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Spring 2025

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Diana Koralski and Austin Hatfield pitching their original idea for MindSprout at the Innovation Quest. / Photo Courtesy of Ruby Wallau for the Cal Poly Center for Innovation & Entrepreneurship

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EMPOWER team members Clara Swanson, from left, Emma Merriman, Hudson Schmidt, Chandni Sharma and Amanda Le showcase a mock model of their haptic navigation system after completing their critical design review.

Marching to a New Beat: EMPOWER Team Aims to Help Blind Musicians March Independently

Brent Boon was flipping through television channels one evening when he landed on a college football game. While most viewers were caught up in the action on the field, Boon's focus was elsewhere: the marching band. As the musicians moved in perfect formation, an idea struck him — one that would challenge assumptions about who could march and how.

A retired Boeing employee and lifelong musician, Boon had spent the past few years teaching piano and drums to visually impaired students through his nonprofit, Pacific West Music of the Blind. From his home in Maltby, Washington, he taught students of all ages, helping them discover the joy of music. But what if they could do more than play? What if they could march?

Bringing that idea to life would be an entirely new challenge. No existing system could support a full-scale visually impaired marching ensemble. Boon needed a solution that was precise, intuitive and adaptable. To make it happen, he turned to cutting-edge technology and a team of Cal Poly engineers, launching an effort to create the first fully independent marching drumline for blind musicians.

"But it had to give them complete independence, without sighted guides or physical constraints. Just a system that let them move as a real marching band."

— Brent Boon

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Full Charge Ahead: Cal Poly Racing Enters a New Era with Electric Drive and Enduring Team Spirit

Cal Poly Racing team members gather at the Santa Maria airport during a sunset test session, shortly after unveiling their 2025 electric vehicle to the public.

When Cal Poly's final combustion car crossed the finish line at last year's Formula SAE competition in Michigan, it marked the end of an era: more than 30 years of roaring engines, hands-on innovation and a tradition few teams could match — building two cars every season.

"Combustion cars are the heart of racing," said John O'Donnell, a third-year aerospace engineering student from Seattle. "But we had to look at where the competition was going and where we were headed."

For Cal Poly Racing, it wasn't just a farewell; it was a turning point. As the team closed the chapter on combustion, O'Donnell took on the role of team lead, helping the club navigate its next phase and supporting a pivotal decision to retire the combustion car and focus fully on electric.

The shift has already paid off. Cal Poly Racing is returning to Michigan for the Formula SAE Electric competition on June 17 with a more unified team, a refined car and renewed energy, all backed by its most rigorous testing season to date.

At first glance, Cal Poly's 2025 electric vehicle doesn't look radically different from last year's. But under the carbon fiber shell, it's smarter, more reliable and — perhaps most importantly — built with something the team hadn't had in years: time.

"The more you can test, the better you do," O'Donnell said. "That was our biggest goal this year: get the car driving early so we could really understand how it performed."

"We were one of the only teams building both," he said. "But if we wanted to be a top contender, we had to focus."

— John O'Donnel

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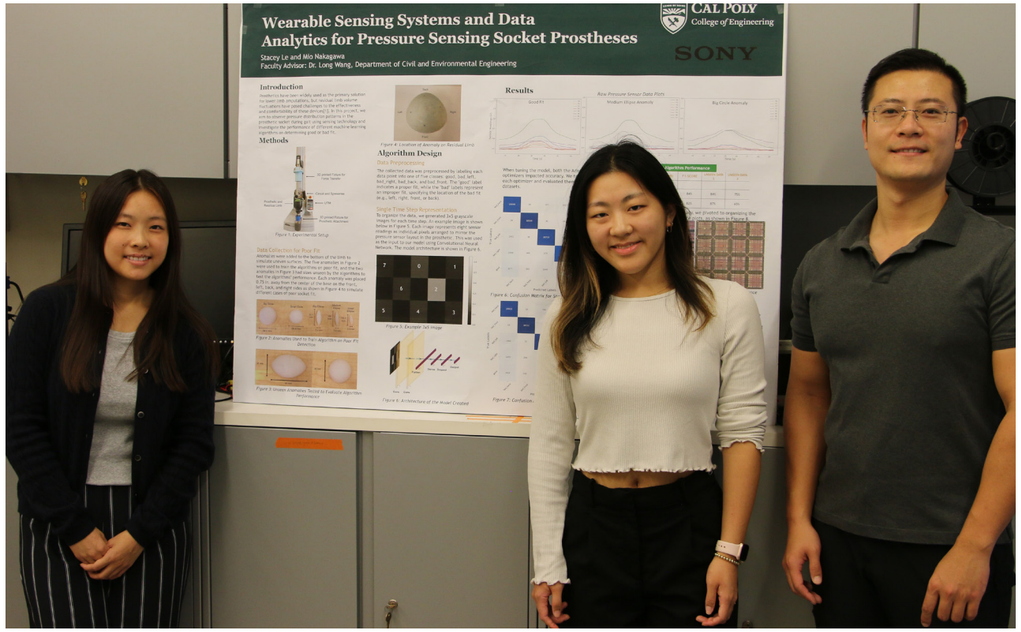

Stacey Le, from left, Mio Nakagawa and Professor Long Wang present the poster for Le and Nakagawa's Summer Undergraduate Research Program project, which focuses on wearable sensing systems and data analytics to improve prosthetic fit.

Cal Poly Students Advance Prosthetic Fit Technology in Sony Collaboration

College of Engineering students Stacey Le and Mio Nakagawa are making strides in refining the prosthetic fit technology spearheaded by structural engineering Professor Long Wang in collaboration with Sony. The project focuses on developing a wearable sensor system to monitor pressure between a prosthetic socket and residual limb, enhancing both comfort and safety for amputees.

Le, who is majoring in biomedical engineering, concentrated on data collection and analysis, simulating limb anomalies to study pressure distribution changes caused by poor prosthetic fit. Nakagawa, who is studying computer science, worked on building and fine-tuning the algorithm, which is now ready for practical deployment. The team will also incorporate user interface improvements to ensure the system is intuitive for amputees.

"This project has enabled me to explore my passion for medical devices with hardware and software integration while addressing real-world challenges," Le said.

Le and Nakagawa first joined the project as part of the Summer Undergraduate Research Program and reflected on the interdisciplinary collaboration and skills they have since gained. "The experience taught me to communicate my ideas effectively and strengthened my problem-solving abilities," said Nakagawa, who plans to pursue a master's degree focusing on artificial intelligence and machine learning.

"I've gained confidence in applying machine learning to practical solutions, and it's been a rewarding experience."

— Mio Nakagawa

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Hands-On, Waste-Off: Capstone Team Tackles Construction Waste with Tech

Ivan Kaur, from left, Supriya Mandava, Michelle Chi, Gannon Bardasian, faculty adviser BJ Klingenberg and project sponsor Jason Wheeler stand in front of the JackRabbit website they helped refine — a reuse platform originally sparked by Cal Poly's Kennedy Library transformation.

Jason Wheeler didn't return to Cal Poly's Kennedy Library to relive his student days but to reimagine its transformation as a catalyst for environmental change. A business alumnus from the class of 2000, he immediately recognized the potential of the library's discarded flooring, destined for the landfill but full of new possibility.

Inspired, he founded JackRabbit Salvage Marketplace, a startup designed to connect salvaged construction materials with people ready to give them a second life. "I saw materials going to waste as costs soared," Wheeler said. "We needed a system to repurpose valuable resources, not discard them."

JackRabbit's first transaction redirected 10 tons of reclaimed flooring to a local general contractor, showcasing how technology can turn waste into opportunity.

This pilot venture also served as the launchpad for Cal Poly's newly introduced computer science capstone sequence. Over fall and winter quarters, seven students partnered with Wheeler, under the guidance of faculty member BJ Klingenberg, to upgrade the site in real time — revamping database design and administrative dashboards, and enhancing interactive maps and user-login features to make it more engaging and intuitive.

Along the way, the project shifted how students thought about sustainability in their own lives. Gannon Bardasian chuckled that he now even considers saving the head of a lettuce instead of tossing it. Meanwhile, Michelle Chi gathers her empty soda cans in a bag, ready to recycle or sell back, so nothing useful slips through her fingers.

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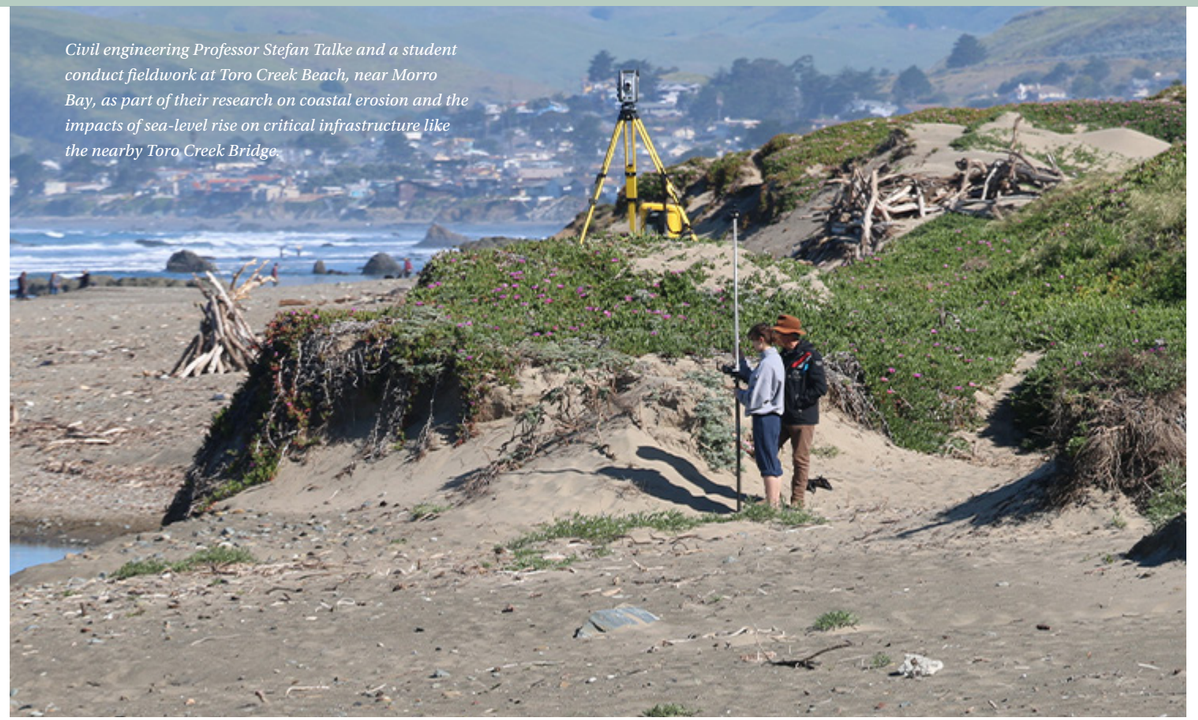
"We needed a system to repurpose valuable resources, not discard them."

— Jason Wheeler



Civil engineering Professor Stefan Talke and a student conduct fieldwork at Toro Creek Beach, near Morro Bay, as part of their research on coastal erosion and the impacts of sea-level rise on critical infrastructure like the nearby Toro Creek Bridge.

Tracking Flood Risk in a Changing Climate

Civil engineering Professor Stefan Talke is delving into critical questions around how climate change and human intervention are reshaping flood risks in coastal and river areas.

His research, funded by the National Science Foundation, Caltrans, the California Delta Stewardship Council, the U.S. Army Corps of Engineers, and the Strategic Environmental Research and Development Program, is a multifaceted look at how sea-level rise, infrastructure and climate-driven changes impact flood hazards.

In an NSF-funded study, Talke collaborated with other universities to investigate how human activities like dredging and land reclamation have amplified flood risks in coastal areas. Their findings suggest that these interventions, often intended to manage water resources and facilitate shipping, may actually heighten the impact of sea-level rise. This creates complex challenges but also offers opportunities to rethink flood management strategies, as highlighted in a recent article published by The Conversation.

For Caltrans, Talke's team is examining the vulnerability of the Toro Creek Bridge, a critical part of Highway 1 between Morro Bay and Cayucos. As sea levels rise, the risk of erosion and wave damage to this bridge grows. His team is evaluating both structural and nature-based solutions that could protect this infrastructure and adapt it for future climate conditions.

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Their findings underscore the region's high vulnerability to sea-level rise, a factor often overlooked in California's adaptation efforts.

Members of Cal Poly's CAPED team present "Jukebox Joyride" at the Ride Engineering Competition, where they earned third place and Fan Favorite honors. Mechanical engineering student Raegan Fordemwalt, far right, who led the controls subteam, was one of several students who helped bring the disco-themed ride to life.

Poet-Engineer Brings Creative Spark to CAPED's National Victory

Raegan Fordemwalt engineers motion — and emotion.

As a sophomore mechanical engineering major at Cal Poly, she's also a leader in CAPED, the university's amusement park engineering club. This April, she helped guide the team to a third-place finish at the Ride Engineering Competition, hosted at The Ohio State University.

Their entry, "Jukebox Joyride," was a disco-themed flat ride (a ground-based attraction that spins, lifts or tilts riders) featuring a rotating platform, vibrant vehicles and a high-energy soundtrack she personally curated. It was the only ride at the competition with music, and its energy turned heads. Judges praised the immersive design, and the team's entry was named Fan Favorite.
While Fordemwalt might be known on campus for her engineering work, she's recognized by millions online for something else: poetry.

She began posting spoken word videos to TikTok in 2022. One — a piece titled "i just want you" — went viral, amassing more than 15 million views. By 19, she had published her debut illustrated poetry book, "Lover Girl," which reached No. 1 on Amazon's poetry charts. A follow-up, "Prince of Hearts," was released earlier this year.

Back with CAPED, Fordemwalt found a way to channel both sides of her identity. A self-proclaimed roller coaster fanatic from Boise, Idaho, she joined the club her first year at Cal Poly after spotting a student-built coaster at the club showcase. She was captivated by the idea that engineering could bring stories to life — even before she had visited many major theme parks. .

"I don't think anyone should have to choose between two things that make them happy," she said. "You can be creative and you can be technical; I think that's the fun of it."

— Raegan Fordemwalt

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Reclaiming the Hangar: More Room, More Makers, Same Cal Poly Spirit

Mechanical engineering students Olivia Hoffsis and Trevor Ortega, current and former presidents of Cal Poly Wind Power, work on turbine components in the team's new room in the Hangar. The upgraded space gives student clubs room to collaborate, build and store equipment.

The first time Liv Hoffsis climbed the hill to the Hangar machine shop, she thought she was in the wrong place.

"It looked like an abandoned building," the mechanical engineering junior recalled. Yet once inside, the space revealed something different, filled with half-finished projects, humming machines and students deep in immersive work. "It didn't look like much from the outside," she said, "but you could feel the momentum the moment you stepped in."

Now, she's an active advocate for the Hangar. As a shop technician, she helps other students bring their projects to life. And during her time with Cal Poly Wind Power, she's logged countless hours in the shop — sometimes spending eight or nine hours at a time machining precision parts for national competitions.

"There's something meaningful about working in a space that feels like it belongs to you," she said. "It becomes part of your story here."

Hoffsis' experience mirrors a larger transformation unfolding at the Hangar. In recent months, renovations, reorganizations and increased attention to student needs have begun to unearth the building's full potential and lay the foundation for what's next.

"There's something meaningful about working in a space that feels like it belongs to you," she said. "It becomes part of your story here."

— Liv Hoffsis

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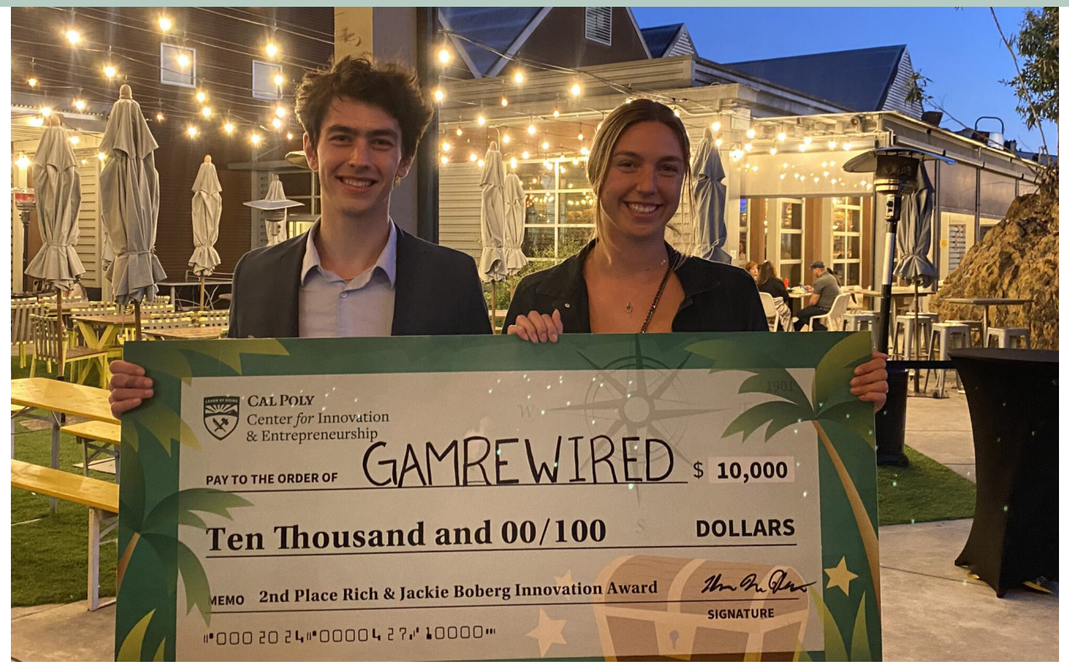

Diana Koralski and Austin Hatfield pitching their original idea for MindSprout at the Innovation Quest. / Photo Courtesy of Ruby Wallau for the Cal Poly Center for Innovation & Entrepreneurship

MindSprout: An Alumna's Quest to Help Curb Problem Gambling

When computer science and business student Diana Koralski was looking for her next project, she went to the Cal Poly Center for Innovation and Entrepreneurship to discover what ideas were in the works.

The center is a hub where people can turn their ideas into businesses and products by cultivating an entrepreneurial mindset.

That is where Koralski first met business student Austin Hatfield. She was drawn to Hatfield's idea and the backstory attached to it.

A close friend of Hatfield's struggled with problem gambling, and he wanted to find a way to help. Koralski got involved and developed the app, MindSprout, a habit-tracking tool to help curb problem gambling.

Now, one year after graduating, Koralski continues to work on ways to get MindSprout in the hands of those who need it.

According to the National Council on Problem Gambling, problem gambling is "gambling behavior that is damaging to a person or their family, often disrupting their daily life and career."

"Our mission is to target the younger demographic that's most affected by online gambling and sports betting rather than the typical slot machines and physical casinos," she said. "The internet and phones have made gambling so easily accessible that some people are gambling in the shower, at work or, frankly, in any place with connection. MindSprout's goal is to make the resources to overcome that gambling addiction just as accessible, if not more."

MindSprout's goal is to make the resources to overcome that gambling addiction just as accessible, if not more."

— Diana Koralski

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A Place to Struggle, Learn and Belong: Inside the CSSE Tutoring Center

Lead tutors Tyler Hlaing, left, and Akash Praveen work through a problem-solving approach at the CSSE Tutoring Center. As senior computer science students, they help guide a team of peer tutors who support students in introductory courses.

On the third floor of Cal Poly's Building 14, Room 309 is filled with a steady current of problem-solving and peer support. Laptops glow, whiteboards fill with code and soft conversations echo between students leaning in over shared problems. It's not a classroom, but it might be where some of the most meaningful learning happens for computer science and software engineering students.

Welcome to the CSSE Tutoring Center, a student-run hub offering peer-to-peer help for foundational courses in the major. Each weekday from 2 to 8 p.m., students drop in for guidance, troubleshooting and, often, encouragement. The center is led by a team of tutors, most of them upper-division CSSE majors, who have been in the exact same seat as the students they're helping.

"It's a safe space. There's no such thing as a dumb question," said Akash Praveen, a computer science senior who serves as one of the lead tutors. "Once the ice is broken, students realize we've all been there."

Praveen and fellow senior Tyler Hlaing coordinate scheduling and oversee a team of 15 tutors, each of whom works four to six hours a week. The structure is simple — two tutors are on duty each hour — but the impact is significant. In a typical quarter, the center sees hundreds of visits.

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"You start to see problems from new angles, and you build soft skills that are so valuable in the workplace."

— Tyler Hlaing

Cal Poly civil engineering senior Chase Plager weighs an asphalt puck in the Pavement Advanced Materials Lab as part of a study on improving the durability of recycled road materials.

Paving the Way: How a Cal Poly Professor and Student Are Rethinking Asphalt

For most drivers, a road is just a means to an end. But for civil engineering senior Chase Plager, it's become something much more: a path to new solutions for building better roads.

In Cal Poly's Pavement Advanced Materials Lab, Plager starts each Friday morning at 5 a.m., heating aggregates and mixing asphalt so he can begin compacting samples by noon. The work is messy and demanding, but for Plager, it's a chance to turn raw materials into meaningful discoveries.

"Now, I look at roads in a completely new way," Plager said. "You don't realize just how much engineering and planning goes into them until you see it firsthand."

The samples Plager prepares form the foundation of a research project led by civil engineering Professor Ashraf Rahim, who has spent decades advancing sustainable practices in road construction and maintenance.

Together, they are exploring how to improve the performance of Reclaimed Asphalt Pavement (RAP), made from old roads that would otherwise go to waste. RAP helps reduce landfill material and offers an environmentally friendly alternative to mining new resources. However, at higher percentages, RAP can lead to durability challenges such as cracking and wear.

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"You don't realize just how much engineering and planning goes into them until you see it firsthand."

— Chase Plager

Kelly Turbin Transforms Gratitude into Opportunity for Civil Engineers

Kelly Turbin stands with fellow Cal Poly football alumni at the site of the John Madden Football Center. From left are Justen Peek (civil engineering, donor), Thomas Curiel (donor), Kyle Shotwell (Hall of Fame inductee 2024),

Kelly Turbin still remembers the moment he realized just how well Cal Poly had prepared him for the real world.

In his first week at his new job, fresh out of the civil engineering program, he glanced at the task list, then opened his class notes. There it was: step-by-step guidance that matched the work in front of him.

"I emailed my professors to thank them," he recalled. "My seismic analysis class had literally walked us through the exact process I was doing on my first project."

Two decades later, Turbin, now the owner of a successful structural engineering firm in Mill Valley, credits his Cal Poly education for giving him a hands-on foundation that translated seamlessly to the workforce. That same gratitude has inspired him to give back — not just to the college that shaped his career, but also to the football program that made his Cal Poly journey possible.

For Turbin, supporting the John Madden Football Center was just the beginning. That initial act of giving grew into the creation of the Susan Turbin Scholarship Endowment, a fund dedicated to helping civil engineering students with financial need.

"I am incredibly grateful to have received a scholarship to Cal Poly; college would not have been possible for me without it," he said. "Supporting scholarships feels like the best way to give back and help others who are in the same position I once was."

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"Supporting scholarships feels like the best way to give back and help others who are in the same position I once was."

— Kelly Turbin

Flipping the Script: Cal Poly Baja Races Toward a New Season and Stronger Culture

Team H2Optimize took home first place at the CPES Hackathon. / Courtesy Photo

When Cal Poly's Baja car crosses the finish line, team lead Matthew Shaffer doesn't just celebrate — he flips. Literally.

A former gymnast, Shaffer has made it a tradition to cap off each Baja SAE competition with a backflip from the roll cage of the off-road vehicle he and his team built from the ground up. It's a moment of joy, adrenaline and achievement — capturing the energy that drives Cal Poly Racing's Baja team.

As the team gears up for its 53rd season, Shaffer is preparing for more than just another flip. With two national competitions on the horizon — starting May 1 in Arizona and followed by a sentimental return to Maryland in June — the mechanical engineering senior is focused on pushing both the car and the culture forward.

"Without culture, nothing matters," Shaffer said. "We spend so many late nights together in the shop. It's important that every member feels welcome and supported. That's when the best work happens."

Under Shaffer's leadership, the team has shaved 20 pounds off its custom-built vehicle and fostered a collaborative environment that boasts nearly equal numbers of male and female members — something rare in off-road racing circles. While the team has its sights set on a top-three national finish this year, Shaffer sees the true victory in how the group has evolved.

"But I had incredible people who showed me that you don't have to know everything. You just have to show up, be willing to learn and be part of the team."

— Matthew Shaffer

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Cal Poly computer science Professor Alex Dekhtyar, from left, CBS News investigative reporter Julie Watts and Cal Poly computer science Professor Foaad Khosmood at a CalMatters gathering. Watts and Khosmood collaborated on award-winning reporting that

Emmy Nominations Spotlight Cal Poly's Role in Reinventing Political Transparency

A Cal Poly-born transparency platform is earning national acclaim — including two Emmy nominations — for uncovering hidden patterns in C alifornia politics and powering award-winning investigative journalism.

Digital Democracy, built through a campus-based research initiative and relaunched in partnership with nonprofit newsroom CalMatters, uses artificial intelligence to turn large volumes of legislative data into searchable, actionable insights.

An Emmy-nominated entry titled "Digital Democracy" — submitted by CalMatters and CBS News — featured reporting that used the tool's data to reveal how lawmakers quietly sideline bills by declining to vote, including legislation related to California's fentanyl crisis. The nomination, in the politics and government category, recognizes CBS News reporter Julie Watts and CalMatters journalist and Cal Poly computer science Professor Foaad Khosmood, who leads research at the Institute for Advanced Technology and Public Policy, for their collaborative investigation powered by Digital Democracy's analysis.

A second Emmy nomination highlights the system's role in a CBS News segment investigating campaign contributions from the oil industry and their influence on environmental legislation in the state Capitol.

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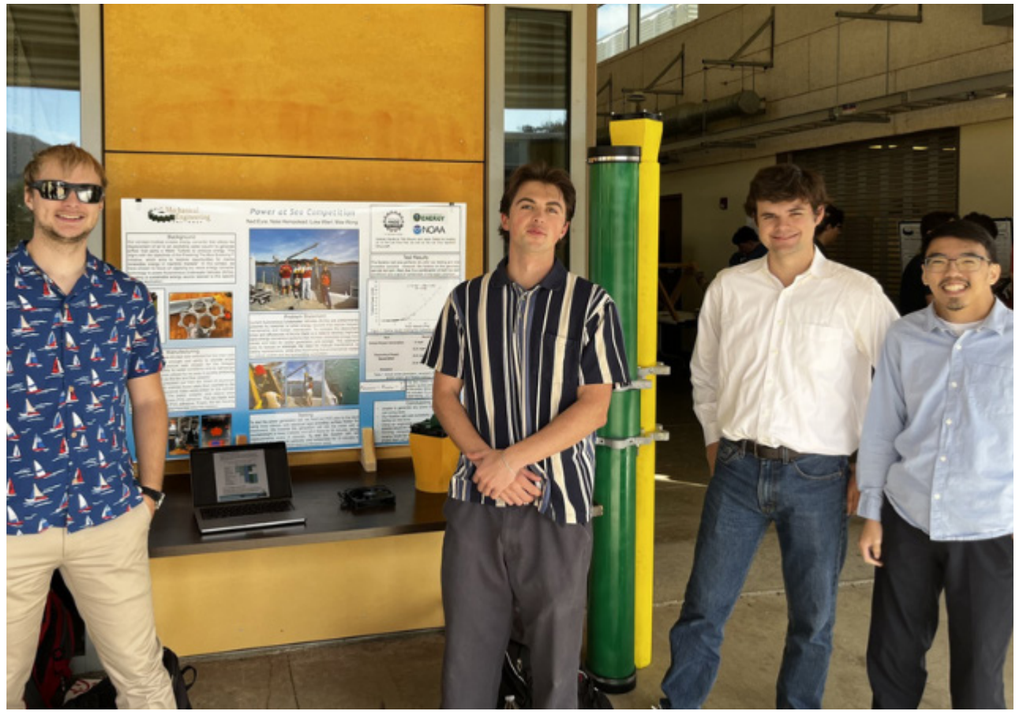
"I may be the only computer scientist nominated for an Emmy, and I'm honored. More than anything, I'm thrilled about the attention this brings to the platform and the students who help power it."

— Foaad Khosmood



Mechanical engineering students Nate Hempstead (left), Luke Wierl, Ned Eyre and Maximilian Wong presenting their research for the Power at Sea competition at Cal Poly's Senior Project Expo. / Courtesy Photo

Mechanical Engineering Students Recognized for Sustainable Energy Ocean Concept

Four Cal Poly mechanical engineering students were chosen to advance to the final stage of the national Power at Sea competition.

Ned Eyre, Nate Hempstead, Luke Wierl and Maximilian Wong worked under the guidance of Assistant Professor Amanda Emberly to develop their proposal for a concept that uses marine energy to power ocean-based activities.

"The concept was part of our senior design project," Hempstead said. "For the competition itself, we had to submit a three-minute video and a 10-page technical narrative."

The group was among 20 teams across the country that progressed to the final round of the competition and received $10,000 for their concept.

The Power at Sea competition is part of the U.S. Department of Energy's Powering the Blue Economy initiative, a push for innovative and responsible ways to use the ocean as an energy resource.

"The main point of the project is to provide power to specialized areas like data centers, underwater charging stations, autonomous vehicles — things like that," Hempstead said.

According to the students' project proposal, most autonomous underwater vehicles need frequent human intervention to keep them running.

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"I think the Cal Poly Learn by Doing philosophy helped with this project a lot because we had experience working in fluid labs and machine shops."

— Luke Wierl

Coming Full Circle: Alumna's Mentorship Inspires Mentee to Pay It Foward

Marissa Schmidt, left, with her early mentees during one of their mentorship meetups, sharing insights and experiences.

When Marissa Schmidt graduated from Cal Poly in 1995, she carried more than just a computer engineering degree into Silicon Valley. As a trailblazer in the first cohort of Cal Poly's Computer Engineering program, she knew what it meant to be one of the few women in a male-dominated field. Despite those challenges, she was determined to build a successful career — and to help others do the same.

That drive to give back started early. As a student, Schmidt was actively involved at Cal Poly, serving as a representative on a university council and supporting the Society of Women Engineers. Those experiences not only shaped her leadership skills but also strengthened her resolve to make an impact, both on campus and beyond.

Years later, as a director of product management at Citrix, Schmidt found herself in a position to offer something invaluable to the next generation: mentorship. When Professor John Oliver, then-chair of the Computer Engineering program, asked for help with a few struggling students, she stepped up. Two young women shadowed her at Citrix in 2013, seeing firsthand that engineering could be more than just hours spent in a lab; it could be a global career filled with innovation and opportunity.

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"It's like the circle of life — helping others that follow you…I want my legacy to be helping others."

— Marissa Schmidt

Navigating Health-Care Portals: How Accessibility Barriers Can Impact Patients

Industrial engineering student Janelle Wilson / Courtesy Photo

Navigating health-care portals can be challenging for anyone, but when these systems lack accessibility, they create even greater barriers for people with disabilities.

Industrial engineering student Janelle Wilson wanted to change that. She set out to improve accessibility in health-care portals, ensuring they are easier to navigate for all users.

The Fremont, California, native worked with her adviser, industrial and manufacturing engineering Professor Duha Ali, to evaluate the effectiveness of current health-care portals, analyzing navigation, task completion and user satisfaction.

After two observation and feedback sessions, Wilson found that participants struggled to access key portal features, including scheduling appointments and viewing lab results. "I noticed that a lot of participants were nervous about initially trying to find where the buttons were and very hesitant about clicking anything at all," she said.

Wilson also discovered that many portal tasks were unintuitive, and patients described billing summaries as particularly confusing.

"There wasn't a clear button that said, 'click here to open' or anything like that," she said.

Beyond unclear medical jargon and navigation issues, Wilson found many accessibility barriers that made it difficult for users to complete tasks.

"Several participants noted that the lack of clear visual clues or assistive features — such as larger fonts or screen reader compatibility — hindered their ability to complete tasks efficiently," Wilson said.

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"This study helps benefit the disabled community by incorporating feedback from a population heavily impacted by digitalization yet often overlooked in the design process."

— Janelle Wilson

Cal Poly students pose with their awards after a standout showing at the 39th annual CSU Student Research Competition, held at Cal Poly Humboldt. The delegation earned five of the event's 15 total honors, including two first-place awards for teams from the College of Engineering. Contributed/Cal Poly Humboldt

Cal Poly Engineers Earn CSU Research Win for Spotting Trouble Before It Strikes

When a two-alarm warehouse fire erupted in San Francisco, six engine companies roared toward the flames, draining three nearby firehouses and leaving thousands of residents uncovered. Months later, Chandler Kuhn replayed that crisis using an algorithm he had developed for his graduate research project in engineering management. On his laptop, census blocks flashed red wherever response times slipped past the city's 5-minute target.

Kuhn clicked run again. In 0.6 seconds, the model reassigned three idle engines and turned the map green — full coverage, no extra equipment needed.

"I've seen a structure fire pull every nearby engine, and if someone has a heart attack right then, the closest help can be 10 minutes away," said Kuhn, a former volunteer firefighter now finishing a blended bachelor's in aerospace engineering and master's in engineering management. "This model tells dispatch in seconds exactly which rig to shift so that gap never opens.

Kuhn's mix of street-level experience and data science earned him first place in the behavioral, social sciences and administration category at the 39th California State University Research Competition, which drew more than 200 scholars from the system's 23 campuses to Cal Poly Humboldt in late April.

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"I've seen a structure fire pull every nearby engine, and if someone has a heart attack right then, the closest help can be 10 minutes away."

— Chandler Kuhn

Cal Poly students with President Armstrong at the state capitol. / Photo by Jay Thompson

College of Engineering Students Honored by Lawmakers at State Capitol

Twenty-seven Cal Poly students were recognized for awards, accolades and other accomplishments by state lawmakers on the floors of the Assembly and Senate in Sacramento on Monday, Feb. 3. Among the group are nine students from the College of Engineering.

"Our students are already making a difference, showcasing their hands-on learning and skills developed through national competitions and extracurricular endeavors," said Cal Poly President Jeffrey D. Armstrong, who is accompanying the group on this 10th-annual visit to meet and be honored by California representatives. "Learn by Doing assures that when these fine students graduate, they and their Mustang counterparts will hit the ground running as they embark on their careers."

The group was introduced to the upper house by Sen. John Laird, D-Santa Cruz, and to the lower house by Assemblymember Dawn Addis, D-Morro Bay, who represents the coastal 30th Assembly District that includes large portions of San Luis Obispo and Monterey counties and the southeastern area of Santa Cruz County. Laird represents the 17th Senate District, which encompasses Santa Cruz, San Benito and Monterey Counties, as well as the majority of San Luis Obispo County.

Students met with East Bay alumni and Cal Poly supporters in Alamo, California, Sunday, Feb. 2, before continuing to Sacramento.

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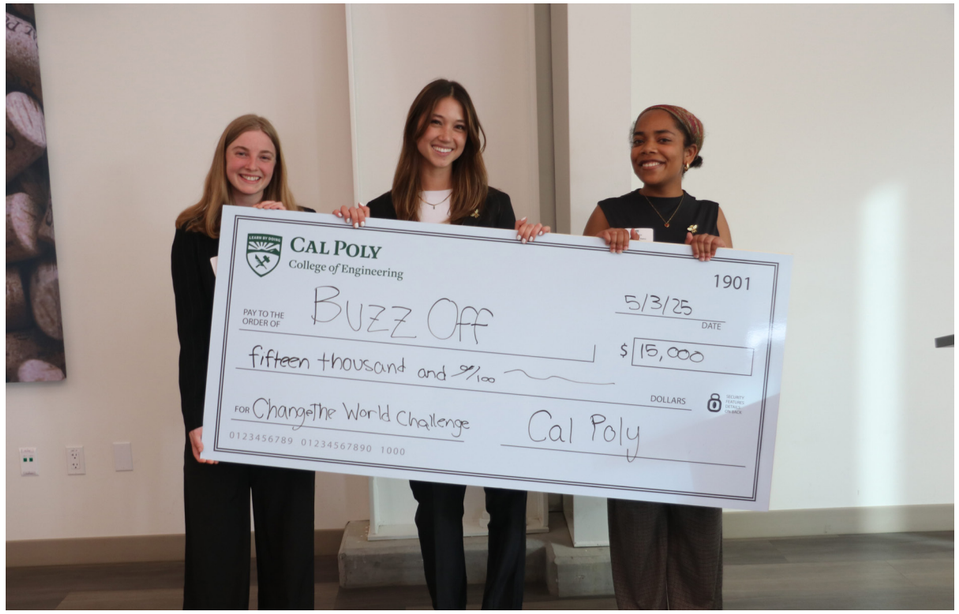
"Learn by Doing assures that when these fine students graduate, they and their Mustang counterparts will hit the ground running as they embark on their careers."

— Jeffrey D. Armstrong,

Cal Poly Students Awarded $15,000 in Fourth Annual Change the World Challenge



(From left) Grace Kathryn Hurley (manufacturing engineering), Lea Joan Graham (natural resources management and environmental sciences) and Zoila Anuri Kanu (computer science and software engineering) won first place in the 2025 Change the World Challenge for their product, Buzz Off. They received $15,000 to continue to develop their product with the goal of making a positive impact on the world.

Three Cal Poly students were awarded $15,000 to fund their innovative product at the fourth annual Change the World Challenge.

The interdisciplinary competition is a transformative student design challenge created to address the world's most pressing contemporary problems.

Bill Swanson, a 1973 industrial engineering alumnus and retired Raytheon chairman and CEO, started the Change the World Challenge to give students a chance to address global challenges.

This year's winners, Lea Joan Graham (natural resources management and environmental sciences), Grace Kathryn Hurley (manufacturing engineering) and Zoila Anuri Kanu (computer science and software engineering), presented their product, Buzz Off, to a panel of judges and placed first among five finalist teams.

This year's judges included Susie Armstrong, senior vice president of engineering at Qualcomm; Ed Burnett, retired Lockheed Martin engineer; Michael Allwein, technical director at General Atomics Aeronautical Systems; Sara Ford, senior developer relations engineer at Google; and Roger Benham, CEO of Leak Control Services and Materials Engineering Department lecturer.

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The interdisciplinary competition is a transformative student design challenge created to address the world's most pressing contemporary problems.

Computer Engineering Society Hackathon Gives Students Access to Latest Technology

Team H2Optimize took home first place at the CPES Hackathon. / Courtesy Photo

Cal Poly's Computer Engineering Society (CPES) hosted its first hackathon April 18-20. Sponsored by Sony and the Cal Poly Computer Engineering Department, the event drew 30 participants from different disciplines.

A total of six groups presented their projects to a panel of judges, with team H2Optimize taking home first place.

Each member of the winning team was awarded their own Sony Spresense camera board — a high-performance microcontroller board — to continue working on their projects after the competition.

The event was the first time most of the participants had worked with microcontrollers, such as the Spresense camera board.

CPES hopes to make the hackathon an annual event for students to continue to learn about the latest technology and utilize it for practical purposes.

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A total of six groups presented their projects to a panel of judges, with team H2Optimize taking home first place.

Darin Grandfield, second from left, with Phillips 66 team members at an isomerization unit at Phillips 66's Lake Charles Refinery. / Courtesy of Phillips 66drew on insights from the Digital Democracy platform.

Darin Grandfield is Building the Future of Energy

Darin Grandfield earned his master's degree in metallurgical engineering at California Polytechnic State University in 2009. Originally, he planned to use his education to work on semiconductors in a laboratory, but an internship at ConocoPhillips convinced him that working in a refinery was vastly more interesting. He is now operations manager at Phillips 66's Humber Refinery in the United Kingdom.

What drew you to the energy industry?

Although much of my family is from the mid-continent, I don't have any family history in energy and am a first-generation refiner. I had a very lucky encounter with a ConocoPhillips recruiter that resulted in an internship opportunity at the San Francisco Refinery, and the rest is history. I will never forget the sense of realization that refining was the place for me as I got to tour the San Francisco Coking Unit for the first time.

I don't think there's another industry out there where a new engineer can get the opportunities we so quickly get at Phillips 66. The sheer scale of investment and resources available to those with ingenuity and creative thinking for solving complex problems continues to impress me daily.

I also greatly appreciate the unique personalities in a refinery and truly believe that the energy industry creates an incredible opportunity for those with significant diversity in educational and family backgrounds. Regardless of their history, anyone with a strong work ethic, respect for others and a problem-solving mind can find success in a refinery, and I think that is quite rare outside of our industry.

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"Regardless of their history, anyone with a strong work ethic, respect for others and a problem-solving mind can find success in a refinery, and I think that is quite rare outside of our industry."

— Darin Grandfield

Awards & Recognition

Vasili Gogonis, Aerospace Engineering

Outstanding Graduates

Congratulations to the seniors and graduate students who were honored for their achievements at the 2025 College of Engineering awards.

Undergraduate Academic Excellence 2025

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2025 College of Engineering Awards

Change the World Challenge

Lea Joan Graham, Natural Resources Management and Environmental Sciences

Grace Kathryn Hurley, Manufacturing Engineering

Zoila Anuri Kanu, Computer Science and Software Engineering

Undergraduate Academic Excellence 2025

Vasili Gogonis, Aerospace Engineering

Connor Bly, Biomedical Engineering

Luke Elliot Johnson, Computer Engineering

Cameron Maloney, Computer Science

Patrick Crandall, Electrical Engineering

Beck Westerlund, Environmental Engineering

Kyle Marshall, General Engineering

Mehek Bhargava, Liberal Arts and Engineering Studies

Colin Hilkemeyer, Materials Engineering

Evan Long, Mechanical Engineering

Ben Lipper, Manufacturing Engineering

Jordan Costa, Software Engineering

Outstanding Graduate Students

Zack Kramer, Engineering Management

Travis Bouch, Aerospace Engineering

Squeaky Buentipo, Biomedical Engineering

Yasmina Yerima, Biomedical Engineering, Regenerative Medicine

Analise Chiu, Civil and Environmental Engineering

Sophie Russ, Computer Science

Jack Cline, Electrical Engineering

Reagan Lawson, Fire Protection Engineering

Tillman Erb, Industrial Engineering

Liam Harrison Drew, Mechanical Engineering

Honors Students

Caitlyn Berryhill, Mechanical Engineering

Maxwell Bosse, Biomedical Engineering

Samuel Kaplan, Computer Science

Olivia Lafferty, Mechanical Engineering

CSU Research Competition

Joanna Chou
Wesley Tam
Chandler Kuhn
Gavin Plume
Jaafar Al Shatari
Josh Gottschalk
Seth Saxena
Giovanni (Luis)

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College of Engineering Senior and Graduate Awards

The following seniors and graduate students were honored with Outstanding Senior Awards for the 2024-25 academic year:

Outstanding Graduate Student Award:

Liam Drew
A standout mechanical engineering student in Cal Poly's blended master's program, Liam Drew has left a lasting i-mpact through research, innovation and outreach. He co-founded the Advanced Functions Material Lab and secured funding to launch new experiments using laser-induced graphene, contributing to multiple American Society of Mechanical Engineers conference papers exploring shape memory polymers and multi-stimuli self-folding. His design for a fog-harvesting "Garden Harp" earned first place in the 2023 Change the World Challenge, showcasing his creative problem-solving and environmental awareness.

Beyond campus, Drew led a transformative educational initiative with the Skip the Grid project, bringing solar-powered workshops and hands-on STEM learning to hundreds of Navajo Nation students. He also helped install solar power in more than 50 homes, directly improving access to renewable energy in underserved communities.

Drew presented his work at national conferences, graded core ME courses for three years and shared Cal Poly's Learn by Doing philosophy with broader audiences. After graduation, he will join Western Analysis Engineering as a forensic engineer and aims to pursue his MBA to launch his own venture.

Driven, inventive and generous with time and talent, Drew exemplifies the spirit of engineering leadership and community impact.

Contributions to the Objectives and Public Image of the College

Nicholas Mackechnie
Nicholas Mackechnie has played a leading role in organizing the American Society of Civil Engineers (ASCE) National Student Championships, one of the largest student-run events in Cal Poly's history.

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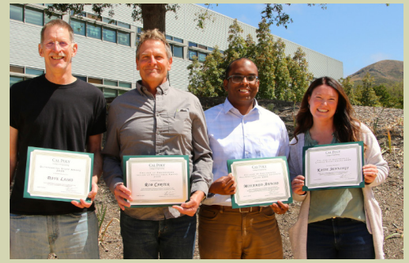

College of Engineering Faculty and Staff Awards

The following faculty and staff were honored on June 10 at the collegewide, end-of-year meeting:

CENG Outstanding Staff Award

Dave Laiho, Biomedical Engineering
Dave Laiho has been the sole electro-mechanical technician in BMED since 2007, shortly after the department was founded, literally building the department into what it is today.

Eighteen years ago, he helped install and calibrate the equipment, and over the years he has maintained that equipment on a daily basis. In addition to the traditional engineering equipment, Laiho has become an expert on the biomedical side of the department, dealing with cells, media, tissues and other biohazards and biologic materials. He is like an engineering tech and a biology tech all rolled into one, routinely working with specialized equipment, from scanning electron microscopes to tissue processors. Laiho also runs all of the department 3D printing capabilities, working with students and student assistants on their solid models, print materials and overall designs.

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Spotlights

CENG Dean Spotlight: Robert Crockett

College of Engineering Interim Dean, Biomedical Engineering Department Professor

We sat down with Interim Dean Robert Crockett to talk about the College of Engineering, his research and more.

What makes Cal Poly's College of Engineering unique?

The obvious answer is the Learn by Doing mindset and the hands-on work. Beyond that, I think we are fortunate that the people who are attracted to the program are a self-selected group. Cal Poly has a great reputation. Students coming in have so many different college options, but they choose Cal Poly because of the hands-on learning experience. Our incoming students already have a mindset of getting things done — they're eager to roll up their sleeves and dive into the work. It's our job to nurture that drive through teaching, clubs, activities and everything else that shapes them into the engineers who graduate from Cal Poly.

What are some of your goals as the interim dean of the College of Engineering?

An interim dean could take on many different roles depending on the situation. Sometimes, it's about polishing things up and preparing for the next dean. Other times, it's about fixing things that are broken. I'm fortunate to be inheriting this role at a time when the college is running as smoothly as I've seen it in my 25 years here.

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CENG Student Spotlight: Corinne Watson

Environmental Engineering, Graduate Student

What was your earliest engineering project?

My earliest engineering project was my 7th-grade science fair. I am originally from Colorado Springs, Colorado. While I was in middle school, several large wildfires affected Colorado Springs and the surrounding areas. When it came time to choose a project for the middle school science fair, I was inspired to dig deeper into the effects of wildfires on mudslides and flooding. For my experiment, I designed a physical model of a mountain slope and tested different tree root depths and spacing to determine their effect on downstream flooding conditions.

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CENG Faculty Spotlight: Ria Kanjilal

Assistant Professor, Computer Engineering

What brought you to Cal Poly College of Engineering?

I was attracted to the institution's dedication to hands-on learning and its strong focus on practical, applied engineering education. The chance to work with enthusiastic students, participate in meaningful research and collaborate with industry partners was particularly appealing. Moreover, the College of Engineering's focus on innovation and sustainability aligned with my aspirations, as I am dedicated to making a meaningful impact in my field.

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CENG Alumni Spotlight: Kelsea Clays

Quality Engineer, Boeing Commercial Airplanes Fabrication Division

Mechanical Engineering, 2024

What made you choose to study engineering at Cal Poly?

The Learn by Doing motto is what brought me to the engineering program. I couldn't pass up the hands-on experience that Cal Poly offers.

What are your hobbies?

I enjoy dancing, climbing, paddle-boarding, thrifting and camping.

How does your Cal Poly education apply to your job and daily life?

Cal Poly brought the best people into my life.

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CENG Alumni Spotlight: Diana Koralski

Founder and CEO, MindSprout

Double Major in Computer Science and Business Administration (Entrepreneurship), 2024

What made you choose to study engineering at Cal Poly?

The competitive computer science program and hands-on philosophy of Learn by Doing drove me to study engineering at Cal Poly.

What are your hobbies?

I enjoy playing tennis, going to the gym, doing yoga, reading and traveling.

How does your Cal Poly education apply to your job and daily life?

Learn by Doing is everywhere.

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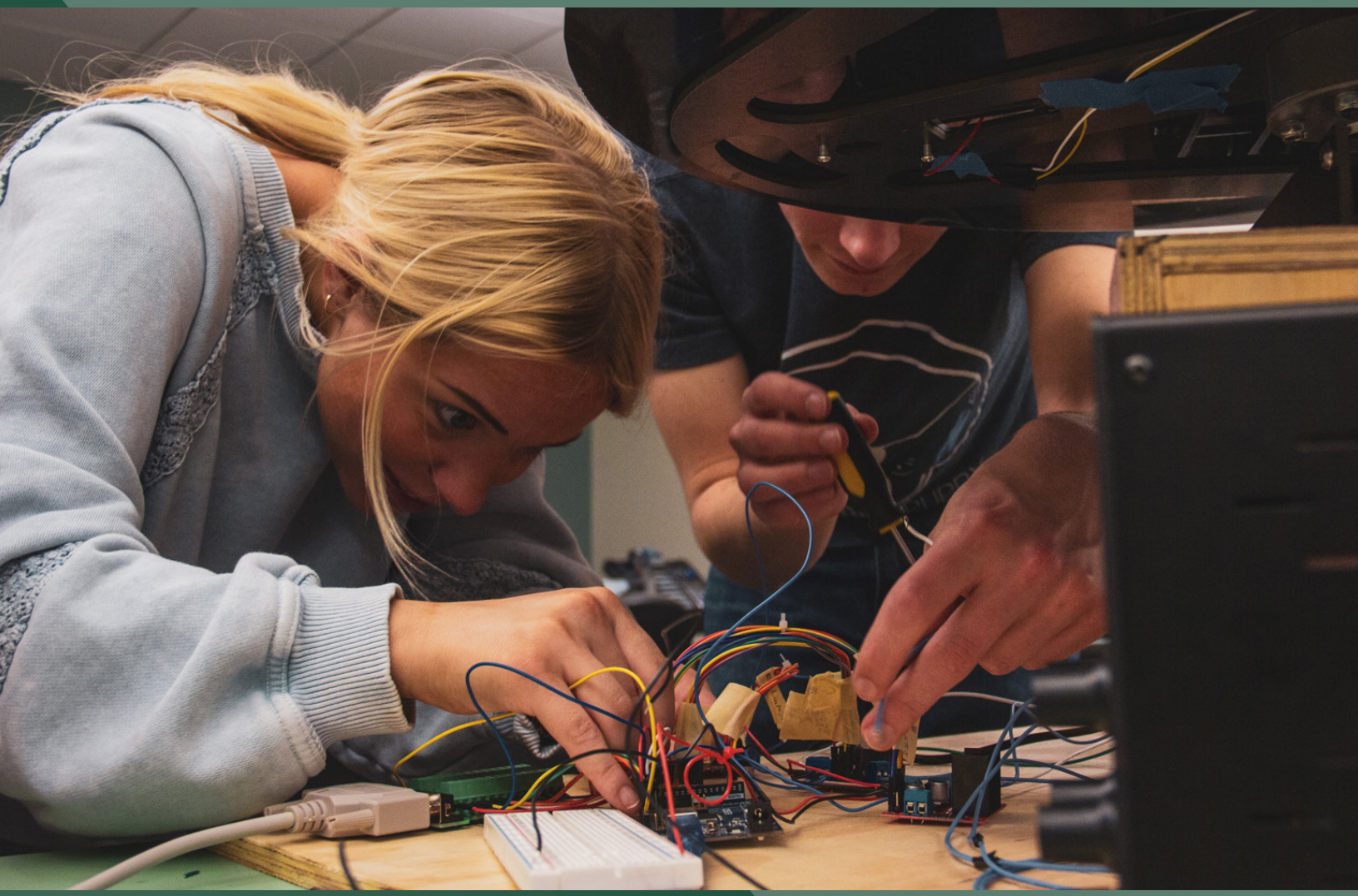

Raegan Fordemwalt, left, helps wire and test the control system for CAPED's "Jukebox Joyride" ride entry. The disco-themed flat ride featured synchronized audio and vehicle movement, requiring complex electronics integration.

LEARN BY DOING

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College of Engineering