

360



THE INNOVATION IMPULSE

IT CAN CHANGE LIVES

360

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SAN DIEGO STATE
UNIVERSITY

Leadership Starts Here

FROM THE PRESIDENT

By the time you open these pages, the campus will be abuzz with last-minute preparations for the presidential inauguration, an inspiring celebration where Chancellor Timothy White will officially commission me as SDSU's ninth president. Most importantly, the SDSU and San Diego communities will come together to honor SDSU's extraordinary legacy as we embrace our collective impulse to innovate towards a brighter future.

That's why I'm thrilled to see this issue devoted to stories that speak of our insatiable impulse to innovate. After all, innovation has been part of SDSU's DNA for 122 years and today is no different.

Read about SDSU

alumnus Daniel Walker. He's a Ph.D., historian, educator, activist and founder of the Long Beach Indie International Film & Entertainment Festival, a vehicle for diverse filmmakers and artists to connect and show their work.

Learn about Natalya Bailey, also an alumna, who earned a Ph.D. in engineering from MIT and is now the co-founder and CEO of Accion Systems, which develops parts for spacecraft.

Discover Vanessa Falcón Orta, one of our brilliant doctoral candidates in the College of Education, and why she founded Transfronterix Alliance Student Organization, an official SDSU student organization that helps create an equitable and inclusive campus environment for the university's transborder community.

I hope that as you read these stories you will notice, among other things, that the impulse to innovate does not discriminate. It is contagious. It is collaborative. That is certainly the

case for members of SDSU's Viral Information Institute, whose researchers are unlocking the secrets of viral ecology and personalized medicine. Or as illustrated with the story of Trent Biggs, a geographer who is collaborating

with the Imperial Valley community in research on the food-water-energy nexus in that region.

Here at SDSU, the impulse to innovate is also palpable through classroom instruction—because preparing the leaders and innovators of the future can't happen in classrooms designed for yesterday. That's the spirit behind the work many faculty and staff are doing to facilitate cutting edge instruction with the use of virtual reality and other technologies

that bring teaching and learning to life.

My hope is that as you read these stories you will be excited, as I am, about the students we are preparing to take on the world's greatest challenges. As long as innovation is alive and well—and it certainly is at SDSU—the future has never looked brighter.

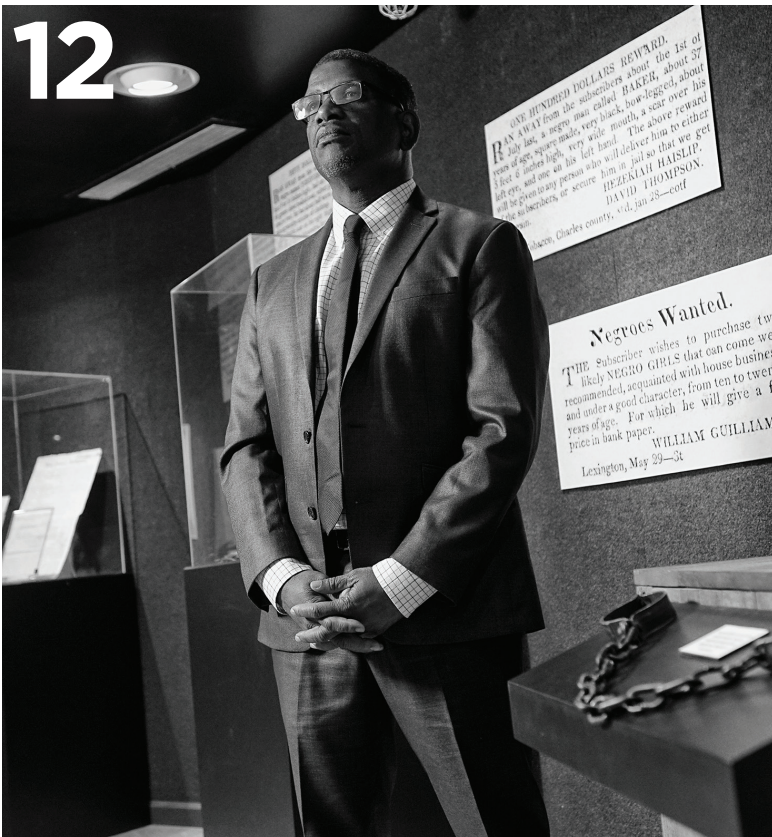
And with that, I hope you will join us on April 11, 2019, to celebrate a new era of innovation at SDSU with the inauguration of your ninth president, who is truly grateful for the privilege to imagine a new chapter with you, and all of those who have faithfully planted the seeds of innovation before me and made San Diego State University the extraordinary story it is today.



Photo: Lauren Radack

Adela de la Torre

FEATURES



360

10-23

THE INNOVATION IMPULSE

The drive to innovate is strong in the human race. It leads to scientific and technological breakthroughs, to new solutions for social challenges and to bold leaps of imagination in the creative arts. In this issue of 360: The Magazine of San Diego State University, we introduce you to alumni, students, faculty and staff whose innovation impulses literally changed their lives and others.

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A Once-in-a-Generation Event





Mural magic

The latest in a series of rediscovered campus murals will be unveiled at a public ceremony on March 23 at San Diego State University's School of Exercise and Nutritional Sciences (ENS) complex.

"Market" depicts 23 figures at an ancient marketplace engaged in various activities against a backdrop with images of an Aztec temple and deity. It was painted in 1949 by art student Robert Hugenberger under the instruction of art professor Lowell Houser.

The mural survived 70 years largely intact due to its location in a locked room in the ENS complex. With funding from SDSU's Division of Student Affairs and

additional support from the School of ENS, SDSU Library, and an SDSU Alumni crowdfunding campaign, conservator Gary Hulbert was hired to perform the "Market" restoration. Hulbert's résumé includes art preservation at Hearst Castle and restoration of several SDSU historic murals, including "San Diego Industry" (1936), "Alice in Wonderland" (1940s), and the iconic rock-and-roll inspired "Backdoor Mural" (1976).

"Market" is the eighth historic campus mural to have been restored over the past two decades in a continuing effort led by Seth Mallios, university history curator. Mallios believes it to be among the most significant of the student murals in terms of beauty, message, and subject.



Photo: Michael Barreiro, Mind and Beauty Productions

Far and away

In the words of San Diego State University President Adela de la Torre, the Study Abroad program is “a transformative opportunity and experience” that deepens students’ understanding of themselves and the world we live in.

A new report shows part of the impact: SDSU now ranks fifth in the United States and first in California among institutions of higher education for the number of students traveling outside U.S. borders as part of their studies. Some 3,039 students received academic credit for studying abroad in 2016-17, the period covered in the Open Doors report by the Institute of International Education.

Back in black (and red)

A familiar face has returned to Aztecs football. Brady Hoke, who compiled a 13-12 record in two seasons as head coach, was hired by successor Rocky Long as defensive line coach.

In 2010, his second year at San Diego State, Hoke led the Aztecs to a 9-4 record and their first bowl appearance in 12 years—a 35-14 win over Navy—while also taking Mountain West Conference Coach of the Year honors.

Hoke left SDSU in 2011 to become head coach for the University of Michigan for four years, and in 2018 coached the defensive line for the NFL’s Carolina Panthers.

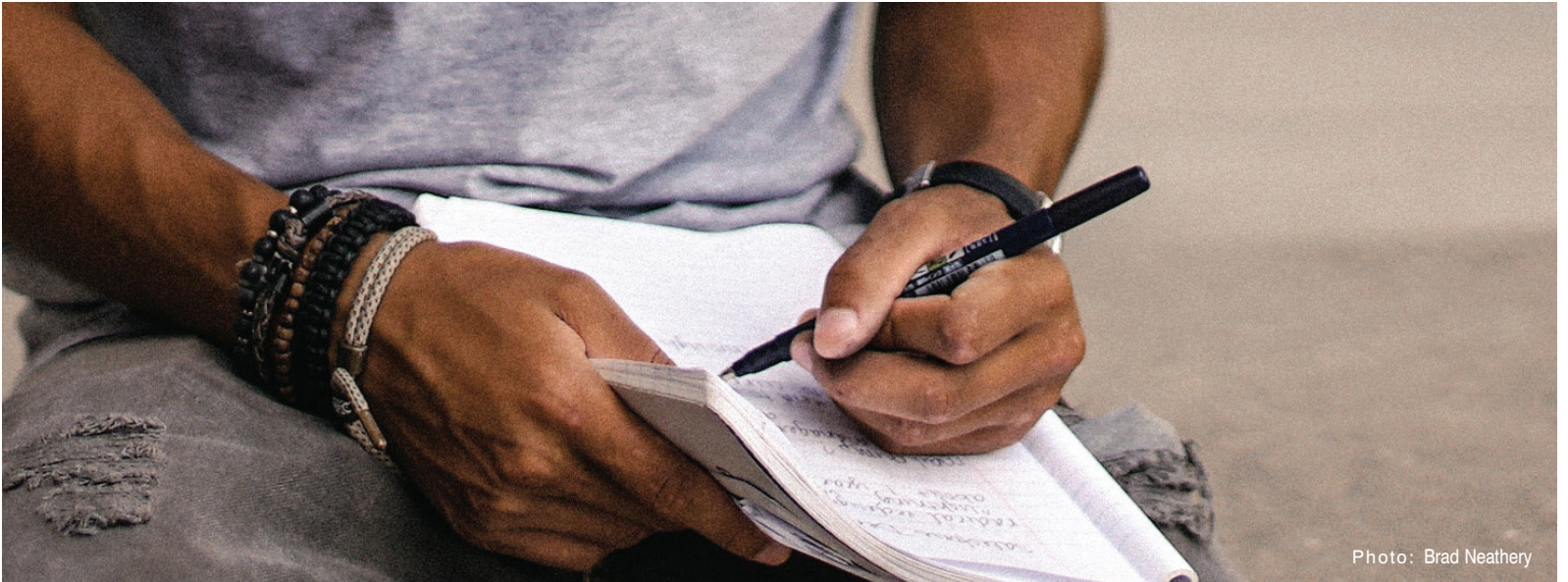


Photo: Brad Neathery

Messages of hope

In a project that began last June, a volunteer group led by San Diego State University faculty is bonding with asylum seekers detained at the U.S.-Mexico border through personal, handwritten letters.

Joanna Brooks, SDSU associate vice president for Faculty Advancement, and Jennifer Gonzalez, a legal communicator, started the group Detainee Allies with colleagues and friends as the refugee crisis and family separations were unfolding along the border. They began with 30 letters to a group of migrants from Honduras being held at Otay Mesa Detention Center, which is operated by a private corporation.

The responses began coming in a week later. They included accounts of contaminated and insufficient food, medical neglect, unsafe working conditions and forced labor, and lack of access to legal representation—as well as heartfelt thanks for reaching out.

“Whenever you reply my letters, it is a light for me in the darkness,” said a detainee from the Democratic Republic of Congo. “It is true it makes me cry because your letter showed care and love as a human.”

Hundreds of letters have been archived by the Digital Collections team at SDSU Library, with lightly redacted versions posted for viewing on the internet.

The early days

Some of the first renderings of San Diego State at Montezuma Mesa have been digitally preserved by the California State Archives.

Alfred Eichler designed and sketched schools, prisons, hospitals and much more during nearly four decades in the architecture division of the state Department of Public Works. More than 430 images from the “Alfred Eichler Collection” can be found online in Google Arts & Culture.

Eichler’s work includes a graphite sketch of the original gymnasium (remodeled in 1990 as the Physical Education Building), iconic images of Hepner Hall and an aerial view of Montezuma Mesa, drawn in pencil while the campus was still under construction.

Sister campus

After growing up together in Cadillac, Michigan, siblings Christy and Tiffany Dykstra went their separate ways. Tiffany headed to West Virginia to explore the world of communication, Christy eventually settled in Georgia to work in environmental engineering.

When Christy got an interview for an engineering faculty position at San Diego State University, she phoned her sister with the news. Turned out Tiffany already knew all about SDSU—she was deep into the interview process for a faculty job in the School of Communication.

The result was a family reunion: both were hired, and began as assistant professors last fall. They now live about three minutes from each other—almost as close as in Cadillac.

Shape of the future

At President Adela de la Torre's official investiture as San Diego State University's ninth president on April 11, she will be wearing an original medallion created for the occasion by SDSU student RexArthur Ramos.

The circular medallion of sterling silver and gold leaf (not shown here) reinforces SDSU's global influence and the nine waves featured within represent the university's nine presidents, "each bringing a new wave of leadership," Ramos said.

His design also includes visual representations of the U.S.-Mexico border—signifying SDSU's many different cultures—and the Pacific coastline—symbolizing the natural beauty of the region. Ramos said the contemporary look of the medallion reflects the future of the university under its new president.

Ramos transferred to SDSU from Miramar College, where teachers encouraged him to pursue jewelry and metalsmithing.

Ambivalent about his own talent, he enrolled as a linguistics major, but soon switched to art. Now he harnesses that self-doubt as energy "to really push and challenge myself," as his designs become increasingly complex. "The thread that flows through all of Rex's work is superior craftsmanship," said Kaiya Rainbolt ('16), an SDSU alumna and Ramos' 3D design instructor at Miramar.

After the inauguration, the medallion will become part of SDSU Special Collections and University Archives.

The Heart of Research. Chris Glembotski changed gears after realizing he wanted to promote health as a scientist.

By Jeff Ristine

Chris Glembotski's path to becoming a molecular cardiologist at San Diego State University began as a teenager in North Hollywood, with the books on exercise and heart health he saw his engineer father absorb.

Glembotski picked up the books, too. "I thought, if this is something on his mind—then it should be something on my mind, but I'm young. Maybe I can have a bigger impact than just keeping my own self heart-healthy."

His high school offered a physiology class, something unusual at the time, and one topic of study was the heart. "That was my favorite part of the course," Glembotski said, "and that's what I've been interested in ever since."

In recognition of Glembotski's research achievements over 33 years at San Diego State University, including \$35 million in grants received and new research on a possible drug treatment for heart attacks, the biology professor has been named Albert W. Johnson Research lecturer for 2019, the university's highest research honor.


"Dr. Glembotski is exactly the kind of professor that sets SDSU apart," said Stephen Welter, vice president of Graduate and Research Affairs. "His critical research advancing the field of heart disease, combined with his commitment to mentoring the next generation of scientists, is a true credit to this institution."

CAREER DECISIONS

Glembotski spent his undergraduate years as a biochemistry major at Cal Poly San Luis Obispo thinking he'd become a physician. That changed after mentors pushed back.

"Almost to a person, they said 'you're a science guy, not a doctor guy,'" Glembotski recalled. "And they were right because after my first research experience as a graduate student I was hooked. I realized what it meant to be a professor and a researcher, and I decided that's what I wanted to do."

He earned a Ph.D. in biochemistry at UCLA, and then went on to a postdoctoral fellowship in molecular and cellular physiology at the University of Colorado School of Medicine. His initial faculty appointment was in the Department of Pharmacology at



the University of Pennsylvania School of Medicine, where he established his first lab. He came to SDSU in 1986, joined the SDSU Heart Institute and became its director in 1997.

Glembotski studies the biochemical process in cells known as protein folding, and how misfolding contributes to poor secretion of a hormone in the heart, which ultimately can cause heart disease. His current research is focused on a possible drug treatment for heart attacks, work supported by a grant application that received a rare perfect score from the National Institutes of Health review panel.

Unlike some parts of the human body, the heart does not regenerate if damaged. A heart attack causes irreversible damage to the muscle, decreasing the organ's ability to pump blood throughout the body. For heart attack survivors, the impaired heart function is lifelong.

PROMISING COMPOUND

Glembotski's lab at SDSU is testing a compound that could reduce damage to the heart in the aftermath of a heart attack, boosting the heart's natural defenses against the damage. It works by activating ATF6, a protein found in heart cells that helps proteins fold and provides a sort of natural resistance to heart damage from a myocardial infarction.

Glembotski and his research team are investigating whether the drug candidate they've identified, administered soon after a heart attack, can mitigate organ damage in the following hours to days. It has been successfully tested in a mouse model of heart attack. A \$2.5 million NIH grant, awarded last year, will provide funding for an additional five years of work on the project.

"In the next stage we hope to expand and extend the results that we've gotten so far in mice to studies in larger animals, whose hearts are more like the human heart," Glembotski said. "Such studies are required before we can consider testing the drug candidate in people, which we anticipate doing in forthcoming clinical trials."

If this compound works in people as well as it did in mice, it could save many lives and improve the quality of the lives that are saved. Glembotski's research also found that the compound reduces damage to the brain in a mouse model of stroke, a development that considerably expands possible uses for the drug candidate as a treatment for certain neurological diseases.

Glembotski credits the staff and students in his lab with contributing the hands-on research leading to these results. The students share his excitement for the potential in their findings, which were published in the high-impact biomedical research journal, *Nature Communications*. He has inspired at least two current graduate students to follow in their mentor's footsteps.

"I started off at SDSU wanting to be an anthropologist," said master's student Alina Bilal. After taking a class with Glembotski, she said, "I loved the way he thought, the way he taught. That really made me want to join his lab...and it encouraged me to change my career path entirely."

Chris Glembotski will present this year's Albert W. Johnson Research Lecture, entitled "Don't Gamble With Heart Disease: You Got to Know When to Fold 'Em," at 3 p.m. on March 29 in Storm Hall West 11. The lecture is free and open to the university community and to the public.

THE INNOVATION *IMPULSE*

The impulse to innovate is strong in the human race. It leads to scientific and technological breakthroughs, to new solutions for social challenges and to bold leaps of imagination in the creative arts. In these stories, you'll discover what drives some of SDSU's most innovative people.

PHOTO BY CJ GUNTHER

Trampoline Dreams

At age 9 or 10, **NATALYA BAILEY ('08)** began sleeping on the trampoline outside her Oregon home and watching space stations and the spent stages of rockets pass overhead.

"It was a rural area; there wasn't very much light pollution, so I was able to do a lot of stargazing," recalled Bailey, who would become a rocket scientist and CEO before age 30.

"I spent a lot of time thinking about aliens. My parents were thankful I didn't end up deciding to study aliens."

Bailey now runs Boston, Massachusetts-based Accion Systems, which makes tiny ion propulsion engines for spacecraft. The engines are not only more affordable than conventional spacecraft engines; they also eliminate the need for the heavy tanks and toxic propellants of their much larger counterparts.

Accion's first two engines in space were purchased by the Irvine Unified School District in California last year. Launched in November and December, they maneuver satellites built by the district's high school students to perform scientific experiments and explore new space technologies.

Bailey said the trampoline dreams that eventually took shape as Accion Systems began to solidify at San Diego State University, where she majored in aerospace engineering.

She recalled learning "how much innovation there was still left to do in the field of space propulsion. It just sounded so cool and interesting—like it was a field just waiting to be

pushed forward."

Bailey launched her company while pursuing a doctoral degree at the Massachusetts Institute of Technology.

"That got very messy and I was facing a decision of dropping out to do the company full time, or pausing the company to finish my Ph.D.," Bailey said.

"As kind of a theme in my life, I turned to my mentors and peers and support network. I think it's really important for

"The small satellites are really exciting because they reduce the cost of operating something in space by several orders of magnitude. So the people that can utilize space are not just the governments of rich countries and HBO. Now high school students can do planetary science by watching a satellite."

founders to be able to recognize where they're going to need additional support, and to be able to ask for it and get it from the right places," she said. "You're never going to start a company and be the complete perfect package right off the bat, and so the sooner you can get comfortable with that, the better."

In the end, she completed the Ph.D. and got Accion off the ground in 2014 with cofounder Louis Perna.

As a woman in a field dominated by men, Bailey has become something of a celebrity. *Inc.* recently named her one of the 100 top female company founders in the country, noting that Accion has raised \$10.5 million in venture capital and booked \$7 million in U.S. Department of Defense contracts. She also appeared last year in MIT Technology Review's prestigious annual list of Innovators Under 35.

Bailey sees Accion's future as a participant in the democratization of space by changing what spacecraft can do.

"The small satellites are really exciting because they reduce the cost of operating something in space by several orders of magnitude. So the people that can utilize space are not just the governments of rich countries and HBO. Now high school students can do planetary science by watching a satellite," she said.

Satellite images of the planet can also help predict critical problems before they become crises, Bailey noted. They can show water levels of basins in the Amazon to help alert local populations of possible drought conditions. And they can potentially predict malaria outbreaks by assessing soil moisture and other determining factors.

"It's a really exciting time," Bailey said. "I don't think it happens that often in an industry, but right now, it's a great time to be a space startup."



Making History

After co-directing a political campaign (U.S. Rep. Juan Vargas' first for San Diego City Council), tackling urban development in New York City and earning three degrees, including a Ph.D. in history, **DANIEL WALKER ('90)** decided to start over. That's when his life became *really* interesting.

Walker gave up a tenured faculty position and took on a bold creative project that reconnected him with San Diego State University. It also placed him squarely in the national spotlight as a champion of art and filmmaking created by and about women and people of color.

"Looking over (my) life story, it now looks like it makes sense but I was scared everywhere," Walker admitted in a video made for Claremont Graduate University, where he was the commencement speaker and an honorary doctoral degree recipient last June.

Student activism was on the rise again when Walker came to SDSU as an undergraduate. He embraced the campus climate, becoming president of Associated Students and cofounding the nonprofit Leadership Excellence with close friend, Shawn Ginwright ('89, '93). They enlisted fellow students as volunteer tutors with the goal of increasing college matriculation rates among students of color.

A year after Walker graduated, SDSU academic counselor Wanda Clay Majors tracked him down. She urged him to apply for three prestigious national fellowships. He received all three and chose

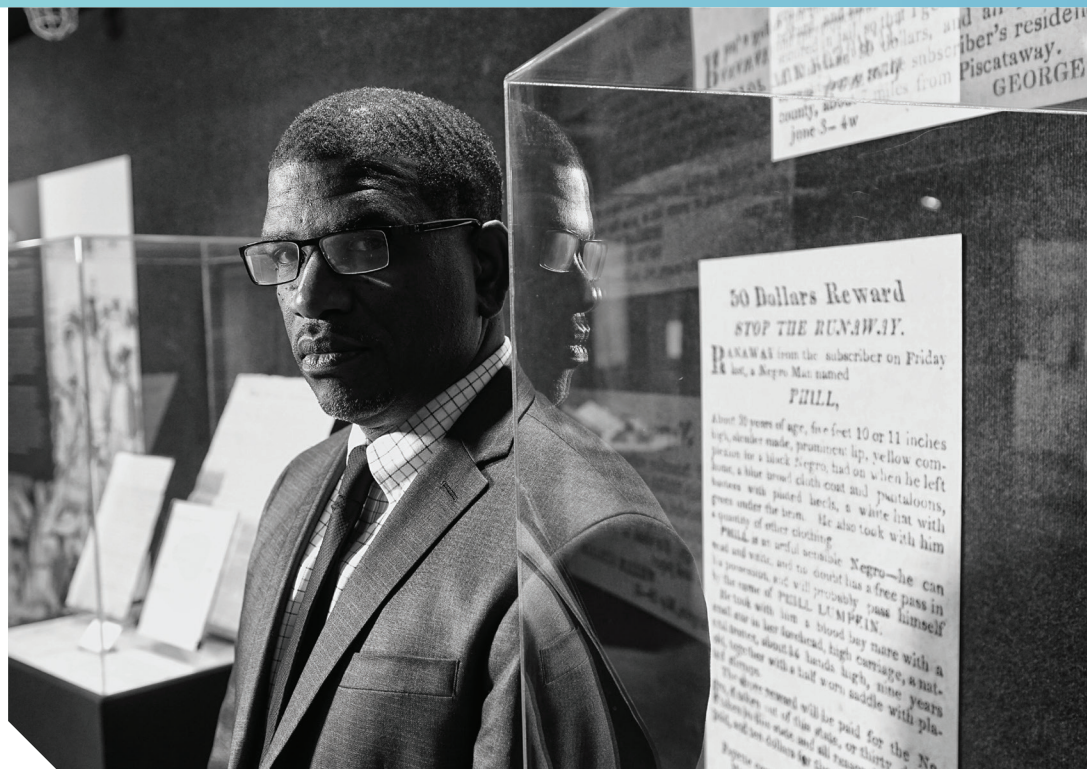


PHOTO: SANDY HUFFAKER

the Urban Fellows program in New York City. In subsequent years, Walker held a Kellogg Foundation Fellowship, led Habitat for Humanity in California and Mexico, earned his Ph.D., and joined the faculty at Indiana University. But teaching alone couldn't satisfy his creative impulse.

In 2009, he returned to SDSU and worked with the Department of Africana Studies to unearth film and videotape featuring the artistry of Danny Scarborough, a professor and founder of the Black Repertory Total Theatrical Experience.

Scarborough wrote, directed and choreographed dramatic dance performances reflecting the totality of the black experience. His troupe—comprising mostly SDSU students—won an Emmy Award in 1978 for a production inspired by the central character in Alex Haley's "Roots." Scarborough was among the first high profile Americans to go public with his diagnosis of AIDS. He died the year before Walker's graduation.

"If anyone, he was my model for life," said Walker. "He was the most energetic, innovative, insightful wellspring of art and culture that any of us has ever met."

"When Roosters Crow," Walker's tribute to Scarborough, received a nomination for Best Short Film at the 2014 San Diego Black Film Festival. In his attempt to take the film to a wider audience, Walker ran headlong into the obstacles facing underrepresented artists with big ambitions. His solution: launch a showcase for creators of diverse content to connect and preview their work. Walker's Long Beach Indie International Film & Entertainment Festival opens for a sixth season this summer.

"The Long Beach Indie helped to change the narrative about the entertainment industry's obligation to mirror the world we actually live in," said Walker. "That world includes women and men, gay and straight, and people of all colors and nationalities."

(continued on page 29)

Food for Thought

REYANNE MUSTAFA'S big idea started with a problem.

The San Diego State University student was working an evening shift at local restaurant True Food Kitchen when she saw the chef pick up a 30-pound pot of untouched rice and move to throw it in the trash. It was closing time, and the restaurant had no need for the surplus grain.

Mustafa jumped in front of the trash can and told the chef she'd take the rice.

The chef considered her. The waste bothered everyone, but it was a daily occurrence and an inevitable one in the restaurant business.

"What are you going to do with it?" he asked.

"I don't know," Mustafa said, thinking on her feet. "I'll feed people."

And so the seed of her company, Soul Much, was planted. At first, Mustafa packed the rice in foil and handed it out to the homeless; but that was an exhausting process, one she couldn't sustain for long.

In the back of her mind, she wondered what product she could make with upcycled grain. A protein powder? A granola bar? A cookie?

What Mustafa didn't know at the time is that SDSU is home to an award-winning entrepreneurship ecosystem organized to help would-be innovators like her: students, faculty and staff who have an idea but don't quite know how to turn it into a product.

This ecosystem, along with Mustafa's expansive knowledge of nutrition and sustainability (her major and minor, respectively), were critical

in making Soul Much into what it is today: a burgeoning cookie company with its own commercial bakery, a handful of employees, and a high volume business in venues like the popular Ocean Beach farmers market.

Mustafa and her business partner, fellow True Food server and SDSU environmental science major **KRISTIAN KRUGMAN**, applied and were accepted into the ZIP Launchpad, SDSU's competitive startup incubator.

Their idea to upcycle grain was a good one, but it needed to be refined with market research.

The duo hit natural markets throughout the region, interviewing shoppers about their preferences on everything from product taste to texture. They found there was room in the natural foods arena for an upcycle cookie, and decided they would use cooked surplus grain from restaurants, along with pulp from local juice shops, as the base for their confections.

Mustafa got to work baking. She spent five months perfecting her recipes, using ingredients like beet pulp and used coffee grounds.

"Some days I felt like I was so close, and then others I felt like I took 20 steps backward," she recalled.

"It's so magical when you surround yourself with people who believe in you, even when you don't believe in yourself yet. I think that was the key ingredient to our successful recipe."

Kristian Krugman, left, and Reyanne Mustafa collect unused grains from True Food Kitchen.

She eventually settled on flavors like carrot ginger turmeric, red velvet beet and chocolate espresso.

Throughout those difficult early days, the ZIP Launchpad and SDSU's Lavin Entrepreneurship Center, which provides resources and education to entrepreneurially minded students, helped Soul Much build a lean business plan and make critical connections with mentors and fellow entrepreneurs who offered invaluable advice.

"We got a crash course MBA in one semester," said Krugman.

SDSU's entrepreneurial ecosystem infused the company with critical resources from the start, including more than \$10,000 in equity free funding to build the business and help its founders travel to pitch competitions, where they won even more start-up funding. Soul Much participated in the Aztec Cooperative Fund, which gives entrepreneurial teams funding to hire SDSU students, allowing the company to work with graphic design students in crafting their logo, packaging and website.

"It's so magical when you surround yourself with people who believe in you, even when you don't believe in yourself yet," Mustafa said. "I think that was the key ingredient to our successful recipe."

PHOTO: SANDY HUFFAKER



The Shape of Water

Whenever it rained, six-year-old **TRENT BIGGS** would get in trouble for digging ditches in the school playground. “I just liked watching water flow around,” he explained.

He still does. Now a San Diego State University geography professor, Biggs leads water-use studies from the Himalayan foothills of Nepal to the Amazon rainforests of Brazil. Closer to home, he’s focused on the Sonoran desert towns and farms that surround SDSU’s Imperial Valley campus on both sides of the U.S.-Mexico border.

The problems there are as old as the urbanization of Southern California: insufficient water to meet community demands and ecosystem needs. The solutions, which could figure into future policy-making, are both increasingly high-tech and surprisingly personal.

PHOTO: SANDY HUFFAKER



“All the big environmental issues come together around water, and Imperial-Mexicali Valley is a great place to study all those issues because it incorporates them in one place.”

“All the big environmental issues come together around water, and Imperial-Mexicali Valley is a great place to study all those issues because it incorporates them in one place,” Biggs said.

The Biggs Watershed Science Lab’s work in Imperial Valley is a collaborative effort, comprising multiple studies by faculty and students from both campuses. They are joined by research colleagues in the Imperial Valley at the Cooperative Extension Office of the University of California, Davis and the Imperial Irrigation District; by the nonprofits Pacific Institute and Comite de la Valle; and by researchers across the border at the Universidad Autónoma de Baja California and El Colegio de la Frontera Norte.

Together, these groups aim to assess the effects of shrinking water supplies in an arid region dependent on agriculture. Their primary goal is to provide information needed by current and future decision-makers to develop water policies benefiting people, economies and ecosystems.

“Time and time again, society has adapted to less water in ways that can end up making us better off,” Biggs said.

Farmers adapt

Imperial Valley’s history as an agricultural center began in the early 20th century when ambitious irrigation projects first brought Colorado River water to the area. Eventually, the demands of growing populations along the river’s route from the Rocky Mountains to the Gulf of California forced a continuing series of cuts in water allocations for agriculture.

Farmers in the valley have so far adapted to reductions in imported water by implementing conservation and efficiency measures, even leaving some fields unplanted in exchange for payments from the Imperial Irrigation District, ultimately funded by the San Diego County Water Authority.

While Biggs stresses the researchers’ job in the Imperial and Mexicali Valleys is to document the issues, not suggest solutions, preliminary data point toward a few new ideas worth exploring. One possibility: Farmers may be able to continue improving water efficiencies by switching crops without sacrificing revenue or reducing the workforce.

Biggs said most of the water used by Imperial Valley agriculture now goes to alfalfa, grown as animal feed. But salad greens and other grocery produce could bring in more money for the same amount of water, he added. Switching crops also could contribute to the Imperial Valley’s growing importance as a driver of California’s aggressive emissions reduction plan. Already, the region is bustling with clean energy projects—wind, solar and geothermal.

However, even the most well intentioned water conservation methods can have unforeseen consequences. For example, new concrete liners have minimized leakage from old earthen irrigation canals in Imperial Valley. But Mexican farmers who



PHOTO: SANDY HUFFAKER

depended on that seepage into underlying aquifers are seeing their land dry up.

“The whole idea of saving water often means taking supposedly “wasted” water from another user,” Biggs said. “So we’re not sure what the ultimate impact of conservation policies will be on the water balance of the region. One of the big questions we’re looking at is: What is the future of the Imperial and Mexicali valleys under reduced water supply?”

The first step in answering that question is documenting and quantifying the impacts of current water and land use policies. To gather this data, Biggs and his students combine high-tech and old-school research methods: satellite photos and in-person interviews.

“We’re interested in using satellite imagery to see where groundwater levels and water quality are changing and where we should talk to people to learn how those changes have affected them,”

Biggs said. “Our goal is to understand the cause of shifting land use in their fields and how are they responding.”

Mixed methods

Graduate student Joel Kramer used this approach in gathering data for his master’s thesis. He first mapped water scarcity effects by noting the appearance or disappearance of green crop areas in satellite images of Imperial and Mexicali valley farms. Then he and the undergrads he mentors drove out and asked some 25 farmers in Mexico how those visible changes had affected them.

Gabriela Morales, also an SDSU master’s student, was drawn to this mixed-methods research model after completing her bachelor’s degree at UCLA last year. She chose the study of geography over more heavily quantitative environmental sciences because of geography’s emphasis on human

interactions with natural processes. Morales hopes her eventual findings will inform future water policy.

“I want to create a holistic view of what’s happening; I want to connect people to the environment,” Morales said.

Biggs considers the kind of fieldwork done by his students in Imperial Valley as an invaluable part of any educational experience in geography. To understand big problems, you need to see them firsthand.

“Meeting the people affected, hearing their stories, seeing it happen in front of your eyes—it’s hugely motivating and hugely educational,” Biggs said.

“You get experience with how knowledge is created and discoveries are made. You see how stuff you learned in class came to be. You understand the problems and nuances that go into testing hypotheses and making statements about how the world works.”



PHOTO: SANDY HUFFAKER

Transborder Lives

When the northward journey of a Central American migrant caravan prompted closure of the U.S.-Mexico border last November, San Diego State University President Adela de la Torre issued a statement offering support and assistance to students, faculty and staff members affected by the shutdown. No one was happier to receive the message than doctoral candidate **VANNESSA FALCÓN ORTA ('08)**.

Falcón, 33, lives, studies and conducts research on both sides of the border. Now in the fourth year of a joint Ph.D. program in education at SDSU and Claremont Graduate University, she has carved a new research niche with her work on transborder students in higher education. Falcón explores concepts such as campus climate, student-led grassroots initiatives, transborder identity and the intersections of race, ethnicity and gender. Her life informs her scholarship.

Born in Los Angeles, Falcón grew up in both the United States and Mexico. In sixth grade, she began crossing the border for school, which made living arrangements difficult. "It was challenging, but now I draw a lot from that," she said. "It became part of who I am today."

Living a transborder life is more than just an experience, Falcón asserted. "It's an identity and a culture in and of itself that is very much salient to the selves and beings of these students and who they are." Through quantitative, qualitative, and visual methodologies depicting the voices of transborder students, she hopes to define and distinguish, among other things, the shared traits and characteristics of these individuals.

Falcón said transborder students are often an invisible population, even to themselves. That's why in 2015 she started the Facebook group *Estudiantes Transfronterizos*, which grew into a student group at SDSU called the *Transfronterizx Alliance Student Organization (TASO)*. Now officially recognized by SDSU, the organization helps create an equitable and inclusive campus environment for the university's transborder community.

For Sara Gonzalez-Quintero ('18), TASO was a revelation. Before discovering the organization, she had difficulty meeting others who could relate to her transborder experience. Those who traverse the border infrequently, she said, often discount the emotional and psychological toll.

"It's always present," Gonzalez-Quintero said of the crossing experience. "Whatever interaction you have with the border you take with you the rest of your day, and there are high levels of anxiety that go with it."

Gonzalez-Quintero had difficulty finding a comfortable social and cultural fit in her first two years at SDSU. She could empathize with being Latina in this country, but her life experiences were different. She felt inaccurately categorized by one group or another.

"We are in between," she said. "Most of us are Mexican-Americans, but that doesn't mean we have to be relegated to one country. It's about transitioning all the time, and sometimes you feel you're from both, but sometimes you feel like you're from neither."

Randy Timm, SDSU dean of students, has worked with underserved groups to alleviate the feelings of isolation they may experience on campus.

"Vanessa has a great sense of the pulse of the transborder community," said Timm. "She has been an incredible spokesperson."

This spring, Falcón introduced the Transborder Student Ally Program to train faculty, staff and students in ways to support SDSU's transborder community. "I see myself as a change agent, and to be a change agent you do need to acknowledge and work within institutions," she said.

If President de la Torre's November border message is any indication, SDSU is gaining a better awareness of transborder students and their needs. Thanks to Falcón's efforts, a community once largely overlooked is achieving much greater visibility.

Stage of Development

He calls it the Silicon Valley model of musical theater: producing a new show with a long, upfront period of collaboration instead of a traditional approach that pushes composers and writers out of the picture before cast members sing a single note.

ROBERT MEFFE, head of San Diego State University's MFA Musical Theatre Program, hopes the model he's spearheading will help sustain a "uniquely American art form" that has defied persistent rumors of its demise.

Over two full years, Meffe— together with SDSU director and choreographer Stephen Brotebeck and the cohort of MFA students who enrolled last fall—will collaborate with a writer/lyricist team to polish their original work for a full production on the SDSU stage.

Meffe and Brotebeck have worked on Broadway, where the creative process of fine-tuning a musical is shoehorned into staged readings limited by union contract to just 29 hours. This high-pressure, low-continuity method frustrates composers and writers, Meffe said, and doesn't benefit student performers and stage designers who are just beginning to learn theater.

"Stephen and I thought, 'Why don't we develop a piece over a longer period of time and see what that looks like.'"

Thus was born the New Musical Initiative, which is developing the original show, "'Til Death Do Us Part," in three steps:

Fall 2018: A traditional 29-hour reading, attended by the composer/lyricist and bookwriter, who

then had an extended period to revise their work.

Spring 2019: A one-week workshop with the student performers reading and singing with limited staging. After this, the writers have yet another chance to touch up their work; the designers begin developing ideas for lights, costumes and sets.

Spring 2020: A full production in SDSU's Don Powell Theatre, with seven public performances.

An open call for submissions encouraged women writers to apply. Meffe said that preference reflects the School of Theatre, Television, and Film's commitment to 50 percent representation by female authors in the plays and musicals they choose. It also addressed the almost complete dearth of female writers with published musicals.

Meffe received more than 120 submissions. "'Til Death Do Us Part," by Bobby Cronin and Caroline Prugh, is the story of Gracie Jean, the wife of an evangelical preacher in Tennessee who aspires to ministry herself in the face of opposition from her husband, his dogmatic parents and their community.

"The story is very relevant," Meffe said. "What is faith and what is grace in terms

of that community, and in terms of where we live in 2019 in the United States?"

Prugh, the New York City-based bookwriter on the musical, describes Meffe's initiative as "the Cadillac of developmental opportunities," and said she's excited by staying connected to the production throughout.

"We came to San Diego with a draft that we never heard read before," Prugh said. "We were getting to see it for the first time and make changes as we went along, while it was still fresh."

Annie Barrack, who plays Gracie, said the approach is more relaxing than the traditional method of learning a new show, and the creators of "'Til Death Do Us Part" have been receptive to feedback from students.

The initiative has elicited positive reaction, including a \$15,000 gift from a program donor impressed by the first iteration of the idea, and a writers residency grant from the National Alliance for Musical Theatre.

Meffe said the learning process—not the outcome of the show—is at the foundation of the initiative. Being innovative, he said, means "you have to be unafraid of disaster."

PHOTO: SANDY HUFFAKER



“We’re asking how we can make changes that will lead to a higher quality of life for San Diego.”

—Anca Segall

Gut Feeling

Researchers know it as the Patterson case. Tom Patterson, a professor of psychiatry at the University of California, San Diego, (UCSD) School of Medicine contracted a multidrug-resistant strain of the bacterial infection *Acinetobacter baumannii* during a 2015 vacation in Egypt. Transported back to San Diego, his condition improved, then reversed. He fell into a coma.

Standard antibiotic treatment options had nearly run out when Patterson’s wife, Steffanie Strathdee, began to research alternative remedies. An infectious disease epidemiologist and director of the UCSD Global Health Institute, Strathdee read about a century-old method of treating deadly bacterial infections. Known as phage therapy, it is utilized by medical professionals in parts of Eastern Europe, but has been generally ignored in this country.

Phage therapy involves administering a cocktail of bacteriophages to target a specific bacterial infection. Bacteriophages are viruses that replicate inside bacteria; they can be beneficial, neutral or toxic to their host. Strathdee and the UCSD team found a handful of researchers around the United States who had cultured bacteriophages thought to be effective in destroying *Acinetobacter baumannii*.

For the final, critical step—purification of the phage cocktail—Strathdee turned to San Diego State University and the research team in the Viral



PHOTO: SANDY HUFFAKER

Information Institute (VII). Their translational research applies knowledge from basic biology and clinical trials to techniques and tools that address critical medical needs. After receiving phage therapy, Patterson recovered.

Robust team

SDSU emerged as a hub of innovative phage research around 2002, when VII co-founders Anca Segall and Forest Rohwer published the first shotgun metagenome. Using environmental samples from San Diego's beaches and sophisticated mathematical models, the researchers simultaneously sequenced the millions of organisms present, revealing that viruses are the most diverse and uncharacterized life forms on the planet.

"SDSU was the first to sequence uncultured marine phage taken directly from the environment," said Rohwer. "We were able to figure out how to go into an ecosystem and discover the viruses in it."

Rohwer has since travelled from the tropical Coral Triangle to the frigid waters of the Arctic to continue collecting virus samples for sequencing. He and Segall also recruited other biologists interested in phage research, and hired computer scientists and mathematicians to bring processing power to bear on viral discovery. Now a robust team of 20 principal investigators, each with individual areas of expertise, VII members collaborate to leverage the power of bacteriophages in viral ecology and personalized medicine. Their goal, simply stated, is to harness the global virosphere.

The first tree

The VII again made headlines in 2014, when computer scientist Robert Edwards found a previously undetected virus that lives in the guts of half the world's population and may be linked to obesity and diabetes.

He and his team named the virus crAssphage after the cross-assembly software programs used to discover it.

"We've basically found it in every population we've looked at," Edwards said. "[crAssphage] is really a diverse virus that is all over the globe. "When we identified it, we didn't realize we had found something that would wind up being so widespread. It was sort of like we found the first tree without knowing about forests."

Another group of VII researchers is investigating viral strategies against cystic fibrosis, a genetic disease that causes persistent lung infections and usually leads to premature death. The researchers have defined methods to characterize both the viruses and the bacteria in the lungs of patients and rapidly get the data to doctors, opening a path to the design of personalized and novel treatments. The VII's newest recruit, Dwayne Roach, who holds the Conrad Prebys Chair in Virology, has experience developing phage therapy for treatment of multidrug resistant infections in humans—the type of infection that nearly killed Tom Patterson.

Maligned history

Roach came to SDSU from the Institut Pasteur in Paris, where about a century ago, microbiologist Felix d'Herelle first identified and named bacteriophages. D'Herelle envisioned therapeutic applications for these "bacteria-eaters" and used them—with mixed success—to treat bacterial dysentery at the Hospital des Enfants-Malades. He was also among the first to suggest using phage cocktails when single phages proved ineffective.

European and American scientists replicated d'Herelle's work, and he received several prestigious awards. But when the 1940s ushered in pharmaceutical antibiotics, including the wonder drug penicillin, phage therapy was discarded.

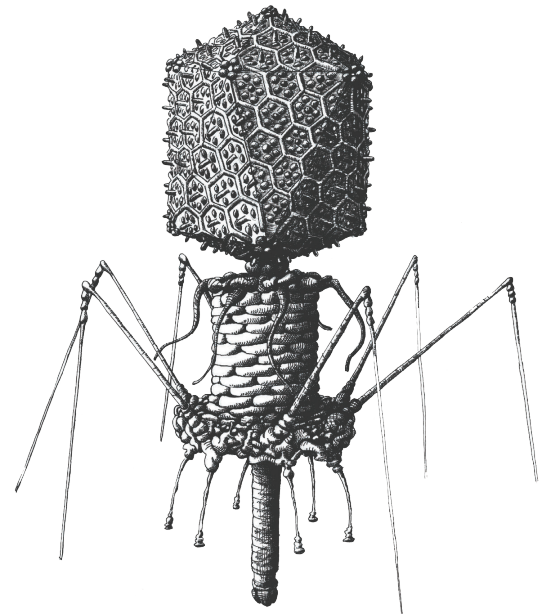


ILLUSTRATION: BEN DARBY

Artist's rendition of a bacteriophage

Scientists today are rediscovering the potential of bacteriophages as powerful restorative weapons benefiting human and ecological ecosystem health. Working to the advantage of SDSU's VII is its location in biotech-rich San Diego and a successful partnership with UCSD Medical Center, whose leadership, Rohwer said, is eager to take advantage of SDSU's phage research.

The VII has even more ambitious goals as it looks 10 and 20 years into the future. "We're asking how we can make lasting changes that will lead to a higher quality of life for the entire San Diego region," Segall said.

The use of phages to improve water quality, prevent food contamination, degrade harmful chemicals in shipyards, hunt down toxins in the environment and maintain the health of wetlands is no longer the stuff of science fiction. Nor is the concept of tweaking phages to make them even more skillful hunters of bacterial infection in humans—before the infection becomes deadly.

Graphic Memories



PHOTO: SANDY HUFFAKER

The characters in **CLAUDIA DOMINGUEZ'S** graphic novel aren't superheroes. They are an ordinary family living through a harrowing ordeal.

In the spring of 2013, Dominguez's father was kidnapped in Mexico City, held for four days and then released for ransom. A year went by before she allowed herself to revisit the traumatic episode. When she did, Dominguez, a university-educated artist, began to paint the story of those four days and realized its narrative power.

In a "sheer act of will" and lacking any professional writing chops, Dominguez chronicled the family's experience with minimal text and stark imagery. On a deeper level, her story is also a lens into the corruption and lawlessness that taints everyday life in Mexico.

"I knew it was important for this story to be in people's homes," said Dominguez, who studied sculpture and fiber arts. "As a graphic novel, it would be accessible to everyone, and the form gave me freedom to

grow as an artist. I felt I couldn't fail as long as I finished."

How Dominguez's novel, "More Than Money," came to be published by San Diego State University Press is a story of resolve and vision. Dominguez's resolve and **WILLIAM NERICCIO'S** vision.

Nericcio is a professor of English and comparative literature and director of SDSU Press, founded more than 60 years ago as San Diego State College Press. Dedicated to scholarship in border studies, experimental literature, cultural studies and critical theory, SDSU Press counts Jane Goodall and Noam Chomsky among its published authors.

From the initial reading, Nericcio found Dominguez's manuscript riveting. "I couldn't believe it was her first book," he said.

An aficionado of comics and experimental novels, Nericcio had been tracking the growing number of university publishers championing graphic narratives. With approval from the SDSU Press board of editors, he created a new division,

Amatl Comix, with Dominguez's book as its premiere publication.

To give the book critical heft, Nericcio asked friends in academia to contribute to the project. Frederick Luis Aldama, Arts and Humanities Distinguished Professor of English at The Ohio State University, wrote a foreword.

Sam Cannon, Bruce and Steve Simon Professor of Language and Literature at Louisiana State University Shreveport, wrote an afterword in which he compared Dominguez's watercolor drawings with the murals of David Alfaro Siqueiros and Jose Clemente Orozco.

The publication of "More Than Money" by SDSU Press affords the book singular status in the graphic novel universe. Pop culture has become a serious field of study at universities, and Dominguez said she is thrilled to have contributed. She's currently working on a second graphic novel about a young girl in Mexico City who rebels against family and societal expectations after a series of empowering adventures with an underground feminist group.

Dominguez's entire family now lives in the United States. Although the kidnapping remains a painful memory, Dominguez and her father have returned Mexico City as tourists. Each visit, she said, "fills me up" with affection for the culture and traditions of her native country.

MORE ABOUT SDSU PRESS

SDSU Press is an independent scholarly press and the oldest publishing house in the California State University system. Its divisions and imprints specialize in manuscripts focused on border studies, critical theory, literary criticism, Latin American studies, cultural studies and comics.

Although its primary audiences are universities and libraries, SDSU Press has increased sales to the public over the last two years by making its books available through Amazon.

Services for Rent

The decisive moment in **ANDREW ADRIAN'S** drive to start a company was when he realized he was doing it all wrong.

In an idea that emerged from a frustrating experience looking for a kayak, the ex-Marine envisioned LENDIT as an online marketplace for individuals to rent things to each other. Once in operation, however, Adrian noticed prospective customers seemed more comfortable dealing with established businesses than with strangers.

What made more sense, Adrian decided, was developing software to assist shops already in the business of renting but missing out on potential opportunities. He had seen many businesses operating at a level just one step above pencil-and-paper; others were trying to book rentals with software designed to reserve a table at a restaurant.

"You have this huge industry that's not being serviced," said Adrian, who pivoted the company's business plan with assistance from San Diego State University's ZIP Launchpad. Still in its beta phase, LENDIT's app—essentially a specialized management system—now has dozens of clients who are testing the service or in negotiations for the business rental software upon public release.

"We can change this idea in society that you have to own everything," said Adrian, who sees the proliferation of self-storage facilities as a sign people are hanging onto too much stuff they didn't need to buy in the first place. "Making

renting more convenient—that could be very powerful."

Adrian spent four years stationed at Camp Pendleton "driving tanks into the ocean" and serving in a machine gunners team. He deployed to Afghanistan and shortly after his discharge in 2014, enrolled at SDSU through a scholarship program offered by the U.S. Department of Defense.

The 2½ years since he developed the idea for managing rentals have been a high-stress whirlwind. The time overlapped with a job he had at a cybersecurity firm, where he rubbed elbows with members of Canada's Parliament, Microsoft executives and the director of the National Security Agency.

At first, LENDIT occupied a series of "offices" that included his Pacific Beach living room and a friend's garage before settling into donated space at a co-working facility in University City. No one was paid.

Once accepted into the ZIP Launchpad, Adrian received critical mentoring and support, office space and opportunities for networking. A 2016 gift from alumni Tom and Linda Lang specifically supports veteran entrepreneurs working in the center.

"I basically lived there because I could study and work on my business," Adrian said.

Adrian raised \$85,000 for LENDIT from savings, friends and family and brought on two SDSU alumni as partners, vice president Alex Weber and software engineer Nika Zaballa.

The company is still strictly business-oriented, and for now, focused on recreation equipment rentals in San Diego. Users pay a monthly subscription fee. To Adrian, however, the possibilities are endless. He would love to show

the concept to a national department store or home improvement chain. A friend is drumming up possible business in Hilo, Hawaii. He knows a guy with more than 100 board games, ready for lending.

Adrian also has plans to offer a marketplace via web and smartphone



PHOTO: SANDY HUFFAKER

app that would allow local businesses and startups to post any kind of rental offerings—party equipment, for example—and how soon it could be delivered. And recognizing the advantage of saving customers a drive across town, he is developing a delivery component that would operate like Grubhub and DoorDash.

Then there's Adrian's mom, a budding entrepreneur back in Oklahoma. With LENDIT's help, she hopes to start up a business to rent cooking equipment by the end of the year.

Virtually Present

When **DAVID CLINE** was 10 years old, his parents took him to visit the beaches of Normandy, France, where Allied forces landed on D-Day during World War II, handing the invading armies a decisive victory at the cost of tens of thousands of lives. As a boy, the San Diego State University public historian saw the hillside bunkers from which Axis soldiers

rained down bullets on soldiers speeding to shore. Cline remembers feeling both awed and humbled.

Philosophers have a term, *numen*, for the semi-spiritual feeling you get from being in the place where something incredible happened. It's difficult to replicate, but researchers and educators at SDSU are experimenting with ways to use virtual and augmented reality to allow students to have that experience without leaving the classroom.

Cline, who joined SDSU in 2017 as an associate professor of history, began investigating the possibility of using virtual and augmented reality several years ago while teaching and researching at Virginia Tech. With funding from the National Science Foundation, he and colleagues



“It’s no longer the case that you are being professed at. It’s two-sided, it’s a discussion. That’s really what active learning is all about.”

SDSU professor Harsimran Baweja guides student Eunice Bae during a VR demonstration.

PHOTO: SANDY HUFFAKER

created an iPad application using 3D models of the Christiansburg Institute, an historic school in Virginia founded to educate freed African Americans after the end of slavery and the Civil War. Only two brick buildings remain from the original campus, but it was once a grandiose, sprawling complex.

Witnessing history

Cline and his colleagues took local students out to visit the campus, computer tablets in hand. As the tablets' cameras panned over the grounds, the site's former glory leapt to life on the screens with virtual models of the old buildings appearing superimposed on the landscape. Students could virtually "enter" the buildings, see historic artifacts on display and learn about the school's history.

"These fifth-graders had grown up in this area and had been driving by with no idea what this place was," Cline said. "Through this app, we were teaching them to ask what this place was, what happened here—essentially, to ask historic questions."

At SDSU, Cline is starting a new augmented reality project. Though it's still in early stages, he envisions creating an app that allows students or members of the public to take three-dimensional walkthroughs of historic sites around San Diego, as well as interact with 3D models of objects inside those sites. So far, he has partnered with the Coronado Historical Society and the La Mesa Historical Society to begin some pilot projects in the spring.

"We're trying to create sort of a seamless segue between walking through an historic house museum, approaching an object—let's say a 19th century candlestick—and being able to reach out and grab it, flip it over and look at it—all the things you can't do in an actual museum."

The ability to flip that candlestick over to see its maker's mark or point

of origin gives students the chance to discover aspects of an object's or site's history through self-guided exploration, Cline notes, which is essential to learning to think like an historian. Such virtual exploration also opens up opportunities to students with limited mobility and allows ordinary people access to far-flung or off-limits locations around the world, such as WWI-era mountain bunkers in France or the guard towers of the Great Wall of China.

New dimensions

Other SDSU professors are using VR and AR technology to give students insight into someplace much closer to home, though nearly as inaccessible: the inner workings of the human brain and mind.

HARSIMRAN "SIM" BAWEJA teaches neurophysiology to first-year physical therapy majors. When he was learning brain anatomy and cognitive function some 20 years ago, the nature of the instruction made some of the concepts difficult to grasp, he said.

"The brain is a three-dimensional object, but it was taught to me in two dimensions," said Baweja, SDSU Instructional Technology Fellow for immersive learning. "It was drawn on a blackboard with chalk."

In his classroom today, students virtually explore a holographic brain on iPads. They can move the brain around, disassemble it and put it back together to see how specific regions connect to one another and how disease or damage might impair certain cognitive functions like speech or balance.

Another prong of Baweja's research involves plugging people with movement and balance disorders into a virtual world to safely assess their condition and work on rehabilitation. For example, he looks at how stress affects balance and muscle control in people with Parkinson's disease. By having someone with the disease walk

a virtual high-rise balance beam, he can elicit a stress response that just wouldn't be feasible or safe in the real world.

Using holographic brain models and teaching virtual reality research techniques fundamentally changes how students participate in a lecture, said Baweja, who's also director of the Neuromechanics and Neuroplasticity Laboratory in the School of Exercise and Nutritional Sciences. "It's no longer the case that you are being professed at. It's two-sided, it's a discussion. That's really what active learning is all about."

A CSU-wide initiative

Baweja's class for the doctor of physical therapy program is one of 35 supported by SDSU's Virtual Immersive Teaching and Learning (VITaL) initiative. Developed by SDSU's Instructional Technology Services (ITS), led by James Frazee, VITaL brings virtual reality, augmented reality and mixed reality immersive tools into the curriculum.

It serves as an incubator to enable experiences that would be out of reach in a traditional learning environment, such as manipulating the brain as Baweja's students can do on their iPads and getting up close to celestial events in outer space.

The ITS initiative has led to collaborations between faculty and student organizations like the Aztec Game Lab and the SDSU Virtual Reality Club. The latter received grant money to develop a VR application to support the nanomaterial curriculum for an intro-level mechanical engineering class.

"We are pushing beyond the limits of the classroom to ensure a more realistic, comprehensive learning environment for students," said Frazee. "In 10 years, we're going to wonder how we taught without this technology."

The Ball's in Her Court. SDSU bucks a trend with women coaching most women's sports.



Even on a golf course or softball field, there can be a glass ceiling in collegiate athletics.

Across U.S. campuses, female athletes crushing track and field records or driving for a spot in March Madness are more likely than not to be coached by a man.

With women heading eight of 12 women's teams, San Diego State University is challenging the invisible barriers that exist, even in women's sports.

The university ranks in the top 20 among NCAA Division I institutions in the hiring of women coaches.

Jenny Bramer, the Aztecs' executive associate athletic director, is proud of SDSU's leadership in this arena. Over the past 15 years, she's worked hard to search out stellar women candidates for head coach openings.

"The key to hiring women is recruitment," Bramer says. "We've had a lot of men who apply for coaching jobs; we've had to go find women."

Once upon a time, nearly all inter-collegiate sports played by women were coached by women. Then along came Title IX, the 1972 law prohibiting sex discrimination in federally funded educational programs. A decade later, the NCAA accepted women's sports.

Progress, right? Yes and no. With the boost in prestige and funding, women's sports became a viable

career path for male coaches, most of them recruited and hired by male athletic directors from within mostly male professional networks.

Even today, at NCAA Division I schools, men coach nearly 60 percent of women's teams, according to the University of Minnesota's Tucker Center for Research on Girls and Women in Sports.

"It's amazing to me that there's been such progress for women, and yet in coaching we've gone backwards," said Carin Crawford, the long-time head coach of SDSU women's water polo. In her sport, only 20 percent of top coaches are women.

Whether consciously or not, student athletes notice such glaring disparities, which shape their assumptions about the world of college sports—and often their own potential.

Women athletes who never see a woman coach may never think of coaching as a possible career, no matter how well they play or how much they love their sports. Things change when administrators bring women into leadership.

"We have a saying in women's sports," Bramer said. "If I can see her, I can be her."

Johnna Fouch offers proof. She's a fast-tracking 2014 SDSU graduate

who just became head volleyball coach at Eastern Kentucky University.

Fouch grew up with a powerful female role model—her mom, a high school athletic director. But it was Aztecs volleyball head coach Deitre Collins-Parker who inspired Fouch’s career choice.

“Our volleyball team had an all-woman staff my senior year. I loved that experience and wanted to pass it on to other students, which is why I got into coaching,” Fouch said.

Collins-Parker also helped Fouch find her first job. “I wouldn’t be here at Eastern Kentucky if it weren’t for Deitre mentoring me and reaching out to coaches,” Fouch said.

As women coaches strengthen their professional networks and ascend to top jobs, they tend to hire other qualified women and introduce policies that help retain them.

“
**We have
a saying in
women’s sports.
If I can see her,
I can be her.**
”

Crawford applauds a recent shift toward family-friendly policies. When she was pregnant with her children, now teenagers, she didn’t tell anyone until it became obvious, and she never talked about her kids at work.

“Being pregnant was not associated with being a great coach,” she explained. “I had a fear I would be seen as not doing my job to my best and

highest ability. Now we have a baby boom in the department, and everyone’s managing beautifully.”

Bramer, who’s also a mom, confirmed that change has been intentional. Though long hours and frequent travel make coaching a tough job for any parent, SDSU “has created a culture that’s inclusive of family priorities,” she said.

Both Crawford and Collins-Parker have worked to create additional support and professional development opportunities for their colleagues. Crawford co-founded the Women of Water Polo and Coaching (WOWPAC). Collins-Parker organized clinics and mentorships for underrepresented women volleyball coaches.

A 1988 Olympian who never had a female coach herself, Collins-Parker finds the opportunity to mentor student-athletes’ deeply rewarding, whether they choose a career in athletics or not.

She mentions a recent thank-you note from an alumna who reported she’s applying the grit she developed in volleyball to her business career.

“That’s why you coach,” Collins-Parker said, “to pass along life lessons that carry them through whatever they do.”

Crawford agreed. “I’m so proud when they’ve never seen themselves as a coach, and they say, ‘Hey, I want to coach.’ But wherever they go in their professional lives they will lead and have confidence.”

Bramer made clear that the best candidate to lead athletic teams can come from any gender.

“What we’ve done,” she explained, “is go out and actively search for women who may be that person.”

—Sandra Millers Younger



An Investment in Hard Work

Carol Lavin Bernick continues her parents' legacy of supporting entrepreneurship at SDSU.



Carol Lavin Bernick recalls her father's accounts of the enterprising students he met during frequent visits to San Diego State University.

"I heard my dad talk about these students and saw him invest in their hard work," she said.

Bernick's father is Leonard H. Lavin, who along with his wife Bernice, transformed a regional beauty supply manufacturer into the international Fortune 1000 company Alberto Culver. After years of personal involvement as a guest lecturer and mentor at SDSU, Lavin endowed the university's entrepreneurship center, which was renamed in his honor.

Bernick worked alongside her father as president of Alberto-Culver Consumer Products Worldwide and eventually as executive chair of the parent company, initiating its sale to Unilever in 2011.

Currently CEO of Polished Nickel Capital Management, Bernick is continuing the family tradition of investing in SDSU with a significant, multiyear gift to support promising student startups developed through the university's nationally-recognized entrepreneurship and innovation hubs. She was inspired to give after meeting with SDSU entrepreneurship students in late 2017.

SDSU's Lavin Entrepreneurship Center, part of the Fowler College of Business, offers professional mentoring, internship programs, guest lectures and curriculum guidance for aspiring business owners and CEOs.

A number of prestigious awards underscore the center's success. In 2017, SDSU was named the Model Undergraduate Entrepreneurship Program by the U.S. Association for Small Business and Entrepreneurship, and in 2018, the Lavin Center received the NASDAQ Center of Entrepreneurial Excellence award from the Global Consortium of Entrepreneurship Centers.

The right time

Bernick's gift provides seed funding for another facet of the Lavin Center's work—helping students launch startups. Fourteen students working individually and in teams received support for their fledgling businesses last year. Some are still in the conceptual stage; others are developing prototypes and several are already up-and-running.

Alex DeNoble, director of SDSU's Lavin Entrepreneurship Center, coaches Lavin Entrepreneur student Chad Vardas during a class at the center.

Josh Munoz is the co-founder with Austin Wulf of Truely, which will sell bioplastic food containers free of toxins that can leach into food.

"This seed money came at just the right time for us," said Munoz. "We have a prototype, and now we need funding to buy the materials." The team is planning to file a utility patent for its product with the U.S. Patent Technology Office.

Bernick's gift also funded a series of informal working dinners at which entrepreneurs answer student questions and recount their stories of success and lessons learned. The guests in 2018 included Zeynep Ilgaz, co-founder and president of Confirm BioSciences; Inc.; Ralph Rubio, co-founder of the fish taco restaurant chain Rubio's; Gail Naughton, founder, CEO and board chair of Histogen Inc.; and Steve Lake, founder of Sector 9, a skateboard manufacturer.

Sharing life lessons

Bernick has shared her success story with students, too, both personally and through "Gather As You Go," published in 2018. The book includes stories and personal observations about business, leadership, philanthropy, building connections and other "lessons learned along the way."

"Gather As You Go" also pays tribute to Bernick's parents. Her father was "the consummate entrepreneur," she said. "He had vision and an unyielding sense of drive. You could knock him down, and he would always get back up." Bernice was Leonard's equal, Bernick said. "She was truly a co-founder of the company. I learned so much from them."

The Lavins were philanthropists, and their generosity is a lesson Bernick took to heart. She has supported several universities in addition to SDSU. She also created Enchanted Backpack, a nonprofit that delivers school supplies, books and winter clothing, as well as art, music and physical education tools to under-resourced schools.

"Dr. Leonard H. Lavin's gift represented a transformational opportunity for SDSU to offer world class entrepreneurship education to future generations of students," said Alex DeNoble, Lavin Center director. "True to her family tradition, Carol has embraced Leonard's legacy and provided us with the ability to support some amazing individuals pursuing highly creative and innovative ideas."

Read more on page 13 about SDSU student entrepreneurs supported by Carol Lavin Bernick.

“
This seed money
came at just the
right time for us.
”

SDSU ALUMNI

2018 - 2019

ALUMNI BOARD of ADVISORS

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Administrator: Andres Olivas

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Liaison to Past Presidents: Leo Morales '09

First President: 1931 Vesta Muehleisen

For a full listing of past presidents, visit:

sdsualumni.org/pastpresidents

NON-ELECTED ADVISORS:

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Alumni Relations Specialist: Jen Ranallo

Assistant Director, Marketing and Communications:

Adam Armolea, '17

1970s

'76 **Betsy McCullough** ★ (master of public administration) was admitted to the College of Fellows of the American Institute of Certified Planners.

1980s

'80 **Daniel Williams** ★ (Latin American studies) founded Rio al Mar Missions, which delivers food, clothing and gifts to communities in Tijuana; **Yale Strom's** (art) "Broken Consort: Shimmering Lights" was nominated for the San Diego Music Awards 2019 in the category of Best World Music Album.

'83 **Rob DeMartini** (finance) is president and chief executive officer of USA Cycling.

'84 **Patrick Marmion** (master of public health) published a manuscript in Issues in Law and Medicine.

'85 **Danielle Dufayet** (English) published her first children's book "You Are Your Strong" (Magination Press).

'87 **James Clark** (accounting) was named senior vice president, controller and chief accounting officer of CVS Health Corporation; **Jeff Landau** (finance) was featured in USA Today's Money Section in an article about the real estate market.

1990s

'92 **Kimberly Robeson** (English, MA comparative literature) published a first novel, "The Greek Persuasion."

'93 **Daniel Meltzer, M.D.** (master of public health) is chief medical officer at Healthwise.

'94 **Karie Kermath** (linguistics) co-authored "Behavioral Activation for PTSD: A Workbook for Men."

'96 **Maya Bordeaux** (criminal justice) is senior vice president/chief human resources and communications officer for Tribune Publishing Company.

'99 **Robert Morgan** (MFA theatre design) received the Emerson Excellence in Teaching Award, awarded to educators from the St. Louis, Missouri, area.

2000s

'00 **Robert Robinson** ★ (accounting) was featured on the cover of the San Diego Attorney Journal, and Hickman Robinson LLP was selected as Law Firm of the Month in that publication.

'05 **Emily Vizzo** (academic engagement) published "Giantess," her first book of poetry.

'07 **Poppy Fitch** (educational counseling) received the Junior League of San Diego's Community Impact Award for 2018; **John McCauley** (MS accountancy) is chief financial officer for Seismic, a San Diego-based sales and marketing technology firm.

'08 **Eric Olney** ★ (English) and **Taylor McDonald** ★ ('12 public relations) married in May. Both are life-time members of SDSU Alumni.

2010s

'10 **Jerry Buckley** ★ (Ed.D., educational leadership) is president of Reedley College and the fourth graduate of his program to be named president of a community college; **Alicia Upano** (MFA creative writing) received the 26th annual James Jones First Novel Fellowship for "Big Music."

Please send your news to the SDSU Alumni Association, alumni@mail.sdsu.edu. | ★ = life member

NO ENCORES

An SDSU alumnus remembers being there for the Beatles' final concert.



It was January 1969, a little more than a year before the announcement of the Beatles' breakup, and the nearly fractured band was debating about where to do one final show. The Sahara Desert, the Pyramids of Giza and the QE2 ocean liner were floated as possibilities. Ultimately, the show occurred in London on the rooftop of the building that housed Apple Records, the Beatles' label.

Ken Mansfield ('61), author of "The Roof: The Beatles' Final Concert," was there in the small audience.

"There was lot of dissension at that time, a lot of chaos in the band," recalled Mansfield, a Beatles insider who ran Apple Records' operations in the United States. "But when they struck that first chord, something happened. They had this look like, 'Yeah, this is us; it doesn't matter what's going down. We're mates, we've been together a long time, and what we really are is a rock 'n' roll band and a good group of friends.' That live concert was just kind of old Beatles."

"The Roof," Mansfield's seventh book and his third on the Beatles, was released in November 2018, just ahead of the 50th anniversary of the final show.

"I wanted people to realize that these were real people," he said of his goal for the book. "There was a camaraderie, there was work to be done, there was absolute chaos, there was madness, there was great affection between the people. History was being made all the time, and we weren't even aware of it sometimes."

The scene on the rooftop that day was like no other, as Mansfield writes in the book:

London was the center of cutting-edge music, and in the neighboring buildings of this vibrant city, secretaries, bankers, wool merchants, and deliverymen alike were jolted alive by the rockin' that was rollin' off the Apple rooftop. Everyone within a mile of that place will proudly state for the rest of their lives that they were there the day the music came wafting down the streets, echoing and slamming up against the red brick buildings.

SDSU was a launching pad for the young man who grew up in Idaho.

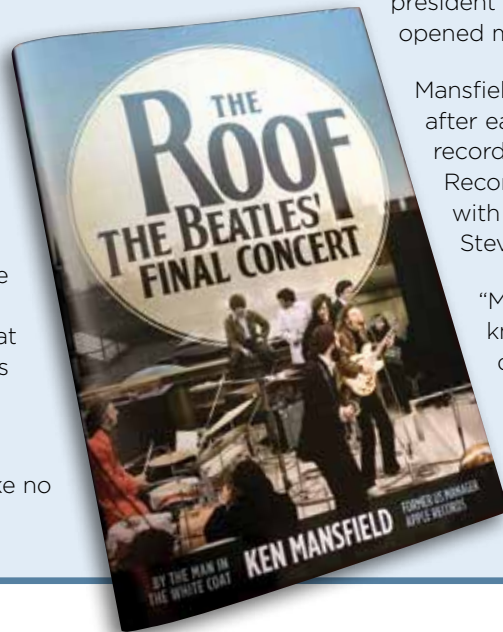
"I got there and walked in the door at the 'teek' (Tau Kappa Epsilon fraternity) house and there I was, kind of an oddball in a way because I'm a cowboy out of Idaho. But I found acceptance right away."

Mansfield became the TKE president, the homecoming chair and president of his senior class. "Something about State just opened me up, something I never dreamed of," he said.

Mansfield got into the music business immediately after earning his degree in marketing. His career as a record company executive included stints with Capitol Records, CBS' Barnaby Records and MGM. He worked with the Beach Boys, Glen Campbell, Merle Haggard, Steve Miller, Bob Seger and scores of others.

"My number one thing was naiveté because I didn't know that I couldn't accomplish these things, I didn't realize how tough the business was, and how ridiculously crazy it was the way I shot up in the business," he said. "Coming off of an Indian reservation in northern Idaho and ending up on the roof with the Beatles."

—Tom Kertscher



Making History

(Continued from page 12)

Walker's ventures have changed the narrative in other spheres too. In an effort to nurture a college-going culture in California's Inland Empire, he and his sister, Dina Walker, founded the BLU Educational Foundation. He has led educational initiatives about the Underground Railroad, emphasizing the partnership between "conductors" of all races and nationalities.

As a research associate at the University of Southern California's Center for Religion and Civic Culture, Walker founded

a digital archive of Gospel music and directed a major portion of a second archive centered on global Pentecostalism.

Recently, he ventured into television, producing an episode for KCET's ArtBound, which traces how social change and the vibrant music scene in 1960s Los Angeles set the stage for the election of Tom Bradley, the city's first African American mayor, and the recording of Aretha Franklin's seminal "Amazing Grace" album.

"My mantra in life is 'We Are One,'" said Walker. "I do push people to have tough conversations, but the end result is the optimism I carry—that we can and should be working together to make progressive change."



• MATTERS OF STATE •

BY SETH MALLIOS

A once-in-a-generation event

I have received many questions about the upcoming April 11th investiture ceremony for President Adela de la Torre. My inbox is full with messages asking: What is investiture? Why is investiture important? and Does investiture have anything to do with my 1099, W-2, or 401K? Anthropologists like me love to study rituals. The fact that this particular ceremony ties directly to university history makes me feel like a kid in a candy store.

Investiture is a special kind of inauguration. It is the formal public inauguration ceremony that grants authority to the new president. Investiture is one of the oldest traditions in higher education, tracing its roots back centuries. The ceremony, designed to symbolize the pursuit of knowledge and the dignity of the academy, is an ornate celebratory affair. The “vest” in investiture derives from the Latin phrase for “dress in robe.” Accordingly, the event includes an elaborate procession of dignitaries in colorful academic regalia from a broad range of institutions. Investiture is a rite of passage, an important occasion that transi-

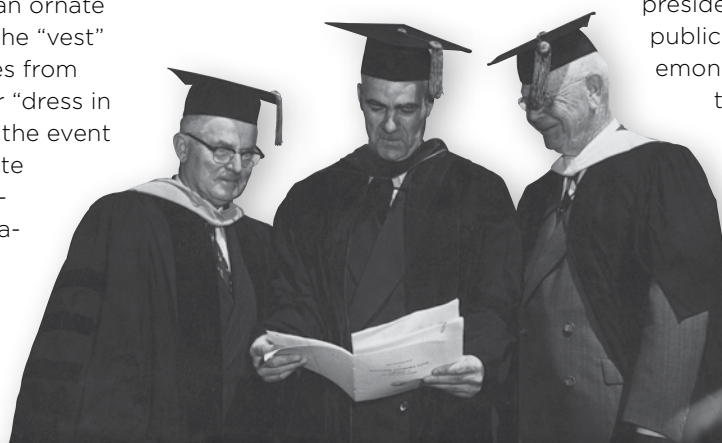
tions individuals for new roles, tasks and challenges.

According to university archives, only half of San Diego State’s eight previous presidents had a formal public inauguration ceremony. None called it an investiture, opting instead for the term “inauguration.” Edward L. Hardy, our second president (1910-35), held his ceremony in conjunction with the opening of the San Diego Normal School’s new Teacher Training Building. Hardy’s successor, Walter R. Hepner (1935-52), took part in a series of inauguration celebrations to mark the start of his presidency, including a supper, freshman dance, football scrimmage, campus tour and reception at Scripps Cottage.

Malcolm A. Love (1952-71) had his inauguration at the Greek Bowl, today’s Cal Coast Credit Union Open Air Theatre; California Governor Earl Warren was the guest speaker. The inauguration ceremony for Stephen L. Weber (1996-2011) was held in Cox Arena, today’s Viejas Arena, and included an address by former Israeli Prime Minister Shimon Peres. These past San Diego State inaugurations were well-attended public celebrations that united the institution and the community.

President de la Torre’s ceremony has been carefully planned with many creative and performative components. While it may be tempting to dismiss such events as frivolous or non-essential, consider that the average term of SDSU presidents who had formal public inauguration ceremonies was nearly twice that of those who did not (20 years v. 11).

Investiture is a key component for community building. It is also the start of a president’s legacy and an opportunity to mark a new era for San Diego State University.



(From left) Walter Hepner, Malcolm Love and Edward Hardy, seen here at Love’s 1952 inauguration, led San Diego State for a collective 62 years—over half its 122-year history.

Farewell

From the Editor

Shortly after coming to work for San Diego State University 16 years ago, I wrote about an academic adviser who told her students stories in order to inspire them. She had decided to leave SDSU and write a book. My lede for that article read something like this: “She’s been telling other people’s stories, and now she has the chance to tell her own.” Even at the time, I thought it might be a fitting epitaph for my career at SDSU. Over the years, I’ve been honored to tell

the stories of thousands of SDSU alumni, students, staff and faculty. My own isn’t deserving of any special mention, but the time is right to share it.

This is my last issue as editor of *360: The Magazine of San Diego State University* before retiring in June, and this column is my chance to reflect on what I’ve learned about the university in the last 16 years. You probably won’t find any surprises or revelations. Most of you have your own foundational memories of SDSU, imprinted during your

student years. What I’ve tried to do, as editor, is show what’s happened since then—how the hard work and aspirations of SDSU’s people reshape the university every day in ways that may not always be evident, but nearly always leave SDSU stronger.

The creative process for each issue of *360* magazine begins with a full palette of colors, each representing a fascinating personal story, a tantalizing research discovery, a brilliant academic venture or an athletic triumph. The possible stories are endless; How do we decide which to feature? There’s

no single answer to that question, but I can name one factor that plays a central role in our decisions. You, our readers, are always top of mind when we assemble *360* magazine. We try to channel your love and pride for SDSU because we feel it too.

In my case, the pride derives from three distinct perspectives—that of staff member, donor and—yes—student. Next year, I will graduate with a master’s degree in MALAS, the Master of Arts in Liberal Arts and Sciences program. It was created and funded about 50 years ago by John Adams, former SDSU chair of humanities and namesake of the Adams Humanities Building. MALAS gives graduate students the opportunity to design a unique curriculum tailored to each individual.

Being in the classroom again presents all kinds of new experiences, both exciting and unsettling. Every session of “Conflict and Protest in the Middle East” left me slightly awestruck by my history classmates’ knowledge, eloquence and intellectual dexterity. An anthropology class on “Race, Ethnicity and Identity” forever changed my personal definition of racism—it’s not something you understand with your head; it’s something you feel with your heart.

Speaking of heart, 10 of my 16 years as a staff member overlapped with The Campaign for SDSU. Nearly 75,000 people, most of us new donors, came together during that magical time to pledge support for the university. I interviewed dozens of donors, and each one inspired me. In the beginning, I never imagined myself as one of them. After all, I wasn’t an alum, and there were plenty of other nonprofits vying for my attention. But this place pulls you to its center. You meet other staff who are energetic and innovative. You see students excited to learn and motivated to achieve. You hear faculty members speak with real passion about their love of teaching. It’s as true now as it has been for 122 years—the people of SDSU are the promise of its future. I am so proud to add my story to theirs.

Sincerely,





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