Fall 2025

engineering

at San José State

Human Health

Making Medicine Personal

Biosensors Bring Global Health Access

Wrist Exoskeleton Elevates Mobility

The Fall 2025 semester launched with energy, purpose, and a new generation of bold thinkers at the College of Engineering at San José State University. These students aren't just earning degrees—they're preparing to solve the world's toughest challenges.

This year, we shine a spotlight on engineering for human health, a dynamic field merging biomedical, mechanical, electrical, and computer engineering. From wearable health tech and biosensors to AI diagnostics and medical robotics, our students are redefining what's possible in patient care and global wellness.

These students aren't just earning degrees—they're preparing to solve the world's toughest challenges.

Located in the heart of Silicon Valley, SJSU is plugged into one of the most innovative ecosystems in the world. Students engage directly with leading organizations like NASA, Stanford Health Care, and fast-moving biotech and medtech startups, turning bold ideas into real-world solutions.

At the center of our programs is hands-on learning. Whether creating life-saving prosthetics, designing urban air mobility systems, or advancing clean energy tech, our students don't just study engineering—they live it!

With over 1,800 graduates each year, SJSU produces more engineers for Silicon Valley than any other university. But it's not just the numbers—it's the people. Our students are creative, resilient, and purpose-driven. They bring unique perspectives into every lab, classroom, and team project, delivering innovations that put people first.

As technology transform fields from space systems to cybersecurity to healthcare, our programs evolve to meet the moment. We're preparing students to lead, adapt, and build a healthier, more sustainable world.

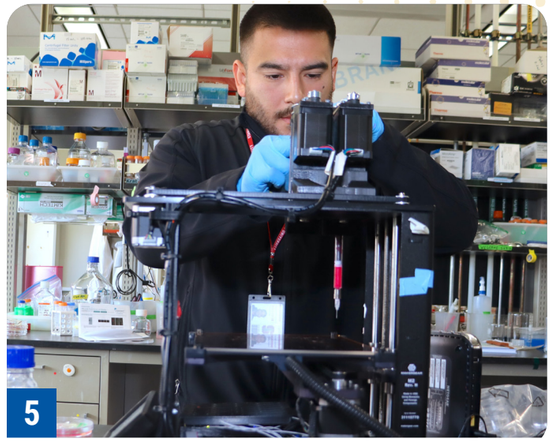
Explore the stories in this magazine. Connect with the people driving change. This isn't just a new academic year—it's the next step in engineering a better future.

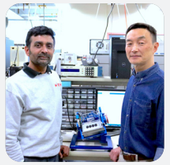
Sincerely,

Dean Sheryl Ehrman
Don Beall Dean,
Charles W. Davidson College of Engineering

#1 SAN JOSÉ STATE UNIVERSITY **MOST TRANSFORMATIVE UNIVERSITY** —*Money* magazine

In This Issue





Congratulations to **Dr. Anand Ramasubramanian** and **Dr. John Lee** on receiving a $432K National Institutes of Health grant to study Chronic Fatigue Syndrome (ME/CFS), a disabling condition with no clear cause or reliable treatment. Their research will focus on how stiff red blood cells may reduce oxygen flow, worsening symptoms like exhaustion and brain fog. Using cutting-edge cell-sorting and machine learning, the team aims to uncover diagnostic markers while giving students valuable hands-on research experience.

Bravo to **Dr. Liat Rosenfeld** and **Dr. Christopher Lew** for receiving a $70K grant from the American Chemical Society. Their research tackles carbon dioxide (CO_2), a major greenhouse gas driving climate change produced mostly from burning fossil fuels. Since fossil fuels remain widely used, better methods to remove CO_2 are essential. Their project uses zeolites—tiny, sponge-like minerals to trap CO_2. By modifying these materials with metals and chemical groups, they aim to boost effectiveness. The team will test the enhanced zeolites under realistic lab conditions. If successful, their work could lead to affordable, room-temperature CO_2 capture—an important step toward slowing global warming.

Kudos to **Dr. Liat Rosenfeld** and **Dr. David Parent** on earning a $700K U.S. Department of Energy grant to launch the SPARTAN SPARK program at San José State University! This initiative will support 25 undergraduate students annually with hands-on research in energy science and engineering. Open to all engineering majors, it prioritizes first-generation, underrepresented, and low-income students. The program includes research training at SJSU, a paid 10-week summer internship at SLAC National Lab, mentorship, skill-building (Python, GitHub, hardware documentation), and professional development. Students receive stipends, laptops, housing, and transportation. They'll present research at a campus symposium and get support to submit to academic conferences—boosting diversity and talent in engineering.

Congratulations to **Dr. Gheorghi Guzun** for receiving $108K in National Science Foundation funding to advance research on more efficient artificial intelligence (AI) systems. This project will develop methods to make AI faster and more energy-efficient by reducing and compressing data without losing accuracy. These tools will help AI run smoothly on smaller devices like wearables and smart sensors, reducing reliance on the cloud. The team will also create software compatible with platforms like PyTorch and TensorFlow, while involving students especially from underrepresented groups in hands-on AI research.

Congratulations to **Dr. Maria Chierichetti** and **Dr. Radha Aravamudhan** on receiving a $150K grant from the Foundation for California Community Colleges. Their project will bring an AI-powered coding tutor to an introductory programming course for first-year engineering students, especially those with limited coding experience. Serving around 150 students, the tutor will provide real-time, personalized feedback on assignments—helping students build confidence and skills while giving instructors insights to tailor teaching. The project also includes faculty workshops and supports broader efforts to close equity gaps in computer science education.

A round of applause to **Dr. Shrikant Jadhav** for securing a $300K grant from Savannah River National Laboratory to tackle one of the planet's most urgent environmental challenges. Alongside master's students **Mrunmayee Dhapre** and **Sai Yaaminie Ganda**, Dr. Jadhav is developing solutions to monitor radioactive pollutants in groundwater using Internet of Things (IoT) technology and AI.

Even after extensive cleanup at contaminated sites, the risk of radioactive pollution returning to groundwater remains a global concern. While labs like Savannah River deploy smart sensors to track water quality, the volume of data makes detecting problems in real-time difficult.

This project uses AI to clean and structure messy sensor data, then applies machine learning to pinpoint contamination faster and more accurately. Early results show a dramatic boost in detection accuracy going from just 50% to far more reliable levels, offering a powerful tool for global environmental monitoring and public health.

Making Medicine Personal

Daniel Ramos and the Future of 3D Bioprinting

FOR DANIEL RAMOS, A RECENT graduate of San José State University and Fall 2025 master's student at Stanford, biomedical engineering isn't just a career path—it's a mission born from personal loss. Daniel's mother battled cancer twice before passing away in 2022, an experience that profoundly shaped his commitment to improving cancer research. "I'm really motivated to test the boundaries of things that haven't been solved yet," he said.

That motivation has led Daniel into the cutting-edge world of 3D bioprinting, an emerging field that could revolutionize organ transplantation, drug development, and cancer treatment. Unlike traditional 3D printing, which creates plastic objects, bioprinting uses bioinks composed of living cells and biomaterials to recreate complex human tissues. These models offer more realistic environments for studying diseases, such as cancer, compared to conventional approaches like cell lines or organoids.

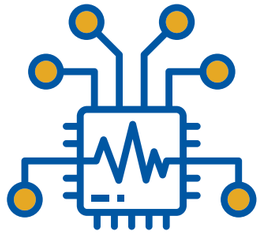
Daniel gained hands-on experience working with a postdoctoral researcher at Stanford University on bioprinted tumor models for ovarian cancer, focusing on how a specific protein may influence chemotherapy resistance. For his senior project at SJSU, he collaborated with Stanford again—on a novel diffusion-based biofabrication technique to create vascular networks, with a long-term goal of modeling the blood-brain barrier. This model could help researchers better predict how patients will respond to treatment, particularly in brain cancer studies.

Looking ahead, Daniel sees artificial intelligence (AI) playing a pivotal role in refining bioprinting technologies. AI can enhance efficiency, optimize parameters, and generate automated medical coding and billing codes to streamline the printing process. While current challenges lie more in the biological complexity than in software limitations, Daniel believes AI will become increasingly essential as the technology evolves.

Although most bioprinting today occurs at the millimeter scale, Daniel envisions a future where full-sized functional human organs can be printed—potentially solving the global organ donor shortage. He emphasizes that real progress will depend on interdisciplinary collaboration across science, engineering, and healthcare. "The collaborative space is really how we're going to be able to push answers to these complex problems," he explained.

As Daniel prepares to pursue a masters degree in bioengineering at Stanford university, he's driven not just by scientific curiosity but by a powerful desire to make medical research more personal, more effective, and more human. His work underscores how innovation, empathy, and resilience can come together to shape the future of medicine.

Biosensors for Early Diagnosis



Revolutionizing Global Health Diagnostics for Underserved Communities

THE RAPID ADVANCEMENT OF BIOSENSORS IS TRANSFORMING HEALTHCARE — especially for underrepresented communities and people living in developing nations. These cutting-edge tools combine biological and electronic technologies to detect diseases like salmonellosis, diabetes, and cancer through simple, non-invasive samples such as blood or saliva. With the potential to deliver fast, affordable, and accurate diagnoses, biosensors are reshaping the landscape of global public health.

What Are Biosensors and Why Do They Matter?

Biosensors are diagnostic devices that combine biological elements—such as enzymes, antibodies, or DNA—with electronic components that interpret and measure biological responses. For example, when a biosensor detects a disease-specific protein or DNA sequence in a sample, it translates that interaction into an electrical signal. This real-time feedback enables fast and highly specific detection of pathogens or biomarkers associated with various diseases.

Unlike traditional diagnostic methods that often require expensive lab equipment and specialized technicians, biosensors can be compact, portable, and user-friendly. Many are designed for point-of-care testing, meaning they can be used on-site without the need to send samples to a central lab. These characteristics make biosensors particularly valuable in low-resource or remote settings, where access to healthcare is limited.

Rapid Detection of Diseases

Salmonella Detection: A leading cause of foodborne illness worldwide, Salmonella is typically detected using slow, lab-based tests. Biosensors now enable rapid identification of Salmonella proteins or genetic material in food samples—cutting down response times and helping prevent widespread outbreaks.

Diabetes Screening: In underserved populations, diabetes often goes undiagnosed due to limited access to medical facilities or prohibitive costs. Biosensors that monitor glucose levels or detect diabetes-related biomarkers in saliva or blood offer a non-invasive, cost-effective solution for early detection and ongoing disease management.

Cancer Diagnostics: Early detection is critical in improving cancer survival rates, but existing methods like biopsies and imaging are often invasive, expensive, and inaccessible in low-resource areas. Biosensors are now being developed to detect cancer biomarkers—such as circulating tumor DNA (ctDNA) and specific proteins—in bodily fluids. These non-invasive tests can potentially detect illnesses like breast, prostate, oral, and lung cancer in their early stages.

Biosensors don't just detect disease, but create pathways to accessible and timely care.

Empowering Underserved Communities

The true promise of biosensors lies in their ability to **bridge the healthcare divide**—bringing advanced diagnostics to communities that have historically been left behind.

Accessibility and Affordability
Traditional diagnostic equipment is costly and often centralized in urban hospitals. In contrast, biosensors are relatively inexpensive, portable, and easy to use. They can be deployed in rural clinics, mobile health units, or even homes—dramatically increasing access to vital diagnostic services for marginalized populations.

Non-Invasive, Patient-Friendly Testing
Many biosensors use saliva or a single drop of blood for analysis, eliminating the need for invasive procedures or uncomfortable tests. This makes them more acceptable for widespread use, especially in communities where medical mistrust or fear of invasive treatment can deter people from seeking care.

Early Detection and Preventive Care
In many developing countries, people only visit healthcare providers when symptoms become severe—often too late for effective treatment. Biosensors enable quick, routine screening that can catch illnesses in their early stages. Early detection allows for more timely and effective interventions, potentially reducing disease severity and healthcare costs.

Portable and Mobile Health Solutions
When integrated with mobile technology, biosensors become part of powerful diagnostic platforms that can be used anywhere. Community health workers, equipped with smartphone-connected biosensors, can perform diagnostics in remote areas without electricity or infrastructure—reaching patients who would otherwise go untested.

Real-Time Public Health Monitoring
Beyond individual diagnostics, biosensors offer public health officials real-time data on disease prevalence and outbreaks. In areas with limited health surveillance systems, this capability can be a game-changer—supporting faster, better-informed responses to emerging threats and improving resource allocation.

Toward a More Equitable Healthcare Future

The global healthcare landscape is undergoing a transformation—and biosensors are at the heart of it. These compact yet powerful tools are dismantling traditional barriers to healthcare by offering **speed, affordability, portability, and accuracy**. For underrepresented groups and communities in developing nations, this means a chance at earlier diagnoses, better health outcomes, and a higher quality of life.

"When we can place reliable diagnostics in the hands of community health workers, even in the most remote settings—we empower entire populations to take charge of their health," said Yun Wang, assistant professor, Biomedical Engineering at SJSU. "Biosensors don't just detect disease but create pathways to accessible and timely care."

As biosensor technology continues to evolve, so too does its potential to reshape healthcare delivery across the globe. By investing in scalable, inclusive diagnostic innovations, we move closer to a world where **everyone**—regardless of geography or income—has access to life-saving tools and early interventions.

Biosensors are not just a leap forward in technology—they are a leap forward in health equity. For the Biomedical MS students helping with this research it is a way to gain high-quality lab skills and hands-on research experience before entering the workforce.

From left to right: Biomedical MS Student Aparna Bhandaru, Dr. Yun Wang, Biomedical MS Student Aimee Ramos, and Biomedical MS Student Briseyda Duran Orozco

Broadening Horizons

Career Confidence in Tech and Healthcare

IN THE SUMMER OF 2024, HIMGAURI PRADEEP Khaladar, a master's student in engineering management, secured a transformative internship as a Product Manager at **Affinity Solutions**, a company that partners with major financial institutions like Visa and Mastercard to analyze consumer purchasing behavior. By translating this data into strategic insights, Affinity helps power marketing campaigns for brands like Netflix, Walmart, and Disney. Although this role wasn't directly tied to healthcare—Himgauri's original field of interest—it marked a pivotal point in her career journey.

As her internship came to a close, Himgauri began exploring job opportunities that would carry her through the academic year. With guidance from a trusted mentor, she broadened her horizons and considered roles outside of the tech startup space. That shift led her to companies like **IBM** and **Cognizant**, where she uncovered unexpected and meaningful intersections between technology and healthcare.

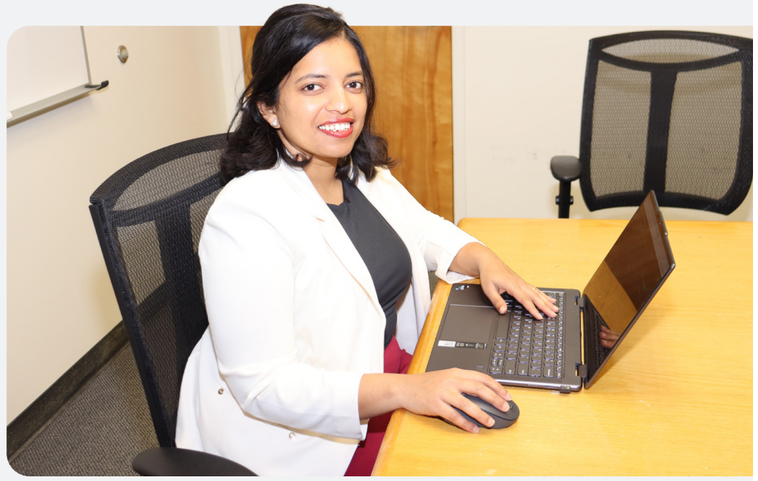
At Cognizant, Himgauri contributed to automating insurance claims processing workflows for clients such as Anthem and MetLife. Her work aimed to improve accuracy, streamline operations, and reduce processing delays—all critical to ensuring patients receive timely benefits and care. This role gave her firsthand insight into the operational side of healthcare, blending her interest in the field with real-world technical application.

Later, at IBM, she further deepened her impact by developing **Java-based APIs** that automated access to legacy claims systems. These tools drastically reduced manual workloads and turnaround times, ensuring healthcare claims were processed more efficiently. For the first time, she could clearly see how backend code translated into real improvements in people's lives—faster reimbursements, smoother insurance interactions, and ultimately, better access to care.

Still, the path wasn't always linear. Finding a new role in a healthcare-specific organization proved difficult. But rather than getting discouraged, Himgauri embraced flexibility. With renewed confidence and the support of her mentor, she realized her skills—data analytics, operations, product management—were not just valuable in healthcare, but in virtually **any industry.**

Today, she's open to roles across healthcare, tech, finance, or operations. Her journey underscores an important lesson: **don't limit yourself to one path**. The skills you build now—whether it's coding, problem solving, managing teams, or analyzing data—can unlock doors you never expected.

***Himgauri's advice** to other students is to stay open-minded. Your major doesn't have to define your future, and your first internship doesn't have to be your last in that field. Be curious. Seek out mentors. Follow what excites you, but also challenge yourself to try something new. You never know where your next opportunity might lead—or how far your skills can take you.*



Engineering the Future of Public Health

A Journey Through Robotics, Mixed Reality, and Multidisciplinary Innovation

FROM TEXAS TO CALIFORNIA, DR. LIN JIANG'S journey as an engineer has been guided by one mission: designing technologies that elevate public health. Her work spans robotics, biomechanics, AI, and human-robot interaction, all aimed at enhancing—not replacing—human care in medical and public environments.

One of Jiang's most ambitious projects, Industry 5.0, funded by the National Science Foundation, integrates mixed reality, robotics, and AI to transform patient care. Emergency rooms, for example, can be stressful and confusing. Jiang's system combines smart sensors, mobile robots, and AI-driven decision tools to make triage more transparent. Patients receive real-time updates and explanations about wait times and care priorities, easing confusion and anxiety.

"Patients often don't know why someone else is being seen first," says Jiang. "Our system explains triage decisions in real time, building trust and reducing frustration."

Picture walking into an ER and being greeted by a social robot that tells you your place in line and what to expect. For less urgent cases, virtual providers—possibly located miles away—can offer immediate guidance or even prescribe medication. An AI system coordinates everything behind the scenes, freeing physicians to focus on patients with critical needs without neglecting others.

What makes this project stand out is its comprehensive approach. Jiang's team is building a fully simulated ER environment, complete with rooms for video consults, medication pickup, and check-ins. They're also developing interactive tools like haptic feedback and voice-based AI through service robots, designed with psychological and usability factors in mind.

These technologies aren't limited to hospitals. Similar systems could be used in libraries, malls, disaster zones, or college campuses—any space where real-time collaboration between people and machines can improve safety and service. The project reflects the core values of

Industry 5.0, which emphasizes ethical, human-centric innovation.

"Technology should never replace empathy," Jiang says. "We want intelligent tools that understand and respond to people—not just complete tasks."

Education is a key component of this vision. Many engineering students have strong technical skills but lack training in usability, design, or human-centered thinking. Jiang's team is working to close that gap by preparing students to build responsive, ethical technologies that solve real-world problems.

Ultimately, Jiang's work isn't about developing flashy robots or futuristic gadgets. It's about building systems that adapt to human needs, improve care, and ensure equitable access to essential services—whether in an ER or a public square. Through a multidisciplinary approach that blends engineering with psychology and ethics, Jiang is helping design a future where technology amplifies empathy and supports better outcomes for all.

SJSU Engineering Team Develops Wrist Exoskeleton

Affordable Three-Degree Wrist Exoskeleton for Enhanced Rehab and Global Impact

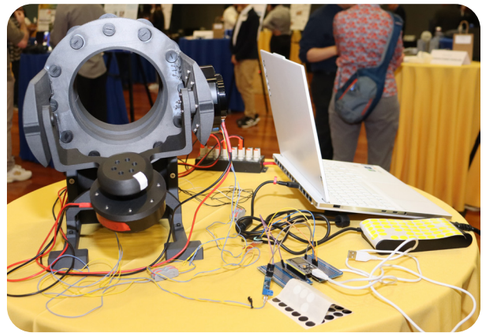
AT THE HEART OF SAN JOSÉ STATE UNIVERSITY'S engineering labs, a student-faculty team is reimagining physical rehabilitation with a new device that could transform wrist therapy for patients across the globe.

Led by Dr. Mojtaba Sharifi, assistant professor in the Department of Mechanical Engineering, the team has developed a wrist exoskeleton capable of supporting three degrees of motion — flexion/extension, radial/ulnar deviation, and pronation/supination. This design fills a long-standing gap in rehabilitation tools, which typically only support two of these movements, often leaving out the rotational motion of the wrist — a critical component of daily motor function.

"Traditional therapy tools focus on just two movements — pronation/supination and flexion/extension," Sharifi explained. "We wanted to enable the full range, but in a way that's safe, affordable, and accessible to more people."

In current physical therapy practices, especially for patients recovering from strokes, spinal cord injuries, or nerve damage, treatment for the wrist often falls short. While therapists have tools for basic movements, many lack equipment that safely and effectively supports the wrist's ability to rotate, which is essential for actions such as turning a key, twisting a doorknob, or lifting a cup.

To remedy this gap, the team set out to develop a motorized exoskeleton that could safely replicate all three key wrist motions. This kind of complexity is rarely addressed in commercial therapy tools, largely because of the biomechanical challenges of rotating the forearm's radius and ulna without causing harm.



Research and Innovation: Engineering Safe, Functional Motion

Through careful simulation and iterative testing, the students created a stationary exoskeleton using three high-torque brushless motors. The mechanical structure incorporated custom 3D-printed parts and a clever peg-and-roller system, which eliminated the need for expensive bearings — helping bring down production costs without sacrificing precision.

"We were aware of the risks with pronation/supination," said project lead and SJSU Engineering's Graduate of the Year Award recipient, Sanad Shabbar, "but we believed we could engineer a safe and precise mechanism. We added code-based motion limits and built simulations to avoid over-rotation and protect the joints and ligaments."

In the process, the team realized that the high cost of traditional rehabilitation devices — sometimes upward of $20,000 — puts them out of reach for most hospitals and patients in low-resource settings. That insight inspired the group to prioritize affordability, bringing the projected cost of their prototype down to around $1,700.

"We used smart 3D printing, modular electronics, and simplified mechanical components to keep costs low," said design lead Michael Iwamiya. "Affordability was just as important as functionality."

What began as a senior project quickly became personal. Several team members shared stories about loved ones who suffered from limited mobility due to illness or injury — including one whose mother contracted polio in Jordan after receiving an unsafe vaccine.

These personal experiences fueled the team's mission to develop technology that heals, regardless of geography, background, or income level.

"This is more than just a senior design project," said team member Wil Valencia. "It's about using what we've learned to build something that could make a real impact on someone's quality of life."

Looking forward, the team envisions extending the exoskeleton's use beyond therapy clinics. Potential applications include surgical training, where mimicking precise wrist movements is critical, and wearable rehabilitation, which would allow patients to continue therapy at home or even at work. One future upgrade could use sensors to map a therapist's wrist movements in real time — allowing the device to mirror those motions and guide a patient remotely.

Innovation with Global Reach

The SJSU team hopes their design will lead to wider access to quality rehabilitation, especially in parts of the world where medical equipment is scarce. With open-source possibilities and low production costs, they believe the wrist exoskeleton could help millions of people regain strength, mobility, and independence.

"In some countries, people don't have any tools for this kind of rehabilitation," said Sharifi. "This device could offer them a chance to recover basic motion — and with it, independence."

Acknowledging a Mentor

The students credited much of their progress to Dr. Burford Furman, a veteran faculty member in the Mechanical Engineering department, whose guidance helped steer the technical and conceptual development of the project.

Professor Furman has taught at SJSU since 1994. Before joining academia, he worked in disk drive development at IBM from 1982 to 1993 and has been a licensed professional mechanical engineer in California since 1984. His teaching and research interests include mechatronics, machine design, precision systems, and Automated Transit Networks (ATN).

"His mentorship and technical insights helped shape our design process from concept to execution," the team said. "We're incredibly grateful."

Alec Karaguezian, Ron Raymundo, Merlin Perez Lopez, Will Valencia, Michael Iwamiya, Sanad A. Shabbar, Dr. Mojtaba Sharifi

*The **2025 CoE Showcase** highlighted projects transforming industries, drawing faculty, staff, alumni, and supporters to witness students' creativity in action.*

Walking Toward Independence

Students are developing robotic exoskeletons and mobility aids that use sensors and AI to help individuals regain movement and balance, offering new hope for stroke survivors and others with mobility challenges.

Helping the Visually Impaired Navigate

AI-powered smart canes and wearable devices with ultrasonic sensors help visually impaired users safely navigate physical spaces, improving their independence and confidence.

Stretching the Genome

In bioengineering, students are advancing genome stretching techniques using microfluidics and nano-tools to improve genome sequencing and diagnostics, pushing the boundaries of personalized medicine.

Concrete Canoes Make a Splash

SJSU's civil engineering team returned to the international concrete canoe competition, designing canoes made of concrete that actually float. They improved from 7th place in 2024 to 3rd place in 2025; next year they are aiming for 1st place.

Innovative Bridge Building

Bridge-building contests challenge students to create lightweight, strong structures, balancing material use with load capacity through creative engineering.

Electric Race Cars on the Rise

Automotive engineering students design electric race cars that combine mechanical, electrical, and software engineering, competing in events like Formula SAE Electric.

Driving Diversity in STEM

Women in STEM are reshaping the college culture. Supported by student groups and national programs, they are building a more inclusive, diverse, and dynamic environment.

From robotics to bioengineering and sustainable design, SJSU's engineering students are turning ideas into reality. Their passion and collaboration are driving innovation that will shape the future.

Student Club Fair Fall 2025

The Fall 2025 SJSU Engineering Club Fair will be held on **Tuesday, September 13, 2025**. It's a vibrant event showcasing various engineering clubs at San José State University. Students have the opportunity to explore a wide range of engineering disciplines, from aviation to environmental engineering. Club members will present their projects, share their passion for engineering, and recruit new members. It is an excellent networking and community involvement opportunity for students interested in engineering, and provides a glimpse into the diverse and innovative engineering community at SJSU.

Conference on Engineering Diversity

The CED event is a MESA event that will be held on **Saturday, October 5, 2025 from 8:30 am to 5:30 pm** in the SJSU Student Union ballroom. The purpose of the conference is to empower and inspire individuals from all backgrounds through professional development, community building, and meaningful conversations centered on diversity in STEM.

CED offers a vibrant space for participants to grow personally and professionally through engaging workshops, networking opportunities, and direct connections with leading companies and innovators in the field. It's not just about learning — it's about building lasting relationships, celebrating diverse voices, and preparing the next generation of engineers and scientists to thrive in Silicon Valley and beyond.

Through intentional dialogue and collaboration, CED highlights the unique roles each stakeholder plays in advancing equity and inclusion, encouraging everyone to be an active contributor to a more diverse, innovative, and representative STEM community.

Scholarship Lunch

Once every academic year, scholarship recipients have an opportunity to thank the individual and corporate donors that make student financial support possible. On **Tuesday, November 4, 2025** at a lunch event, students will be able to meet those responsible for their scholarships face-to-face. Many of the donors are College of Engineering (CoE) alumni who have reached a certain level of success. Others, including generous corporate donors, want to see students reach their full potential.

SierraThon

Sierrathon isn't your typical design competition—it's a high-octane, one-day engineering showdown where students race against the clock to solve real-world Printed Circuit Board (PCB) challenges. Teams hustle through rapid-fire prototyping rounds, earning points for precision, creativity, and speed. Only one team will rise to claim the title of Sierrathon Champion! The event will be held on **November 22, 2025 from 9am to 5pm** at San Jose State University, College of Engineering in room 285. Awards will be presented at the conclusion of the event.

Alumni Notes

From Community College to Mayor, Alumnus Robin D. López's Journey of Purpose and Advocacy

Robin D. López, the current Mayor of Albany, California, is also a PhD candidate at UC Berkeley. His path into public service and academia didn't follow a straight line—it was shaped by personal loss, resilience, and a deep commitment to environmental and social justice.

Photo courtesy of DennyK Photography

Raised in Richmond, California, Robin grew up acutely aware of how policy impacts lives. Though he didn't initially aspire to politics, the seeds of advocacy were planted early.

"Our lives were politicized from birth," he reflects, citing the nuances of environmental inequities surrounding his community. His academic journey began at community college after a turning point at age 21, following the tragic loss of a close friend. Motivated to change his path, Robin transferred to San Francisco State University to study civil engineering and later earned a master's degree in water resources at San José State University. It was there that his passion for infrastructure, equity, and water justice fully emerged.

Courses like Water Policy in the West opened his eyes to how engineering decisions shape communities. His leadership grew through student activism and his role in organizing the 2017 March for Science in San Francisco. Eventually, his advocacy turned local when he moved to Albany and, on a whim, decided to run for city council in 2022. To his surprise, voters took him seriously.

"I messed around and found out," he laughs. But behind the humor is a powerful truth: Robin's lived experience, technical expertise, and empathy make him an effective community leader.

Robin's story is a reminder that there's no single path to leadership—and that passion, persistence, and purpose can drive real change.

Dana Ditmore

College of Engineering Advisory Council

Dana was a longtime member of our Engineering Advisory Council (formerly the Engineering Industry Advisory Council) and a member of SJSU's Tower Board. Originally from Bakersfield, CA, he studied mechanical engineering at UC Berkeley and went on to a long, distinguished career in Silicon Valley, with his last two executive roles at Lam and Applied Materials.

As he would say, he 'failed retirement'—spending much of it in service on nonprofit boards for causes he believed in and working with universities. Deeply involved in the Morgan Hill community, one of his recent efforts was restarting the Silicon Valley Tech Academy summer program, offering hands-on STEM experiences to middle and early high school students—a program originally created by Dean Emeritus Jay Pinson.

Dana also coached executives from nearby universities to think more like Spartans. He and his family donated funds to endow a scholarship for SJSU engineering students from any discipline. He truly understood how special our students are.

Charles A. Cheshire

'70 BS Electrical Engineering

Chuck served as Military Police in the U.S. Air Force before earning a degree from SJSU. He had a long tech career at companies like HP, Dell and Lockheed Martin until age 76.

Larry Anthony Laster

'63 BS Business and Industrial Management

Larry enjoyed a 31-year career with American Airlines and 45 joyful years with his wife Linda, filled with travel, golf, and family.

Theodore Donald Geiszler

'58 BS Electrical Engineering

Ted served in the Korean War, founded five electronic security companies, a New Zealand fishing boat line and co-founded Midtown Family Services.

James W. Boring

'56 General Engineering

James served in the U.S. Navy, flying missions during the Korean War. As a civil engineer, he worked for the city of San José and Nevada County. He and his wife also restored multiple historic homes.

Robert Charles Franklin

'65 BS Electrical Engineering

Bob served as a U.S. Air Force radar tech in 1950s Germany and earned 22 patents during his engineering career at Lockheed, Eitel McCullough, and Beckman Instruments.

Don Cain

'56 BS Electrical Engineering

Don served in the U.S. Navy and Army and had a long IBM career. He and his wife Barbara, loved family, technology, and church volunteering.

James C. Gilmore

'59 BS Engineering

Jim graduated from Santa Clara High and SJSU, worked 36 years at IBM and earned multiple awards. Jim was a gourmet cook, loved art and was a devoted family man.

Rodger Bernard O'Brien

'66 BS Civil Engineering

Rodger served in the U.S. Coast Guard, co-founded O'Brien Contractors, and retired early to focus on family. He generously supported his church and its school for his children, and grandchildren.

Carl Donald Gronlund

'65 MS Electrical Engineering

Carl served as a U.S. Air Force 1st Lieutenant before a 30-year Silicon Valley engineering career.

Charles Bruce Wilson

'68 MS Civil Engineering

Charles served in the U.S. Army's Chemical Corps in Germany, then spent 32 years as a Supervising Civil Engineer at Santa Clara Valley Water District..

Phillip William Sanfilippo

'64 BS Civil Engineering

Phil served in the U.S. Coast Guard. retired as Assistant Director of Public Works for Santa Cruz County, loved camping and 49ers football.

Roberto O'Reilly

BS Electrical Engineering

Roberto began his career at Kaiser Aerospace, and later studied economics at SF State and UC San Diego, where he co-founded Groundwork Books, a student cooperative.

SJSU SAN JOSÉ STATE UNIVERSITY
CHARLES W. DAVIDSON COLLEGE OF ENGINEERING
ONE WASHINGTON SQUARE
SAN JOSÉ, CA 95192-0080

#4 PUBLIC SCHOOL IN THE NATION

—Wall Street Journal/College Pulse

HAPPENING THIS SUMMER...

#1 SAN JOSÉ STATE UNIVERSITY **MOST TRANSFORMATIVE UNIVERSITY** —*Money* magazine

Flight competition
Precision Flight Team will compete in the SAFECON National competition May 2026 in Oshkosh, WI

Spartan racing
Electric Vehicle Competition
Summer 2026
Brooklyn, MI