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### FROM THE PRESIDENT



Vibrant research efforts and creative endeavors are essential elements of the exploration, both of knowledge and of ourselves, that characterize a great public university. This spring, we are taking the next steps in fulfilling our aspirations to become a top-50 public research university.

Following the guidelines of our strategic plan, we are recruiting new faculty in the arts and the sciences. These efforts include the Conrad Prebys Chair in Biomedical Research, faculty in our areas of research excellence-viromics, clinical and cognitive neuroscience, climate and sustainability, and human dynamics in a mobile age-and artists in musical theatre, music, dance and visual art. These new faculty will bring energy and cutting-edge ideas, which are the lifeblood of the university.

We are also expanding opportunities for undergraduate students' research and creative endeavors, creating new support for faculty to secure grants, enhancing research facilities and adding more opportunities to highlight creative work.

In this issue we meet some of the SDSU researchers and creative artists who are changing our world through their insights, teaching and mentoring. They tackle a wide range of real-world problems, from Kelly Doran's study of how bacteria cross the blood-brain barrier to cause bacterial meningitis to Rob Edwards' use of computer science to scan genomes for novel viruses and bacteria. David Carruthers' research on environmental justice movements in Latin America. and Kim Stringfellow's art that connects people with the history and culture of their environment

These are among the SDSU faculty and staff who are helping us to understand and characterize our world and, ultimately, unlock its mysteries. I hope you enjoy reading more in this edition of 360: The Magazine of San Diego State University.

Elliot Juli

Elliot Hirshman

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# Compass

VIDEO SDSU.EDU/SCROLLS



#### Year of the phage

One hundred years ago, the British scientist Frederick Twort made what is generally credited as the first discovery of bacteriophages, bacteria that replicate exclusively inside viruses. That legacy continues at SDSU, where the Viromics Information Institute explores the biological underpinnings and therapeutic possibilities of phage research.

Earlier this year, SDSU hosted a conference centered on the Year of the Phage, drawing a like-minded crowd of researchers from around the country to discuss the field's history and future.

Student and faculty artists contributed their own artwork and musical compositions inspired by the phage, culminating in a loud and lively celebration of this curious lifeform.

#### **Breaking habits**

San Diego State University, in collaboration with the UC San Diego School of Medicine, launched one of the nation's first doctorate programs focusing on understanding and curbing drug and alcohol abuse, as well as gauging its effects on health and communities.

"This new program is designed to train the next generation of researchers to meaningfully address substance use issues of national and global impact," said María Luisa Zúñiga, program co-director and associate professor in SDSU's School of Social Work.

#### Past is present

Some of the oldest fragments of the Hebrew bible form the centerpiece of the Dead Sea Scrolls exhibition at the California Science Center in Los Angeles. Curator Risa Levitt Kohn, chair of San Diego State's religious studies department, has woven a story of the connections between past and present using objects from 2,000 years ago and earlier.

"It's very much like an archaeological excavation, in which you peel away the layers to get deeper into the past," she said. "When you look at the scrolls and the ancient artifacts on display, we want you to think about who fashioned them, why and for what purpose."

This is the ninth exhibition of the Dead Sea Scrolls curated by Kohn in collaboration with the Israeli Antiquities Authority. It runs through Sept. 7, 2015.

## Compass

#### Into the blue

The tiny nation of Palau witnessed more U.S. casualties during the Pacific Campaign of WWII than any other battle site except Iwo Jima and Okinawa. Many Americans who went missing in action there were never repatriated.

Derek Abbey, assistant military liaison officer in SDSU's Joan and Art Barron Veterans Center, is trying to rectify that situation through his work with the BentProp Project.

"This project helps to complete the promise we make to American servicemen—that if they are lost or fallen during war, their country will bring them home," Abbey said.

Members of the BentProp Project do extensive research before each mission in the Pacific. When they locate a significant site, the information is relayed to the Defense POW/MIA Accounting Agency, part of the U.S. Department of Defense.

The project can be a learning experience for students, too. Abbey revisited Palau in March along with three SDSU students, whose trip was funded by a grant from the President's Leadership Fund.

#### It's on us

San Diego State University received a \$200,000 grant from the California Governor's Office of Emergency Services to better prevent and respond to incidents of sexual assault on campus.

The grant will help fund a full-time sexual assault victim advocate, as well as a part-time police officer dedicated

to sexual assault prevention, training and investigation. The university intends to expand its Sexual Violence Task Force to include representatives from community agencies and law enforcement.

"SDSU can be a real model for how universities across the country handle the issue of sexual assault," said Jessica Rentto, associate vice president for Business and Financial Affairs and Title IX coordinator for the university.

#### Shining a light

SDSU alumni recently won national awards for uncovering irregularities in the health care sector. C.M. Murphy, '11, and Christina Selder, '08, received the 2014 Free Speech & Open Government Award from the First Amendment Coalition. Co-founders of Consumer Advocates for RCFE Reform (CARR), they were recognized for creating the first website dedicated to the regulatory history of assisted living facilities in California.

Dennis Wagner, '78, investigative reporter for the Arizona Republic newspaper, won the 2015 George Polk Award for his coverage of alleged misconduct in the Department of Veterans Affairs health care system. Twenty-one years ago, another SDSU alumnus, John Martin, '60, won the Polk Award for network television reporting on the tobacco industry's failure to disclose research on the addictive properties of nicotine.



#### Did you know?

SDSU ACHIEVED THE SIXTH HIGHEST SCORE FOR STUDENT BODY DIVERSITY AMONG NATIONAL UNIVERSITIES RANKED BY U.S. NEWS & WORLD REPORT.



#### You are when you eat

When it comes to heart health, *when* you eat your meals could be just as important as what you eat. That's the message from SDSU biologist Girish Melkani's recent work with fruit flies in collaboration with researchers at the Salk Institute. Their findings were published in *Science* magazine.

Melkani and his colleagues allowed one group of flies to eat a standard diet of cornmeal for 24 hours a day and a second group to eat for only 12 hours. After

several weeks, the flies on the restricted eating schedule had healthier hearts, slept better and were less obese than the flies that ate all day, even though they ate similar amounts of food.

Another set of experiments revealed that the benefits of a time-restricted

diet applied equally to old and young flies, and that some degree of heart protection persisted even for flies that went back to eating whenever they wanted.

Photo: Encyclopedia of Life



#### **Aztec oenology**

Wine is big business, and students in SDSU's professional certificate program in the Business of Wine have a new opportunity to learn from Old World masters who have been practicing their vino-craft for centuries.

A study-abroad course offered through the College of Extended Studies will take students through the Catalonia, Rioja and Basque regions of Spain this fall to show them ancient wine caves, provide tasting courses at various wineries, teach them to crush grapes underfoot and expose them to professional food pairings. Bring on the tapas!

# Horizons

## The Unsung Venetians. Joanne Ferraro tells the stories of those who aren't in the history books.

#### By Michael Price

The 117 tiny islands and 400 bridges that compose the floating city of Venice, Italy collectively hold more than 1,500 years of politics and poetry, engineering and industry. But the chronicles that have made it into history books tend to center on men interacting with other men—and that is a very incomplete story, according to Joanne Ferraro, historian and author of a number of books delving into Venetian history and its gender issues.

Ferraro, chair of San Diego State University's history department, was selected by a faculty committee as this year's Albert W. Johnson Research Lecturer, an honor bestowed on SDSU's most distinguished researchers.

"When I was trained as a historian, women and family were almost always absent from the narrative," Ferraro said. "I entered this field because I wanted to rewrite the past to show how ordinary men and women shaped the history of this city."

Ferraro first visited Venice in 1971 during her junior year abroad. Her Italian immigrant parents were proud to see their daughter exploring the family heritage. She returned in 1978 to undertake doctoral research in the city's archives and libraries. Ferraro fell in love with the city, especially the parts that locals call *Venezia minore*, the paths less traveled by gawking tourists.

"You can still sit down on a bench with a cup of espresso and observe everyday life," she said.

#### MILES OF FILES

It's this everyday life that Ferraro explores in her historical research, too. For the past 36 years, she has traveled to Venice several times a year to visit the colossal archives of the Basilica di Santa Maria Gloriosa dei Frari. There are nearly 100 miles of archival materials stored there. Ferraro's niche is in judicial collections, a repository of tribunal manuscripts stretching back centuries.

The manuscripts—some bound in volumes, others piled loosely in boxes—include legal arguments and transcripts for family disputes, marital breakups, criminal



charges, civil disagreements and more. Going through the documents isn't easy. They're mostly written in Venetian dialect of the 16th- and 17th-centuries, Italian, and Latin. Some words are completely different from their modern counterparts. And the shorthand notation of the court is nearly illegible if you lack Ferraro's trained paleographical skills.

There's also a large cultural divide between present-day understanding of legal issues and the precedents of the past. Without understanding the rules of contemporary canon and Venetian law, the court testimony won't make much sense, she explained.

They are tough codes to crack, but for those who persevere, these ancient judicial proceedings divulge the stories of Venetians who don't normally make it into history books.

"You have the protagonists of the case, but also their relatives and neighbors who weigh in with their own testimony," Ferraro explained.

These voices are anything but dry historical record. Gossip and conjecture play a large role in the recorded testimonies, she said, and end up shaping the judicial process.

For example, a marriage not consummated could be annulled. If a wife declared that to be the case, it brought up questions about her husband's virility and impotence. With his masculinity questioned, he might boast of the number of prostitutes he had slept with—willing to admit to adultery to save his manly reputation, but not his marriage.

"These were smart, savvy women who knew how to twist things to their favor," Ferraro said.

#### MODERN REFLECTIONS

There are a great many court transcripts dealing with accusations of rape, abortion, infant abandonment and the legal rights of unwed mothers. Finding the truth behind these cases is difficult, as the testimonies and judgments were heavily influenced by the patriarchal attitudes of the day. Ferraro can't help but see reflections of modern issues in these ancient transcripts.

On a larger scale, Ferraro wants to broaden Venice's history. For almost as long as historians have been writing about the city, they've focused on its political and economic history, its architecture and industry. The actors and actresses who built the fleet at the State Arsenal or wove Venice's prized silk textiles are all but invisible.

"I'm interested in telling their stories," Ferraro said, "or asking even bigger questions: How did people of the past handle failed marriage, sexual conflict, illicit liaisons and unplanned parenthood? The answers offer important insights into the human condition."

# The SEARCH

Maybe once in a lifetime a researcher has a eureka moment. Most days, the work is a process of careful planning and prediction, trial and—more often than not—error.

Constant experimenting, coupled with the desire to produce something totally new, reveals researchers as creative types.

For political scientist David Carruthers, the creative impulse emerges as he's formulating the research question.

"Immediately I want to move outside the political science dimensions and consider entirely different worldviews. What are the anthropologists doing in this area, what are the geographers doing? How would local activists or indigenous peasant farmers see this issue? The creative side of me looks for a subversive approach to the question."

Text: Michael Price and Coleen L. Geraghty Illustrations: Matt Manley Photos: Lauren Radack





Creativity plays a role in biologist Kelly Doran's translation of her complex research for a variety of audiences.

"The first time I gave a research presentation, I realized how much I enjoyed explaining the science. I like being creative with my presentations at conferences and in the classroom, adding pictures when I can and trying to make it fun."

This issue of *360: The Magazine of San Diego State University* looks at the work of nine innovative faculty researchers. They study a breadth of disciplines, including engineering, entrepreneurship, public health, computer science, transmedia art, education, biology and political science.

In doing our own research to adequately describe their work, we began to appreciate the connections between research and creativity. Which is why we asked artist Matt Manley to illustrate this special section on "The Art of Research." We believe it captures the creative spirit that lives in SDSU's research faculty.



Dailing the Viromic Deas

There's a transformation happening in microbiology. The price of DNA sequencing has dropped precipitously in recent years, with individual genome sequencing falling below \$1,000. Lab after lab has sequenced a diverse list of species including rice, algae, mosquitoes, fruit flies and humans. The sheer amount of data now obtainable—quickly, cheaply has turned biology into an information science, and San Diego State University biologist Rob Edwards is helping to usher in this new age.

"During the genomics revolution of the mid-to-late '90s, it became clear that genomic sequencing was going to completely change the biological sciences," Edwards said. "There are huge volumes of data. It's driving every aspect of biology."

When Edwards ioined SDSU in 2004, there were already quite a few familiar faces. The computer scientist with a background in biology had worked as a postdoctoral scholar with Stanley Maloy, SDSU's dean of the College of Sciences, at the University of Illinois, Urbana-Champaign. He had co-authored journal articles with SDSU virologist Forest Rohwer on the genomic taxonomy of bacteria-killing viruses known as bacteriophages.

"I was supremely impressed by the collaborative nature of the research at SDSU," he said. "It's not a competitive environment where the big fish eat the little fish and take all the credit. We have extremely friendly colleagues and terrific students."

Edwards does regularly encounter both big and little fish in his research, however. He and his colleagues hunt for new data all over the world, successfully taken a delicate and expensive DNA sequencer out to sea with them to do sequencing in real-time—the first time anyone had ever attempted this feat

Sorting through all this raw data to find meaningful information takes a combination of biological knowledge and computational know-how. Last year, Edwards and a team of local and international collaborators created a new computational tool called cross-assembly that allowed them to identify a never-before-seen bacteriophage present in threequarters of the world population.

Edwards hopes that cross-assembly and other tools like it will help biologists hone in on entirely new bacteria and viruses that could become the next life-saving drugs of the future. These tools might also be used to identify aspects of known genomes that can predict someone's risk for disease or how effectively one drug might work compared to another.

"As we move toward personalized, precision medicine, these kinds of techniques will become more and more important," he said. ■

making frequent trips to isolated coral reefs in the Line Islands and diving to collect genetic samples from their watery surroundings. They've even

Joxins in our Midst



It's not necessarily the pollutants we already know about that worry San Diego State University environmental scientist Eunha Hoh. Instead, she devotes her research to discovering harmful contaminants nobody even knew to look for.

Hoh didn't begin her career as an environmental researcher. She studied chemistry in South Korea and took a job as a chemist for a major electronics manufacturer. Eventually, she grew concerned over the types of chemicals being used and disposed of during the production process.

"I never realized how many toxic chemicals went into manufacturing," Hoh said. "That got me very interested in environmental health."

Hoh moved to the United States to study environmental science at Indiana University, eventually earning her Ph.D. under the tutelage of one of the field's luminaries, Ronald Hites. There she began researching pollutants in and around the Great Lakes.

The shores of the vast lakes are home to several cities

with major manufacturing centers. In particular, manufacturing flame retardants can produce highly concentrations in several places on the lakes. She was able to trace the pollutant to its likely source at a people's noses and nobody knew about it was troubling to Hoh.

"I thought that if I could find dechlorane plus, there must be lots of other POPs out there, too, that we don't know about," she said.

> Hoh spent the next three years as a postdoctoral scholar and research chemist in a U.S. Department of Agriculture chemical residue research group, then joined SDSU in 2009.

Here, she uses a combination of gas chromatography and mass spectrometry to look for previously unknown pollutants, even those that can be found only in low concentrations. Collaborating with fellow SDSU faculty Penelope J.E. Quintana and Georg Matt. Hoh has also

begun to look into "thirdhand" smoke—the residual chemical leftovers of cigarette smoke.

"If you only look for the things you already know are present, then you might miss a lot of other things that could turn out to be extremely important, but you never knew they were there," Hoh said. ■



toxic products in the lakes. Environmental regulators struggle to keep up with manufacturers' replacement of regulated retardants with unregulated ones.

In 2006, Hoh detected an airborne contaminant known as dechlorane plus an old yet unregulated chemical—at very high manufacturing facility in Niagara Falls, New York.

Chemical contaminants that stick around in the environment indefinitely are known as persistent organic pollutants (POPs). Little was known about dechlorane plus's toxicity to animals and ecosystems, but the fact that it was right under

Mining New Markets

Eric Ries, pioneer of the Lean Startup movement, redefined the word "pivot" for a whole new generation of entrepreneurs. In startup-speak, pivoting is the act of keeping one foot firmly in place while shifting the other in a new direction—in other words, changing course without discarding the lessons already learned.

It's a technique San Diego State University management professor Mujtaba Ahsan teaches his students and one he has applied in his own life's work. Starting out as a mechanical engineer. Ahsan earned an M.B.A. and then a master's degree in information systems. He shifted focus again, structuring his Ph.D. to examine technology innovation in emerging companies.

"My background allows me to teach different courses and pursue research in several areas," Ahsan said. "More importantly, it helps me mentor students from different backgrounds and work with student entrepreneurs who are pursuing technology ventures."

Ahsan collaborates with Martina Musteen, also an SDSU management professor, on research examining new directions in international entrepreneurship, most recently with a publication in *Entrepreneurship Theory & Practice.*  Ahsan and Musteen have advanced current thinking on international entrepreneurship with their study of offshoring behavior in young firms. Ahsan said. "Advances in technology have compressed that time frame. Small startups are expanding more rapidly now and looking for overseas firms to supply not just labor and materials, but also knowledgeable and experienced business partners to help them reach customers in foreign markets."

> In fact, willingness to offshore the creative, knowledgeintensive work allows young companies to focus on their core activities—marketing products and services to their customers. The result: They can be quicker to jump on the undulating waves of market tastes and trends.

As a teacher, Ahsan brings his research to bear in the classroom. He also guides students in writing comprehensive business plans, but warns them against getting trapped in the minutiae of taking a product to market.

"I urge them, 'Don't wait to develop the perfect product; test the preliminary version of the product in the market, on Kickstarter, for example. Use social media as a barometer of customer endorsement, and be willing to change your product based on feedback. Even if your product fails, the lessons you learn from customer feedback will help you develop a better product next time."" ■

They've learned that the challenges associated with finding high quality managers at home motivate young firms to seek out innovation-driven offshore partners—the kind of creative allies that can help a startup move ahead faster.

"Until recently, companies were reluctant to expand overseas extensively until they had a history of 30 or 40 years,"

SDSU.EDU/AHSAN

Fire in the Oky



Light a match on earth and you can expect the flame to shoot up in a tapering bulb. But light that match in space and you might not even recognize the small, blue orb at the tip. That's because fire behaves very differently in low- and zero-gravity environments.

Discovering how the mechanisms of combustion differ in a gravity-free environment is the goal of San Diego State University mechanical engineers Subrata Bhattacharjee and Fletcher Miller, and it could lead to safer space travel and a more complete understanding of fire on earth.

Buoyancy plays an integral role in flames on earth, as hot combustion gases rise upward and suck in oxygen to feed the flame anew.

"Buoyancy creates all the dynamics of flame as we know it," Bhattacharjee said. "But in space, there's no up or down. Products from a burning flame can, in some cases, accumulate around the flame, starving it of oxygen, while in other cases, diffusion can sustain a flame in microgravity."

On earth, our atmosphere is about 21-percent oxygen, but engineers can regulate the oxygen aboard spacecraft. High oxygen levels can lead to extremely flammable conditions, as seen in the fatal Apollo 1 disaster. Knowing how fire will behave at different levels of oxygen in low-and zero-gravity environments will make future missions safer.

Bhattacharjee and Miller explore this in a few different ways. They have constructed an 8-meter tall steel flame tower with a vertical rail inside. By placing a fuel sample in a cart, igniting it, then moving it up the tower at a controlled speed, they can negate the effects of buoyancy when the flame travels upward at about the same speed as its gaseous products.



"We are simulating the surroundings that the flame would find in space," Miller explained.

In another experiment, they burn flames in a narrow channel, suppressing buoyancy by limiting the flames' height.

Using a camera in both tests, they observe how the flame spreads under various conditions, simulating a spacecraft or lunar atmosphere. Eventually, the duo hopes to develop an elegant, simple formula for predicting where fire will go in a variety of conditions and environments.

Another set of experiments takes place 250 miles above their heads. In 2011. NASA invited the researchers to send up materials to the International Space Station for a series of controlled burns in sustained microgravity. Miller and Bhattachariee have sent up various thicknesses of acrylic and astronauts have burned them in a specially designed chamber while the SDSU researchers observed and offered control suggestions from a video uplink.

Results from these experiments will help the researchers refine their theories about flame dynamics and help NASA qualify materials as safe for use on spacecraft. ■

Bacterial Barbarians

On the list of body parts you don't want to become infected, the brain is right there at the top. Luckily, the blood-brain barrier manages to keep

out most of the unwanted guests. The barrier primarily consists of a thin strip of endothelial cells in the central nervous system that form so-called tight junctions between themselves.

Like a bouncer at a ritzy nightclub, the barrier is highly selective about who it lets inside. Unfortunately, bacteria can sometimes fool these cells into letting down their guard, causing deadly bacterial meningitis. San Diego State University biologist Kelly Doran studies how these sly bacteria slip by the brain's defenses-advancing both the state of science and the careers of her students.

For Doran, the fight is a personal one. Her younger sister died as a teenager, the result of complications arising from the bacterial meningitis she'd had since birth.

"I don't think I consciously set out to solve this problem, but at each step in my education and then my career, I found myself following this path," Doran said.

In her lab, Doran and her students and postdoctoral scholars explore

the cellular mechanisms that the bacteria exploit in order to gain entry to the brain. The cells that make up the blood-brain barrier But exactly how the bacteria do this remains a mystery. Doran is experimenting with a number of different models to figure out what's going on. One of her latest



can selectively allow through immune cells by temporarily dissolving the tight junctures between themselves, and these bacteria have found a way to activate the cellular signals that break down the junctures.

"The bacteria are hijacking the normal systems of the cell," Doran explained. "It makes the barrier leaky, which contributes to disease." attempts involves a collaboration with the University of California, San Diego, in which she and her colleagues can watch in realtime as group B streptococcus bacteria infiltrate the blood-brain barrier of seethrough zebrafish larvae.

By experimenting with specially grown strains of zebrafish, the researchers are able to "turn off" various genes to see what effect that has on the bacteria's ability to cross the barrier.

Although she's a highly respected researcher in her field and

enjoys the work, Doran's true passion is in preparing the next generation of scientists and doctors. She measures her success by how well she is able to involve students in her research and whether they achieve their own research victories.

"That is primarily what I love," Doran said. "I see my main impact as giving students the tools and support they need to accomplish their goals." ■

EO SDSU.EDU/DORAN

Documenting the Desert



If you see the desert as merely a desolate expanse between Southern California and Las Vegas, Kim Stringfellow wants to adjust your focus. She is an artist, and the desert is her muse.

Stringfellow chronicles arid landscapes as a photographer, journalist, documentary filmmaker and cultural geographer, but she is no passive observer. Her transmedia art emerges from meticulous research about the connections between place and the people who inhabit it. At its most fundamental, Stringfellow's work connects people and communities to the land they inhabit.

In 14 years as a faculty member in San Diego State's School of Art & Design, Stringfellow has published books of text and photographs tracing the history of two desert phenomena the Salton Sea ecosystem and an area near Joshua Tree National Park, where abandoned shacks mark one of the last tracts of land in the United States to be opened for homesteaders.

Now, she's at work on her most ambitious undertaking yet. The Mojave Project, funded by the California Council for Humanities, will include up to 50 multimedia installments showcasing the desert and its communities, presented through audio, video and archival imagery created by Stringfellow and select guest contributors.

"Many landscapes are projections of culture, but the Mojave Desert really lends itself to being a kind of staging ground, a canvas for human activities," Stringfellow said. "The extreme environment of the desert is full of unique sites and unique voices because it hasn't been colonized in the way our coastal environments have."

The initial chapters of the Mojave Project render the region in fascinating detail. There are stories of the transformation of Shoshone, a dying desert community, into a sustainable tourist destination; a retired professor's discovery that creosote bushes in the Mojave have survived



for thousands of years by cloning themselves; and the annual treasure hunt for water-soluble gems and crystals at Searles Lake, which first occurred in 1942.

These episodes have been aired on KCET, an independent public television station in Los Angeles, and can be found on the station's website (www. kcet.org/arts/artbound).

What the Mojave Project stories have in common is Stringfellow's straightforward narrative style, which challenges stereotypes of desert life. For example, the installment on the treasure hunt, known as Gem-O-Rama, deliberately shifts focus away from the perceived blight of a desert community to the festive atmosphere of an event that attracts 3,000 visitors to the town of Trona (population 2,742).

The Mojave Project will culminate in 2017 as a large-scale video installation featuring the digital research journal, photographs, documents, maps, mineral specimen collections and other ephemera.

More of Stringfellow's work can be found at kimstringfellow.com

Borders of Inequality

Millions do it every year. Travel between San Diego and Tijuana is routine for border residents, but David Carruthers contends that crossing the border is more than just a physical journey.

A political science professor at San Diego State University, Carruthers is co-author of a book-in-progress about how borders produce and reinforce cultural, economic, even psychological differences. He and fellow poli sci professor Kristen Maher are researching San Diego's unequal, often uneasy, relationship with its southern neighbor.

"Kristen and I are interested in the border as a place that legitimizes differences and inequalities," Carruthers said. "For many San Diegans, the experience of Tijuana is filtered through the lens of an iconic border fence. We were struck by how this perception differs from our own experiences in the city given the art and creativity coming out of Tijuana. The disjuncture was the genesis of the book."

A fluent Spanish speaker, Carruthers studied for a year at the Universidad de Guanajuato, Mexico. His research has focused on agriculture, indigenous issues and environmental injustices in Latin America. At SDSU, he serves as undergraduate adviser for the Latin American studies major and co-director for the sustainability program.

Carruthers admits to a fascination with borders—not just between countries, but also between rich and poor, privileged and oppressed, the natural world and the built



environment. And that led to collaboration with Maher on the border closest to home.

"By now, I guess I'm a Tijuanologist," Carruthers said, using a term coined by Mexican writer Heriberto Yépez to describe scholars obsessed with understanding the city.

One chapter of the upcoming book examines the parallel histories of San Diego and TJ. Over the last century, tourism and commercial interests promoted the region alternately as the gateway to Latin America, an exotic binational vacation paradise and an economic powerhouse. But a hardened post-9/11 mentality and a violent drug war changed everything.

Federal legislation authorized construction of a secure fence along the U.S.-Mexico border, making the practical matter of crossing it more unwieldy, and the psychological divide more pronounced. Another book chapter, which looks at Tijuanafocused stories published in the San Diego Union Tribune from 2000 to 2010, finds a heavy emphasis on crime, border enforcement and immigration.

Consequently, transit from San Diego declined, enabling Tijuana's local entrepreneurs and community activists to reclaim the dying tourism districts and "reimagine" their city, Carruthers said.

"They like the idea that tourists will eventually return, not because TJ is close to San Diego and easy and cheap, but because it's a creative place with great food, wine and art a place that is maturing on its own terms." ■

Uprooting Math Anxiety



Quick: What's the square root of 49 divided by 3? If simply reading that sentence brought on a faint tremble of nervousness, you're not alone. Math anxiety weighs heavy on the minds of many young students, and that unease frequently carries over into adulthood.

"It's really sad to hear kids and even adults say, 'I'm not good at math,'" said Melissa Soto, an assistant professor of mathematics education at San Diego State University. "Kids start off excited about math, but by the third or fourth grade, they get more timid about it."

Keeping kids interested in-or at least unafraid ofmath is the goal of Soto's research into a teaching method called Cognitively Guided Instruction. To understand what that is. it's important to first understand what it's not. For most kids. Soto said. early math classes have focused on getting kids to give the correct answer as fast as possible. Think timed quizzes and fast-as-you-can multiplication table tests. These inspire rote memorization and anxiety more than they do actual learning, she explained.

"There's more to math than speed and accuracy," Soto said.

IDEO

Soto's preferred approach is based on the principle that students solve math problems and make errors in predictable ways. Understanding the cognitive impulses that drive students' forays into mathematics can help teachers identify red flags and rectify misunderstandings.

A major component to this approach is giving students the time and opportunity students don't understand the concept behind it, they'll struggle when it comes to more advanced notation.

"When we focus on speed, we don't allow students to reason through a problem," Soto said. "We take away the struggle."

One simple yet effective trick to jumpstart mathematical reasoning, she said, is to personalize the Also, sharing information is frequently called out as cheating in classrooms, but it's a crucial way students learn from one another and solidify their own understanding of math concepts, Soto said. Group work should be encouraged, not penalized.

Slowing down isn't an easy directive to follow for already harried teachers, but Soto said it's worth it.



to discover solutions for themselves. Consider "borrowing" in multi-digit subtraction. It's a nifty shortcut to solving subtraction problems, but if context, such as including students' names in story problems. Once they can visualize themselves in the scenario, they're better able to reason through it. "Teaching kids to be more flexible and sophisticated in their mathematical thinking will pay off in the long run," she said. ■

# **By the Numbers** San Diego State's research portfolio

In the last decade, San Diego State University faculty and staff have received more than \$1.28 billion in grants and contracts to advance their research. The funding derives from the National Science Foundation, the National Institutes of Health and other federal agencies, as well as state, local and private sources.

#### Social Sciences & Creative Arts

Health & Behavioral Sciences

# \$107.86 Million

Grants & Contracts 2013-2014

STEM (Basic Sciences, Technology, Engineering, Mathematics)

\$879K

Margaret Friend Psychology Source: National Institutes of Health

**\$1.7 M** Melbourne Hovell Public Health Source: National Institutes of Health

\$603K

**Sheldon Zhang** 

Sociology

Source: National

Institute of

Justice

A SAMPLING OF AWARDS •

\$1.9M Mary Ann Lyman-Hager & Christopher Brown Arts and Letters Source: Institute of International Education

\$437 K Kee Moon Engineering Source: National Science Foundation

(via University of

Washington)

n Ma ng onal So

Mark Sussman & Chris Glembotski Biology Source: National Institutes of Health

**S1.7M** 

#### \$1.75M

Caren Sax Admin, Rehab & Post-secondary Education Source: U.S. Department of Education \$700K Carol

**Education** 

Robinson-Zañartu School Psychology Source: U.S. Department of Education

Moving Forward

#### Working across disciplines will drive the next great research endeavors at San Diego State.

For generations of academic scientists, the default approach to one's research was specialization. Focus narrowly in your training and concentrate your efforts on a specific problem, for that way lies funding and success. That era of thinking is rapidly coming to a close, and nowhere is the change more evident than at San Diego State University, where the promise of interdisciplinary research forms the foundation of the university's future.

"For so, so many years, people were trained and rewarded to be narrow in their thinking," said Stanley Maloy, dean of SDSU's College of Sciences. "But we're moving in the opposite direction now. We are promoting collisions between disciplines."

Three major technological breakthroughs underlie this shift, Maloy explained. The sharp rise in computational power, the emergence of geographic information systems (GIS) and significantly cheaper and faster genome sequencing have blown open the doors between disciplines, allowing them to together work on totally new kinds of problems.

"These aren't just incremental steps," he said. "I'm talking about changing the way that we think."

This leap forward in research is reflected in SDSU's areas of excellence. The Viromics Information Institute pairs powerful computer tools with the latest findings in virology to discover new viruses and ways to exploit them for medicinal purposes. The Center for Human Dynamics in the Mobile age brings together GIS, behavioral science and engineering to track voting patterns and disease outbreaks. The Center for Clinical and Cognitive Neuroscience unites brain researchers with faculty in engineering, computer science and exercise and nutritional sciences who can apply that research to prosthetic instruments and technologies that screen for disorders. And the Center for Climate and Sustainability Studies fosters collaboration among anthropologists, biologists, geographers and

mathematicians in an effort to better understand Earth's shifting climate, and how it will affect populations.

This blending of knowledge doesn't mean that researchers at SDSU won't be experts in their own fields. Far from it, Maloy said. But they will also want to understand the work of their colleagues down the hall.

"The student of the future is going to need traditional disciplinary expertise, and they're also going to need an appreciation of what the other fields out there can offer," Maloy said.

This cross-disciplinary cooperation will be reinforced as researchers work side by side in SDSU's Engineering and Interdisciplinary Sciences Complex. Here, engineers and basic science researchers will routinely share ideas and form collaborations. Construction on the complex will begin this summer with a view to completion in 2017.

"With engineers sitting next to scientists, thinking about the same problems, getting coffee at the same shop," Maloy said, "there will be a lot of 'Aha!' moments."

To raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science.

– Albert Einstein



# Aztecs in Motion



## In Her Element. Don't call Anna Cholewczynski a science nerd.

Anna Cholewczynski's grandfather was a scientist. Her father is an electrical engineer. Her brother is an aerospace engineer—an actual rocket scientist—and her sister, whom she calls "a genius," is working on a master's degree in biomedical engineering.

It wasn't until a few years ago that Cholewczynski (pronounced hall-of-chinski) realized her family was a bit ... different.

"At the dinner table we'd talk about science," she said. "I remember when I finally took calculus I was like, 'I know what derivatives and integrals are! Now I can talk about this at dinner with all of them!' It's just a completely different world I grew up in. So science is always a cool thing to me."

The junior chemistry major and member of the Phi Kappa Phi national honor society is finishing her third semester as part of the research team in Professor B. Mikael Bergdahl's organic chemistry lab. But if you're thinking Cholewczynski is a science nerd, you would be wrong. When she's not in class or working in the lab, she is on the field slamming into attackers as a defender on the Aztec lacrosse team. She has both athletic and academic scholarships.

The former three-sport high school athlete from Maryland was recruited by Coach Kylee White to play midfield but was quickly reassigned to play defense because of her speed and physical style. White describes her as "very aggressive, tough and determined."

"It's fun to be physical," Cholewczynski said. "I get to be way more physical on defense."

Cholewczynski uses colorcoded charts to manage her student-athlete life of classes, assignments, labs, practices, workouts and games. During the school year her schedule is hectic, so she can afford only four lab hours per week.

But last summer, she received a research grant to work full-time in Bergdahl's lab, eight hours a day, five days a week. She was in heaven. For the first time, she could be part of the research process from start to finish.

Since being accepted into the lab as a sophomore—something Bergdahl says is very unusual— Cholewczynski has been involved in research toward finding a less harsh vaccine for Hepatitis C. She's currently working with lagunamides, molecules extracted from an Asian plant that could help fight leukemia, colon cancer and malaria.

When Cholewczynski graduates in spring 2016, her lacrosse days will be over but her career in research will begin. She's using the Aztec Mentor Program

to help find

a career

direction.

do well.

Bergdahl is

confident she'll





"She is very driven and goaloriented as to what she wants to do," he said. "She loves organic chemistry."

White, too, is impressed with Cholewczynski's research credentials. Last spring, the lacrosse team attended a symposium in which she gave a presentation about her research on the Hepatitis C vaccine. Cholewczynski was glad to have their support and to share what she does. "It's just amazing the things she's learning. She gets very excited talking us through the things she's studying," said White. "It's fun to think about where she's going to go."

-Doug Williams

# Giving Back

# More Seats at the Table

The Conrad Prebys Chair in Biomedical Research will advance SDSU's role in disease prevention.

San Diego is home to one of the largest biomedical research communities in the United States and headquarters for industry giants in genomic sequencing and wireless medicine.

The region's universities are a reliable wellspring of workers for this important industry. In the near future, a greater number of those workers will be Aztecs.

A \$2.5-million gift from Conrad Prebys to San Diego State University will create a new faculty position to strengthen biomedical research and teaching in the College of Sciences.

The Conrad Prebys Endowed Chair in Biomedical Research is an important building block in SDSU's drive to become a top national public research university, and Prebys' gift is the most significant endowment ever received by SDSU to support a faculty researcher.

HANK

CONRAD

The philanthropist's first gift to SDSU—a \$20-million endowment for student scholarships—was the largest single gift in SDSU history. It helped propel The Campaign for SDSU toward the original goal of raising \$500 million.

Last October, SDSU extended the campaign and set a new goal of \$750 million. More than \$567 million had been raised as of March 18, 2015.

#### NEW CURES AND THERAPIES

Research in the field of biomedical research leads to discoveries that can trigger the development of new preventions, therapies and cures to improve human health.

The researcher selected to fill the Conrad Prebys Chair in Biomedical Research will join SDSU's world-class faculty researchers in the Viromics Information Institute. Members of the institute apply a cross-disciplinary approach to studying the genetics of viruses known as bacteriophages and exploring their potential for use in medicine.

The Conrad Prebys Chair in Biomedical Research will also work closely with the Prebys Biomedical Research Scholars, students who are pursuing careers in biomedical research and bioengineering.

They are supported by Prebys' first gift to SDSU, which provides dozens of scholarships annually to student-veterans, honors students, Guardian Scholars, students majoring in entrepreneurship and the creative and performing arts, as well as students who fill leadership roles on campus.

**\$2.5-Million Bridge to Brazil** 

90

The Behner/Stiefel Program on Brazil is SDSU's first endowed academic program with a global focus.

A new academic program that mines the strengths of two economic powerhouse nations is taking shape at San Diego State University.

The J. Keith Behner and Catherine M. Stiefel Program on Brazil is SDSU's first endowed academic program with a global focus. Over the next five years, through research collaborations with major Brazilian universities, SDSU will strengthen its global leadership in public health, environmental sciences, international business and urban development.

The university will also develop new curriculum incorporating the study of Brazil in history, geography, politics and economics and will introduce a minor in Brazilian studies.

"Brazil and the United States exert tremendous economic impact in the Americas and face a host of similar challenges," said Ramona Pérez, Ph.D., director of the Behner/ Stiefel Program. "Through this collaboration, we can share information and potential solutions in the areas of health, undocumented migration, food shortages, urban development and coastline degradation."

The Brazil Program is supported by alumni J. Keith Behner, '71 and Catherine M. Stiefel, '92. The couple made a five-year pledge to establish a \$2.5-million endowment for the program.

This is the couple's second major contribution to The Campaign for SDSU. In 2012, their \$1-million gift supported the School of Accountancy in the College of Business Administration and the Latin American studies program in the College of Arts and Letters.

Behner lived in Brazil for four teenage years, and Stiefel lived in Puerto Rico as a child. Both developed a profound respect and affection for the language, culture and peoples of Latin America. They believe that Brazil, with the world's fifth largest population and seventh largest economy, has not received the academic attention befitting its status as a global economic and cultural powerhouse.

With the development of the Behner/Stiefel Program on Brazil, SDSU will take its place among a small group of national research universities with significant ties to Brazil, including Brown, Columbia, Vanderbilt and the University of Illinois at Urbana-Champaign.

SDSU's program will include five areas of emphasis: curriculum development, research development, partnership exchanges, visiting scholar exchanges and donations of historical material to SDSU Special Collections and University Archives.

The Behner/Stiefel Program on Brazil will be based in SDSU's Center for Latin American Studies, but draw on faculty expertise from the College of Sciences, the Graduate School of Public Health, the School of Public Affairs and other academic programs.

# Alumni Angles

#### Class Notes 1990s 2000s 2010s

#### **ALUMNI ENGAGEMENT**

#### 2014 - 2015 ALUMNI BOARD of ADVISORS

#### EXECUTIVE COMMITTEE

President: Elsa Romero '84 President Elect: Perette Godwin '86 Immediate Past President: Tim Young '91 Liaison to the Campanile Foundation: Bill Earley '86 Vice President, Alumni Engagement: Katie Hansen '03 Vice President, Alumni Recognition: James Newland '88, '92

Vice President, Finance: Alan Dulgeroff '92 Every Any Every Liaison: Leo Morales '09 Liaison to Affinity Groups: Sean Kilkenny '10 Liaison to Athletics: Deanna Encarnacion '90 Assistant Vice President, Alumni Engagement: Jim Herrick

Director Development Technology: Tammy Blackburn '94, '01 Administrator: Christy Andrade

#### OTHER ELECTED ADVISORS:

Kelly Batten '98; Chiloh Baty '08; Mike Cully '11; Stephanie Dathe '95; Lindsey Dixon '02; Ileana Ovalle Engel '94; Jason Farran '00; Aimee Faucett '96; Allyson Frasure '97, '99, '03; Robert Garvin '76, '81; Aron Getty '95; Dan Guevara '70; Brian Hayek '09; Ryane Hughes '02, '05; Rudy Johnson '00; Kathleen Lang '05, '07; Mark Mays '69; Channelle McNutt '13; Steve Nelson '96; Chris Parks '92; Todd Vitale '86; Stacey Wolfson '10

#### PAST PRESIDENTS:

Immediate Past President: 2013-2014 Tim Young '91 First President: 1931 Vesta Muehleisen For a full listing of past presidents, visit: sdsualumni.org/pastpresidents

#### **NON-ELECTED ADVISORS:**

President: Elliot Hirshman; Vice President, University Relations and Development: Mary Ruth Carleton; University Senate Chair: David Ely; Associated Students President: J. Cole; Aztec Athletics: Mandy McKinley

#### **ALUMNI ENGAGEMENT STAFF**

Assistant Vice President: Jim Herrick Director Development Technology: Tammy Blackburn '94, '01 Assistant Director Administration: Ryan DeLong '05 Facility Assistant: Mike Lopez '09 Electronic Solicitation Manager: Dan Majors '03 Assistant Director, Annual Fund, Stewardship & Membership: Cheryl Lemox Assistant Director, Annual Fund: Natasha Bliss Annual Fund Supervisor, Alumni Engagement: Caitlin Kuhn Assistant Director, Affinity Groups: Dion Akers '08 Career Development Liaison: Diane Barragan Marin Program Coordinator: Jen Ranallo Alumni Engagement Coordinator: Christy Andrade

Communications Specialist: Tobin Vaughn Electronic Solicitation Assistant: Vanessa Horne Parma Payne Goodall Alumni Center Coordinator: Lauren Duran

#### 1960s

'62 **Darlene Davies** (communication; '65 Au.D., audiology) won a first-place Excellence in Journalism award from the San Diego Press Club for her magazine series on the 1915 Panama-California Exposition.

'68 **Joanne Pastula** (English) will retire after 16 years as president and CEO for Junior Achievement of San Diego County.

#### 1970s

'71 **Ret. Col. Thomas Walters** (industrial arts) was appointed by Governor Rick Scott to the Seminole County School Board in Florida.

'75 **Martha O'Donnell Pagel** (journalism), water/natural resources lawyer and shareholder at Schwabe, Williamson & Wyatt, won the Oregon State Bar's Environmental and Natural Resources Award.

'77 **The Hon. Dale Drozd** (political science), chief U.S. magistrate judge, serves on the U.S. District Court for the Eastern District of California.

'78 **Catherine Caine** (child development) was named Hawaii's 2015 Teacher of the Year. She teaches at Waikiki Elementary School.

'79 **Navy Vice Admiral Scott H. Swift** (industrial arts) is a four-star general and commander of the U.S. Pacific Fleet.

#### 1980s

'80 **Max Branscomb** ('82 journalism; '12 Ed.D., leadership) is the 2014 recipient of the Sunshine Award from the Society of Professional Journalists for his dedication to a free student press; **Yale Strom** (art) is a recipient of the Creative Catalyst Grant from the San Diego Foundation.

'82 **Neil Sagebiel** (economics) published his second book, "Draw in the Dunes: The 1969 Ryder Cup and the Finish that Shocked the World" (St. Martin's Press).

'84 Bruce Duner (accounting) joined Bomgar as chief financial officer based in Duluth, Georgia.

'85 **Tawnya Pringle** (psychology; '87 counseling), a counselor at Hoover High School, was honored by the White House as one of the top five school counselors of the year.

'89 **Louis Hernández Jr.** (accounting; '90 M.B.A.) is CEO of Avid Technology, a Massachusettsbased provider of audio and video technology.

#### 1990s

'90 **Louis Pirnik** (accounting) is executive director with Ernst & Young LLP's Assurance practice in Sacramento.

'91 Wendy Busey Halloran (criminal justice) received a 2015 Alfred I. duPont-Columbia University Award for investigative television reporting on the Phoenix Fire Department's arson squad; Sylvia Garcia-Navarrete (English; '12 Ed.D., leadership) was named professor of the year by the American

Please send your news to the SDSU Alumni Association, aluminfo@mail.sdsu.edu. | \star = life member



#### Monica Dominguez @MoniDom

#whysdsu Where else would you find the BEST friends anyone could ask for? Miss you after 25 years!!

#### **Caitlin Nolan @CMNols**

#WhySDSU Amazing everything! Campus, people, weather. Had the time of my life at @SDSU on exchange. #AztecForLife #california #australia

#### Carl Starrett @CarlStarrett

@SDSU My daughter is really impressed with your RWS major. #WhySDSU #ExploreSDSU



#### Lenn Goodside @Lenntv

Another reason I attended @SDSU - The best TV Production department in the country. Fantastic professors, talented students. #WhySDSU

#### Paul Garrison @Aztecpaulg

@SDSU #WhySDSU The Compact for Success has inspired tens of thousands to believe going to college is possible! http://compactforsuc-cess.sdsu.edu/compact/



#### Alpha Gamma Delta @AlphaGamSDSU

@SDSU #WhySDSU To live with purpose! #AlphaGamSDSU

#### Gavin @CT2SD

@SDSU At 1st it was the physical beauty but I quickly learned there was so much more to love. Now we plan to grow old together. #WhySDSU

#### David Hernandez @D4VIDHernandez

@SDSU It easy to find your niche & grow. I would've never guessed I'd be the news editor of our campus paper @TheDailyAztec #WhySDSU

#### Andrea Ringler @DreaMalia

#WhySDSU for the AMAZING faculty! #jms #advertising

#### Tweet us your #WhySDSU

# **Class Notes**

#### 1990s

Association of Hispanics in Higher Education; **Stacey James** (management) was elected to the board of directors for Littler, an employment and labor law practice; **Stephen Lewis** (English), superintendent of Delta Elementary Charter School, Clarksburg, California, was recognized as an educator of the year by the California State University, Sacramento.

'92 **Debra Heiskala** ('93 M.S., accounting) is a partner with Ernst & Young LLP's Tax practice in San Diego.

'95 **Vince Hall** ★ (speech communication) is executive director of the Future of California Elections; **David Clarkin** (mechanical engineering) is president of A.O. Reed & Co.

#### 2000s

'00 **Clint Schultz** (master of fine arts) is lead graphic designer for "Tomorrowland," a Disney film starring George Clooney and due for release in May; **Robert P. Robinson** ★ (accounting) is managing partner at Hickman & Robinson and is featured in the 2015 San Diego Super Lawyers magazine as a Rising Star; **Dianne Bright** (M.A. Spanish) published her first novel, "Soul Reader" (Tate Publishing); **Erika DiProfio** (journalism) is director of marketing at Omni La Costa Resort and Spa in San Diego.

'02 **Andre Monette** (geology) was promoted to partner at Best & Krieger LLP. Based in Washington, D.C., he specializes in water quality and water rights.

'05 **Scott Slater** (political science), founder of Slater's 50/50, opened a second restaurant in San Diego—S&M Sausage and Meat.

#### 2010s

'10 Irina Weisblatt (Ed.D. educational leadership) was named an Outstanding Business Educator by the California Business Education Association. She is an assistant professor at Ashford University's Forbes School of Business; Edward Stepanow Jr. (economics) is vice president for finance and administration at Howard Payne University in Brownwood, Texas.

'14 **Dahir Nasser** (master of public health) has been accepted into the Capital Fellows Program administered by the Center for California Studies at California State University, Sacramento; **Jeanna Kylstad** (journalism) joined Nuffer, Smith, Tucker Public Relations as account coordinator.

# • Summer of Wond

San Diego Normal School played a starring role in preparations for the 1915 Panama-California Exposition.

By Tobin Vaughn











he lazy days of summer were anything but for students at San Diego State's first iteration, the San Diego Normal School. It was California's first normal school to offer summer sessions with the intent to provide additional training for teachers and prospective teachers. But classes were

inexpensive (just \$2 for the semester in 1909) and they ended shortly after lunchtime, so students could still get in a few hours at the beach.

Within a decade, the Normal School's offerings were attracting students from almost every California county, many states and Mexico. Classes ranged from child development and grammar school arithmetic methods to Victorian poetry.

Although these sessions were popular from the start, none was more eagerly anticipated

than the summer session of 1915. It was to be the Normal School's contribution to San Diego's Panama-California Exposition, featuring Maria Montessori, originator of the famed Montessori method of educating young children.

Montessori was an Italian educator and physician who developed a controversial educational system that is both a philosophy of child development and a rationale for guiding that development. It is based on her idea of a child's developmental need for freedom within limits and an educational environment offering exposure to experiences and materials.

Exposition organizers had planned for Dottoressa Montessori to present a special course on her controversial method. It was to feature a demonstration by school children on the Exposition grounds in Balboa Park, but details could not be finalized.

Montessori decided to cancel the 10 lectures she had initially promised to give, believing they were too few to allow a thorough presentation of her approach to education. Instead, she agreed to hold a class in a remodeled art studio on the Normal School campus.

As the event approached, the dottoressa refused to allow public viewing of her classroom, citing the distraction it would likely cause both students and staff. But she did invite Normal School students to observe her demonstration class and also delivered lectures at the school that were originally planned for the exposition.

An internationally known figure in education, Montessori's presence on campus conferred a certain celebrity on the Normal School and San Diego. But even without her demonstrations on its grounds, the Panama-California Exposition attracted crowds.

The exposition celebrated the opening of the Panama Canal, and was meant to attract tourists to San Diego as the first U.S. port of call for ships traveling north after passing westward through the canal. Held in Balboa Park, it attracted two million visitors during its two-year engagement ending Jan. 1, 1917.

The Normal School conducted field trips to the Exposition and the 1915 Normal School commencement was held in Balboa Park.

One hundred years later, a Balboa Park Centennial Celebration recalls the Panama-California Exposition, summer sessions are an accepted part of course offerings on any campus, and Montessori's method, while still controversial, is a widely recognized alternative to more structured, traditional educational environments.

Meanwhile, just a few miles away from the old Normal School campus and a century removed from that summer of 1915, what is now San Diego State University remains a recognized innovator in the field of education.

# By Degrees

#### What brought you to SDSU?

When I graduated from San Diego City College, I was accepted at SDSU and a number of UC universities. I came here because of the faculty in Chicana/Chicano studies. I knew the work of Isidro Ortiz and Roberto Hernández, and I wanted to learn from them and other department faculty.

#### What is the focus of your studies?

I have been researching the barriers to health care faced by undocumented students who arrived in California as children. These include misunderstandings about the Affordable Care Act by students and also by the staff of Covered California. My work has been supported by the Grace Molina de Pick scholarship, which is awarded to SDSU undergraduates who conduct research on issues related to social justice. I presented my findings at the SDSU Student Research Symposium in March. It's still a work in progress, but I'd like to publish it eventually and help end the inequities in health care.

As part of the research process, I also worked with staff on our campus to get SDSU students registered through Covered California. This was part of a California State University Health Insurance Education Project.

#### Who on campus has influenced you most?

Victoria González, my research mentor in the Department of Chicana/Chicano Studies. As a historian, she teaches us to look at history as a process that influences the present. I've learned from her how to research and write about primary sources and how to approach history with a social justice perspective.

#### What's the next step for you?

I've been accepted into the UC San Diego graduate program in Latin American studies with a concentration in history, and through that program I received a fellowship funded by the National Science Foundation. I plan to earn a Ph.D. and teach history at the college level. **Miguel Castañeda** HOMETOWN: San Diego, California MAJOR: Chicana/Chicano studies

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- Jeff Smith, San Diego Reader (*Les Misérables in Concert*, Fall 2014)







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ALLISON NEUNZIG HAS ASPIRED TO A NURSING CAREER SINCE HIGH SCHOOL, WHEN SHE RECEIVED A PAID SUMMER INTERNSHIP WITH KAISER PERMANENTE. NOW SHE **EXCELS AS A NURSING STUDENT** AT SAN DIEGO STATE AND IS VICE PRESIDENT OF THE SDSU CALIFORNIA NURSING STUDENTS' ASSOCIATION CHAPTER. **THE CAMPAIGN FOR SDSU** SUPPORTS FUTURE LEADERS LIKE ALLISON AND HELPS THEM SUCCEED. **VISIT CAMPAIGN.SDSU.EDU**