECST (Fall 2018)



From left to right: Michael Thomas, Michael Ibrahim, Mathias Brieu, Rachel Friedman, Navid Amini

**MICHAEL THOMAS** Department of Technology, Fire Protection Administration and Technology

**MICHAEL W. IBRAHIM** Department of Civil Engineering, Construction Management

**MATHIAS BRIEU** Department of Mechanical Engineering, Mechanics of Polymer and Bio-Polymer Materials, Design of Medical Implant and Medical Devices

**RACHEL FRIEDMAN** Department of Technology, Aviation Publications, Single Pilot Resource Management, Single Pilot Operations for Multi-Engine Aircraft, Airline Transport Pilot Shortage

**NAVID AMINI** Department of Computer Science, Machine Learning and Mobile Computing

*Faculty joining in 2019-20 will be featured in our next issue of InSights magazine.*



**Q: AS A NEW FACULTY MEMBER, WHAT ARE YOU MOST LOOKING FORWARD TO CONTRIBUTING TO ECST?**

**A:** “I plan to motivate and help our students learn the skills needed to be scientists and engineers. I also aim to contribute to improving our students’ soft skills including: written and oral communication, teamwork, and leadership.”— *Navid Amini*

“I would most like to bring state and federal certification recognition to the College’s Fire Protection Administration Degree program, making it a more viable pursuit for fire service professionals nationwide.”  
— *Michael Thomas*

“I love teaching our students. They are smart, hard-working, and enthusiastic about aviation. I look forward to adding some aeronautics courses to the current curriculum, taking the students on study abroad, and working with my colleagues on future ECST initiatives.”  
— *Rachel Friedman*

“I wish to contribute to the well-being, development, and improvement of students. I also wish to contribute to the intensification of a high level of research. With such actions, I hope to contribute to ECST’s outreach and reputation.”— *Mathias Brieu*

“I look forward to embracing a teacher-scholar model while collaborating with our diverse faculty, multidisciplinary research centers, and local industry leaders to develop and deliver valuable courses while creating new cutting-edge knowledge to advance how we build our built environment. I am currently working on a research project to identify the skills and competencies that construction employers often look for in exceptional new hires. I’ll incorporate these findings when designing a certificate of construction and engineering management that will hopefully grow into an academic program.” — *Michael W. Ibrahim*

**Q: WHAT DO YOU LOVE MOST ABOUT WORKING AND LIVING IN LOS ANGELES?**

**A:** “I like the wide diversity of people in Los Angeles and the fact that it is one of the sunniest cities in the country. Los Angeles is the second-largest metropolitan area in the country; therefore, there is enormous potential for community-based, biomedical research, and industry collaboration.”— *Navid Amini*

“As a virtual native, I’ve grown to love and appreciate our balmy Southern California climate, with its beaches, recreational activities, and entertainment venues. I served over 36-years as a first-responder in the “The City of Angels”, and wouldn’t trade a day of the experience; from wind-driven brush fires, to earthquake catastrophes, I love LA!”— *Michael Thomas*

“The people — I love the diversity. The aviation community is quite big — there are lots of little airports in Southern California; Catalina is my favorite destination for a short flight. The food is great. I love sports; I am a Yankees fan but have already been to a Dodgers World Series game. There is so much to do — I doubt I can do it all in one lifetime.”— *Rachel Friedman*

“Despite only arriving in January, what I already like— especially coming from a flat country—are the landscapes.”— *Mathias Brieu*

“I love how diversity is celebrated in Los Angeles. The inclusiveness of such diversity often provides fresh perspectives of life and empowers creative solutions and opportunities. Working in Los Angeles enables me to collaborate with its diverse and exciting people on a regular basis to push boundaries in ways I did not know about before. Living in Los Angeles encourages me to enjoy each day in a different way with my wife and little daughter. So far, we have had many adventures and created so many memories, and we look forward to celebrating our lives in the City of Angels.”  
— *Michael W. Ibrahim*

**Q: IF YOU WEREN’T A PROFESSOR, WHAT WOULD YOU BE?**

**A:** “I would probably be a software engineer.”  
— *Navid Amini*

“I’d probably be playing a lot of golf, hanging out with retired firefighters, fishing, and spending time with my five grandchildren.”— *Michael Thomas*

“I would be a professional pilot—military or airline.”  
— *Rachel Friedman*

“At the end of high school I had to choose between my two main interests: science and mathematics or biology and medicine. I wanted a career where I could be of service to others. I decided to study sciences and math and became a professor to reach my goals. Today I do biomedical research; I finally found a way to combine my passion and my desire to help others. Thus, I think that if I were not a professor, I would be a medical doctor.”— *Mathias Brieu*

“Entrepreneur, investor and politician.”  
— *Michael W. Ibrahim* ■

# GETTING IT RIGHT:



## ECST ALUMNI AND PROFESSORS ARE LEADING CHANGE AND MOVEMENT IN A RAPIDLY SHIFTING LANDSCAPE

Across Southern California, ECST alumni and professors are helping to lead an “aqueous awakening,” lending their water expertise to impact high- and low-tech change to ensure a resilient water system — and supply — for years to come in the Los Angeles area.

### THE BACKSTORY

In order to understand LA's future water state, it's important to understand where it's been and why there's concern.

Today, LA County imports 58 percent of its water from more than 200 miles away, and the city of LA imports about 90 percent of its water. At one time, the Los Angeles River was a main source of the city's water, but in 1940 the city was concerned about flooding and needed a way to properly drain excess water. When the river was restructured as a drainage system and usable water began to be diverted into the ocean, the city lost a source of its drinking water.

With California now experiencing warmer temperatures and less rain, climate is also an issue. When rain does occur, with no significant economic way to collect that water and reuse it, about 80 percent of rainfall makes its way to the ocean.

LA's growing population has also stressed the water supply. More people mean more demands for water, and drought and higher temperatures have resulted in less supply.

But ECST instructor **John Shamma** ('86 Civil Engineering, '89 Masters in Hydrologic Engineering) remains positive. Shamma has spent the last three decades working for the Metropolitan Water District (MWD), which serves more than 19 million people in Southern California.

“Over the past two decades, the region has made major investments to diversify its water supply portfolio, including investing more than \$1.4 billion in conservation, water recycling and groundwater recovery,” says Shamma, who currently serves as MWD's Facility Planning Unit Manager. “And while we continue to invest in the reliability of our



*“To have a reliable system that meets the region’s demands, we have to look at our water supply as a portfolio — everything from water recycling, desalination, and groundwater recovery to storage and conservation.”*



imported supplies, I am encouraged by the many new initiatives that the region is considering to continue securing the reliability of Southern California’s water supplies.”

A few years ago, they opened SAFNA Engineering and Consulting (a division of Heateflex) so they could use their expertise from the semiconductor industry to help local cities and water agencies with their water projects.

## GETTING IT RIGHT: A DIVERSIFIED WATER PORTFOLIO

Most Los Angeles residents don’t think about the fact that so much of the water that comes to their faucet or sprinkler is imported from somewhere else. But LA Mayor Eric Garcetti is thinking about it, recently announcing that the city will cut its reliance on imported water in half by 2025 and produce 50 percent of the city’s water locally by 2035.

Like Los Angeles, the whole of Southern California has jumped into an increasingly urgent rule of good water policy — diversification. “To have a reliable system that meets the region’s demands, we have to look at our water supply as a portfolio — everything from water recycling, desalination, groundwater recovery, storage and conservation,” Shamma adds.

As CEO of Heateflex Corporation, **Jorge Ramirez** (’04 Electrical Engineering) says as LA’s dependence on imported water supplies go down, he’s seen an increase in local water projects.

Ramirez and his team took the knowledge they gained working with corporations like Intel and HP on computer chips and expanded it to design and create products for their water systems.

“Cities across Southern California are proactively looking at water as a precious resource and investing in infrastructure and diversification to become more water efficient,” he says.

In South Gate, for example, the city is building a potable water reservoir, a booster pump station, a new groundwater well and expanding the region’s recycled water systems. The city of Fontana is also expanding its recycled water program to include schools and parks.

Water districts, like Coachella Valley and SATIVA LA County, are also investing in water. Ramirez and his team are helping advise SATIVA’s construction of a potable water reservoir, a new groundwater well, system pipelines and multi-agency interties for better water reliability.

And then there’s ocean water. Desalination of ocean water — using reverse osmosis to turn seawater into drinkable and potable water — is also part of the water portfolio. In many countries, this process provides the main source of usable water.

“The **Carlsbad Desalination Plant** is the largest in the western hemisphere and supplies just under 10 percent of San Diego county’s water supply,” says Ramirez, whose firm provided the



Top photo: Building Southgate’s booster pump station.  
Bottom photo: Construction on the Carlsbad Desalination Plant.  
Photos courtesy of Safna Engineering

## GETTING IT RIGHT: WATER IN LA Continued from page 11

plant with a uniquely designed and patented Micronic Filter System that protects the reverse osmosis and promotes plant uptime.

Each day, the Plant takes in 100 million gallons of seawater — filters it through specialized vessels — and turns it into 50 million gallons of fresh drinking water.

### GETTING IT RIGHT: A RELIABLE INFRASTRUCTURE

For **Joseph Lucey** ('18 BS Civil Engineering), a strong infrastructure is key. As an undergraduate at ECST, Lucey worked closely with Professor Sonya Lopez to predict and model water storage and precipitation using NASA satellite data. Now as a UCLA graduate student, he works hands-on with other water experts at local LA beaches to study erosion and coastal flooding.

“Based on the data I’ve seen, our sea level is rising, and there’s a steady increase in coastal storms and flooding,” he says. “If our infrastructure isn’t working properly, it could cause catastrophic consequences, especially in LA and beach towns.”

While cities across Southern California have recently passed bonds to address aging infrastructure to deal with events like flooding, years of environmental degradation is also impacting some local communities.

“Because Southern California has imported so much of its water from Northern California, we bypassed a lot of the local issues that come from aging infrastructure,” Ramirez

“Based on the data I’ve seen, our sea level is rising, and there’s a steady increase in coastal storms and flooding. If our infrastructure isn’t working properly, it could cause catastrophic consequences, especially in LA and beach towns.”



says. “But as demand gets bigger, local cities and towns are getting better at ground water.”

In the past, chemical contamination in ground water plagued some municipalities. **Jose Molina** ('87 Mechanical Engineering), Chief Operator, Water and Sewer System Expert at SAFNA, says that today, many of these chemicals are being treated.

“When pipes and valves are not flushed or replaced, accumulation of organic material and chemicals can corrode them,” he says. “Cities are now facing this reality and regularly flushing out their systems to better maintain these local infrastructures.”

The state of California has also updated its regulations to ensure cities are compliant.

“Every single drop of water that goes to residents is compliant,” Molina stresses. “Water samples are collected weekly and some systems check samples daily. Agencies also publish water sample readings online, so the information is transparent and available to anyone who wants to see them.”

### GETTING IT RIGHT: PREPARING FOR AN EMERGENCY

Southern California relies heavily on a network of dams and aqueducts to store and transport water from the Owens Valley, the Colorado River and the Sierra, via the Bay-Delta Region. If a major earthquake hits one of the many faults that cross the area, what happens to our water supply? Or when wildfires hit, how is the water supply impacted?

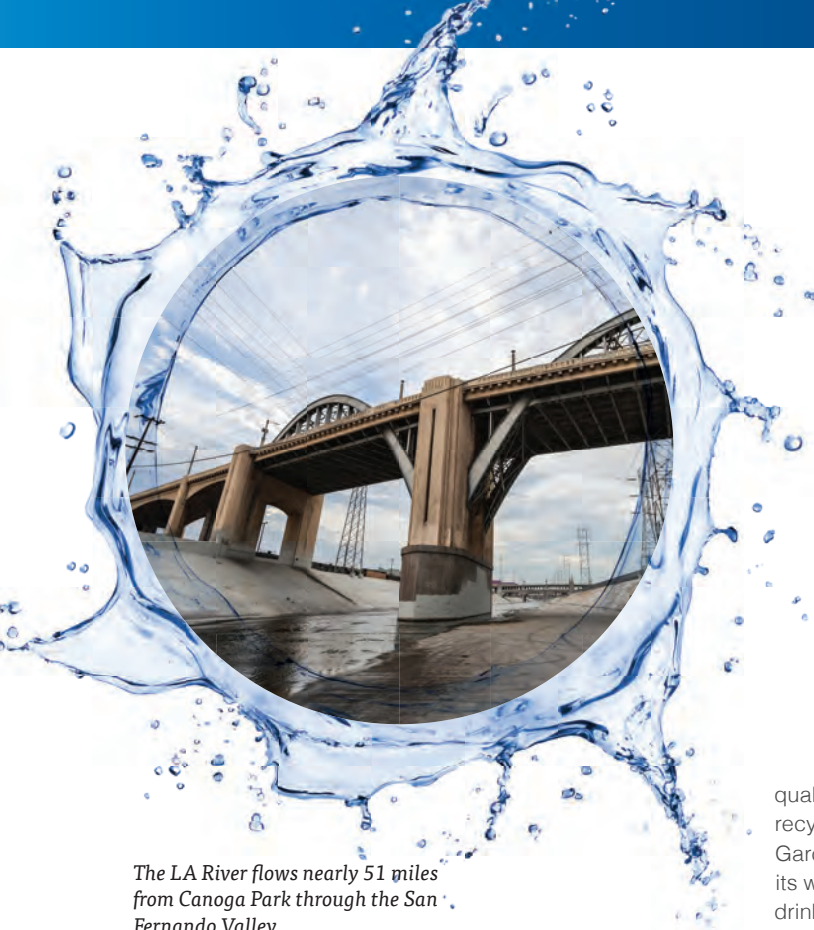
In addition to securing and modernizing those water systems, relying more on our local water supplies means LA can become more fire- and earthquake-resilient and prepared for emergencies.

“We have to care more about our water — where it’s coming from, where it’s going and how much each of us use,” says ECST Professor **Sonya Lopez**, pictured above at right with Joseph Lucey and his mother.

In collaboration with NASA and the Jet Propulsion Laboratory (JPL), Lopez and San Diego State University Professor Alicia Kinoshita, along with partners at Los Alamos National Laboratory, have been studying real-time data from satellite remote imaging







The LA River flows nearly 51 miles from Canoga Park through the San Fernando Valley.

to understand how communities in wildfire-prone areas can better prepare for and deal with emergencies.

“We use long-term data sets and 3D modeling to examine what would happen to watersheds during and after wildfires,” says Lopez, who also studies urban area water issues. “Algorithms tell us how simple acts, like removing vegetation, can lessen flooding and mudslides after fires.”

This knowledge of how the watershed recovers over time is important to LA’s future, especially with longer and more severe droughts expected.

## FROM RECYCLING TO TECHNOLOGY: LA’S WATER FUTURE IS BRIGHT

Today, the Metropolitan Water District is studying a potential Regional Recycled Water Project, which would bring up to 150 million gallons of drought-resistant, high-

“Like the water issue in LA, there’s not just one solution. It takes a multi-pronged approach — diversification, technology, governance, and passion — to move us forward to achieve best practice. And we are.”

quality water annually to Southern California residents by recycling wastewater. And as part of his water plan, Mayor Garcetti announced that LA will recycle 100 percent of its wastewater by 2035, which will increase the amount of drinkable water residents get from its four water treatment facilities from 2 percent to 35 percent.

Additionally, Measure W, which was passed by LA County voters in November 2018, will generate \$300 million per year to help capture rain water to add to the water portfolio and reduce beach and ocean pollution from water runoff. The County’s 88 cities will use the funds to transform urban hardscapes into more nature-based, green infrastructure designed to reduce water pollution, ease the risk of flooding, and augment their local water supplies.

Finally, quickly-advancing technology is providing more science and data to the water field — from high-tech drones that measure beach erosion, to more powerful satellite imaging from NASA, to the application of machine learning in hydrology that one day may replace algorithms and statistics-based data.

“The water field is exciting and rapidly changing,” Ramirez says, pointing out that each community has different concerns and resources. “Like the water issue in LA, there’s not just one solution. It takes a multi-pronged approach — diversification, technology, governance, and passion — to move us forward to achieve best practice. And we are.”



## ALUMNI CALLOUTS

# TRANSPORTATION

## COLLIER PENDLETON & DAVID REYNA

After studying and working together throughout their years at ECST, **Collier Pendleton ('14, Civil Engineering)** and **David Reyna ('14, Civil Engineering)** continue to work together in their professional careers, supporting the Regional Connector Transit Project in Los Angeles.

When complete, the project — a 1.9-mile underground light-rail system connecting the Metro Gold Line to the 7th Street/Metro Center Station — will allow Metro passengers to travel directly from Long Beach to Azusa, and East LA to Santa Monica, bypassing Union Station.

"It is thrilling to be part of such a historical project that will impact millions," says Pendleton, who oversees the 2nd Street



and Broadway construction site. In addition to offering people an alternative option to congested roadways, the project provides significant environmental and economic benefits, as well as employment opportunities across the county.

"ECST's well rounded civil engineering curriculum definitely helped prepare us for our careers," adds Reyna, who oversees the cut and cover work from 4th to 7th Streets Downtown. "Learning geotechnical, traffic, structural, and hydraulic engineering are all major components to a subway tunnel construction project." ■

# AVIATION

## FLORA MARGHERITIS

**Flora Margheritis ('91, Aviation Administration)** knew early on that aviation was her passion. At the age of 15, Margheritis started taking flying lessons at Burbank Airport. She received her private pilot certificate at 17. Today she is the airport manager at the Van Nuys airport — a general aviation airport located approximately 25 miles north of Los Angeles International Airport (LAX).

"It became clear to me at a young age that airports were my calling. Cal State LA was the perfect place for me because it offered an aviation administration Bachelor's degree with interesting classes like airport planning and aviation law," explains Margheritis, who worked in LAX's airport operations department before moving to Van Nuys.

In her job, no two days are ever the same: "I wear many hats. Every day is different," she explains, noting that on any day she could go from a meeting with airport operations to another meeting with the FAA, put on her financial hat to plan for the 2020 fiscal year, and finish the day brainstorming strategies with the airport's marketing team.

"My overarching goal is to manage this airport so that it is safe and efficient for the general public," she says. "Because I've wanted to do this since I was just a girl, being here is an absolute dream come true." ■



# UTILITIES

## RICSON CHUDE

**Ricson Chude ('08, Mechanical Engineering)** is a project manager at Southern California Edison. In his role, he manages energy efficiency programs for residential and commercial customers. He also works with key internal and external stakeholders to advise on how Edison plans to help transition Los Angeles into clean energy.

In addition to his work to improve energy efficiency in LA, Chude is committed to making a difference across Southern California. "I like being part of a team and working towards a common goal." Chude is the current president of the Southern California chapter of the American Society of Heating, Refrigeration and Air-conditioning Engineers (ASHRAE) and the national lead of its Energy Management Subcommittee. Additionally, he is the lead of the West Coast Regional Steering Committee of Engineers Without Borders-USA.

Chude credits ECST with giving him the foundation for his

professional success. During his senior year, he completed a Capstone Senior Design project that was an energy assessment of select Cal State LA buildings. It was the first-ever student-led campus energy assessment, and it was featured in the ASME conference the following year. He was also a part of ECST's MESA program and enjoyed the open space to get to know a diverse group of students.

Chude is excited about the future of ECST, and the role it can play in making LA a better place to live. "I am very impressed with the upcoming plans ECST has in store for its students, as well as the Cal State LA community as a whole," he says. "I'm particularly excited about the Makerspace for its potential to inspire innovation and collaboration." ■





## AEROSPACE

### NATANAEL PORTILLO-SILVA



**Natanael Portillo-Silva** ('15, Industrial Technology, Engineering) thinks Los Angeles is one of the best places in the world to live — especially if you work in aerospace.

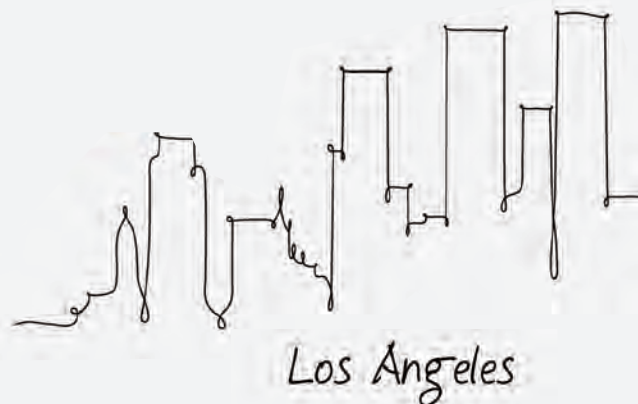
After graduating from ECST, Portillo-Silva decided to pursue his MS in Mechanical Engineering at Cal State LA, as well. He now works as an aerospace manufacturing engineer at Northrop Grumman Corporation.

In his role, he serves as a liaison between the technicians and the tooling integration and design teams. He is regularly tasked with planning integration, developing tool process improvements, and designing and implementing tool fabrication aids. He also acts as a mentor to his team of technicians, helping them better understand technical drawings and specifications. “We need to make sure things are being done as fast as possible and that mistakes that could potentially take a long time to correct do not happen,” he says.

An early experience with ECST played an integral role in convincing Portillo-Silva to pursue a career in engineering. As a high school student in 2005, he attended ECST's Summer Transportation Institute. Through ECST's partnership with NASA, he was able to pursue his passion for aerospace through research in structural propulsion and control engineering as well as multi-disciplinary flight dynamic controls. “At NASA, I gained experience in structural analysis, fabrication, and design — I did it all,” he says.

In addition to his experience with NASA, Portillo-Silva credits ECST with the success he's found early in his career. He says that the constant collaboration and teamwork, the hands-on approach to labs and machinery, the rigorous curriculum, and faculty who were always willing to help gave him the foundation he needed to succeed.

“My dad was in construction,” he says, noting that he is the first in his family to attend college. “He took me to work one night and I helped him shovel until three in the morning. He asked, ‘How do you feel?’ I said I was tired and he said ‘If you do not go to school, this is your life.’” Portillo-Silva believes that “dreams come true if you put the work into it and don't lose focus.” ●



## STRUCTURAL ENGINEERING

### DILIP KHATRI



**Dilip Khatri**, Ph.D., ('83, Civil Engineering) is not only principal at his own structural and civil engineering firm, he's also a documentary filmmaker dedicated to sharing stories about great feats of civil engineering, and the engineers who make them happen.

Khatri's firm, Khatri International, is a design and construction management firm based in Los Angeles. Khatri and his team — many of whom are Cal State LA alumni — oversee projects related to forensic distress, property reconstruction, geotechnical and soil issues, and seismic evaluations.

Khatri praises ECST's curriculum: “There is something to be said for a practical education. And, our graduates do great work — they are a cut above.”

After 26 years in the engineering business, Khatri took his career in a new direction when he decided to produce films.

“We don't have any museums or big new stories dedicated to civil engineering. We really needed a documentary about the civil engineering profession,” he says. Through projects like his first documentary, *Aspire to the Sky* — about the Wilshire tower in Los Angeles — Khatri's goal is to create a public image for engineers.

Khatri's life motto, “follow your inner voice”, has helped guide him throughout his career, from engineering to filmmaking. “I've always been a firm believer that if you are not happy with what you are doing, change it. Pursue what makes you happy.”

(Read more about *Aspire to the Sky* on page 19.) ●

*If you or someone you know would like to be profiled in an upcoming issue of InSights, let us know! Please contact Kevin Doody ([kdood@calstatela.edu](mailto:kdood@calstatela.edu)).*



## STAFF SPOTLIGHT:

# THELMA FEDERICO



**Thelma Federico** has been Director of Cal State LA's MESA (Mathematics, Engineering, Science Achievement) program for the past 12 years. The program, which celebrated its 40-year anniversary at ECST in 2018, was implemented at the College of Engineering, Science, and Technology to build a bridge for underrepresented high school and middle school students in Los Angeles to successfully transition to college and pursue STEM degrees.

As the Outreach Director for the College, Federico works as the liaison between Cal State LA and our partner schools in Los Angeles. She is in constant contact with more than 50 high school and middle school teachers, coordinates events like MESA competitions and the annual ECST Open House sponsored by Boeing, which brings 1,000 MESA students to campus, and always maintains an open-door policy to meet with students and faculty alike. Many ECST students participated in MESA during their high school years and now serve as assistants for Federico's programs and events.

*"They are the ones that keep me going even on the most challenging days."*

A graduate of the University of Arizona, Federico uses her background in Social Work to bring a 'people -person' approach to ECST. She believes that the best part of her job is working with the students: "They are the ones that keep me going even on the most challenging days," she says.

Federico recalls working with twins several years ago; each would work early-morning jobs before school to help support their family. With the help of Federico and MESA, they both became engineers, eventually buying their parents a home.

"I love how I get to see first-hand the impact MESA makes on so many kids in the greater Los Angeles area," she says. "It's a rewarding career." ●

## NEW MASTERS PROGRAMS

### MS IN MATERIALS SCIENCE AND ENGINEERING

#### PROGRAM DIRECTOR

Dr. Mohsen Eshraghi, Assistant Professor

#### ABOUT THE PROGRAM

The MS in Materials Science and Engineering is an interdisciplinary graduate program providing a rigorous education in the fundamentals of both Materials Science and Materials Engineering. It's an exciting opportunity for students to be on the forefront of MSE research and access cutting edge research facilities. In the race to make things stronger, cheaper, lighter, more functional, and more sustainable, it is crucial that today's engineers understand how to design and manipulate materials, their properties, and the processes to produce them. Graduates of the MS MSE program will be ready for industrial positions or to move on to PhD programs.

### MS IN INDUSTRIAL MANAGEMENT

#### PROGRAM DIRECTOR

Paul Liu, Professor

#### ABOUT THE PROGRAM

The MS in Industrial Management is designed to meet the increasing demand for technology leaders in the Greater Los Angeles area and beyond. The program enhances students' engineering and technological skills, develops managerial skills in the area of planning, problem solving, and decision-making, and integrates the theory of engineering practice with the practical knowledge necessary to succeed in the manufacturing industry and across various business environments.

# THE CAPS SCHOLARSHIP AIMS TO SUPPORT STUDENTS IN MORE WAYS THAN ONE

*“CAPS is more than a scholarship—it’s a long-term program created to support our top students financially, academically, and personally, so they can achieve even more.”*

The Culturally Adaptive Pathway to Success (CAPS) Scholarship launched in June 2018 with a five-year grant for \$1 million, funded by the National Science Foundation Scholarships in STEM program.

“CAPS is more than a scholarship — it’s a long-term program created to support our top students financially, academically, and personally, so they can achieve even more,” says **Elaine Kang**, PhD, Professor of Computer Science, who oversees the scholarship program. The CAPS Scholarship begins sophomore year and extends through graduation, up to four years for some students.

CAPS is a unique scholarship because it pairs scholarship recipients with faculty mentors who share similar interests and expertise. Faculty mentors are trained to guide scholars from a variety of backgrounds and encourage students to think differently by:

- Meeting frequently for ongoing conversations and support
- Advising on future career goal setting and achievement
- Providing exposure to more opportunities, like research and internships

The first cohort of 12 scholars were chosen last year. This very active and motivated group of students is 50 percent female—a great example of how the CAPS Scholarship is doing its part to further equity in STEM careers. The second cohort will be chosen this summer.

**Now, the CAPS Scholarship is working towards its next goal: To make the program sustainable and continue on after the initial grant has been completed.** “We’re looking for even more support so we can continue this great program and select yet another cohort of students in 2020,” Dr. Kang adds.

For more information about the CAPS Scholarship, go to [calstatela.edu/ecst/CAPS](http://calstatela.edu/ecst/CAPS). ■

## MEET JUAN AVILA, ELECTRICAL ENGINEERING, A CAPS SCHOLAR

“Being part of CAPS eases the financial burden of college for me and my family,” **Juan Avila** explains. “But that’s not all—my faculty mentor, **Dr. Charles Liu**, is such a great support and always available to help me. He’s at a place where I want to be someday.”

### A little about Juan:

He’s highly motivated and passionate about all-things-computers, working to pursue a career in Computer Engineering. He is very involved with organizations such as Society of Hispanic Engineers, SHPE, and the Association of Computer Machinery. In his spare time, he enjoys playing trumpet.

### Summer Plans?

He recently secured his first internship at Southern California Edison’s IT department, working in telecom on fiber optics systems.

### Dream job?

Working as an engineer at Apple.







## 2019 DONOR APPRECIATION AND SCHOLAR CELEBRATION LUNCHEON BRINGS DONORS AND STUDENTS TOGETHER

On March 28, ECST student scholarship recipients met with the alumni and corporate donors of ECST scholarship funds at our annual Donor Appreciation and Scholar Celebration Luncheon. **John J. Tracy**, who received his Master's degree in Physics from Cal State LA in 1981, and served as Chief Technology Officer and Vice President of Engineering, Operations & Technology at The Boeing Company from 2006 to 2016, delivered the keynote address. He also met with current scholarship winners from the Victoria Alegria Tracy Memorial Scholarship Fund, which he created 15 years ago in his mother's name. Since its founding, the fund has granted more than \$400,000 in scholarships to over 50 ECST students, including new graduate Aileen Han, who also spoke at the luncheon. The annual luncheon is a highly anticipated event for both scholarship donors and recipients, often leading to job interviews and internships for students. ●

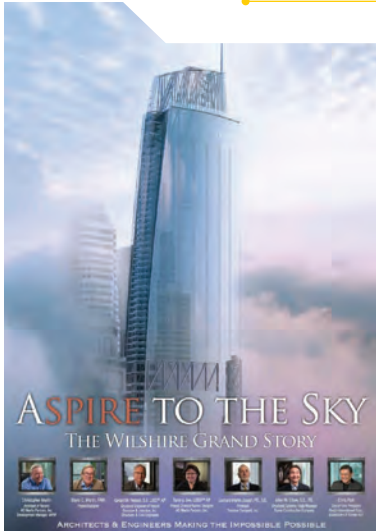


*Top: Dean Emily Allen greets donors and alumni during the luncheon.*

*Above: Alumna John J. Tracy delivering the keynote address.*

*Bottom: ECST scholarship donors and recipients gather.*





## ECST ALUMNI DILIP KHATRI PREMIERS HIS FILM 'ASPIRE TO THE SKY'

Cal State LA hosted the world premiere of the documentary *Aspire to the Sky: The Wilshire Grand Story* in November. The film was directed and produced by **Dilip Khatri**, Ph.D. ('83, Civil Engineering) with help from a small team of structural engineers (for more about Dilip, see page 15). The film explores what it took to build the tallest building in the Western United States, standing at 1,100 feet tall with a 180 foot spire. The building, which sits on a one-acre lot and supports 22 acres of office and hotel space, is unique because it merges art and engineering like no other building in the area, bringing vitality to the Downtown Los Angeles skyline. For more information about the film, visit [thewilshiregrandstory.com](http://thewilshiregrandstory.com). ●



More than 100 ECST faculty, staff, and student volunteers helped make ECST's annual Open House a success.

## ECST TEAMS UP WITH BOEING ON SUCCESSFUL 14TH ANNUAL ECST OPEN HOUSE

More than 800 middle and high school students, teachers, and parents toured the college's faculty and student-led research and projects in October 2018 during our 14th annual ECST Open House. Participating students were part of ECST's Mathematics Engineering Science Achievement (MESA) schools program led by Thelma Federico (see page 16). During their visit, they learned first-hand about ECST's programs from more than 100 ECST faculty, staff and student volunteers, and also had the chance to meet and talk with more than 50 executives and engineers from The Boeing Company who volunteered their time for the event, including Corky Townsend, Vice President-Customer Support; Courtney Makela, Director-Engineering Integration Customer Support; and Chris Brown, Director of Space Electronics for the Space and Launch organization. Activities also included tours of the labs and campus, networking and lunch.

Watch for details soon about our 15th annual Open House to be held in the Fall. ●

## MAJOR GIFTS

# SIKAND FAMILY ESTABLISHES THE SIKAND CENTER FOR SUSTAINABLE AND INTELLIGENT INFRASTRUCTURE

Since 2015, the Gunjit S. Sikand Faculty Research Endowment in Urban Sustainability has allowed ECST faculty and students to conduct important research in the area of Urban Sustainability. In April 2019, the Sikand family committed to extending the impact of this work through a gift pledge of \$1.25 million to establish the Sikand Center for Sustainable and InTelligent Infrastructure at the College of ECST.

The mission of the Sikand SITI-Center is to support the advancement of multidisciplinary research and education focused on Urban Sustainability and its components, including transportation infrastructure, water resources, environment, smart mobility, connected vehicles, and more. The SITI-Center will focus primarily on issues of interest to urban Southern California.

Serving as a research development hub at ECST, as well as an incubator for successful sustainability solutions, the SITI-Center will facilitate the advancement of faculty, students, and Center members across the Cal State LA campus by providing structured support



for research, external funding, and professional development in the area of urban sustainability.

**Mehran Mazari** is an assistant professor specializing in Transportation Infrastructures and Materials, and the founding director of the SITI-Center. He says, “This gift is a major contribution to the advancement of urban sustainability research and education at Cal State LA. It will help ECST faculty and students to develop our overall research capacity and promote the development of multi-disciplinary research in urban sustainability topics over a wide variety of contexts and disciplines.” ●

## W.M. KECK FOUNDATION GRANT

The W.M. Keck Foundation awarded ECST a \$325,000 grant to develop the operational and training infrastructure for an Innovation and Design Center (IDC). The IDC will provide collaborative spaces for project-based learning for over 1,000 undergraduate students each year. Managed by **Chris Bachman**, the grant’s principal investigator and assistant professor of mechanical engineering, the grant will also support a research study on the effect of hands-on learning on the development of engineering identity in students, conducted by **Kimi Wilson**, assistant professor in the Charter College of Education at Cal State LA.

The IDC will be a resource for experiential learning throughout the ECST curriculum, provide training and access for students to design and fabricate projects for Capstone design, competition teams and research, and offer regular workshops

on design and manufacturing topics.

Additionally, ECST students will develop confidence and superior hands-on skills in manufacturing, design, fabrication, and innovation through the IDC’s full array of functional tools including 3D printers, welders, saws, laser cutters, and more.

“Our hope, in creating the IDC, is to inspire Cal State LA students to be passionate about engineering by allowing them to apply what they learn to real problems originating in industry and our community,” Bachman says.

Most importantly, the experiential learning taking place in the IDC will motivate and inspire ECST students to be passionate about becoming engineers and technologists and prepare them to make an impact in any STEM workplace. ●



## ECST RECEIVES \$525,000 GRANT TO ESTABLISH ACCELERATION INITIATIVE

The College of Engineering, Computer Science, and Technology was recently awarded a \$525,000 grant from the Weingart Foundation to accelerate the achievement of students pursuing degrees in the College.

The three-year grant will allow ECST to establish the Acceleration Initiative, which will prepare students from underrepresented groups to succeed in STEM. The grant allows ECST to hire a program director who will integrate the College's already existing programs for middle school, high school, and first-year college students:



### MESA

(Mathematics, Engineering, Science Achievement) A partnership with educationally disadvantaged LA middle and high-school schools which fosters early interest in STEM fields, provides professional development for teachers, and offers enrichment activities and competitions to students



### LAUNCHPAD

A two-week summer program that introduces high school girls to engineering and computing through hands-on projects



### STEP

(Summer Transition to ECST Program) A seven-week summer math boot camp that prepares incoming ECST freshmen for college life and their first-year academic requirements



### FYrE@ECST (First-Year Experience at ECST)

A first-year cohort program that provides students with skills and support for ongoing success in their ECST majors

The Weingart Foundation grant will enable ECST to strengthen its K-12 pipeline programs, recruit more female students, and produce more diverse STEM graduates who are prepared for the workforce and ready to contribute locally and globally.

"This generous grant from the Weingart Foundation will allow the college to provide the best possible pipeline programs and first-year experience for our students, strengthening students' commitment to excellence, engagement with their community, and accelerating their academic success and career prospects," says **Dean Emily Allen**. ●

Photos:

(Opposite page) Mark Sikand, President of Sikand Engineering, recently visited ECST to see how his family's gifts have broadly impacted the college. (Above) The Weingart Foundation's Acceleration Initiative supports the MESA program and (below), the LAUNCHPAD summer program.





## IN MEMORIAM

# DR. JACK LEVINE AND DR. MORRIS MANO: FOUNDING FATHERS OF CAL STATE LA'S COMPUTER ENGINEERING PROGRAM

## Dr. Jack Levine

April 8, 1930 — October 27, 2018

**Jack G. Levine**, emeritus professor of electrical engineering, died in October 2018 at the age of 88. He was the consummate professor and adviser, volunteering his time during his later years.

Jack was born in 1930, and spent his early childhood in Chicago and New York City before moving to Alameda, California where his mother worked as a riveter during the war years. After the war, Jack's family settled in Los Angeles, where he attended Los Angeles High School, graduating in 1948. He always said that he loved Los Angeles right from the beginning; he appreciated the diversity of the population, the freedom from the tradition-bound east coast, and the liberal politics.

Jack attended UCLA after high school for three semesters until he was asked not to return. He was drafted by the U.S. Army in 1951 during the Korean War. During his time in the Army, Jack worked with other men who were engineers, his introduction to the field. He graduated from UCLA in 1958, under the GI bill, after he was able to convince them that his younger self was sorry.

In September 1960, Jack was hired by the Engineering Department at then Los Angeles State College of Applied Arts and Sciences. He was promoted to the rank of associate professor in 1979, followed by professor in 1984.

Jack was a well-rounded professor, very involved in the community, and a great humanitarian. He taught in Nairobi, Kenya from 1963 to 1966, which was a significant experience for him. In the early 1970s, he took part in one of the first Earth Day celebrations on any campus. He stood next to a concrete tree designed and built by the Art Department and read his speech from a roll of toilet paper, which unfurled as he talked about saving trees and the environment. Always working for social justice, he believed in equal rights and equal opportunities for all.

From 2001 to 2006, Jack participated in the Faculty Early Retirement Program, coming back from retirement as a part-time faculty member until 2016. He made significant contributions to the development of the digital logic laboratory and the course redesign of the entire computer engineering program during the recent semester conversion.

Jack is survived by his wife Jeanette, children Mark and Cambria, and grandson Andrew. ■

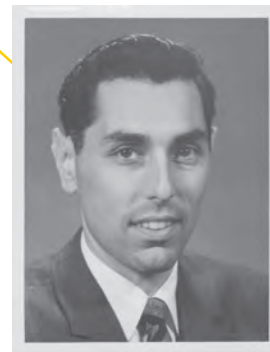


Photo (left, Professor Jack Levine) courtesy of ECST. Photo (right and below, Professor Morris Mano) courtesy of Cal State LA Special Collections & Archives.

## Morris Mano

April 3, 1927 — December 3, 2018

**Moshe Morris Mano**, professor of electrical engineering for 30 years, died in December 2018 at the age of 91.

Morris was born in 1927 in Salonika, Greece. At the age of eight, he and his family emigrated to what was then Palestine. Despite growing up in poverty and never receiving a proper high school education, Dr. Mano was able to attend New York University on a student visa, graduating with a degree in Electrical Engineering. After school, he returned to what had become Israel and served in the Israeli Defense Force. He then moved back to the United States to attend graduate school at Northwestern University.

Passionate about travel and classical music, Dr. Mano taught at Cal State LA for 30 years, helping to found the Computer Engineering program. He was also the author of five best-selling books on computer hardware and architecture. His students described him as "a kind but tough, no-nonsense teacher that would challenge you to come up with the answer to your own question when you went to him. He was insightful and a master in his field."

Morris is survived by his wife of over 60 years, Sandra, and their children and grandchildren. ■



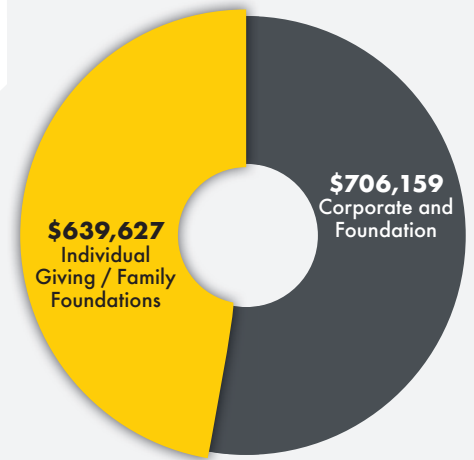
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## ECST CONTACT INFORMATION

### COLLEGE OF ECST

Tel: (323) 343-4500 | Fax: (323) 343-4555  
Office: E&T A236 | [ecst@calstatela.edu](mailto:ecst@calstatela.edu)

### ECST DEVELOPMENT OFFICE

Tel: (323) 343-4500 | [ecst@calstatela.edu](mailto:ecst@calstatela.edu)

### CIVIL ENGINEERING

Tel: (323) 343-4450 | Fax: (323) 343-6316  
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### COMPUTER SCIENCE

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### ECST STUDENT SUCCESS CENTER

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