CALIFORNIA STATE UNIVERSITY
BAKERSFIELD
College of Natural Sciences, Mathematics and Engineering

CSU BAKERSFIELD

NSME IMPACT

FALL 2025

Contents

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A MESSAGE FROM THE DEAN

Greetings, NSME Community, Partners, and Friends.

It is with immense pride and joy that I welcome you to this edition of NSME Impact, with a collection of amazing stories to show how the work of our faculty, staff, students and alumni have impacted our local region. In the last academic year, 383 NSME graduates proudly crossed the commencement stage. Already, many have joined the workforce in our local industries, hospitals, schools and organizations, while others are pursuing advanced degrees to deepen their impact. We look forward to seeing the impact of our graduates and telling their stories in the future editions of NSME Impact.

As we move on to the 2025-2026 academic year, we excitedly celebrate the growth of NSME:

- The Doctor of Nursing Practice (DNP) program has officially launched and welcomes its first cohort in Fall 2025. With the opening of our new Graduate Simulation Lab, the DNP program prepares nurse leaders to transform health care in our communities. This would not have been possible without the generosity of Dr. Uma R.Varanasi and family, whose vision helped establish the lab, and the partnership of Kern Health Systems, who share our mission of advancing community well-being.
- At our Antelope Valley campus, the 2+2 degree completion program in Computer Science begins this upcoming semester, expanding opportunities for students to join the growing technology workforce.
- The design of the Energy Innovation Building has been approved by the CSU Board of Trustees, and we anticipate breaking ground this fall. This facility will symbolize our commitment to innovative energy solutions for a sustainable future.
- Thanks to the support of Chevron, our Outdoor Makerspace is now open—broadening access to STEM education and empowering students, faculty and community members to transform ideas into real-world creations.
- Our “Classroom to Career” initiative continues to connect students with experiential learning, internships, and professional practice opportunities in partnership with regional industries.

Deeply rooted in the region, NSME is very grateful for the strong support from our industry partners and local communities. Our success is the result of the collaboration, dedication and shared vision of all of our valued stakeholders — faculty, staff, students, alumni, industry and community partners. Together, we will cultivate the talents that empower our region’s economy and enhance the well-being of those who live and work here. As you turn these pages, I hope you feel the same sense of inspiration that fills our College each day.

NSME — the future starts here.

Dr. Jianyu (Jane) Dong
Dean of the College of Natural Sciences, Mathematics and Engineering

The ebbs and flows of researching the Kern River

CSUB biologist Dr. Rae McNeish studies an ever-changing subject

The first time that freshwater ecologist Dr. Rae McNeish saw the Kern River, she didn't think there was much particularly noteworthy about it. It was the fall of 2017, and she was in the area for her on-campus interview before joining the biology faculty at California State University, Bakersfield.

Still, with her research focusing on rivers and lakes, she was naturally intrigued by the Kern River and interested in the research possibilities it could offer. She'd be coming to Bakersfield from the Northeast, where she previously studied rivers around Lake Michigan, and would need to find a way to continue her work in the Central Valley.

The unusually high water levels of the Kern River during that first visit might have left Dr. McNeish thinking it was just like any other river, but she would soon discover that was not the case. As she returned to various sites along the 164-mile river during her first couple of years at CSUB, she was struck by how different it looked every single time.

"That was really the first time that I became aware of how dynamic the water flow was in the river," Dr. McNeish said of one early visit. "I was like, 'Whoa, the Kern River looks not like a river right now. What's happening? Sometimes it does and sometimes it doesn't.'"

The mystery of the Kern River is something Dr. McNeish has spent the last several years slowly uncovering, learning about the geology of the river, the politics that surround its water flow, the trash that litters it and the creatures that make it their home. Along the way, she's put her lab on the map as a leader in Kern River research.

Dr. McNeish's work has already earned the respect of journalist Lois Henry, who covers water issues in the San Joaquin Valley for her independent, nonprofit news organization, SJV Water. Studying the Kern River in whatever wet or dry state it's in is something she hasn't seen anyone else tackle.

"I don't think anyone has done that kind of exacting research on the river so far," Henry said. "It's not political or being done under any agenda. She's just gathering and analyzing the facts as nature presents them. I think that's highly valuable to the future of Kern River management."

As dynamic as the Kern River is, so too has been the process of studying it.

A crash course in the Kern River

Before coming to CSUB, Dr. McNeish studied how humans impact rivers and streams and how changes in the terrestrial environment impact the health and functions of freshwater systems. The volume of trash in the Kern River she noticed from the start would give her plenty to work with to continue that line of research, but she also wanted to learn more about the Kern River overall.

Connecting with Dr. Bob Crewdson — a colleague in the Geology Department in CSUB's College of Natural Sciences, Mathematics and Engineering — Dr. McNeish got a crash course on the Kern River's flow. Scouting out field sites suggested by Dr. Crewdson in October 2019, Dr. McNeish was shocked by what she saw.

"There was no flowing water," she said. "I had never in my life hiked a river that was dry. Usually, the rivers I sampled had a variety of different bottom substrate … there are stones and boulders and sediment and silt. But this (the Kern River) was like walking on a sandy beach."

The site, right under Mohawk Bridge, was perfect for Dr. McNeish's litter study, which she was working on with a graduate student named Amy Fetters. They just needed some water flowing, which they got not long after, when Dr. McNeish assumes there must have been a dam release approved by the Kern River watermaster, which manages water resources in accordance with water rights.

Dr. Rae McNeish

"It was just wild how over the span of a couple of weeks, you went from a very dry riverbed to meaningful, flowing water at Mohawk Bridge," she said.

Unfortunately, work on the trash study had to be paused during the COVID-19 pandemic. Because of the danger posed by field work near the river, Dr. McNeish always requires her students to work in teams, and social distancing made that impossible.

When it was safe to do so again, Dr. McNeish and the students in her lab resumed their work. Keeping an eye on water levels at her sites, Dr. McNeish sometimes takes students in her classes to the river too.

"My students often have this misconception that it is normal for the river to be dry," she said. "From my understanding, the river is historically a perennial river, which means it's supposed to have water flowing in it year-round, barring extreme drought conditions."

California's Central Valley has historically been a very water-rich area. By the 1860s and '70s, settlers were draining ephemeral swamps and damming and diverting water off the river to farm.

This time period kicks off some of the first water rights conflicts, with the decision from an 1888 lawsuit between settlers Henry Miller and James Ben Ali Haggin still in place today. Lois Henry explained that water ownership is shared mostly between a combination of five local agricultural water districts, which gets about 80 percent of the river. The City of Bakersfield receives the remaining 20 percent and also controls the riverbed, banks and most of its infrastructure from about Hart Park to Enos Lane

Water levels in the river at any given time are affected not only by drought conditions, but also by who gets the water when, where it goes and how it's used. It's a complicated topic Henry has spent years covering for SJV Water and The Bakersfield Californian, including the ongoing fight between managing agencies and groups like Bring Back the Kern, the Sierra Club, the Center for Biological Diversity and Water Audit California.

For her part, Dr. McNeish strives to remain neutral.

"I'm willing to cooperate and make my data publicly available," she said. "I'm trying to maintain my scientific independence, but, of course, as scientists, if there are cries for concerns in the environment, we should also be focusing our time and energy on that."

Surveying the river

Working at sites along the Kern River like the Mohawk Bridge, Park at River Walk, Hart Park and the Audubon Bakersfield Environmental Studies Area (BESA) just north of the CSUB campus, Dr. McNeish and her students are now surveying the water quality and wildlife present along the river.

The team will take water samples — when there is water to sample, that is — to measure nitrogen and phosphorus. They observe whether birds are nearby and what kind. Naturally, there are more birds present when water is flowing. They also monitor fish and aquatic macroinvertebrates, like insects, worms, clams, snails and crayfish.

"Macroinvertebrates are a very powerful group of organisms to measure in freshwater systems because they are honest signals of the health and ecological function of your freshwater streams and rivers," Dr. McNeish explained.

"Some are very sensitive to pollution and some are resistant," she continued. "If your macroinvertebrate community is dominated by sensitive taxa species, this might be pretty good water quality. But if your community is dominated by pollution tolerant ones and there are no sensitive taxa, then this is a warning."

That warning could portend nutrient pollution, thermal temperature pollution, excess sedimentation or chemical pollution.

Using tools like a multi-parameter sensor probe, the McNeish team can measure pH levels, salinity, oxygen, conductivity and temperature of the water.

Photo courtesy of SJV Water

Fish species that the team has seen include crappies, bass and sunfish. They've even spotted rainbow trout, which is surprising, given that species typically resides in colder waters; the warmer water of the Kern would be "like sitting in a hot tub," Dr. McNeish noted.

"At the BESA, we found some unbelievably deep parts of the river, and the deeper the water is, the cooler the water will be too," she explained. "There's a giant willow overarching into the stream above a deep pool that creates a lot of shade."

Dr. McNeish noted that there is some mystery as to the origins of the rainbow trout, which have also been spotted by fisherfolk she has talked to in the field. It's possible the energetic current of the river carried them south from cooler spots upstream, or they could have been planted by the California Department of Fish and Wildlife.

Another way her team can assess what fish are in the Kern River is through environmental DNA, or eDNA, sampling. Collecting water from the river, filtering it and then concentrating and sequencing the DNA gives an idea of the fish present in the water. Because it picks up more dominant DNA and misses fainter traces, the testing isn't perfect, but it does provide an interesting look into the fish population.

"The eDNA fish taxa list aligned beautifully with our field observations," said Dr. McNeish, adding that the results revealed some fish her team hadn't yet seen, like threadfin shad, and confirmed others they couldn't quite identify confidently, like sculpin.

Surveying fish took a dramatic turn last August, when water was cut off to the Kern River, diverted for riverbed work and agriculture. The major dewatering event led to a mass fish die-off, sparking some urgent discussions on water management and, for Dr. McNeish's team, a new line of research as their live fish survey became a dead fish survey. For more on this, see When the water disappeared sidebar.

Research as dynamic as the river

As Dr. McNeish has discovered, the Kern River does indeed offer many possibilities for research, much more than she could ever

When the water disappeared

With the Kern River always changing, the McNeish lab team has had to be flexible. Last August, their plans for a live fish transect survey turned into a dead fish transect survey over the course of a week when flows in the river were cut off.

One day, as the water seemed to be getting lower at some of her research sites, Dr. McNeish found the water at their Bellevue Weir site to be just a minimal flow, with fish crowding in refugia pools — small deeper pockets of the riverbed where water might remain as the river goes dry.

Days later, on Aug. 30, she brought local water journalist Lois Henry along for a story for her organization, SJV Water. They couldn't have picked a more dramatic day for her to join them, as they were greeted by hundreds of dead fish, most of them still glistening.

"It was as if you just snapped your fingers and the water was gone," said Dr. McNeish.

At the time, water was still flowing through the BESA, even waist-high at some parts, so when Dr. McNeish heard that the water there was gone too, she couldn't believe it.

"It was just disappointing, shocking and amazing how it turned from a flowing river into freshwater flats, and so many fish were dead and piled up already," Dr. McNeish said. "I was like, 'Oh no! We've got to do a dead fish transect survey!'"

With time and water running out, Dr. McNeish enlisted colleagues from the Biology Department and local alumni to help with a survey on Sept. 7, covering one-and-a-half miles of the river in the BESA.

"There were so many dead fish; we literally just could not document them all," she said. "My preliminary counts are 3,033 dead fish, but there are definitely more than that, because you have literal piles of fish."

From there, interest in Dr. McNeish's work grew, landing her team on the front page of the Los Angeles Times.

The fish die-off added fuel to the conflict between water authorities and advocates for returning water to the Kern River. For the latest news on the Kern River, including an ongoing lawsuit brought against the City of Bakersfield by Bring Back the Kern, go to sjvwater.org.

handle on her own while balancing the courses she teaches.

"It's hard to conduct research with the faculty member being the spearhead of all the projects," she said. "We just don't have time. This is where collaborating with students really helps get these projects off the ground."

Currently, Dr. McNeish has three graduate students and 11 active undergraduate students working in her lab. One of them, Andrew Alba, recently earned his bachelor's degree in biology from CSUB and returned this fall to earn his master's degree and continue his work in the McNeish lab.

Alba, a 32-year-old U.S. Air Force veteran, first got involved in Dr. McNeish's research as a student in NSME's Summer Undergraduate Research Experience. Identifying macroinvertebrates, processing leaf samples and testing water nutrients and quality during the month-long program eventually led to Alba becoming a lead researcher in McNeish's lab as an undergrad, studying how the invasive Tree of Heaven species interacted with the freshwater macroinvertebrate community.

Since last summer's dewatering and mass fish die-off, Alba has been monitoring the river by taking physiochemical samples and depth measurements, noting wildlife that have been present throughout the dewatering process, observing plant growth and talking with local unhoused people, fishermen and others to see how they have been affected.

Dr. McNeish's passion for the topic is what inspired Alba to return to her lab and earn his graduate degree under her mentorship.

"Rae is an awesome mentor and really pushes me to do my absolute best," Alba said. "She is also very personable and understands my family and work duties. I have done more than a few research presentations and half a dozen poster presentations outside of school for her and with her."

Undergraduate student Dana Garcia has been studying microplastics, specifically looking into litter dynamics in the Kern River linked with water availability in the river. Another undergrad, Stephaniee Florez, has been sorting through hundreds of photos of the dead fish from last summer using a computer program and a ruler in each photo to measure the length of each one.

The dynamics of the Kern River have made it a difficult system to study reliably, Dr. McNeish said, but her team is making the most of it. As the water levels have changed dramatically over the last few years, each cycle presents a new opportunity for research.

Photo courtesy of Andrew Alba

"Rae is an awesome mentor and really pushes me to do my absolute best."

— Andrew Alba, biology graduate student

"We have preliminary data of what the river was like when it was flowing," she said. "We have been documenting what's been happening this whole time it's been de-watered. And then water should eventually return back to the river. So, how's the river going to change? How's the wildlife going to change? ... Where there's water, life always comes."

The health of the Kern River is, of course, important to the creatures who inhabit it, but to the surrounding human community as well. The river represents different things to different people, Dr. McNeish explained. For some, it represents water needed to support their livelihoods. For others, a place to enjoy nature and outdoor recreation.

Dr. McNeish stressed the importance of balancing the use of freshwater resources so they are managed appropriately for current and future needs without sacrificing ecological integrity.

"Water tends to be the lifeblood of human civilization," she said. "It's so important to support the human enterprise — economically, culturally, spiritually. If you can't maintain the ecological integrity of these systems, you're degrading them in a way that they can't support the connections we have with them. Eventually those connections just break and sometimes can never be recovered."

Stephaniee Florez

Andrew Alba

Dr. McNeish, Florez, Alba and Jade Dominguez

Brhyona Thomas works with the Epilog Laser in the Fab Lab.

Celebrating a decade of innovation at the Fab Lab

For more than 10 years, the Fab Lab has been a place where California State University, Bakersfield students and members of the surrounding community can go to make their ideas a reality. But before it became a hub of creativity and innovation, it too was just an idea waiting to come to fruition.

Opening in 2014, the CSUB Fab Lab was the first of 10 initial fabrication labs that Chevron announced it would fund nationwide. The Fab Foundation is a network of Fab Labs located all over the world, and CSUB was the first in the CSU or University of California systems to have its own Fab Lab. The lab opened soon after CSUB's College of Natural Sciences, Mathematics and Engineering added its three engineering programs, marking a new chapter in the college's growth.

"Getting the Fab Lab was huge for us because we knew we had this big responsibility on our shoulders to show Chevron that we could make this successful and prove to them that it was a good working model," said Dr. Andrea Medina, NSME's director of grants and outreach, who also oversees the Fab Lab. "It was just so cool that they put that faith in us to be their first. We're very proud of what we've been able to do with that space."

Megan Lopez, public affairs representative for Chevron, San Joaquin Valley Business Unit, said the company is "incredibly proud" of the impact the Fab Lab has had on CSUB students and the broader community.

"Chevron invested in the Fab Lab at CSUB because we believe in the power of STEM education and its critical role in workforce and economic development," Lopez said. "By supporting the Fab Lab, we aim to empower students with hands-on experiences, nurturing their skills and preparing them for future careers. Our investments in the Fab Lab are not just about supporting a facility; they're about inspiring the next generation of

innovators and leaders who will drive progress in our local community and beyond."

'Everyone's welcome'

Located in the Engineering Complex, the Fab Lab first opened with a suite of fabrication machines, including 3D printers, vinyl and laser cutters, circuit board and a ShopBot computer-controlled cutting machine. It would not only be a place for engineering students to work on projects and put to practical use the knowledge they gained in classes — it would also be a community makerspace, open to anyone with an idea for something to create.

Beyond being a physical space, the Fab Lab also represented connection to the larger global maker community through the Fab Foundation network.

"That was a big deal, being part of this international network where every single lab had the exact same hardware and software, so you could collaborate with anybody worldwide on the exact same project and there are no barriers," Dr. Medina said. "It was just really neat to have little old CSUB be part of this global network."

At the time, there were 400 Fab Labs in 50 countries, with CSUB's lab being one of 59 in the United States and one of just three in California. Today, there are more than 1,500 labs in 90 countries.

The Fab Lab's first specialist, Matt Chalker, focused on getting the lab up and running, learning the new equipment and setting internal policies and procedures. When he left in 2016, Dr. Medina took on the Fab Lab as part of her role in grants and outreach, bringing on Bobby Hartsock as the lab's new specialist.

Together, Dr. Medina and Hartsock set about making the Fab Lab a welcoming environment with open doors to anyone in the community. Through word of mouth and special programming, the goal was to make sure that Bakersfield knew about the resource it had on campus.

"Everyone's welcome," Dr. Medina said. "We've had art students in there, theater students, business students. It really doesn't matter what your background is. If you have an idea, the Fab Lab interns can help teach you how to turn your idea into a reality."

In addition to the Fab Lab specialist, the space is staffed by NSME student interns. As well-versed in every piece of equipment as they are, though, the interns will not create things for visitors. That's been an important part of the Fab Lab ethos from the beginning.

"People usually come in saying, 'I want to make something; here's my project idea,' and whatever their experience level is, we work from there and get them to a point where they can use the equipment and feel comfortable with it," said Hartsock, who led the Fab Lab until 2024. "We always say that we don't do anything for anybody — we teach everyone how to do it for themselves."

The Fab Lab team also keeps busy with projects of their own. In 2019, they participated in Project Egress, a community build led by Adam Savage of "MythBusters," where makers from across the country each built one part of the Apollo 11 command module, which Savage rebuilt from the contributed parts. In 2020, they created face shields for local health care workers during the shortage of personal protective equipment of the COVID-19 pandemic.

Over the years, many NSME students have made the Fab Lab their home on campus, a place where they can tinker away on personal projects or work out the details for big class assignments.

Computer engineering major Brhyona Thomas first got involved with the Fab Lab as part of the

The Fab Lab team in 2019 working on Project Egress.

Brhyona Thomas works in the Fab Lab.

> "It's the perfect spot to collaborate and build projects from scratch.
>
> **— Brhyona Thomas, Computer Engineering student and member of the Robotics Club**

CSUB Robotics Club and has been working there as an intern since February 2024. In that role, she has used all the major machinery at the lab to help people outside of campus. She's worked with a local entrepreneur to 3D print a mount for a GPS tracker, a motorcyclist who wanted laser-cut parts for his bike and a teacher who coaches an E-sports team and needed help making old arcade game frames with the CNC machine.

Thomas and her fellow Robotics Club members have also used the lab to make 3D-printed planes and a fully autonomous delivery drone for competitions.

"The Fab Lab is the heart of the engineering departments, in my opinion; it's definitely the heart of the Robotics Club," Thomas said. "We are constantly having people come in for their senior design projects, class projects and personal projects. The Robotics Club meets in the Fab Lab to do any of our project due to all the resources we have here. It's the perfect spot to collaborate and build projects from scratch."

The Fab Lab has also provided a valuable training ground for the 20-plus student interns who have worked there in the last 10 years. Two former interns, Grace Roman and Alfredo Arevalo, have gone on to work for Edwards Air Force Base, citing their experience in the Fab Lab as preparation for the jobs they do now. Martin Mendoza was one of the first interns and now has his professional engineer certificate.

James Odle was offered a job at Northrop Grumman before he officially earned his electrical engineering degree.

"The Fab Lab gave me the confidence to pursue my ideas," Odle said ahead of graduating last year. "It gave me the confidence of seeing my ideas come to fruition."

One former intern was even hired on as the Fab Lab specialist when Hartsock left. Ivan Martinez-Hernandez was an intern until he graduated with his engineering degree in spring 2024, was brought on as interim specialist soon after and officially became the new specialist in December 2024.

"There's relief from finishing college and pride," Martinez-Hernandez said of the full-circle journey from intern to specialist. "I'm glad that I can see the skills that I developed in college be applied directly to something."

Now on the other side as the lab's specialist, Martinez-Hernandez is excited to see interns take what they learn and apply it to their future careers. He knows firsthand how the skills they learn in the lab will help, having previously been hired as a CNC operator at a furniture company specifically because of what he learned as a Fab Lab intern.

"We're seeing more and more direct statements from engineering companies that they want people who know how to use 3D printers, who know that workflow of making a file," he said. "And if they get someone who already understands that, they don't have to take the time to teach them that. They have a head start compared to other people."

The next 10 years

Just months into his position as Fab Lab specialist, Martinez-Hernandez oversaw a total refresh of the lab's equipment, generously funded by Chevron. New vinyl and laser cutters, 3D printers, mini CNC mill and ShopBot are now in the lab, providing students with faster and more efficient tools for their projects.

"It's having better capabilities to actually make things," Martinez-Hernandez said of the updated equipment. "The previous printers, for example, were good, but they had a lot of errors, and they were very manual. We had to be very patient with them. The new ones make it easier for us to fix errors and print without worry."

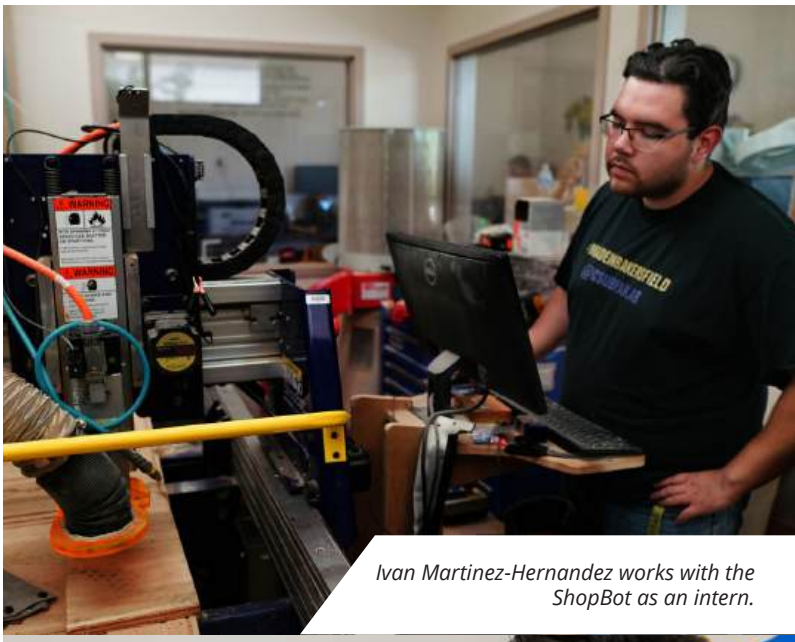
Martinez-Hernandez mentioned "benchy boats" as a way to illustrate how much faster the new 3D printers are. Used as a benchmark to see how long certain projects will take to print, a benchy boat can now be printed in about 20 to 30 minutes on the new machines, where it would have previously taken about an hour. The other new machines are similarly faster, he said.

"Thanks to Chevron's continued support of the Fab Lab and specifically their funding of this new equipment, our students and visitors have access to the latest and greatest in fabrication," Dr. Medina said. "This not only makes for a smoother process for those working on projects, but it also keeps our students up to date on the kinds of machines and software they might use in their engineering careers."

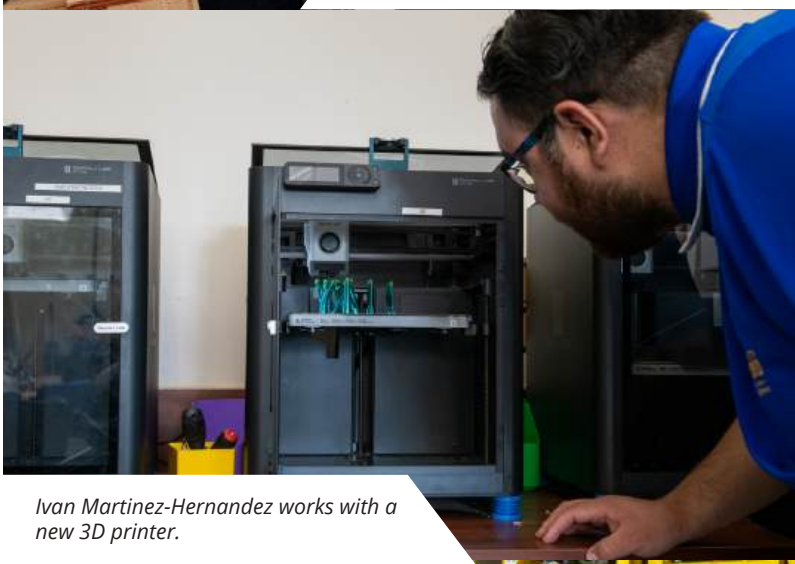
The Fab Lab recently expanded beyond its four walls with a new outdoor makerspace just south of the Engineering Complex. The Chevron-funded space gives students a dedicated spot to work or projects (including those requiring woodworking and metalworking) and to test vehicles, robotics and drones in a safe, fenced-in area.

Looking back at the first decade of the Fab Lab, Dr. Medina reflected on the dozens of interns, hundreds of engineering students and thousands of younger visiting students who have come through the makerspace. She has seen grade school kids have their interest in science sparked inside the lab, watched as students puzzled out projects for classes and kept in touch with those who turned the skills they learned in the lab into a dream career.

"I'm just really proud of the impact that we've had within the community," she said. "I'm really proud of the work we've done, and I'm proud of the students who have gone onto these amazing careers. I'm proud that we've maintained that accessibility for anybody who wants to come in. It's just a welcoming space for everyone."



Ivan Martinez-Hernandez works with the ShopBot as an intern.



Ivan Martinez-Hernandez works with a new 3D printer.

Nursing students go to "work" as part of the poverty simulation.

Creating empathetic nurses

Poverty simulation puts nursing students into low-income patients' shoes

At California State University, Bakersfield, nursing students are taught more than the clinical essentials of caregiving. The program also emphasizes empathy, but putting themselves in their patients' shoes can be difficult without knowing the fuller picture of their lives.

With Kern County consistently at the bottom of health and prosperity rankings, future nurses can expect to encounter patients who live in poverty and might struggle with their health as a result. To give them a better idea of the challenges these patients deal with daily, the Nursing Department held a poverty simulation in October 2024.

"The goal for us is for people to have better understanding and more empathy and to recognize the challenges people with low income have to face," said Dr. Heidi He, associate professor of nursing. "Poverty affects every aspect of social determinants of health."

For the simulation, around 60 students and faculty members were assigned roles in family units, such as single parent, pregnant teen, young child or senior citizen. They were given a packet with a description of the family and its individual members, sources of income, family possessions and bills, identification documents and other items that they would need to survive the month, such as transportation passes and some cash.

The student housing multipurpose room on campus was transformed into a miniature community, with everything from banks and grocery stores to homeless centers and jails. Every 15 minutes was a week, with participants given specific tasks to try to make ends meet.

To pay their mortgage and bills, they would need to work to earn money. To go to work or drop off kids at school, they would need a transportation pass. Those with preschool-aged kids would have to find childcare. With unexpected expenses and obstacles to resources, it was easy for participants to fall behind in one aspect or another, with several family units facing eviction by the end of the simulated month.

"You feel like you're getting ahead and you get slapped with a bill, or you feel like you're getting ahead and your child gets sick and you can't go

to work for a week," nursing student Jillian Pitre explained in a debriefing following the simulation. "It was just barrier after barrier."

Resources from organizations such as a community action agency, social services department and an interfaith center could provide help, but finding the time or means to get there could be a challenge in itself.

Nursing students go to "work" as part of the poverty simulation.

"We all agreed that we felt overwhelmed," said student Mackenzie Christner, summing up her discussion group's sentiments. "It kind of threw us off knowing how many resources we had. It kind of stressed us out trying to make ends meet."

With basic survival being so complicated, it was no wonder that most participants didn't prioritize a visit to the doctor over other necessary errands, or their medication over food for their families.

"Healthy choices were not a priority because Maslow's hierarchy: if your basic needs are not met, then nothing else matters," Pitre said. "(My character) was 16 and pregnant and trying to get through school and that was really hard … Healthy lifestyle choices were not even on my mind."

When patients don't follow medical advice, nurses must take into consideration the obstacles that might be in their way, Dr. He said.

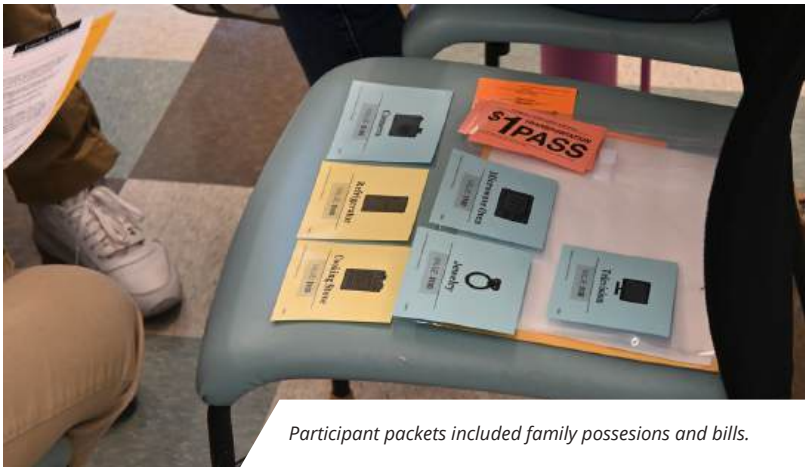
"As health care providers, before we label a patient 'noncompliant,' let's look at why," she told the students. "If they don't have the chance to purchase food, whatever healthy lifestyle choices that we recommend, of course they're not going to be implemented."

For many students, the simulation was not entirely unfamiliar. Several mentioned that it rang true to their own experiences growing up.

"It sounds like it surprised some people (that people go through this)," said nursing student Carl Allen. "I hope this helps whoever's thinking that realize that this is real life for a lot of people. I grew up like this, so now I'm just realizing even more how much my dad really had to do for us."

The poverty simulation is a kit created by the Missouri Community Action Network, purchased by the CSUB Nursing Department with funds from two grants: a U.S. Department of Health and Human Resources (HHS) Health Resources and Services Administration (HRSA) Advanced Nursing Education Workforce (ANEW) Program award and Nurse Education, Practice, Quality and Retention (NEPQR) Simulation Education Training (SET) Program award.

"Health outcomes are so poor in the community, and I think we have the obligation, as a school and a department, to do what we can to improve them," Dr. He said. "We have to look at the root cause. We really should understand the social determinants of health, and poverty is one of those things that affects every aspect."



Participant packets included family possesions and bills.

Brooklyn Macross, Madison Tarpley, Tyler Garza and Maggie Izumi attend the 2024 Geological Society of America conference.

Conference 'an amazing experience' for geology students

The Geological Society of America held its annual meeting in Anaheim last fall, drawing in geologists from all over the world. Among them was a group of faculty members and students from California State University, Bakersfield's Geology Department.

With research presentations, networking opportunities, field trips and more, the conference gave professional and student geologists alike the chance to connect and learn more about a wide range of topics in their field.

"I cannot say this enough: it was an amazing experience!" said Brooklyn Macross, a senior geology major. "It felt like I was actually stepping foot into the professional world, instead of just being a student."

Macross was one of several CSUB students who presented their research at the conference. Along with her fellow student researchers, Braedon Scarry and Elijah Swanson, Macross presented two posters on mine tailings.

"Mine tailings are waste piles left behind after all the valuable materials are collected from the mine," Macross explained. "There are millions of these piles around the world that just sit there, doing nothing at best and potentially leaching harmful contaminants into the environment at worst."

Her group's first poster — Carbon Mineralization for Potential Long-Term Carbon Capture and Storage: A Mineralogical Analysis of Mine Tailings in Mojave Desert, California — detailed their research on repurposing mine tailings for carbon sequestration, a method of removing carbon dioxide from the atmosphere and storing it to reduce greenhouse gases. The process occurs naturally in certain rocks, Macross explained, and her group wants to see if mine tailings can be moved elsewhere to maximize the amount of carbon being mineralized.

Their second poster — Environmental and Health Impact Assessment of Mining Tailings: A Case Study from the Randsburg Mining Complex, California — explained how potentially hazardous elements like arsenic, chromium, rubidium and strontium can be transported when mine tailings are moved. Contaminating the new environment is something geologists will naturally want to avoid, so Macross and her team hope to study improved

waste management practices to mitigate that risk. While most student presenters at the conference were graduate students, Macross and other student researchers from CSUB were among a smaller group of undergraduate presenters.

"Before the conference, my group and I were a little nervous that we would be grilled by these experts, but everyone we interacted with was very professional and provided constructive feedback," she said. "Collaboration is a key step in the advancement of sciences, and it felt great to be a piece of the puzzle."

Senior geology major Madison Tarpley also attended the conference, though her experience took her out of the convention center and into a better-known Anaheim destination: Disneyland. One of a few field trips available to conference-goers, the tour of the park was both educational and fun, Tarpley said.

"The tour focused on how geology and paleontology are essential to 'making the magic' at Disneyland Resort," she said. "It was fascinating to see how famous geological sites like the Matterhorn and Bryce Canyon National Park influenced the design of the park's attractions, such as Big Thunder Mountain and Galaxy's Edge. It gave me a whole new appreciation for how geoscience shapes even the most unexpected places, like theme parks!"

Back at the conference, Tarpley attended a meet-and-greet for officers of college geology clubs. As the president of CSUB's Geology Club, she enjoyed the opportunity to exchange ideas and see what other clubs are doing. Another highlight of the conference was a women's geology event, where Tarpley met Cate Larsen, also known as "the Groovy Geologist."

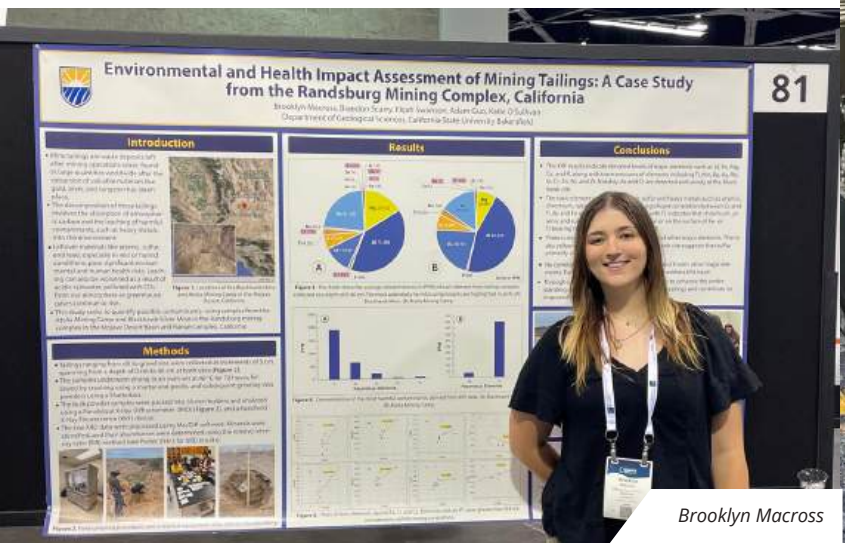
"It was amazing to connect with someone who's making geology more accessible and engaging through social media," Tarpley said of Larsen. "We had a great conversation, and I left feeling even more inspired by the power of community in this field."

Research Tarpley and other CSUB students worked on was presented by their faculty mentor, Dr. Liaosha Song. The team's research focuses on the practicality of geological hydrogen storage in California's Central Valley, specifically on the use of depleted oil and gas reservoirs for long-term storage.

"Although I didn't personally present at the Geological Society of America Meeting, it was an inspiring experience to see my work shared with such a large audience of geologists," Tarpley said. "Seeing my professor present our research gave me a sense of pride and accomplishment, especially considering the number of attendees and the discussions that followed. It was incredible to see how our work fit into the broader dialogue about sustainable energy and geological storage technologies."

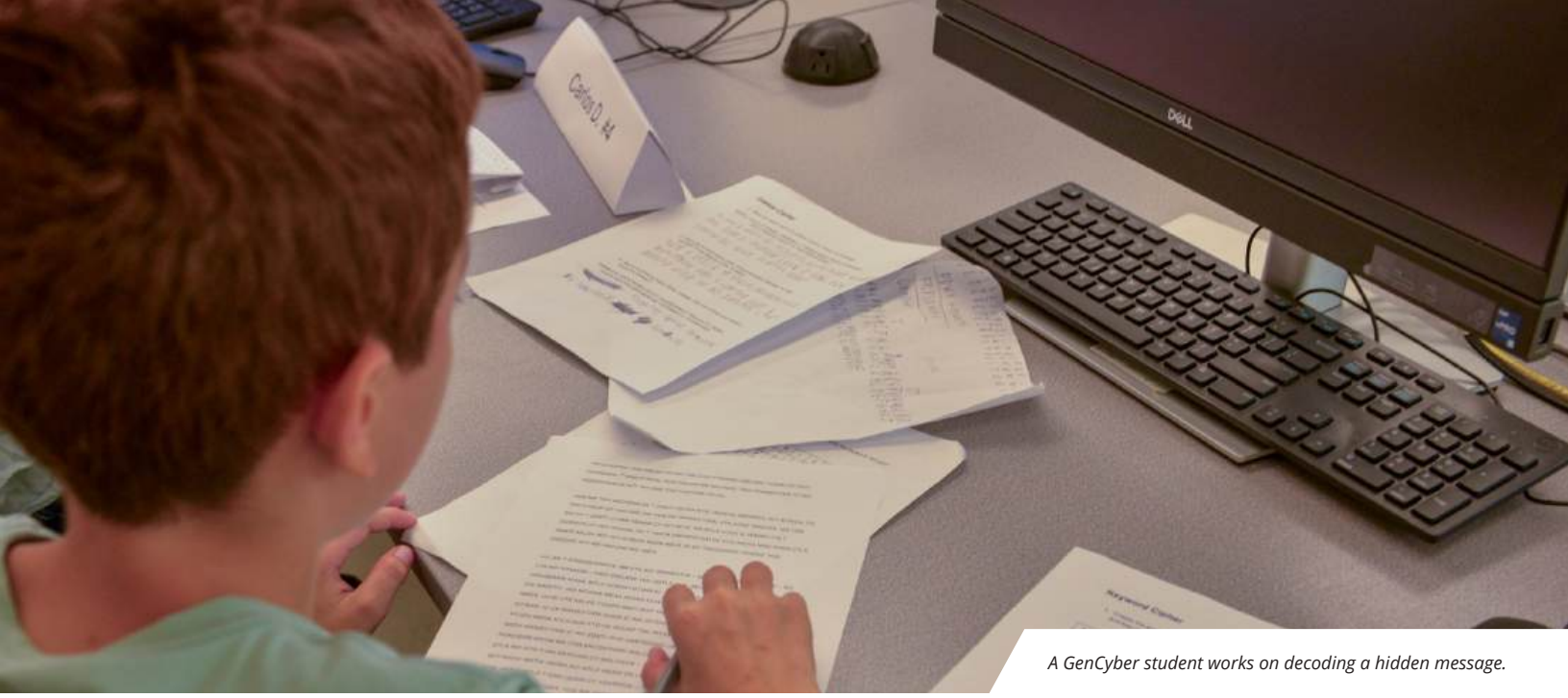
Both Macross and Tarpley said their favorite part of the conference was connecting with other geologists from around the world and learning about their research.

"It was inspiring to exchange ideas and hear different perspectives on the same challenges we face in the field," Tarpley said. "Talking to experts from different geological disciplines gave me a fresh perspective on how I could improve my research, particularly when it comes to refining methodologies and thinking about applications for my work in new ways."



Brooklyn Macross

Madison Tarpley and Cate Larsen, "The Groovy Geologist"



A GenCyber student works on decoding a hidden message.

Cracking the code

GenCyber teaches the next generation of cybersecurity professionals

Local sixth- through eighth-grade students learned all about cybersecurity as part of the GenCyber program hosted by California State University, Bakersfield.

Topics of the program covered everything from password-cracking to pocket-sized computers and social engineering. Though they might be several years away from joining the cybersecurity profession, the participants were already thinking of a few practical uses for what they are learning.

"We got to learn how to break codes and make codes, which I'm going to teach to my entire group chat so if they want to say some gossip or a secret, they can," said Sophia R. Alvarez Lopez after a lesson on cryptography. "I found it extremely fun to mess around with the codes."

GenCyber is an initiative sponsored by the National Security Agency (NSA) and the National Science Foundation (NSF). It was brought to CSUB by Dr. Kanwal Kaur, an associate professor in CSUB's Department of Computer and Electrical Engineering and Computer Science, thanks to a two-year grant she was awarded by the two agencies.

For the NSA and NSF, the goal of the GenCyber program is to increase interest in cybersecurity careers. It invites students from different backgrounds to discover a passion for cybersecurity in the hopes of developing a more diverse workforce in the future.

At CSUB, local students are learning cybersecurity principles through hands-on activities, interactive lessons and problem-solving exercises, said Dr. Kaur, the grant's principal investigator and program director.

"The focus is on fun, engaging activities that demonstrate the importance and relevance of cybersecurity in everyday life," she said. "I wanted to work with kids and get them interested in cybersecurity because early exposure to this field can have a profound impact on their future opportunities and career choices."

For one of the program's lessons, CSUB mathematics professor Dr. Charles Lam taught students a little about the history of cryptography and some basic code-making and -breaking. For an example of early encryption, students were given a page of text and a hint that each letter represented a different letter. Without a key, it was difficult for the students to get more than a couple letters figured out.

"Today's lesson — encryption, decryption, cryptography — that was really fun and interesting," said eighth grader Srikandan Narayanan. "The last activity we did was pretty hard, so it kind of made our brains work!"

Dr. Lam told the students how this kind of encryption method worked well for hundreds of years, with kings, queens and diplomats sending important messages through couriers with little worry of them being intercepted. Until the art of codebreaking improved, that is. As the students learned, looking at letter frequency is a good way to narrow down what each character represents, slowly but surely deciphering a hidden message.

Mathematics brings us into modern day encryption, Dr. Lam said. He told students about mathematician Alan Turing, who was a vital part of cracking encoded German messages during World War II. Using letters to represent other letters has limitations, but using numbers to represent letters gives cryptographers many more options.

"When we turn letters into numbers, there are many things we can do; we can turn it into numbers and do math with it," Dr. Lam said. "It takes math and a lot of patience. To make strong cyphers, you have to know how to break them as well."

Joining Dr. Kaur and Dr. Lam in GenCyber were CSUB faculty members professor Melissa Danforth (computer science) and lecturer Jesus Esquibel (teacher education), who taught various concepts to GenCyber participants. In addition to cryptography, students also learned about basic computer science principles using Micro:bit and Python programming, cyber defense, network security and more. All these are taught with a comprehensive understanding of cyberspace and cybersecurity's societal, ethical and legal aspects, Dr. Kaur said.

"By working together, I hope they develop teamwork and communication skills, building confidence in their abilities to collaborate and solve complex problems," she said. "Ultimately, I want the camp to be a fun, inclusive environment where all students feel welcomed and empowered, regardless of their background or experience. My goal is for them to leave the camp with new skills, a sense of accomplishment and excitement for the possibilities in cybersecurity and technology."

The students aren't the only ones having fun in each GenCyber session. Dr. Kaur said her favorite part about working with kids in the program is seeing their excitement and curiosity come to life.

"Their enthusiasm for learning new skills, asking questions, and solving problems is incredibly inspiring," she said. "I love witnessing their 'aha' moments when they grasp a concept or successfully complete a challenge. It's rewarding to be part of their journey as they discover the vast possibilities in technology and cybersecurity and to help them build confidence in their abilities. Their energy and creativity make every session engaging and fulfilling."

Martin Vega shares his passion for science

Martin Vega knows the power of a passionate scientist's ability to inspire people to marvel at the world around them and aspire to learn more. It was astrophysicist Neil deGrasse Tyson who sparked Vega's own interest in science, and now the graduating senior hopes to influence future generations in the classroom as a science educator himself.

"His passion and enthusiasm that he exuded every time he explained something scientific was just so captivating," Vega said of Tyson. "I also felt rewarded after I understood something about the natural world that he explained. I just wanted to learn more. After giving it some thought, I decided to go to college to study physics."

This spring, Vega graduated from California State University, Bakersfield with his bachelor's degree in physics and a plan to return to the university in the fall to earn his teaching credential. Using his passion for science and everything he has learned about physics, Vega is excited to come full circle and motivate students to pursue their own scientific interests.

It wasn't until Vega was a junior at Independence High School that he knew what he wanted to do in life, but a future in science quickly came into focus after he discovered Tyson, a well-known science communicator who has become something of a celebrity scientist with television appearances and a strong social media presence.

With a new interest in all the world of science, Vega eventually settled on a specific subject.

"I wanted to learn more about how nature works, and I decided physics because it's at the foundation of all natural laws," he said. "I wanted to understand how it all worked at the most fundamental level."

After graduating high school in 2020, Vega decided to attend CSUB because of its physics program and the university's proximity to home. With his

first two years as a Roadrunner spent doing remote learning due to the pandemic, Vega said his introduction to college wasn't exactly ideal. Fortunately, before Vega started his freshman year, he received an email inviting him to the College of Natural Sciences, Mathematics and Engineering's Pathways program, which connected incoming STEM majors with an older student mentor and specialized advising. With Pathways mentors, advisors and fellow students, Vega had a built-in group of new friends and a valuable support network.

"It was so hard to find motivation during that first year, and being in a pandemic didn't help," he said. "But they really motivated me and encouraged me to stay on top of my coursework, and so just because of that, my first year was much brighter."

Vega also found support in the Department of Physics and Engineering. While students in any program at CSUB benefit from smaller class sizes than they would at larger universities, the physics program is especially small. Vega recalled two classes where he was one of just three students.

"I got along with pretty much all the other physics majors here and grew close to the physics professors," Vega said. "That's definitely a benefit about being a physics major here."

One faculty member Vega worked closely with was Dr. Yize Li, an associate professor of physics. In spring 2023, Vega worked in her laboratory researching biodegradable soil sensors. The research process was a learning experience for Vega, though not the way he might have initially expected.

"I learned what research was like, and I realized that doing research in a laboratory setting was not really for me," Vega said. "I realized that I don't really like spending so much time in the lab and something goes wrong, or it doesn't work, and it gets kind of frustrating, and you have to do the whole thing over."

If not a career in a lab, Vega had to figure out what else he might want to do with his physics degree. He recalled classroom visits from CSUB alumni who went on to work at Naval Air Weapons Station China Lake, but he didn't think he would like working in the desert for years. He also considered aerospace engineering but didn't find himself too passionate about that option either. "Then I remembered the importance of having a really good teacher, especially for a high school student just figuring out what it is they like," Vega said. "I remembered how rewarding it was to have a professional science educator, like Neil deGrasse Tyson, to communicate some complicated process or part of nature in a way that allows even everyday people to understand.

> "That was when I decided to pursue a teaching career and to try to become the best science educator I can be," he said.

Though Vega might not have been inspired to become a research scientist like herself, Dr. Li was still committed to helping her student realize his full potential in his newfound passion for science education. Dr. Li switched gears from guiding Vega as a researcher to helping him as an educator.

In the fall 2024 semester, Dr. Li gave Vega the opportunity to research different teaching methods related to physics, identifying challenges students might face when trying to understand abstract physics topics like electric fields, waves and quantum mechanics. She also hired him as an instructional student assistant for her Physics II classes, which gave him the chance to practice what he was learning as he worked with students.

"Martin demonstrated an excellent performance, and most importantly, I saw his true passion in physics education," she said. "Martin not only graded quizzes and group discussion problems but also presented topics on abstract concepts. I am confident that Martin will do a great job as a high school physics teacher."

With the teaching credential program on the horizon, Vega still has at least a year and a half in the classroom as a student before he's leading a classroom of his own. For now, though, he's taking time to appreciate the milestone he's reached.

"It's been five years, and finally, it's all coming to an end," he said. "This was definitely not easy for me. Physics is not easy. But it feels great to finally be wrapping it up and moving on to the next part of my life."

Dean's advisory board helps shape NSME

Blair Pruett, board member and CEO/ Founder of Cal Microgrids, speaks with students during Engineering Day.

The College of Natural Sciences, Mathematics and Engineering (NSME) at California State University, Bakersfield prides itself on providing an excellent educational experience that prepares its students for jobs in technology, energy, health care, research and more. To ensure its programs meet evolving workforce needs, NSME launched the Dean's Advisory Board in May 2023 under the leadership of Dean Jane Dong.

Made up of 21 leaders from the realms of energy, agriculture, environment, aerospace, engineering consulting, health care and K-12 education, the board provides valuable input on future workforce demands and technological innovations impacting regional industries. It also strategizes new opportunities for NSME students.

"NSME is the only four-year public institution in our region preparing professionals in STEM and health care," Dr. Dong said. "Maintaining close ties with employers is essential to ensure our graduates are career ready."

The Dean's Advisory Board supports NSME by serving as a sustainable communication platform between the college and employers, education, industry and community partners; collaboratively enhancing NSME's capacity to develop talents to meet the evolving needs of industry and local communities; and advocating for NSME in the community and beyond to create more opportunities for local students and to support the growth of the college.

The board is chaired by Isabel Silva, senior director of wellness and prevention at Kern Health Systems. An alumna of California State University, Long Beach who has lived in Bakersfield with her family since 2007, she wanted to get involved with local education and was happy to find a way to do so at CSUB, a sister-university of her alma mater.

Silva explained her belief in the importance of a college education and its ability to open doors to career opportunities and foster critical thinking, resilience and personal growth. She wanted to get involved with the board because she knows the impact higher education can have, especially for first generation students, and how a little support can help those balancing academics with home or work responsibilities.

"Having experienced these challenges firsthand, I deeply empathize with students who are juggling multiple roles," she said. "It can be exhausting at times, but with the right support, encouragement and resources, it helps make the journey less daunting."

Silva sees the board as "a bridge between students and opportunity" and wants it to actively work toward reducing barriers to higher education, especially for students who might be the first in their family to attend college.

"I envision a board that not only provides meaningful support and encouragement, but also creates pathways for real-world experience through internships, mentorship and professional connections," Silva said. "I want the students of NSME to feel empowered, prepared and confident as they pursue their academic and career goals."

Already, the board has helped launch the "Classroom to Career" initiative, which includes a plan for NSME major-specific career advising and connecting students with employers through networking and career events. A career preparation subcommittee was established in Spring 2024, and its members — Aimee Blaine, Omar Hayat, Amy Galanski and Silva — have been instrumental in shaping this initiative.

In September 2024, a "Train the Trainer" workshop was organized with support from the board. The workshop included a panel of employers who regularly hire NSME graduates and an audience of NSME faculty and staff advisors, as well as advisors from CSUB's Center for Career Education and Community Engagement. Panelists shared their insights on expectations for future members of the workforce and their companies' recruitment process.

NSME Internship and Career Coordinator Alejandro Murillo attended the workshop and found it “extremely valuable” in strengthening his ability to advise students. In the last year, he has personally advised more than 250 students looking for career guidance and hosted 15 career or information sessions.

“By engaging directly with employers, I gained clearer insight into what they are looking for in candidates and how industry needs are evolving,” he said. “Learning about current trends and expectations in the job market has given me the tools to better guide students, helping them align their skills and goals with real-world opportunities.”

In the year ahead, the board will continue to serve as a resource on industry trends and as ambassadors to boost the visibility of NSME programs. It plans to expand the “Classroom to Career” initiative by bringing in more internship opportunities and exploring other opportunities for collaboration with industry partners. Dr. Dong sees the board as a lasting structure for collaboration.

“It ensures our programs align with industry needs while giving students the education and experiences to thrive,” she said. “The DAB members provide valuable insight to enhance our programs and student services, helping us prepare students for their future professions.”

The Dean’s Advisory Board is made up of local leaders from the realms of energy, environment, aerospace, engineering consulting, health care and K-12 education.

Alejandro Murillo leads a job fair preparation workshop.

Congratulations, Angelo Mazzei!

Angelo Mazzei, a member of the NSME Dean’s Advisory Board and founder of Mazzei Injector Co., was awarded the John Brock Community Service Award this summer. Mazzei is recognized for his community leadership and philanthropy in Bakersfield and the greater Kern County area.

From his beginnings on his family’s farm in Fresno, Mazzei went on to earn a bachelor’s degree in industrial and automotive technology from Fresno State. After serving in the National Guard, Mazzei bought his uncle’s farm in Arvin and became an innovator in agricultural water treatment technology, patenting 20-plus creations.

Mazzei gives back to the community by serving on boards like the NSME Dean’s Advisory Board, as well as the CSUB Foundation Board. For CSUB, his support for the new Energy Innovation Building has been integral for making it a reality.

More NSME news

NSME welcomes new faculty member

Dr. Yasser Youssef

Dr. Yasser Youssef joins the Department of Computer and Electrical Engineering and Computer Science as an assistant professor working primarily on the CSUB Antelope Valley campus for its new computer science degree program.

Originally from Cairo, Egypt, Dr. Youssef earned his bachelor's and master's degree in computer engineering from the Military Technical College in Cairo before going on to earn his Ph.D. in biomedical engineering from Cairo University.

After initially working as a biomedical engineering software developer and database administrator, Dr. Youssef transitioned to academia, first working as a lecturer at Giza Engineering Institute in 2012 and the College of Computing and Information Technology at the Arab Academy for Science, Technology, and Maritime Transport in 2014.

More recently, he was a lecture in the University of Oklahoma's School of Library and Information Studies.

Dr. Youssef's research centers around computer science and data science, with a special focus on machine learning, medical image analysis and explainable AI.

"I'm excited to become an active contributor to CSUB's mission and to support our students in becoming creative, ethical and technically strong professionals," Dr. Youssef said. "I'm also looking forward to building bridges between academia and industry, and I welcome any opportunities for interdisciplinary collaboration within the CSUB community."

Dr. Youssef has moved to Lancaster with his wife, with whom he shares three children. In his free time, Dr. Youssef enjoys long walks outdoors, reading and going to the gym.

NSME faculty recognized during University Day

Two NSME faculty members were recognized ahead of the start of the 2025-2026 academic year as part of CSUB's University Day. Dr. Danielle Solano (Department of Chemistry and Biochemistry) received the Faculty Leadership and Service Award and Dr. Matthew Herman (Department of Geological Sciences) received the Promising New Faculty Award. Congratulations, Dr. Solano and Dr. Herman!

Top right: Dr. Danielle Solano receives the Faculty Leadership and Service Award
Bottom right: Dr. Matthew Herman receives the Promising New Faculty Award

Energy Innovation Building receives key approval

In March, the California State University Board of Trustees approved the designs for California State University Bakersfield's Energy Innovation Building, which will serve as the nexus for energy research, STEM education and community and industry collaborations with the only public four-year university in the Southern San Joaquin Valley.

Governor Gavin Newsom and the state Legislature allocated $83 million for construction of the building in the 2022-23 California budget. Construction on the project is anticipated to start in the fall.

"I want to thank the Board of Trustees for supporting the people of Kern County and our students," said Dr. Vernon B. Harper Jr., president of CSUB, after the board meeting at the CSU Office of the Chancellor in Long Beach. "The Energy Innovation Building will be more than a building; it will be the physical representation of CSUB's vision for a STEM-prepared workforce to meet the opportunities and demands of the future and a hub for research, exploration and new ideas to meet the world's energy needs responsibly and sustainably. The building will be a magnet for future students, scientists and partners, and a magnificent community space that will make the residents of Kern County incredibly proud."

CSUB receives grant for kit fox research project

A new grant has given California State University, Bakersfield the opportunity to expand its research into the endangered San Joaquin kit fox population on campus.

The university has received $8,500 from Mutual of Omaha's Wild Kingdom and the National Wildlife Federation for Biology Professor Dr. Antje Lauer and three students to conduct a survey on the kit fox population on campus and along the floodplains of the Kern River to determine their preferred denning and hunting grounds.

As part of the project, Dr. Lauer and her students will develop a habitat conservation plan aimed at providing long-term protection for the species that will be implemented in CSUB's Master Plan and presented to the Bakersfield City Council.

"We're excited to receive this grant," Dr. Lauer said. "This is an ambitious project that will give us more information about where the kit foxes are so we can have a real solid conservation plan."

CSUB adds DNP program

Starting with the 2025-2026 academic year, California State University, Bakersfield will offer a new Doctor of Nursing Practice (DNP) program, only the second doctoral program in the university's 55-year history. This is a major development for a community in dire need of more medical professionals.

Two tracks will be available from the department: a Doctor of Nursing Practice – Family Nursing Practitioner (DNP-FNP) program and the Master of Science in Nursing to the Doctor of Nursing Practice (MSN-DNP) program.

"This is something we're very proud of," said Dr. Heidi He, director of the DNP program. "At a system level, we are the leader. The CSU is using our proposal to transition the program as a model for our sister campuses to follow."

CSUB student selected for California Pre-Doctoral Program

For biology major Kenya Espinoza, her dream of attending graduate school and earning a dual M.D.-Ph.D. degree is now one step closer to reality.

Espinoza has been selected as a 2025-26 Sally Casanova Scholar as part of the California Pre-Doctoral Program, which helps prepare students for success in a doctoral career. Fellow student Dayana Aguilar-Hernandez received an honorable mention from the program.

Espinoza is receiving a $5,000 scholarship to help pay for her graduate school application fees and will also receive support for her research through opportunities to work with faculty from doctoral-granting institutions.

"Being a first-generation student, I am very grateful programs like this exist," she said. "It helps people like me overcome the obstacles that we face. I won't have to worry about where the money is going to come from when I apply to these programs. Being able to have that kind of support from people who want to see us succeed is very important."

NSME grad student earns President's Medal

Ahead of graduating with his master's degree in biology this spring, Jonathan Juarez was awarded the President's Medal, honoring him as CSUB's top graduate student. During his time at CSUB, Juarez worked in Dr. Rae McNeish's lab studying the ecology of the rivers managed by the Tejon Ranch Conservancy.

"I'd like to use the knowledge and skills I've acquired to continue to do work into environmental issues," said Juarez, who works as a staff biologist at an environmental consulting company. "Ideally, I'd like to go into the public sector. I feel like I'm contributing all I can to ensure that our natural resources are as protected as they can be."

STEM outreach brings hundreds of students to campus

Each year, CSUB's College of Natural Sciences, Mathematics and Engineering brings hundreds of high school students to campus for special outreach events. With Chemistry Day in October, Engineering Day in February and Math Field Day in March, faculty and staff welcomed students to campus and got them excited about careers in STEM.

CERC holds annual symposium, welcomes new director

This spring, the California Energy Research Center hosted its fourth annual Carbon Management Symposium. Experts from academia, industry and regulating agencies joined for a day of conversation on the challenges and opportunities of carbon management. The event was held in partnership with Lawrence Livermore National Laboratory and sponsored by Chevron, California Resources Corporation, National Cement, MTR Industrial Separations, the American Association of Petroleum Geologists Pacific Section, Cornerstone Engineering and Claire Technologies.

This summer, CSUB also welcomed new CERC director, Katy Larson, to campus. Larson brings more than 15 years of energy industry experience to CSUB. Her background includes expertise in carbon sequestration, oil and gas, gas storage, water sustainability, hydropower, and civil infrastructure. Most recently, Larson served as the Geoscience Compliance Manager at Tallgrass Energy, where she built and led a Carbon Sequestration Compliance and Permitting program. She earned her master's in geology from the University of Louisiana at Lafayette.

Congratulations to our faculty members who received tenure and/or promotion this year!

Katie O'Sullivan
Associate Professor – Geology
Tenure and Promotion

Lucas Hall
Associate Professor – Biology
Tenure and Promotion

Heidi He
Professor – Nursing
Promotion

Nick Toothman
Associate Professor – CEE/CS
Tenure and Promotion

Matthew Herman
Associate Professor – Geology
Tenure and Promotion

William Krugh
Professor – Geology
Promotion

Vincent On
Associate Professor – CEE/CS
Tenure and Promotion

Lorelei Punsalan
Associate Professor – Nursing
Tenure and Promotion

Junhua Guo
Professor – Geology
Promotion

COLLEGE OF NATURAL SCIENCES,
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CSU BAKERSFIELD

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Bakersfield, CA 93311

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❑ VISA ❑ MASTERCARD ❑ DISCOVER ❑ AMEX

Credit Card Number

Name on Card Exp Date Sec Code

Signature