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“For a long time, my goal has been to earn a BA. I finally decided this was for me.”
—Doris Alejos, '23 Interdisciplinary Studies



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WASHINGTON SQUARE

The Magazine

SJSU



From the Editors

We're excited to introduce the reimagined Washington Square: The Magazine — and introduce ourselves to you! We are your new co-editors, Tiffany Harbrecht and Ken Mashinchi.

There have been quite a few changes to the magazine since we last printed in 2019, so we thought we'd take you through the new features.



DIGITAL EXCLUSIVES

Get in-depth exclusive content and more.
sjsu.edu/wsqa

Reimagining Libraries

From virtual reality to research assistance, SJSU's Dr. Martin Luther King, Jr. Library is redefining how students, faculty and staff, and the greater community experience libraries.



Starting Their Next Chapter

Read stories of students' resilience, transformation and upward mobility from the College of Professional and Global Education: (Left to Right) Karen Quest, Sophina McDaniel, Ana Arevalo and Jolani Rhodenizer.

Shining a Spotlight on Inclusivity

The 2022 Latin American Choral Music Festival offered SJSU educators the chance to help students celebrate culture and promote social change.



TOP PHOTO: ROBERT C. BAIN

Harry Edwards Formalizes His Legacy at SJSU

Renowned sports sociologist and professor emeritus of UC Berkeley Harry Edwards, '64 Social Science, '16 Honorary Doctorate, reached a milestone of giving to SJSU that resonates with his contributions to society.

Why did a few years elapse before a new print issue was produced?

TH: The onset of the pandemic put our print production of WSQ and, let's face it — life — on hiatus. This also gave us the extraordinary opportunity to revisit the magazine with fresh eyes and determine how best to share SJSU's stories moving forward. In December, we first relaunched WSQ onto a new online platform. If you haven't seen it yet, we encourage you to visit sjsu.edu/wsqa. Then, our team came together to redesign the look and feel of the print version.

Both of these endeavors took time, but it was time we think was well invested in bringing SJSU's stories back to you.

Why did you decide to change the layout? What happened to regular content such as class notes?

KM: We have transitioned Washington Square to serve as a university and alumni magazine, focusing on telling the best stories that embody the Spartan pride and resilience we all treasure. The world has become more digital and social — making it easier to know who has moved on to different opportunities. Within these 32 pages, we want to pack in as much content as possible that resonates with our Spartan community and beyond.

What's different about the digital version of WSQ?

TH: Our new online WSQ features digital-exclusive stories alongside and in between print issues. Each page is its own content experience, with engaging imagery that immerses you immediately in the stories. It's also much simpler to navigate than our previous WSQ blog and is easy to read on mobile devices.

How often will you publish the digital and print versions of the magazine?

KM: Through a mix of digital and print versions, new editions of WSQ will be available multiple times a year.

Have feedback for us?

TH/KM: We would love to hear from you. Use the QR code or email below and let us know what you think. We hope you enjoy reading both versions as much as we did creating them!



—Tiffany Harbrecht and Ken Mashinchi

PS: A special thanks to our colleagues in University Advancement; Lisa Millora; Michael Crawford; Christine Hutchins; and all of our faculty, students, alumni and new friends who contributed to and participated in our stories.



My Spartan Generation Story

In 100 words, tell us about your family's legacy of San José State graduates (and current Spartans, if any). We want to know why you all chose, and continue choosing, SJSU.

Email: wsqeditor@sjsu.edu

“We, as a nation, are at the beginning of truly engaging in nuanced conversations about how we see our Latinx community. This festival is just one example of where we can start.”

—Corie Brown, Conductor and Assistant Professor of Choral Music Education

Making Inclusivity Center Stage

San José State University's inaugural Latin American Choral Festival, which featured artists from Brazil, Puerto Rico, Venezuela and Mexico, inspired as much dialogue as it did music.



READ THE FULL STORY
ONLINE AT sjsu.edu/wsqa.

PHOTOS: JIM GENSHEIMER



From the President's Desk

WELCOME TO THE SUMMER/FALL 2022 EDITION OF WASHINGTON SQUARE: THE MAGAZINE!

BEFORE I TOOK THE POSITION of interim president at San José State University, I, of course, did a little digging around about the campus. One of the first things I came across was the Fall/Winter online edition of Washington Square: The Magazine. I'm being completely honest when I say I was blown away by the quality and ingenuity of this publication. I thought to myself, "Wow, this university has some amazing talent!"

These past several months on the job have solidified how right my first impressions were. Spending time around our campus and in the community, engaging with students, faculty, staff, alumni and supporters, I've gained a deep appreciation for the spirit and character of our university. It's great to see so much of that reflected in Washington Square.

Whether you're flipping through physical pages or reading in a digital environment, I think you're going to enjoy this latest edition. From innovative ideas like SPARTAN Superway, to an alumnus redefining cancer treatments, to using artificial intelligence to predict future wildfires, Washington Square shines a light on how Spartans are transforming the world in meaningful ways.

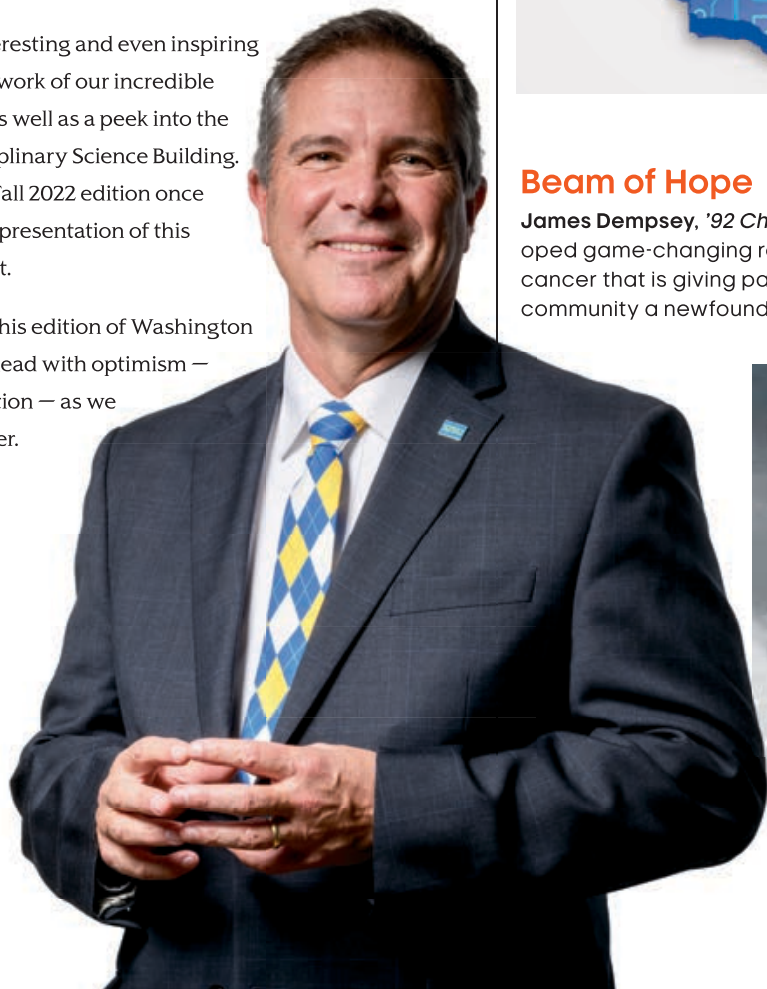
You'll also find fun, interesting and even inspiring material related to the work of our incredible faculty and students, as well as a peek into the future of our Interdisciplinary Science Building. All in all, the Summer/Fall 2022 edition once again is a wonderful representation of this university and its talent.

Further, I believe with this edition of Washington Square, we can look ahead with optimism — perhaps even exhilaration — as we prepare for fall semester.

Enjoy!



Steve Perez
Interim President



Contents

The Spartan Superway 10

It's part student project, part world-changing innovation. More than 300 SJSU students, faculty and alumni are designing a futuristic, solar-powered, emissions-free transitway.

Machine Learning: The Next Firefighting Tool 13

Imagine knowing exactly what a wildfire will do, where it will be, hour by hour. With cutting-edge technology, we can.



Beam of Hope 16

James Dempsey, '92 Chemistry, has developed game-changing radiation therapy for cancer that is giving patients and the medical community a newfound sense of hope.



PHOTO: ROBERT C. BAIN



TOWER AND BELL

Equipping Spartans for career success 4

New spaces for wellness and small business 5

SJSU Cares for students in unforeseen crisis 6

SHOWING INITIATIVE

Building the culture of Title IX at SJSU 7

INQUIRING MINDS

Magdalani Eirinaki is using artificial intelligence (AI) for good 8

SPARTAN SPOTLIGHT

Edgar McGregor, '23 Climate Science, turned a hiking habit into a climate-saving mission 20

For Natasha Andrea Oon, '21 Business Administration, '23 MA Interdisciplinary Studies, time away from golf propelled her game to historic heights 22

INSIDE LOOK

See the foundation of SJSU's iconic new science building 24

ALUMNI IN ACTION

Maria Cedolini Thompson, '90 Child Development, is helping children adapt beyond the pandemic 26

John Contreras, '22 MFA Spatial Art, makes art that allows him to be creative, silly, serious, reflective — and transformative 28

Dick Vermeil, '58 BA, '59 MA Physical Education, immortalized by Hollywood and, now, the Football Hall of Fame 30

SPAR"TEN"

Mai Mai Cantos, '00 MPH, on health and safety during COVID-19, student transformation and the Renaissance era 32

WASHINGTON SQUARE

The Magazine
SUMMER/FALL 2022

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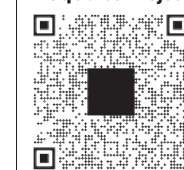
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Preparing for What's Next

SJSU's Career Center seeks to help every Spartan emerge well equipped for lifelong professional success.

THE CENTER PROVIDES CAREER EDUCATION, counseling/coaching, job development, job and internship opportunities, and career/employment events for San José State University's nearly 37,000 students. In fall 2021, the center offered students the flexibility of in-person and virtual services to accommodate their busy schedules and lives in a new hybrid world.



Joshua Reyes, '23 Advertising, and Vanessa Santiago, '25 Undeclared, search for career-ready attire in the SJSU Career Center. More than 400 students utilized the career closet and its accompanying professional headshot studio in spring 2022.



Become a Spartan!

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sjsu.edu/admissions/why-sjsu

*Domestic

OUTCOMES SNAPSHOT

FALL 2021/SPRING 2022

13 virtual career fairs

330 employers attended

Nearly 3,000 students attended

FALL 2020/SPRING 2021

17,700+ students served (all virtually)

17,060 internships and 55,455 jobs posted (July 2020–June 2021)

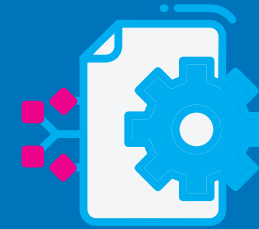
~65% of students logged into SJSU Handshake seeking jobs or internships

SPARTAN CAREER CLOSET

Current Spartans can choose and keep one free professional outfit and have a portrait taken each academic year.



PHOTOS: ROBERT C. BAIN



TOP HIRING COMPANIES

FALL 2019–SPRING 2020 SPARTAN GRADUATES*

- Accenture
- ACES, Comprehensive Educational Services
- Amazon
- Amazon Fulfillment
- Apple
- Cephoid
- Cisco
- City of San José
- Costco Wholesale
- County of Santa Clara
- Fortinet
- Genentech
- Google, Inc.
- IBM
- Intel Corporation
- Kaiser Permanente
- KLA Corporation
- Lockheed Martin
- Meta
- Microsoft
- NASA Ames Research Center
- Oracle
- San José State University
- Silicon Valley Bank
- Sutter Health
- Thermo Fisher Scientific
- Valley Water
- Valley Medical Center
- Western Digital
- Yahoo

Names are used for informational purposes only. No endorsement is implied by the use.

*in bachelor's degree programs

PHOTO: DAVID SCHMITZ (TOP) | ROBERT C. BAIN (RIGHT)



SJSU HEALTHY DEVELOPMENT COMMUNITY CLINIC

A Healthy Vision for the Future

WHAT IF FAMILIES COULD ACCESS WELLNESS AND MENTAL HEALTH SERVICES — free of charge? This spring, San José State University's Connie L. Lurie College of Education partnered with San José's East Side Union High School District to open the Healthy Development Community Clinic (HDCC) at Oak Grove High School. The HDCC offers screenings, brief services, skills groups, educational workshops and other wellness services that support the healthy development of children, youth and families.

The HDCC is staffed by SJSU graduate students under the supervision of expert clinical researchers specializing in child and adolescent development, communicative disorders and sciences, and clinical psychology. Materials and workshops will be available in English, Spanish and Vietnamese.

WANT TO GET INVOLVED WITH THE HDCC? CONTACT sabra.diridon@sjsu.edu.

Boosting Small Businesses With Big Ideas

SILICON VALLEY'S BOLD BUSINESS IDEAS got a new home in January when San José State University opened the Silicon Valley Small Business Development Center (SBDC). Led by director Michael Cohen, the SBDC in downtown San José provides support, training, consulting, technical assistance and connection to resources for entrepreneurs at any stage of their journey — from ideation to structure for acquisition or merger activities.

"We are so fortunate to be in the heart of Silicon Valley and SJSU in particular," says Cohen. "I encourage all students, faculty and alumni to take advantage of our free services."

The SBDC hosts an event every third Wednesday of the month at SJSU's Dr. Martin Luther King, Jr. Library from 10 a.m. to noon that includes an hour of presentations on topics of interest to small businesses followed by an hour of networking. All are invited to register and attend.

FOR MORE INFORMATION ABOUT THE SBDC, GO TO svsbdc.org.

GET THE LATEST FROM THE SJSU NEWSCENTER. SUBSCRIBE TO WEEKLY UPDATES: go.sjsu.edu/subscribe.





All the Ways SJSU Cares

SINCE 2015, SJSU CARES HAS offered basic needs services to students at San José State University who are facing unforeseen financial crises. The program opened a new office in Clark Hall in fall 2021 where students can consult privately with case managers, receive assistance and get referrals to community resources.

“I went [to SJSU Cares] when I had a family emergency. It’s just people that truly want you to succeed, and they inspire you.”
—Reem Farhat, '22 Psychology



SJSU CARES RESOURCES:

- Food
- Housing
- Emergency/disaster assistance
- Mental health support
- Employment assistance
- Financial counseling

VISIT sjsu.edu/sjsucares TO LEARN MORE.

“I slept in my truck for a couple days, and one of my classmates told me, ‘You should check out SJSU Cares.’ Once I started getting help, I could focus on my work and didn’t have to worry about my living situation. It was the most awesome thing you could ask for.”
—Luis Jauregui, '24 Industrial Engineering



By the Numbers

50,000+ student visits to the Spartan Food Pantry in three years

114,396 pounds of food distributed between January–March 2022

27,510 pounds of fresh produce donated by Second Harvest of Silicon Valley between January–March 2022

From July–December 2021, all **173** individuals facing housing insecurity who met with a case manager received assistance



SHARE YOUR SPARTAN HEART

RETURNING THIS FALL, the Share Your Spartan Heart campaign is designed to spread the word about the availability of emergency food and housing for students and provide multiple ways to support SJSU Cares. Last fall, the campaign raised nearly \$14,000. We hope you’ll join us this year!

VISIT sjsu.edu/sjsucares/share TO LEARN MORE.

PHOTOS: ROBERT C. BAIN (TOP) | JAVIER DUARTE (STUDENTS, LEFT)

Showing Initiative



Building the Culture of Title IX at SJSU

SJSU IS COMMITTED TO PROVIDING A HEALTHY and safe campus environment, free from all forms of discrimination, harassment and retaliation. This year marks the 50th anniversary of the passing of the Title IX of the Education Amendments Act of 1972.

The Title IX Office at San José State has partnered with many departments on campus to enhance education and training and to improve the systems that handle reporting and resolution processes. These improvements include:

ELEVATING AWARENESS: To ensure students understand their rights and how the Title IX Office can help them, University Marketing and Communications launched an awareness campaign. The ongoing campaign includes

social media, print and video testimonials from student and faculty leaders.

EDUCATION AND TRAINING: In addition to the mandatory online training for all students and employees, the Title IX Office has conducted more trainings in person in the last academic year on gender and sex-based discrimination and harassment, consent, retaliation and other important concepts.

DEPARTMENT OF JUSTICE RESOLUTION AGREEMENT: A team of SJSU staff and administrators from multiple areas of campus has worked with the U.S. Department of Justice to fulfill the terms of the Department of Justice Resolution Agreement and has met its obligations. You can follow the progress at the SJSU FYI site (sjsu.edu/fyi).

“Find out where the Title IX Office is; find out who the contacts are. Even if it is a slight issue and something you are on the fence about related to harassment, cyberstalking or anything else that you are unsure of, go there and talk to them to see what you should do and take the best course of action.”

—Jada Mazury, '23 Business Marketing



“You are not alone. It is OK to reach out and use the resources the campus has because that is what they are there for.”

—Hana Garcia, '22 Digital Media Art



“The impact sexual harassment has [on people], not only on day-to-day life but [also on] how you view yourself, can really do damage. Knowing that the Title IX Office is in place helps. Don’t be afraid to use your voice.”

—Caleb Simmons, '21 Kinesiology, '22 MA Interdisciplinary Studies



PHOTOS: DAVID SCHMITZ



AI for Good

Computer Engineering Professor Magdalini Eirinaki is showing students — and the world — what it means to be a socially responsible artificial intelligence engineer.

By Brett Bralley

YOU KNOW HOW ONCE YOU’VE FINISHED binge-watching a Netflix show, you’re immediately suggested another one that’s similar? That technology is called a recommender system, and it’s built using artificial intelligence and machine learning. Recommender systems gather data about you — the user — then make content suggestions based on that information.

“It fascinates me how people use these technologies,” says Magdalini Eirinaki, professor and associate chair of computer

engineering at San José State University — and an artificial intelligence (AI) and machine learning expert and researcher.

Eirinaki wants to make recommender systems even better, because while artificial intelligence and machine learning allow us to do amazing things, “it has a flip side, and we should be more critical of it,” she explains. She points to the Cambridge Analytica scandal, which came to light in 2018, in which more than 87 million Facebook users’ data was collected without consent and used for political advertising.

PHOTO: DAVID SCHMITZ

The propagation of fake news on social media is also a strong example of how such technologies can be used to reinforce social biases, she notes.

“We should be educating more about the dangers of AI, while promoting its good uses.”

HER MISSION IS TO HARNESS THE POWER of AI for good, and she’s dedicated to teaching her students how to make a difference. Whether it’s her own research or supporting student projects, “we can use AI as a tool to benefit others and as a method to solve different problems,” she says.

For example, she and her students built an app that helps translate American Sign Language into text, incorporating vocabulary often used in restaurant environments. She has also worked with students to create Viva — a virtual assistant that provides voice navigation, obstacle detection and a surrounding risk assessment for the visually impaired.

She has even developed an alternative to traditional recommender system algorithms leveraging the user’s social network. Instead of suggesting content based on what others similar to you like — how recommender systems usually work — she designed one that recommends based on your circle of influence, including your friends, and friends of friends. Putting it to the test, she found it works.

“We saw that introducing real-life relationships greatly improved the results when compared to more traditional recommender system algorithms,” she notes.

Recently, Eirinaki co-led the charge to launch the Charles W. Davidson College of Engineering’s new MS in Artificial Intelligence program, which accepted its first in-person cohort in fall 2021.

When she first joined SJSU in 2007, Eirinaki was the main faculty member teaching AI-related courses. But soon, the college recognized a growing demand for AI education, as the industry began to need more experts. For the last two years, she and a group of faculty members conducted market research and met with business and technology leaders in Silicon Valley to build a program that would provide students with the education and experience to become socially responsible AI engineers.

FOR EIRINAKI, TEACHING IS A PASSION. When she was a middle school student growing up in Athens, Greece, she wanted to be a teacher. As she got older, she developed an affinity for all things computer science. After earning both her bachelor’s and master’s in the field, she spent a short stint working for a software company. But

“We can use AI as a tool to benefit others and as a method to solve different problems.”

—Magdalini Eirinaki, Professor and Associate Chair of Computer Engineering

she found herself working on the same tasks every day, and missed opportunities to be learning and trying new things. So she returned to academia to work on her PhD.

That’s when she fell in love with working with students. She admits part of that lies in instant gratification.

“You can start working with a student when they don’t know much, and by the end of even one class, they’ve learned something new. It’s transformative,” she says.

Zeeshan Pachodiwale, ’20 MS Computer Engineering, says he felt that transformative process when working with and learning from Eirinaki.

When he took one of her data mining courses, “the knowledge gaps I had had from a previous course were filled because of the way she teaches and helps you understand,” he says.

For that reason, he asked her for help in realizing the Viva project — the assistance app for the visually impaired.

“She guided [me and other students] through that process, was supportive and helped us aim high,” he says. Now, Pachodiwale works as an engineer for Amazon, and he hopes to continue pursuing machine learning and data mining throughout his career.

That’s what Eirinaki appreciates about the long-term impact of teaching: She’s helping change lives. After 15 years at San José State — an institution Eirinaki says lives up to its ranking by Money magazine as the “Most Transformative University” — she’s seen how her lessons have had an impact on students.

“I’ve had several students come back and tell me, ‘What you taught me helped get me an interview or land my dream job,’ many years later. That’s the rewarding part of teaching.”



The Spartan Superway

It's not a bird. It's not a plane. It's the future of solar-powered, emissions-free, world-changing public transportation, designed by faculty, students and alumni of San José State University.

By Brett Bralley

BURFORD FURMAN HAS A VISION. The mechanical engineering professor at San José State sees the university's two campuses — one located in the heart of downtown San José, the other eight blocks south — connected by a new transit system.

Not a bus route, nor a train — instead Furman sees sleek blue and gold pods hanging from an elevated solar-paneled guideway. Students, faculty and staff ascend steps to a boarding station on Seventh Street, departing Main Campus to catch a Spartan football game at CEFCU Stadium. They step inside, take a seat, doors close, and then they move, slowly at first, but soon whirring through downtown, above stoplights, past treetops and alongside skyscraper windows. There's no energy wasted; as congested traffic starts and stops below them, the pods never gain or lose momentum, until they slow to a stop at their destination.

To be sure, this futuristic transitway may still be quite a few years away from implementation, but the project — dubbed the SPARTAN Superway (SPARTAN stands for Solar Powered Automated Rapid-Transit Ascendant Network) — is now in

the proof-of-concept stage: Miniature pods zoom along an oval-shaped track the size of a dining table, proving that they can follow instructions from code written by SJSU alumni, faculty and students.

The track sits in the former Terraine Courthouse in downtown San José, where engineer, entrepreneur and sponsor Ron Swenson, president of the International Institute of Sustainable Transportation, has set up shop. Swenson shares the SPARTAN Superway vision, which is why he's invested in the idea since its inception.

Furman and Swenson, along with 15 other faculty, students and RodzMas, a Mexican design team, investigated how realistic this concept could be for the university. Their findings, which were published in December 2021 by SJSU's Mineta Transportation Institute, confirmed that the transit system could certainly integrate within the downtown landscape.

What's more, the study concluded that SPARTAN Superway would emit 86% less greenhouse gases than a purely electric grid-powered version — and 98% less than the current SJSU Park & Ride diesel shuttle system.

IMAGE: COURTESY OF SPARTAN SUPERWAY TEAM



At a demonstration on campus this spring, members of the SPARTAN Superway core team showed students how the transitway works, using an oval-shaped track with miniature model pods zooming around its perimeter.

That's why Furman and Swenson aren't stopping with SJSU. They know this idea can change the world, amplifying Silicon Valley's impact, as they collaborate with universities and co-developers in Mexico, Europe and Africa.

"This is a new paradigm for how to do urban transportation," Furman explains. "For over a hundred years, we've had wheels rolling around on the pavement. When we think, 'How do I get from point A to point B?' it involves taking your car out and driving. Our cities are built around that form. We have parking lots, streets in a grid. We're talking about moving this guideway up into the air, collecting solar energy."

"This means that instead of parking your car, you let the pod car go off to serve someone else. We're doing more with less."

PART STUDENT PROJECT, part world-changing innovation, SPARTAN Superway has been put together by more than 300 students, faculty, alumni and mentors who have contributed since the project started in 2012.

Furman reconfigured an existing program initiated by Belle Wei, then-dean of the Charles W. Davidson College of Engineering, to establish an industry-university project and partnership with an effort focused on sustainable mobility. This project would allow students to gain real-world experience while making an impact in sustainability. Wei now serves as the Carolyn Guidry Chair in Engineering Education and Innovative Learning.

While searching for the right project, Furman formed an advisory board with industry experts, which included Swenson.

Swenson had built a successful engineering career that had taken him around the world, creating remote solar systems and experimenting with sustainable transportation options like solar- and electric-powered vehicles. When he joined the advisory board, he had an idea: Instead of solar-powering just one vehicle, "I realized you could put solar panels on a guideway and thereby achieve this result of having enough solar energy to run a whole fleet of vehicles."

PHOTO: ROBERT C. BAIN

Furman remembers, "It was Ron who said, 'Hey, you ought to be working on solar-powered pod cars.'"

Ever since the project took off, cohorts of engineering students have joined during their senior year to learn about design, manufacturing and programming, as well as study renewable energy and sustainability. They have also gained career-building skills, such as learning how to network and make formal presentations.

Every student works on a different facet of the project — from the design of a single pod, to creating and perfecting the track system, to researching user experience, to even developing an escape hatch for emergency situations.

Still, for several years, progress was slow for a big reason: high turnover. Students finished their projects, graduated, then moved on. The next cohort of students often started from scratch or had to spend valuable time understanding the work and processes of the former cohort.

That is, until Greg White, '20 Mechanical Engineering, got involved.

White was in the middle of his senior project with SPARTAN Superway when the pandemic arrived, and "everything was taken out from under us," he remembers.

He got through the semester and met the requirements of the project, but he "still felt like there was more to do. I wasn't satisfied."

He said as much to Furman, who gave White the go-ahead to continue working on his project over the summer. It wasn't long before White pitched to Furman and Swenson that he work on SPARTAN Superway as a staff engineer and bring on an entire team. They agreed. "Now we have continuity," Swenson says. "It makes a huge difference."

The biggest difference is that the project has accelerated. In just two years, White and three other on-staff engineers led the development of the miniature proof-of-concept track and pods — from designing to 3D printing to building.

It's a dream experience for White, who admits to often spending late hours working at the downtown building, solving pieces of the puzzle. He knows this opportunity is setting him up for success in his career as an engineer and as a leader.

"The reason I am here is because I want to make a difference in something in the world," he says. "I think this is an opportunity to do so."

BEFORE SHE GRADUATED IN MAY, Trang Dang, '22 Mechanical Engineering, worked on the design of the track, concentrating on the switch rails that would allow the pods to make turns and veer toward stations.

She plans to pursue her master's degree and says the project has helped her understand the processes of design planning, developing a prototype and cross-collaborating with different teams.

The SPARTAN Superway project holds special meaning to her: Growing up in Vietnam, Dang saw daily traffic congestion and a high number of traffic accidents.

"Air pollution [in Vietnam] is at an alert level because of greenhouse gases [emitted] from the high number of mobile vehicles," she says. "People keep asking why more and more people have lung diseases and respiratory illnesses. The oil industry is also harmful to marine life because of oil leaking and land disturbances.

"When I was in my country, I always hoped that the government could do something to save the people, the next generations and the environment. The SPARTAN Superway project reminds me of that hope."

FURMAN AND SWENSON SHARE Dang's hope for the future. But in many ways, SPARTAN Superway is just plain common sense.

"A lot of people ask, how much can solar power do? And actually, fossil fuels do very little," Furman explains. "If you look at an internal combustion engine, something like 88% of the energy in the fuel tank is wasted. As little as 12% of the total energy actually moves the car down the road. You fill up your tank and think about how all the gas in that car is going to get you down the road. But really, most of it goes toward heating up our world."

And there's another way that SPARTAN Superway can change the world. In 2019, 33,244 people in the U.S. were killed in traffic accidents, according to the nonprofit Insurance Institute for Highway Safety. That number is about the same year after year, Furman notes.

"We have a terrible time right now with the way transportation machinery interacts with people," he says. "You take your life into your hands crossing streets, and it ought not to be that way. What can I do as an engineer to preserve and protect and cause life to flourish, rather than extinguish it? Moving machinery away from people so that it can't maim and kill people — that's important to me."

So what will it take before we see pods speeding through the air, saving the world one trip at a time? Furman and Swenson agree: buy-in from the community. It will take discussing ideas with stakeholders, developing more partnerships and engaging more investors, they assert.

Ultimately, Furman says, "It's going to take the will of people who want to take this different approach, who can see the vision."

LEARN MORE ABOUT SPARTAN SUPERWAY AT sjsu.edu/smssv.

PREVIOUS PAGES: AN ILLUSTRATED RENDERING DEPICTS THE SPARTAN SUPERWAY, WITH SLEEK BLUE AND GOLD PODS HANGING FROM AN ELEVATED SOLAR-PANELED GUIDEWAY, SUSTAINABLY SHUTTLING SJSU COMMUNITY MEMBERS BETWEEN THE MAIN CAMPUS AND SOUTH CAMPUS IN DOWNTOWN SAN JOSÉ.

About Mineta Transportation Institute

By Tiffany Harbrecht

In 1991, San José State University's Mineta Transportation Institute (MTI) launched with a mission to improve the safety, efficiency, accessibility and convenience of our nation's transportation system. Through surface transportation research, technology transfer, workforce development and education, the institute is creating a more connected world and increasing mobility for all.

MTI spearheads two multi-university consortia: the California State University Transportation Consortium, which represents the 23 CSU campuses, and the Mineta Consortium for Transportation Mobility (MCTM). MCTM includes Howard University, Navajo Technical University, San José State University and the University of North Carolina Charlotte. MTI is affiliated with SJSU's Lucas College and Graduate School of Business.

Read the Mineta Transportation Institute superway study at go.sjsu.edu/MTI-SpartanSuperway.

Machine Learning: The Next Firefighting Tool

By Brett Bralley
Illustration By Yeab Kebede

Could artificial intelligence hold the key to cutting-edge wildfire prediction?

Editor's note: This is the second piece in a two-part series in Washington Square examining San José State University's interdisciplinary approach to wildfire research.

Imagine knowing exactly what a wildfire will do, where it will be, hour by hour. When flames will leap across hillsides, when billowing smoke will darken skies, when neighborhoods will be engulfed.

With this knowledge, firefighters could be better prepared to defend against flames and smoke charging through landscapes; aerial water drops could be more targeted and effective. And residents could know exactly how much time they have to safely evacuate their homes. Better yet — responders could stop flames before they even become a threat.

For Adam Kochanski, assistant professor of meteorology and climate science at San José State University, this hypothetical world of fire prediction isn't far-fetched. Kochanski believes the approach to better understanding this massive force of nature lies in technology — including machine learning.

Leveraging artificial intelligence for fire spread forecasting isn't a novel concept in wildfire research, but "up to this point, we haven't had enough data to build those models," Kochanski explains.

But he sees a way to gather that data and harness it so that "we could get information about wildfires any time we want, to see the size of the fire, how it is progressing. We could estimate how fast the fire is going to spread, and how intense it will be."

Kochanski is part of the university's Wildfire Interdisciplinary Research Center (WIRC), a group of seven SJSU scientists from a number of disciplines, including ecology, social sciences, engineering and meteorology. Five of those researchers were hired between August 2020 and January 2021 — a move that established WIRC as the largest academic wildfire interdisciplinary research center in the country.

Momentum for wildfire research at SJSU has since surged. In August 2021, WIRC received a grant from the National Science Foundation designating it an Industry-University Cooperative Research Center (IUCRC).

This grant and designation have been a game changer, explains Craig Clements, professor of meteorology and climate science and WIRC director, because now, research can move forward at an unprecedented speed. Usually, the academic research process can take months waiting for funding approval.

But as an IUCRC, funding is immediately available, and research can start as projects are approved by partnering stakeholders, which, for San José State, include San Diego Gas & Electric Company; Pacific Gas & Electric Company; Southern California Edison; Technosylva, Inc.; Jupiter Intelligence, Inc.; State Farm Insurance; CSAA Insurance

Group; and Lawrence Livermore National Laboratory, among others. Kochanski's foray into artificial intelligence is one of several projects WIRC faculty are tackling that are funded by support from IUCRC stakeholders.

Just seven months later, nearly \$1.2 million from President Biden's federal spending plan was set aside this March for cutting-edge fire modeling and prediction technology at SJSU. That funding will support the development of four new facilities: a national wildfire data and computing hub, a remote-sensing laboratory, a wildfire dynamics laboratory and a community wildfire resilience laboratory.

Teaching machines to teach us

Kochanski has already completed an important step in teaching machines how to predict wildfire behavior: He co-developed WRF-SFIRE*, a wildfire forecast and modeling system that allows wildfire experts to predict which way smoke and flames will move based on current weather conditions. WRF-SFIRE is already a crucial resource that has helped curb the spread of wildfires across California and the globe.

However, the model utilizes data from satellite and aircraft observations of fires that are only available once or twice a day. And that isn't nearly enough to teach a machine how to predict fire spread more accurately, Kochanski says. In fact, he says artificial intelligence networks "need thousands of data points" to do the job.

To gather them all, he's relying on the past. He is combining historical satellite images of wildfires with the WRF-SFIRE model. Then, he'll factor in regularly updated information about the current dryness levels of landscape vegetation, otherwise referred to by wildfire experts as "fuels."

Scientists, including researchers and students from WIRC, gather this data on fuels by collecting them — sometimes even on the

front lines of a wildfire — and measuring their moisture content by weighing them, drying them out, then weighing them again.

Jack Drucker, '21 BS, '24 MS Meteorology, is one of those students. The Los Angeles native joined Kochanski's lab as an undergraduate and made it his senior project to create a database that aggregates fuel moisture-level findings from WIRC and other sources. The database is open for users to access based on their needs and has been key to Kochanski's research, as well as to Drucker's long-term career goals. He plans to continue wildfire research after he earns his master's degree.

"The more I learn about wildfires, the more I realize there's so much we don't know," he says. "Uncovering the secrets behind how wildfires develop is fascinating and drives my curiosity to learn more."

A clearer future

If Kochanski is successful in his endeavor, the effects will be profound.

"First, we can have a better forecast of what a fire is going to do, where a fire is going to be 24, 48 hours from now," he notes.

But that's just the beginning; He says that machine learning can give us an idea of what wildfire activity will look like decades down the road. That snapshot into the future could inform many decisions made around wildfire prevention — from where we choose to build homes, to whether utility companies should consider placing infrastructure underground, to if and how much governments should invest in preventing wildfires.

One such area the government could invest more in is better forest management, Kochanski notes — an idea shared by other WIRC researchers, including Kate Wilkin, assistant professor of fire ecology.

In general, Wilkin says "we have chosen a hands-off land management approach to many of our forests and woodlands, and what we've ended up with are really, really dense forests — and in some cases, woodlands that have become forests — because we have not been allowing a natural process to occur, which is fire."

Wildfires are an important, natural occurrence, and whenever we extinguish smaller, harmless fires, we pave the way for the massive, catastrophic ones we experience every year, she explains.

Prescribed fires — fires that burn under controlled conditions — are a viable solution. In fact, California Governor Gavin Newsom's Wildfire and Forest Resilience Task Force issued a strategic plan in March for expanding use of prescribed fire and other beneficial burning tactics to help mitigate the spread of wildfires.

"Whether it be for forest health or biodiversity, there is a lot of evidence that it is good when we allow these fires to burn," adds Wilkin.

Next generation's fire fighters

Growing up in Colorado, Kathleen Clough, '23 MS Meteorology, has seen the damage wildfires and drought can have on communities.

Clough had no idea wildfire research was a field she could even pursue, though she knew she was interested in studying the effects of climate change. Then, at a conference during her senior year of college, she learned about Kochanski's work. When she found out that he was at San José State University, "I knew that's where I had to go."

Now, Clough is analyzing the performance of WRF-SFIRE in order to help improve the prediction model's accuracy over time. She plans to pursue a PhD in wildfire research, then hopes to work for NASA or Lawrence Livermore National Laboratory "to be directly involved in the implementation and improvement of WRF-SFIRE," she says. "I'm interested in doing work that directly and positively impacts mountain communities."

SJSU is also working to make wildfire science education available to more students. In fall 2021, the College of Science introduced a wildfire science minor program. While specifically designed for careers related to environmental and climate change-related fields, Kochanski emphasizes that it can complement a variety of fields of study.

"We need more students, more people who will know how to use this technology or work in utility companies, insurance companies or other places," Kochanski says.

Those students studying wildfire science today might be part of creating a future prediction model that could update residents hour by hour on smoke levels in the air, Kochanski imagines. They could be part of the government's future efforts to restore our forests to better health. Or they could be leaders in their communities, educating residents how to better safeguard their homes against wildfires.

"There is big potential for careers outside of [wildfire] science itself," he asserts. "The fire problem is not going away."

VISIT go.sjsu.edu/wildfire TO READ THE FIRST OF THIS TWO-PART SERIES EXAMINING WILDFIRE RESEARCH AT SJSU.

*WRF-SFIRE IS A MODEL THAT COMBINES A WEATHER FORECAST MODEL — WEATHER RESEARCH FORECASTING SYSTEM (WRF) — WITH THE FIRE-SPREAD MODEL KNOWN AS SFIRE.

Beam of Hope

SJSU alumnus James Dempsey captured lightning in a bottle. His cutting-edge medical technology is saving lives and revolutionizing radiation treatment for cancer as we know it.

By Tiffany Harbrecht

Illustration by Jennifer Guo

JAMES DEMPSEY, '92 CHEMISTRY, has a passion for solving "impossible problems." That's because, as he says, "They're not impossible. They're just the ones we don't know how to do yet."

The foundation of Dempsey's career is built upon the experiences he had at San José State, especially under former nuclear chemistry faculty member Peter A.J. Englert, who, Dempsey says, "shaped his perspective on science." In addition, Dempsey explains, Englert not only employed him in his lab at SJSU, which helped pay for his tuition, but also helped him land a job working on NASA's Mars Observer at the Max Planck Institute for Chemistry in Germany.

"For me, [SJSU] was amazing," Dempsey recalls. "The programs were amazing. The chemistry faculty were great. I think San José State is a tremendous asset to Silicon Valley. I was very pleased when my son decided to go there."

Dempsey's vision for his life, however, was clear long before SJSU: "When I was a kid, people would say, 'What do you want to be?' I'd tell them 'I want to be an inventor.'" But they didn't believe him; some even told him that was "not a thing." Dempsey proved them all wrong.

In 2004, he founded ViewRay, a medical technology company that is, to this day, ahead of its time — and became an inventor of a revolutionary radiation therapy for cancer: the MRIdian®.

MOST OF US HAVE HAD A DIRECT or indirect experience with someone who has, or has had, cancer. According to the Centers for Disease Control and Prevention, every year more than 1.6 million people are diagnosed with cancer in the U.S.; it's the second leading cause of death in the country, after heart disease. But with ViewRay's MRIdian, a cancer diagnosis doesn't have to mean "the end" — even for patients who had previously been told that there was no hope, no medical options left.

The MRIdian combines an MRI (magnetic resonance imaging) with advanced radiation technologies to provide an MRI-guided radiation therapy that enables radiation therapists to see, follow and treat tumors in real time — with the precision, accuracy and control of a surgeon.

There are other systems out there using PET (positron emission tomography) or CT (computerized tomography) scans, ultrasounds and X-rays, but only MRI machines can accurately see the soft tissues, explains Dempsey. And only the MRIdian uses technology of this kind. "It's still something that even shocks our physicians when they see it for the first time," he says.

The MRIdian also automatically controls the beam of radiation to target only the tumor, protecting patients from unnecessary harm to healthy tissues and critical organs. Therapists change the dose of radiation they deliver on the spot as required.

"It's called stereotactic, MRI-guided [adaptive] radiation therapy, SMART therapy," Dempsey continues. "We know where the tumors are. In fact, all of them keep moving around. The current solution is to radiate the whole region. With the ViewRay technology, [therapists] can see where the tumors are, and the beam will not fire unless it's locked on target."

"That's really the critical thing — the ability to see not just what you're treating but also control the beam and reshape the dose. Those three capabilities really change the game."

A typical course of radiation is five treatments per week, Monday through Friday, often for six weeks or longer. Dempsey's MRIdian reduces that to five treatments or less, which results in little to no side effects versus standard radiation therapy.



"The MRIdian, in many ways, is a game-changer for cancer patients and radiation oncologists," says Dr. Jonathan Clark, a radiation oncologist at Enloe Medical Center's Regional Cancer Center, the first medical facility to offer the MRIdian in Northern California. "Our field is moving away from five- to nine-week treatments to ultra-precise, ultra-high-dose treatments that only take three to five days."

Clark explains that the MRIdian's precision now enables radiation oncologists and therapists to treat cancers that were once thought to be impossible to treat. "Examples of this include high-dose pancreatic treatment and previously radiated patients who now have a recurrence," he says.

"The other benefit to this machine is for our rural patients, who often have to travel one to two hours for treatment. This has traditionally been a huge limiter to patient care, but now patients can be less stressed when they know it will only take one week versus six."

The MRIdian gave Robert Olea, the first pancreatic cancer patient to be treated with the technology at Enloe, a newfound sense of hope and a new lease on life. After the 92-year-old former pilot was diagnosed with pancreatic cancer in June 2021, he started planning his funeral for December, having been informed that he could have just months to live.

Olea was not interested in undergoing extensive treatment, but when Clark introduced the MRIdian as an option that would only take five sessions, he decided to give it a try.

"I went through a week of radiation," recalls Olea. "I had no ill effects. I wasn't nauseous. I wasn't dizzy. A few weeks later, I had a [CT] scan to see what the results were, and it looks like it just stopped everything in its tracks. And that's the way it's been ever since. The MRIdian did its job."

As for the radiation oncology field, Clark says: "We always want better and more accurate ways to treat patients in order to control the tumor and reduce side effects. The MRIdian allows us to do just that."

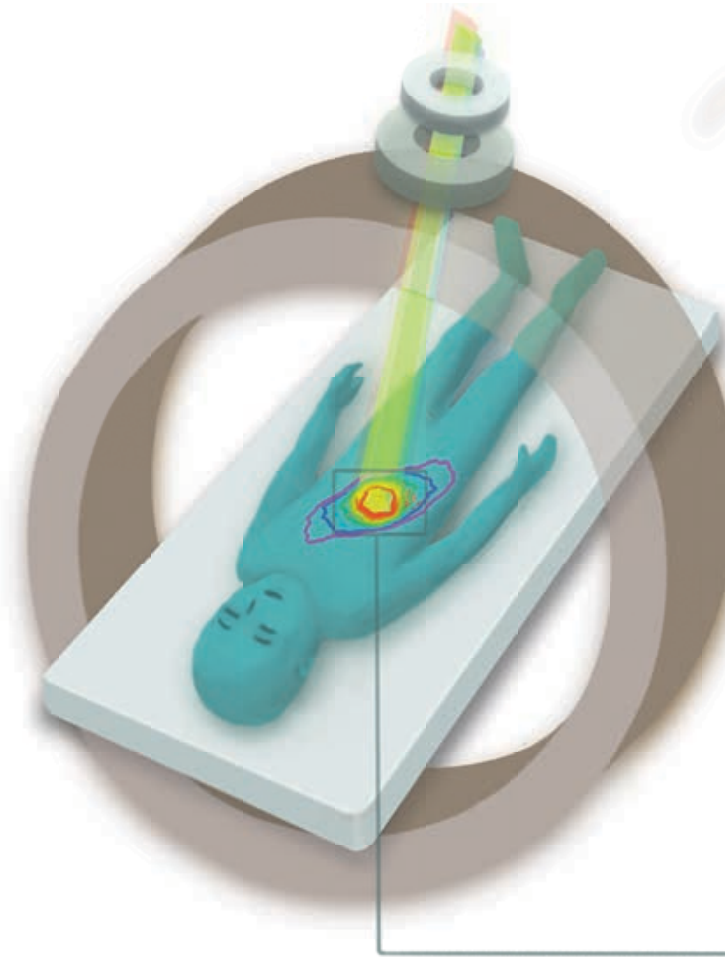
THE STORY OF HOW DEMPSEY INVENTED the MRIdian and founded ViewRay begins with an unexpected analogy to Don Quixote. "Clinical researchers are Don Quixote," he says. "We see a windmill on a hill, and we say charge."

Dempsey found more than just windmills in his life; after SJSU, he completed his PhD in nuclear chemistry at Washington University in St. Louis, Missouri. A friend took him on a tour of Washington's medical school, where Dempsey was struck by the patients in a waiting room for radiation. It was like a light bulb went off, he describes. He knew he could do something to help, so he spent the next three years doing postdoctoral research, working side by side with clinicians, understanding the practical side — and the flaws — of cancer treatment.

He went on to teach and conduct research in radiation oncology at the University of Florida. By happenstance, Dempsey missed a faculty meeting in which the university's medical center was deciding whether or not to discard an old-fashioned cobalt-60 radiation machine. Cobalts had fallen out of favor as medical technology for radiation treatment advanced, and linear accelerators, commonly referred to as linacs, replaced them over time.

"My boss said, 'Wait, Jim Dempsey wants it for research.' When he came back from the meeting, he told me I was inheriting the cobalt," Dempsey recalls. He and his students then made high-tech measurements on the old machine and found it was much sharper than expected. At that moment, he realized he could do advanced radiotherapy with this antiquated technology — he just wasn't sure how.

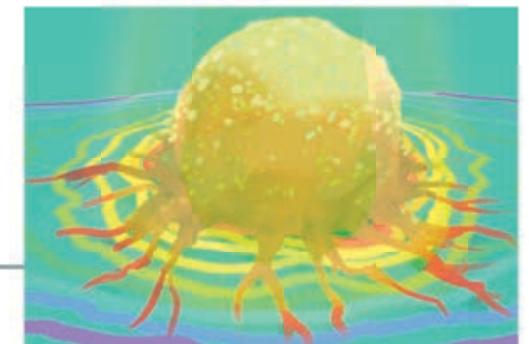
Dempsey founded ViewRay as he continued to teach, conduct research and figure out how to make the cobalt work with new technology. But soon, he found himself facing a life- and career-changing decision: continue his tenure as an associate professor with research on the side or finally dedicate himself fully to science and his company.



These drawings provide a simplified example of how the treatment works and a close-up image of a cancerous tumor.

... the ability to see not just what you're treating, but also control the beam and reshape the dose. **Those three capabilities really change the game.**

—James Dempsey, Founder and Chief Scientific Officer, ViewRay



Ultimately, like Quixote, he chose to embark on an epic quest — he left academia to do research full time. He eventually figured out how the cobalt, which used radioactive nuclear energy, complemented the technology of the MRI — as opposed to the high-energy X-rays used by linacs, which interfered with it. And in 2010, his first prototype of the MRIdian was born.

It wasn't long before Dempsey's propensity for solving impossible problems led him to tackle how to combine an MRI with linac-powered radiation. In 2012, he and his team obtained FDA clearance for a new type of linac with an MRI at their facility in Mountain View, California. A year and a half later, the first patient was treated with this breakthrough therapy at his alma mater, Washington University's medical campus.

VIEWRAY'S LATEST INNOVATION, the MRIdian A3i, received 510(k) FDA clearance in December, and far surpasses Dempsey's original cobalt, which they no longer make. According to their December 2021 press release, the A3i is now equipped with new features to treat abnormalities and tumors in the brain and enables clinicians to "collaborate simultaneously and connect remotely during patient treatment." Dempsey refers to it as ViewRay's version of Zoom treatments.

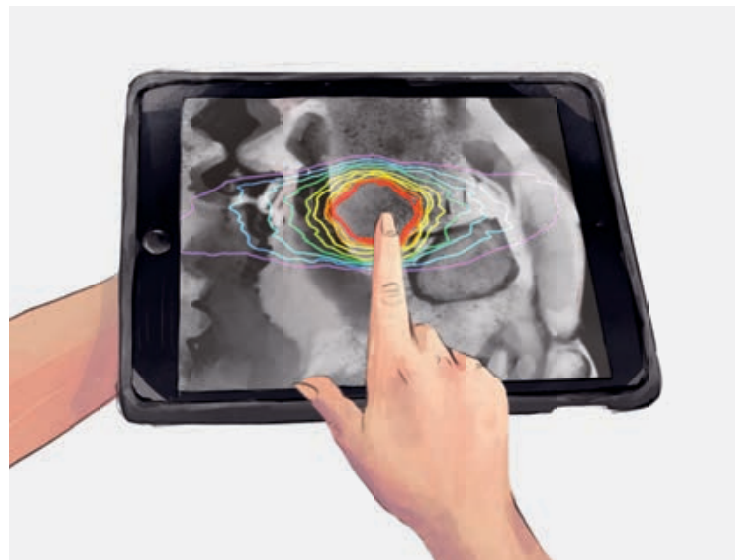
During radiation, patients must also hold their breath and stay completely still while the beam of radiation is deployed on their bodies. The newest version of the MRIdian is upgraded with a countdown display, so patients know exactly when to hold their breath; they can talk with the therapist or put their favorite music on and watch for visual cues.

Dempsey compares the experience to a video game: "You're trying to keep one circle inside the other one. Hold your breath, the beam turns on, and you get your dose. Exhale, you catch your breath; the beam turns off. Essentially if the patient can help position themselves better, they can help keep it on target."

To date, more than 18,000 patients around the world have been treated with ViewRay's MRIdian technology; of them, over 2,300 have been unresectable pancreatic cancer patients. Forty-eight top medical centers around the globe use the MRIdian; three are in Northern California: Enloe in Chico and, as of this year, Bass Cancer Center in Walnut Creek and Stanford Health Care.

"Building these systems is tremendously gratifying, but it's nothing compared to a doctor calling and saying, 'This matters,'" says Dempsey. "And from day one, that was the goal."

**ViewRay holds an exclusive worldwide license for its combination of MRI and radiation therapy technologies.*



This illustration depicts a tumor and its target area pre-treatment using the MRIdian. Thanks to this breakthrough technology, doctors, radiation therapists and medical physicists are able to see and target tumors in real time with pinpoint accuracy — while also sparing the healthy tissues around its perimeter.



Cleaning Up California

Climate Science student and activist Edgar McGregor is making the world a tidier place — one piece of trash at a time.

By Brett Bralley

EDGAR MCGREGOR, '23 CLIMATE SCIENCE, didn't have a huge epiphany. He didn't wake up one morning deciding to embark on a nearly 750-day mission to clean up Eaton Canyon, a natural reserve in Los Angeles County. And he certainly didn't plan to garner worldwide attention.

Instead, one sunny afternoon in May 2019, the then-community college student thought, "Why don't I go on a hike today?" McGregor, a climate activist, figured he might as well make the earth a little cleaner along the way.

Over time, his hiking habit transformed into a mission to eliminate all trash from the 198-acre park. Once the pandemic hit, that charge evolved into a daily social distancing ritual. McGregor's efforts have garnered him national headlines, more than 30,000 Twitter followers and even a shoutout from Nobel Peace Prize nominee Greta Thunberg. McGregor now calls himself a Spartan — and he's brought his passion to Silicon Valley.

Whether he is exploring spots close to San José State University like Alum Rock Park, or hiking through the Santa Cruz Mountains, McGregor isn't slowing down on picking up trash.

"People ask me when I am going to stop doing these cleanups," McGregor shares. "It's something I do every day, like brushing my teeth or eating or shaving."

"On top of cleaning up, I get to exercise every day, get fresh air, talk to people on trails and meet strangers. I get to explore local ecology and topography. There's not a single reason I've come up with why I should stop — other than the fact that hiking in the sun is probably not the best thing for my skin."

A climate science major at SJSU, McGregor wants to continue making a difference in addressing climate change — perhaps through research, teaching or even politics.

In 2014, he remembers watching "Cosmos: A SpaceTime Odyssey" with Neil deGrasse Tyson, which sparked his curiosity in climate change. He started to look up climate data for his area.

A Little Goes a Long Way, Every Single Day

When it comes to daily cleanups, Edgar McGregor says to keep things simple. No major organization or buying trash bags or pickers in bulk required.

"All I have on me is a bucket, gloves and a first aid kit, and that's it," he adds, though he notes that you might want to bring water, depending on the hike and weather conditions.

One day, he was driving home to LA from SJSU at the end of the semester, and he still hadn't squeezed a trash pickup into his busy day: "I pulled over at a turnoff in Santa Barbara County, filled my bucket in three minutes, and that was that."

He stresses that efforts don't have to be huge, just consistent: "I hope the simplicity convinces other people to do it."

McGregor has unearthed decades-old trash during his hikes across California since 2019.

PHOTOS: JIM GENSHEIMER

Pasadena, McGregor's home within Los Angeles County, has "one of the oldest and most reliable weather stations in California," he points out.

So he created charts to get a holistic look at how climate change was affecting his hometown.

"I was looking at this data, and I realized, wow, Pasadena's climate is totally different from what it used to be," he says. "San José has Pasadena's climate from 115 years ago. Moving up here is like moving back in time to what Pasadena's climate used to be."

That understanding — that his home is slowly heating up year by year — motivates him to take better care of the planet by picking up trash.

His craziest find so far?

"Once on the side of a trail," McGregor recalls, "I spotted a little metal thing sticking out of the ground. I pulled it out; it was an aluminum can, and it looked old."

After he pulled it out, he saw a plastic fork underneath it. Eventually, he unearthed what amounted to a huge pile and saw that some of the cans in the heap had expiration dates.

"For some reason, someone in 1986 thought it'd be a good idea to bury all of their trash on the side of the trail."

As might be expected, McGregor's mission can be a dichotomy of fulfillment and discouragement. He admits to some resentment toward litterbugs. In fact, he felt so disheartened at the beginning of his efforts that it kept him from going out some days. Now, he's more at peace with it.

On the flip side, accumulating thousands of Twitter followers has allowed him to make an impact across the globe. Every day, he posts a video of his daily trash haul.

"People will message me saying, 'Hey, we saw what you did on Twitter, and it inspired us to clean up the mouth of this river here in Sydney, Australia,'" he says. "Or maybe it's a park in Norway or a popular square in New Delhi. It's really cool to see that what I'm doing in my parks at home is encouraging to others."

Alison Bridger, chair of the Department of Meteorology and Climate Science, who taught McGregor in one of her meteorology courses, sees the impact his work can have on those around him.

"His work in cleaning area parks is inspiring; I've never known a student to have done so much at such a young age," she notes. "I think a lot of our students — in our program, our college and across campus — can be motivated by the example he sets. Although the challenges we face seem enormous, all of us can do a little something to help make the world a better place."



Spartan Spotlight



Pressure Off, Game Oon

Natasha Andrea Oon's historic individual season led the Spartans to championship-level heights, and a new perspective on golf propels her as she starts her professional career.

By Kenneth Mashinchi

TURNING A NEGATIVE into a positive — that is the essence of the game of golf. Eagles and birdies lead to scores under par, and having the lowest score, often in the negative, leads to victory.

Natasha Andrea Oon, '21 Business Administration, '23 MA Interdisciplinary Studies, thrives in the negative space of golf, and her dominance was on full display for the Spartans this spring.

Oon was the first SJSU golfer to be a first team All-American in 25 years; finished second individually at the 2022 NCAA Championships in May; received the 2022 Inkster Award presented by Workday, recognizing the highest-ranked women's Division I collegiate golfer in her final year of eligibility; qualified as a finalist for two of women's golf's most prestigious individual honors — the Honda Sport Award for Golf and the ANNIKA Award — and became Mountain West Player of the Year. Her play spearheaded a historic season for the university, which included a record-breaking win at the Mountain

"I remember my mom calling my dad, and my dad's like, 'Oh, stop joking. What are you trying to pull?'" recalls Oon. "We have a running joke in our family. We call the car Vanessa. It was just very special."

Oon says coming to the United States to attend SJSU changed and improved her game, from finding a coach to shifting her mentality on practice and training with a team. San José State provided an opportunity to join a program that could grow as Oon's game did.

"I definitely was good in my country, but worldwide I think I was just a little bit above average, so I felt I had to compete somewhere that would make my game much sharper," says Oon.

HER SPARTAN CAREER HAD A STORRYBOOK START in 2018, when she won her first-ever college tournament on her 17th birthday. Oon earned second team All-American honors and Mountain West Women's

"A lot of people don't think athletes go through these things, but you never know if you're going to be as good as yesterday. So you really just try to be better. But out there, there's only so many things you can control."

FREEING HER MIND TO PLAY golf, Oon finished in the top 10 in every tournament except one during the 2021-2022 season. Her second-place finish at the NCAA Championships showcased all the abilities that make her one of the best in women's golf.

"She was amazing," says Head Women's Golf Coach Dana Dormann, '90 Finance. "We would say, 'Hit it here,'

West Championships and advancing to match play at the NCAA Championships for the first time in school history. "Everything just clicked one day, and it was crazy. I think it's definitely like a Cinderella story," says Oon. "I think San José State is one of those places where if you have potential, this is the place to grow it. I'm really grateful that I chose San José State. It's been a really, really fun journey."

BEFORE SLIPPING ON CINDERELLA'S slipper at SJSU, Oon's golf skills were known around the world. Born in Indonesia, Oon began accompanying her dad to the driving range at 4 years old.

Success came shortly after. After moving to the Philippines, Oon won her first junior world championship in San Diego at age 6. Growing up, Oon wasn't just facing the city's or region's best; she was playing on the world stage, taking on Southeast Asia's best over and over again.

"I think those were the days that made me really good because I went through a lot of pressure every single tournament," says Oon. "We got to compete with girls from Thailand, Singapore, Philippines and Indonesia."

Oon wasn't just winning tournaments — at age 12, she hit a hole-in-one that earned her family a new Volvo.

Golf Freshman of the Year. The good times continued into summer 2019, when Oon won the 117th Malaysian Amateur Open women's championship by six strokes.

After a solid fall season in 2019, the COVID-19 pandemic prompted Oon to go home to Malaysia for a few months. Even with the shortened season, she earned honorable mention All-American honors and was the Mountain West Player of the Year.

In spring 2021, a stress fracture put Oon in a boot and ended her season before it began. Two years removed from competing in a collegiate competition, Oon had to face this setback and find a way to come back better than ever. The change would have nothing to do with swing mechanics and everything to do with shifting her mindset.

"When I was a junior golfer, I took losses pretty hard. My brain would say, 'Let's not lose, so we don't have to go through that,'" she says. "So when COVID and the injury happened, it was a mixture of being sad for not competing but also a breath of relief. I could finally check my mental health and look at tomorrow and say, 'Everything's going to be OK.'"

and she would hit it right there. Incredible ball striking, knock in a few putts. I'm so, so proud of her."

The SJSU team followed Oon's lead, taking down No. 1-ranked Stanford twice to win the first two spring tournaments before the historic appearance in match play at the NCAA Championships.

Oon qualified for the Augusta National Women's Amateur, where the top 75 amateur players play the legendary Georgia course. Though it was a dream come true, she turned it down to play in the Ladies Professional Golf Association (LPGA) Chevron Championships — one of the tour's major championships. It was the third time Oon had played in a pro tournament. In June, Oon officially launched her professional career.

"I just wanted to see how good I can be," says Oon. "I think my perspective changed during COVID for sure. When you're an athlete, you should play for yourself, not for others. And if you make it, great. If you don't make it, it's fine. You can do other things in life."

"I'm just excited because my college career has put me in this position where I can do it, and I'm proud of myself for how far I've come."



Natasha Andrea Oon (second from right) and the San José State women's golf team celebrated the first Mountain West title in school history by jumping into the lake at Mission Hills Country Club in Hayward, California. The Spartans won by a record 30 strokes.



Spartan Spotlight

SAN JOSÉ STATE

SPARTAN UP
SPARTANS

Inside Look

INTERDISCIPLINARY SCIENCE BUILDING

Accelerating Research

In summer 2023, the Interdisciplinary Science Building (ISB) will open doors to increased collaboration across various scientific fields in ways that will thrust SJSU into the forefront of research and innovation.

By Kenneth Mashinchi

THE NEWEST ACADEMIC BUILDING at San José State University in more than 30 years, and the first one dedicated to science in 50 years, the ISB will change science in Silicon Valley. The \$186 million, eight-story building will house the College of Science's chemistry and biology labs, the interdisciplinary Center for High Performance Computing, and data and science information labs and classrooms for the College of Professional and Global Education. With teaching labs, research labs and collaboration space on every floor, ISB will introduce a new age of innovation and discovery for science teaching and research. Enjoy a first look at the inner workings of the future of science at SJSU.

Editor's note: The interior photos were taken on April 29, 2022.



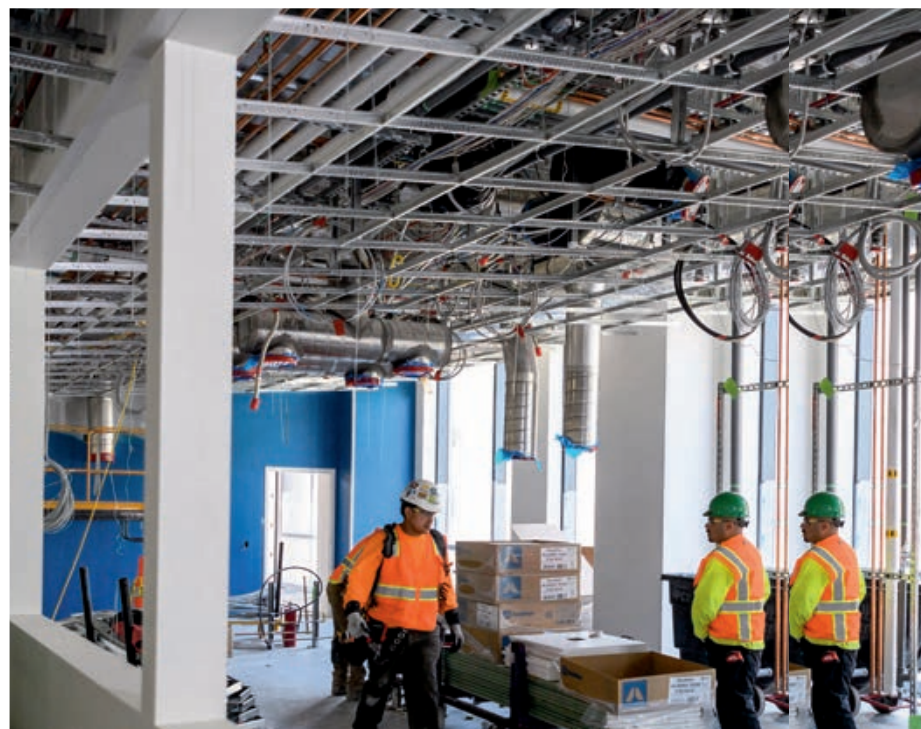
TO BE PART OF THE TRANSFORMATION OF SCIENCE AT SJSU, CONTACT sabra.diridon@sjsu.edu.



DISCOVER MORE ABOUT ISB IN THE FALL/WINTER 2021 EDITION OF WSG.



PHOTOS: ROBERT C. BAIN (INSIDE) | MICHELLE FREY (OUTSIDE)





For Maria Cedolini Thompson, 'Anything Is Popsicle'

By Julia Halprin Jackson

WHEN THE COVID-19 PANDEMIC FORCED SCHOOLS TO CLOSE in 2020, first-grade teacher Maria Cedolini Thompson, '90 Child Development, '92 Teaching Credential, wondered how to best prepare her students for an uncertain future. A fourth-generation educator, Thompson had taught elementary school for 16 years in Northern California when she had to transition online.

For months, she channeled her energy into delivering lessons via Google documents, slideshows, virtual scavenger hunts, weekly read-aloud audio recordings and daily math lesson videos. Her students adapted to new technologies while sharing space with working parents, siblings and extended family.

Inspired by the work of her father, child psychologist and author Anthony Cedolini, '65 BA, '68 MA Psychology, she set out to create a resource that could benefit kids and adults alike.

"Lying in bed at night, all I could think about was how these kids were going to feel when they had to come back to school to a totally different situation," she says. "So I got up and started writing."

"I wanted to have a voice — to explain the pandemic to kids, to tell them that we are going to persevere through this."

Thompson could sense that when they returned to a physical campus, the rules would be different — and children and families would need to feel prepared. She brainstormed ways to encourage interaction in a space where students couldn't share art supplies, trade lunches or ask for hugs when they were feeling sad.

How could she reassure her students that, despite COVID-19, they were still capable of learning? And despite months of social isolation, they were not alone?

PHOTO: DAVID SCHMITZ



It was a scary time for us and was hard to understand. We watched Netflix, played with toys, and washed our hands. For months, we wore gloves, masks to the store, and did math on our home. It wasn't the going to school, we fell all alone.



Alumni in Action



The room had colorful posters and paper flowers hanging from the ceiling above. We felt so inspired, safe, and secure in our inviting room full of love. Our desks were still not the same arrangement, a bit far apart. But, our spirits were high, and we were ready to START.

Left: Maria Cedolini Thompson reads "Our 20/20 Journey Back to School" to students at Buena Vista Elementary School in Walnut Creek, California. Above: Daria Shamolina's illustrations captured students adjusting to shifting COVID-19 protocols in school.

“The year 2020 is one we will always remember. We all had to stay at home and not be together. It's not what we imagined or could ever predict. It was the safest option so we didn't get sick.”

—Excerpt from "Our 20/20 Journey Back to School"

THE ANSWER CAME IN THE FORM OF A BOOK: In October 2021, Thompson published "Our 20/20 Journey Back to School," which follows an elementary class as they attend online school and navigate a contactless world. The book doubles as a time capsule — a meaningful way for parents and educators to contextualize the pandemic for children.

"Maria's book expresses the true sentiment of how our teachers and students felt as they navigated the various phases of the pandemic," says Marie Morgan, superintendent of the Walnut Creek School District, where Thompson teaches. Morgan bought five copies of the book for each of the district's school libraries.

"Her story was the perfect resource for many of our teachers as they supported students who were returning to school," she adds. "Maria is a magical first-grade teacher who is highly valued by students, families and her colleagues — a true gift to our district."

IMAGES: COURTESY OF MARIA CEDOLINI THOMPSON

HINDSIGHT FOR THIS EDUCATOR IS 20/20, as her title suggests. The pandemic reaffirmed her belief that teachers are irreplaceable and challenged her to reflect on the skills she wanted to impart to her students.

"I was brought up to believe that I could do anything," she remembers. "My dad would say, 'If you think you can, then you can. If you think you can't, you won't.' I instill these same words to my students."

These words carry special meaning during the pandemic, when students have often felt limited by health restrictions and ever-changing rules. Thompson encourages parents and educators alike to reinforce that children can continue to learn, socialize and even enjoy school, regardless of what it might look like.

Thompson adds that life is unpredictable and uncertain, and that "flexibility, a positive attitude and perseverance are key to success. As we say in first grade, 'Anything is popsicle.'"

Alumni in Action

The Art of Social Change

Artist, veteran and educator John Contreras, '22 MFA Spatial Art, sees art as a conduit for dialogue and change. *Caution: This story mentions death caused by gun violence.*

By Julia Halprin Jackson

JOHN CONTRERAS HAS A SIGNATURE LAUGH: half-chuckle, half-guffaw. He exudes a sunniness that fills his studio at San José State University's 6,000-square-foot Foundry, an indoor art facility complete with workshops for bronze and aluminum casting, metal fabrication and welding, and an adjacent 12,000-square-foot outdoor fabrication yard.

He picks up a bronze baseball that he has split down the middle with a stainless steel screw.

"You know what I call this one?" He laughs. "Screwball."

Creating art allows Contreras to feel, explore and share the complexity he sees in the world around him. Through art comes community, he says.

That's why he, along with members of SJSU's mural club, erected canvases at Viva Calle San José, a city program that connects people through one-day open streets activities, in November 2021. The canvases were for passersby to add their own artistry as part of a community mural.

"Viva Calle SJ was one of the first outdoor escapes that we had from COVID," Contreras reflects. "It was a hands-on experience for kids to throw paint. They might not know it now, but it may have inspired them to paint, sculpt, take photos — create."

CONTRERAS ADDS THAT ART FREES HIM up to be creative, silly, serious, reflective — and transformative. While some of his pieces, like "Screwball," may seem playful, many of his works go one step further, exploring issues of mental health, trauma and the loss of childhood innocence.

Take, for example, "Where Christopher Robin Played": Contreras assembled this sculpture of Winnie-the-Pooh stumbling across a dead Christopher Robin, gun lying by his side, in November 2021 as part of SJSU's inaugural Day of Action Against Gun Violence, hosted by the Center for Community Learning and Leadership (CCLL).



Opposite page: Contreras collected art from his fellow Marines in a notebook — a symbol of his journey as an artist. Top: Contreras and SJSU's Mural Club at the 2021 Viva Calle SJ event.

CCLL Director and Psychology Professor Elena Klaw says that Contreras "played an integral part in building bridges between constituencies that seldom engage in dialogue," including veterans and service members, mental health advocates, gun owners, students and politicians.

"Art has always been a means of communication for me," he says. "You process ideas from your head into your hands and into an actual form."

Contreras hopes to pursue a PhD in art therapy and establish a practice that incorporates art as a restorative tool.

"When you can visually see something transform right in front of you, it's a release — a form of expression," he explains. "You'll be blown away by what you can physically create with your hands."

Contreras believes that art and community dialogue can lead to action. Two months after the SJSU Day of Action Against Gun Violence, the City of San José enacted legislation that requires gun owners to purchase liability insurance — the first law of its kind in the nation. He counts this as a win.

"This is a huge step," he says. "It just goes to show how powerful art can be when the community gets involved."

VISIT sjsu.edu/wsq TO SEE MORE OF CONTRERAS' WORK.

“They might not know it now, but [Viva Calle SJ] may have inspired them to paint sculpt, take photos — create.”

—John Contreras, '22 MFA Spatial Art

Inspired by his discovery that the Winnie-the-Pooh creator, A.A. Milne, served in World War I, and his son served in World War II, the sculpture reenacts a traumatic memory from Contreras' experience in Afghanistan. While deployed as a 7041 aviation operations specialist for the United States Marine Corps, Contreras witnessed the death of his commanding officer, Lt. Col. Christopher Raible. Like Milne, Contreras expresses the fears and neuroses of a generation through art.

PHOTOS: DAVID SCHMITZ (LEFT) | KATHERINE D. HARRIS (TOP RIGHT)



A Hall of Fame Dynamic

Recent Football Hall of Fame inductee Dick Vermeil's knack for identifying the value in people has caught the attention of Hollywood twice — a skill he credits his SJSU coaches and professors for fostering in him.

By Kenneth Mashinchi

DURING HIS 240 GAMES AS A HEAD COACH in the National Football League, Dick Vermeil, '58 BA, '59 MA Physical Education, often faced — and overcame — seemingly impossible challenges. None were greater than when he led the St. Louis Rams to a Super Bowl victory behind an (at the time) unknown quarterback named Kurt Warner.

Nearly 14 years removed from coaching his last game, Vermeil's most impossible task came in Canton, Ohio, on Aug. 6, 2022: summarizing a head coaching legacy that spanned five decades into an eight-minute speech at the Pro Football Hall of Fame induction ceremony.

"I hope that everyone I have had the opportunity to share experiences within the coaching field takes great pride in the contributions they made to my career that propelled me into this opportunity," says Vermeil, a few weeks after he was announced as a member of the Pro Football Hall of Fame Class of 2022. "I'd like for them to think they have a piece of the action and deserve a hell of a lot of credit that I won't be able to express in eight minutes."

From manning the sidelines of Hillsdale High School in San Mateo to coaching at UCLA before leading the Philadelphia Eagles, Rams and Kansas City Chiefs, Vermeil used the game of football to positively impact the lives of thousands of young men. When he thinks about how coaching left a mark on him, Vermeil points to his time at San José State University, where he played quarterback from 1956–1957 under the tutelage of then-football coach Robert T. Bronzan, '40 Kinesiology.

"What he said and how he said it was very influential in me in starting to understand I had deeper value than what I had had ingrained in my beliefs," Vermeil says. "He was so positive in what he thought of me that it raised my expectations and created an enthusiasm to keep getting better and be what he thought I ought to be."

Recruited to SJSU as a walk-on, Vermeil earned a scholarship after the first spring practice. He took over as the starting quarterback midway through his second year at SJSU, with his first start coming in Eugene against the University of Oregon, whose team went on to play in the Rose Bowl that year.

"I wasn't exposed to so-called big-time football growing up, so all of a sudden I find myself starting that game," Vermeil recalls. "It was an unbelievable feeling of arrival — 'My God, I made it.' To me, I guess it would be like starting an NFL game as a first-round draft choice."

Vermeil's NFL coaching journey and knack for seeing value in people has been immortalized twice by Hollywood — first in the 2006 film "Invincible," in which Greg Kinnear portrayed him; and most recently in the 2021 movie "American Underdog," with Dennis Quaid depicting Vermeil when he tapped Kurt Warner to lead the Rams in 1999. Warner was inducted into the Pro Football Hall of Fame in 2017.

On and off the field, Vermeil says his time as a first-generation college student at SJSU was positive, especially in the physical education department. His experience was unique,

because he got to know his coaches and professors in a different light: He also served as their mechanic. Vermeil worked nights at Vince's Garage in San José to support himself and his wife and son. He could purchase parts at wholesale prices to repair coaches' cars while he completed his graduate degree at SJSU.

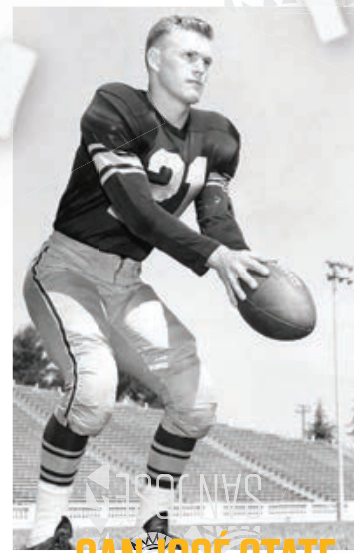
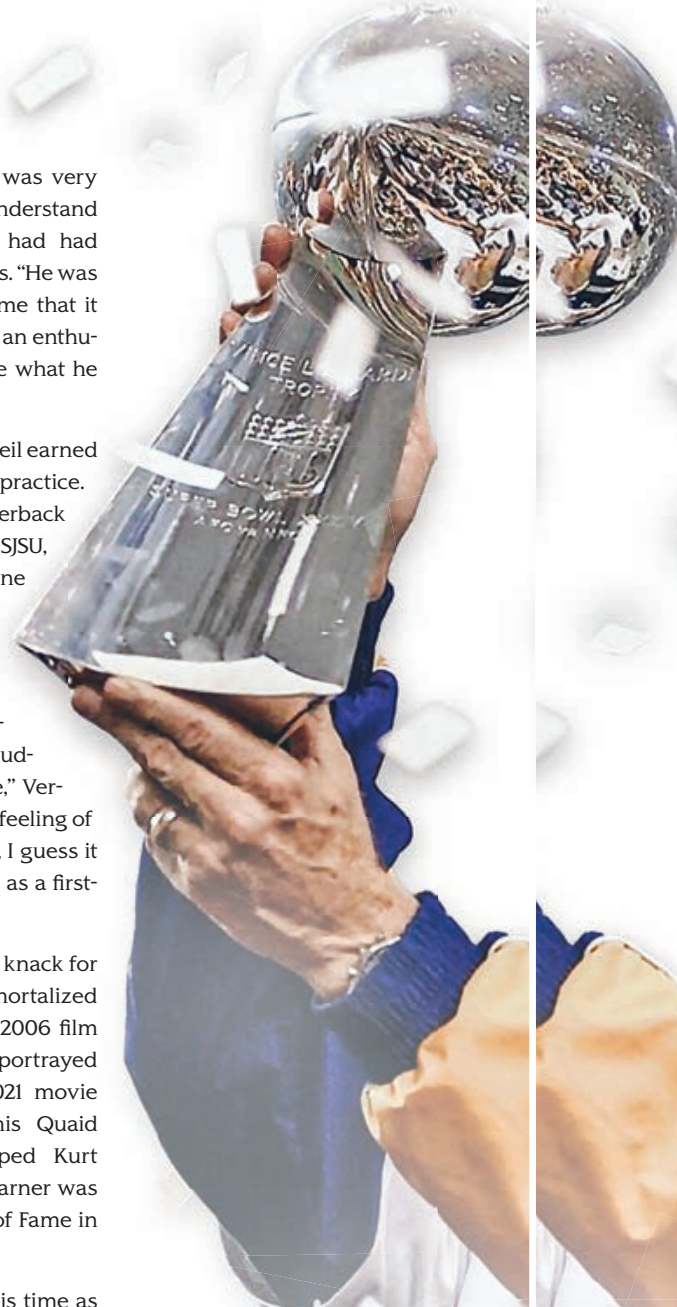
"The whole physical education department at that time was a positive influence on everyone

who walked into the classroom. They weren't there to eliminate you; they were there to educate you," he remembers. "My time at SJSU was probably as positive a time in influencing my future as anything I did in my lifetime."

“We are excited and proud that the Hall of Fame selected a legendary Spartan, Dick Vermeil, to be recognized for his career. Coach Vermeil's storied career is only surpassed by the quality of man he is and the volume of lives he has touched. All Spartans are proud of Coach Vermeil!”

—SJSU Football Head Coach Brent Brennan

Time spent rising up the quarterback depth chart at SJSU propelled Dick Vermeil, the 27th head coach to be elected into the Pro Football Hall of Fame, to pro football's ultimate prize: a Super Bowl trophy.



PHOTOS: COURTESY OF SJSU ATHLETICS

SPARTAN UP



QUESTIONS WITH

Mai Mai Cantos

Executive Director of the Student Wellness Center Mai Mai Cantos, '00 MPH, joined SJSU in February 2021 and immediately jumped in to lead the university's COVID-19 response. Cantos heads a team of 75 people who provided health and wellness services in person throughout the pandemic and kept the campus community safe.

By Kenneth Mashinchi

What brought you back to SJSU to serve in this role at the height of the pandemic?

This role is a unique opportunity to work at the intersection of public health and health services and make a difference for SJSU students, one that means so much to me and has impacted my own professional journey. I want to make sure students reach their full potential and that when they are not feeling well, they have a safe, non-judgmental space to access care.

What has your routine been like in your role?

While every day is different, I have enjoyed connecting with campus units and problem-solving in ways that we wouldn't have done otherwise. The strategic parts of the job are fun, and I am driven by the hope of getting to a time when the pandemic is behind us.

What were the biggest challenges in keeping students safe as the pandemic continued?

The constant changes in guidance, especially around isolation and quarantine, was the biggest challenge. Guidance could change weekly, or sometimes even daily, as we had to follow state and county public health

guidelines while being cognizant of what was happening on campus.

What is something this pandemic has taught you about public health that will be useful moving forward?

The pandemic reinforced how important prevention and preparation are in public health. Part of the process is looking for solutions or patterns and asking yourself, "What would it take for this not to happen again?" We are now at a point where we are able to learn what did and didn't work, so we can incorporate it if there is another public health crisis.

What has been the most rewarding part about being in your role?

Seeing students transform over their time at SJSU, from pushing through adversity to graduating and reaching their goals, is rewarding. In the public health field, it can take a long time to see change, but with students, you can see the return sooner.

What is your favorite memory from your time as a student at SJSU?

My favorite memory is also a full-circle moment in my life. As I was getting close to graduating from SJSU, I remember celebrating one of my classmates' accomplishments during

a barbecue at a picnic table near a tree that is where the Student Health Center building now stands.

What is the last show you binge-watched?

"Tokyo Vice" on HBO.

If you could travel back in time, what era would you go to and why?

I would go back to the Renaissance in Florence, Italy. I love the creativity that came from that era and how new ideas from philosophers, artists, mathematicians and scientists became available to the masses.

What is your favorite motto or phrase?

I have the phrase "The time is always right to do what is right" by Dr. Martin Luther King, Jr., posted in my office.

Last one, dogs or cats?

Dogs. I have three — two miniature Schnauzer siblings named Artemis and Apollo and a terrier-chihuahua mix named Toffee.

PHOTO: ROBERT C. BAIN