

Summer 2023

engineering

at San José State

The Future of Robotics



**Students Create
New Campus Based
Social Media App**

**Microscope Donation
Moves the Needle
for Students**

**Jabil Robot Donation
Advances Curriculum
for Students**

This past Spring semester proved to be a busy one with events such as the Women in Engineering and BioMedical Device conferences returning to in-person venues, along with our successful Alumni interacting with students via the Dean's Career Conversations, Silicon Valley Leadership Symposium and the Interdisciplinary Speaker Series events. As a university sitting in the heart of Silicon Valley, San José State University has played an important part in making this high tech region one of the most innovative areas in the world. We are proud to be a regional university with global impact.



"We are proud to be a regional university with global impact."

Each year SJSU sends over 1,800 engineers into the workforce, providing more engineers to Silicon Valley companies than any other university. Our students are creative, resilient and resourceful. They bring their lived experience to our classrooms, labs and project courses. We are constantly demonstrating that the College of Engineering is not only an educational institutional destination, but also a hub for research and innovation.

With technology making leaps and bounds each day in artificial intelligence, cybersecurity, the growth of renewable energy and the continuing rise of electrical vehicles, we are constantly evolving to prepare students to meet the challenges in the workforce. Now more than ever the world needs engineers who are not just theoretical thinkers, but also practical achievers who can put their ideas into action. I hope you enjoy the articles in our magazine and see if there are opportunities where you might be able to connect with us.

Sincerely,

Dean Sheryl Ehrman

*Don Beall Dean of Engineering,
Charles W. Davidson College of Engineering
at San José State University*



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Congratulations to Dr. Santosh

KC, Assistant Professor of Chemical and Materials Engineering at SJSU who recently published an article in a scientific magazine, along with Dr. Ramin



Abolfath from the University of Texas MD Anderson Cancer Center.

Dr. Santosh's paper is titled: Towards the Ionizing Radiation-induced Bond Dissociation Mechanism in Oxygen, Water, Guanine, and DNA Fragmentation: a Density Functional Theory Simulation.

The radiation-induced damages in bio-molecules are ubiquitous processes in radiotherapy and radiobiology, and critical to space projects. This research is very applicable in radiation therapy as well as in an environment where the human body will be exposed to radiation such as nuclear power plants or voyages to outer space. The study sheds light on the atomic-level details of the mechanism of bond dissociation in the presence of ionizing radiation.

Congratulations to Dr. Dahyun Oh,

Assistant Professor of Chemical and Materials Engineering at SJSU for receiving the San José State University Research Foundation (SJSURF) 2022 Early Career Investigator Award (ECIA).



The award recognizes tenure-track faculty who have excelled in areas of research, scholarship, and creative activity during their probationary period. Dr. Oh, along with other colleagues, received funding for her work from the Department of Energy, the National Science Foundation, the Department of Defense, CSUPERB, and LG Chem, for a total of \$1.2M as Principal Investigator (PI) or co-PI.

Her research has focused on the development of next-generation batteries, including solid-state electrolyte and aqueous electrolyte-based batteries for safer energy storage devices.

Dr. Oh has published 15 articles, been a frequent reviewer of multiple respected and peer-reviewed journals and proposals, and delivered nearly a dozen presentations at international conferences. She is an Associate member of the Royal Society of Chemistry and served as a review editor/guest editor of journals.

Congratulations to Dr. Mojtaba

Sharifi, Assistant Professor of Mechanical Engineering at SJSU who recently received a \$200k award from the National Science Foundation from the Disability and Rehabilitation Engineering (DARE) program.



He received the award for enhancing the autonomy and safety of lower-limb exoskeletons to assist humans in locomotion and other activities. Dr. Sharifi's work is featured in a robotics article on pages 6 and 7 in this magazine issue.

Dr. Sharifi plans to use the award to purchase the Exo-H3 exoskeleton, which is especially designed to be a research platform. Dr. Sharifi also plans to hire 4-6 graduate students and pay their tuition, conduct multidisciplinary research, and perform experiments and user studies. Part of Dr. Sharifi's research will be focused on autonomous locomotion planning and impedance control strategies will be designed and implemented with the following purposes:

- Online shaping of personalized walking trajectory to enhance human comfort.
- Real-time adjustment of the exoskeleton impedance (flexibility) during human-robot interaction.
- Developing Intelligent control strategies for lower-limb exoskeletons to facilitate a balance between exoskeleton autonomy and human safety.

Students Create New Campus Based Social Media App

An Effort to Enhance the College Experience

AT THE CROSSROADS OF DIVERSITY, INCLUSION,

genuineness and shared interests, lies a new student creation named Xircle. Xircle is a new, student inspired social app that connects and maximizes the on campus experience. Xircle was created by SJSU engineering students Seema Vora, Surabhi Gupta, and Isita Bagayatkar.

These forward thinkers recognized that, from meeting new people, finding genuine friends, or adapting to college-level courses, the transition from high school to college can be difficult to navigate for both introverts and extroverts. The team also realized that being able to maintain a strong network is a crucial component to succeed throughout college. Xircle is intended to help students lean on each other for emotional support, get help with assignments, and to create a bond to provide support during tough times from others that understand what a student might be going through. Of course, Xircle is also for having fun throughout the college experience!



Xircle Co-Founders Left to Right: Seema Vora (CEO/Co-Founder) - 4th Year Software Engineering Major. Surabhi Gupta (CTO/Co-Founder) - 4th Year Software Engineering Major, Isita Bagayatkar (CDO/Co-Founder) - 4th Year CS Major)

The co-founders met through student clubs and saw the need for an enhanced social life on campus, especially after the pandemic. The app started out as a hackathon project in response to this need, and within a few weeks the app had more than 500 users. The students dedicated over two years to building this product, and it is currently available to all SJSU students, with plans to expand it to other CSU campuses.



The team received generous seed funding from Dr. Ben Reed, a SJSU Computer Science professor who reached out in November of 2021 after the team's first launch. He had tested the app and saw the future potential of a social app on campus. "He reached out via email wanting to invest \$100k. Since then, he has been an advisor and also a member of our Board of Directors." co-founder Seema said. "He has been extremely supportive and involved in the process as we navigate the startup world."

Xircle is currently available for download from the Apple App Store and Google Play.



Dr. Mojtaba Sharifi

Robotic Advances in Solving Mobility Challenges

According to the Center for Disease Control, 26 percent of U.S. adults have some kind of disability, and 11 percent of U.S. adults have a mobility disability with serious difficulty walking or climbing stairs. Mobility limitations can be incredibly frustrating and debilitating for those affected. However, despite these challenges, advances in exoskeleton technology have enabled increased movement and independence for those individuals.

Mojtaba Sharifi, Assistant Professor of Mechanical Engineering, is working on human and robotic interaction, and, more notably, assistive and medical robotics. With the help of students Anthony John and Nathan Lacuata, Dr. Sharifi has developed exoskeletons for upper and lower limbs. There is also an assistive walker in development to further aid individuals with mobility needs. Two main things that had to be considered during the development of the exoskeleton were human safety and using a lightweight material in order to make it easier for users to transport.

Dr. Sharifi became interested in robotics as a masters student. While studying motor controllers, he also looked at the medical field to see how his background could aid individuals with mobility challenges.

How Robotics are Shaping the Future

A New Approach in Robotic Development and Education

Nathan, a 4th year mechanical engineering student, became interested in robotics after finding a lot of enjoyment working with Arduino and Raspberry Pi. No, not the dessert! Both products are a series of small computers that support running multiple programs simultaneously, which is essential in robotics. “I find it fascinating to be able to blend mechanical design and robotics in order to accomplish different tasks,” Nathan said.

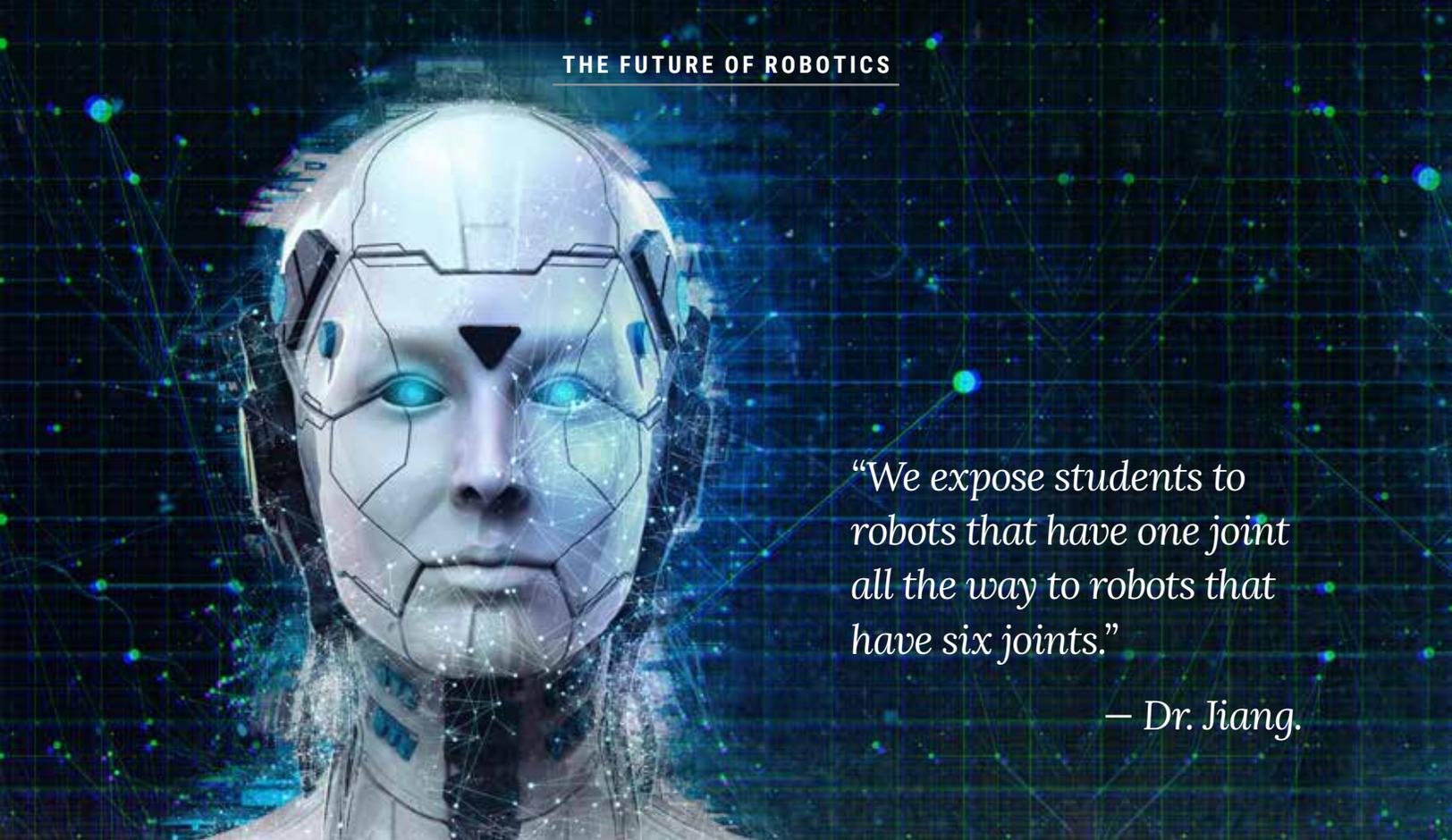


Anthony (left) and Nathan (right)

Anthony, a 4th year interdisciplinary engineering student, became interested in robotics after being exposed to multiple robotic projects, then decided to change his major to mechanical engineering. “Being able to gain a lot of programming experience is really fulfilling to me,” said Anthony. Previously, Anthony fabricated robotic parts using a 3D printer, assembled a robot, and then programmed it. “I found the whole process of seeing an idea come to life extremely rewarding,” Anthony added.

“10 years into the future there will be exoskeletons that are lighter, more compatible with the human body and with more personalized movements rather than repetitive motions,” said Dr. Sharifi. “While developing these exoskeletons there has to be an equilibrium between safety and autonomy.”

Innovative exoskeletons are solving many of the issues that commonly confront people with mobility challenges. The ongoing improvements are expected to further enhance patients’ functioning, mobility, and quality of life.



“We expose students to robots that have one joint all the way to robots that have six joints.”

– Dr. Jiang.

The Changing Landscape of Teaching Robotics in Higher Education

Lin Jiang, an Assistant Professor of Mechanical Engineering, has been teaching robotics at the SJSU since 2021, and now specializes in control and novel systems. Dr. Jiang became interested in robotics as an undergraduate student. After her minimal invasive back surgery utilizing an image guided robot arm 10 years ago, Dr. Jiang wondered if engineers could help with medical science and started educating herself on robotic surgery systems.

In the last 10 years, robot systems have changed from being rigid systems to those that use artificial intelligence. This resulted in educators teaching students how to manipulate the machine or robot arm by learning rigid robot dynamics, control systems, and understanding programmable logic controllers.

Today, robot education focuses more on human-robot interaction and using artificial intelligence. Students are provided with more experience in controlling the robots and adding advanced algorithms to make them think. Robotic systems are becoming faster, smarter and more stable.

Dr. Jiang and her department keep up with the most advanced robots on the market, so that students can get the best experience and develop a state-of-the-art skillset to help them prepare to go into industry. “We expose students to robots that have one joint all the way to robots that have six joints,” said Dr. Jiang. “This helps students understand the basics of robot control with older equipment so that they have a good foundation to move onto more advanced robot systems.”

It is important for students to understand how to manipulate, configure, understand movement and how to program the robot. The robotics skills that students obtain at SJSU are highly sought after in industry. Robotics students often obtain positions such as systems engineer, control engineer, and technical support engineer.



Dr. Lin Jiang



Microscope Donation Moves the Needle for Students

Microscope Donated by Robin and Steve Ching

THE CHEMICALS AND MATERIALS ENGINEERING (CME), department has been using the same microscope for students to inspect the properties of materials for over 40 years. During this time, the only upgrade this microscope has received was to remove the old 35mm camera and replace it with a digital one. Even with the upgraded camera, CME students such as 6th year student Sianna Mendoza and 4th year student Noah Fourby still had to take a significant amount of class time to set up the microscope. And even when the microscope was set up properly, the light level was uneven, which made detailed viewing of materials samples very difficult.

“The more detail the microscope can capture, the better it is to see the microstructures, which enhances the understanding of its composition and tells engineers how the material was made,” said Sianna. “It also gives clues as to where material can be used, such as high strength wires.” “It also helps prevent weaknesses in a product like steel beams used for bridges,” added Noah.

Dan Chafey, a Chemical and Materials Engineering lecturer, knowing the limits of the current microscope, started looking into bringing a more updated one into the lab that could expand

the students' experience in reviewing material structures, composition and applications. But new technology often comes with a hefty sticker price. Thanks to the generosity of Robin Ching ('77 BS Chemical Engineering) and Steve Ching, the microscope was purchased and is now in use in the CME lab.

The new microscope, camera, and analytical software made many new features available to students. “Having the right tool for the job makes all of the difference,” said Chafey. “Not only is there higher functionality, but it also enables students to spend more time analyzing materials rather than effort setting up the microscope.”

“This microscope has significantly upgraded optics, but I am especially impressed with the camera and software package for capturing images and performing analysis,” said Chafey. “Proper analysis of the microstructures under examination allow students and researchers to learn much more about what is going on in the material. The donation covered the entire system and is helping our students be better prepared with hands-on and visual experience in materials science.”

Jabil Robot Donation Advances Curriculum for Students

From Concept to Reality, the Robots Bring Real World Action to the Classroom

DONATIONS ARE USED TO FUND RESEARCH OR

back teaching methods, which not only helps improve a higher education entity's reputation, but can also add innovative technology to increase student success.

For many, the percentage of alumni that donate can inform others about the quality of the school. As alumni look back on their college days, they may remember the wonderful friends they met, the memories they made, the positive experiences they had and the lessons that were learned. They will remember what the school did for them, which encourages giving back to the institution as a gesture of gratitude.

It doesn't matter how much each alumni gives, but the donation will show that they looked back on their time at the university or college fondly, and are grateful for the experiences they had within the walls of the organization.

This was the case with alumnus Jim Puzar ('85 Technology), formerly Director of Manufacturing at Jabil and recipient of the 2022 Alumni of Distinction award, and Quyen Chu, ('00 Material Engineering), Director of Global Manufacturing at Jabil. Both are members of the Technology Program Industry Advisory Board. These two advocates contacted Dr. Freidoon Barez in the San José State University (SJSU) Engineering Technology department about two of Jabil's 3-axis robots that were being removed from their production lines, and discussed donating them to the SJSU College of Engineering (COE) to support the robotics and automation lab.

"The gift of two robots (from Jabil) to the Engineering Technology Program will enhance the Automation and Robotics Laboratory with advanced state-of-the-art hardware in preparing our students with the application of modern tools used in today's manufacturing environment," said Dr. Freidoon Barez.

The donation was both an advantage to the College of Engineering and Jabil. The COE will be able to advance the Engineering Technology department's teaching curriculum and Jabil will have the potential access to qualified interns and employees with the required knowledge and skills related to robots and automation to support the company's workforce development.

"This generous donation from Jabil will enable College of Engineering students to develop skills to program the robots," said Dr. Armin Moghadam. "In the end the robots can assist in identifying defective parts that are being transported by a factory conveyor belt and remove them." Currently, students are able to program, but not see the end results which the robots will be able to provide.

If you're a COE alum, chances are you benefited from the generosity of previous alumni when you were a student. Giving to the next generation is a long-standing COE tradition and makes it possible for future students to experience many of the same opportunities you did.

Dr. Armin Moghadam



Creating Future Leaders by Building Strong Community Connections

College of Engineering Students Igniting Interest for STEM Careers in Underserved Communities

COMMUNITY LEADERSHIP IN A CITY AS DIVERSE

as San José is crucial in ensuring inclusivity and representation. The San José area is primarily composed of residents that are immigrants, and where over 50 percent of households speak languages other than English at home.

Enter the CommUniverCity Project, a San José State University (SJSU) student volunteer effort led by Dr. Michael Oye. CommUniverCity is a unique partnership between San José State University, the City of San José, and underserved communities in Central San José. This program inspires interest in STEM education and careers, increases innovative thinking, encourages curiosity, and builds creativity as well as ingenuity.

“The focus of CommUniverCity is to help volunteers develop their leadership skills and increase neighborhood involvement. Engaging, learning, and building a stronger connection within the community sits at the heart of CommUniverCity’s efforts. At the organization’s core lies the need to ignite interest in STEM based careers for the young people in the San José community,” said Dr. Oye.

A recent activity had College of Engineering (COE) students engaging with young pupils at Muwekma Ohlone Middle School, located very close to the SJSU campus. The Muwekma Ohlone project was one of three projects that were happening simultaneously that day.

At Muwekma Ohlone Middle School, SJSU College of Engineering students were able to transfer their knowledge to middle school students about engineering concepts such as leverage, composite materials, and batteries. When engineering students were asked why they participated, their top three answers were: They had the ability to give back to the community, transferring the knowledge helped the engineering students to reaffirm what they have learned in the classroom, and getting young people to start a conversation with their parents about college at an early age.

***Keep up the good work,
CommUniverCity!***





Women in Engineering Conference

Encouraging Women at the College of Engineering and beyond.

ON MARCH 18, 2023 OVER 560 INDIVIDUALS

attended the 9th annual Women in Engineering Conference hosted by San José State University's Charles W. Davidson College of Engineering. Among the attendees, over 44 colleges and universities were represented, and 60 speakers gave presentations on various topics.

The theme of the conference was "Engineering a Better World" and gave women in engineering a chance to Learn, Connect and Be inspired. Attendees were able to expand their knowledge about cutting-edge technologies such as artificial intelligence, climate resilience, quantum computing, electric vehicles, and air and space technologies as well as advice on their job and internship search.



"This conference is so impactful and empowering to women, and gives them a chance to meet role models," said Gayle Dilley, President of the Mark and Carolyn Guidry Foundation. "I want to thank San José State University for giving people this opportunity and inspiring so many."

"I'm here today thanks to the support of the MESA program," commented Carla Morales de Leon, Sophomore at Diablo Valley College. "In 5 years I'm excited to see women in engineering expanding their reach in the professional world and not feeling unwelcome in industry."

The 2023 conference was the first time the event was in person since COVID-19 hit the world, and everyone attending was excited to be able to come together and celebrate women in engineering face-to-face.

Thank you to the sponsors: The Mark and Carolyn Guidry Women in Engineering Program Fund, Agilent, Applied Materials, Dexcom, Erica Lockheimer, Google, IBM, Lockheed Martin, Marvell, Netgear, Synopsys and TSMC. Your generous support is vital to the success of the Women in Engineering Conference.

To learn more about Women in Engineering, visit the WiE website. 2023.siliconvalleywie.org



Bringing NASA Lab Standards to SJSU

Stanley Krzesniak: Empowering Aerospace Engineers for Success from everywhere

Meet Stanley Krzesniak, an Aerospace Engineering graduate student, advisor for the Aerospace Engineering club, and a contractor at NASA Ames Research Center, bringing a wealth of expertise and valuable insights into the lab for training students to bridge the gap in applicable knowledge needed to succeed in the industry.

At the Aerospace Engineering club, students are provided with a state-of-the-art learning environment with an array of industrial equipment. This cutting-edge facility ensures that students gain hands-on experience and practical skills necessary for the aerospace industry. Stanley Krzesniak, as an advisor, plays a pivotal role in training students within this remarkable facility. Beyond his role as an advisor, Stanley Krzesniak is a contractor at NASA Ames Research Center, where he actively contributes to the advancement of aerospace technology. He works alongside industry experts and Adjunct Professor Ali Guarneros-Luna, who also works at NASA Ames Research Center in the Projects Management Division (PX). She has provided extensive experience in building space hardware for manned and unmanned missions and developing space technology. She is an invaluable asset to both the club and NASA. Professor Guarneros-Luna's expertise ensures that the lab's equipment is held to the highest industry standards, providing students with an unparalleled learning experience.

Exceeding Industry Standards with Precision Testing: The lab's equipment setup is designed to surpass industry standards, providing students with the tools needed to conduct precise and accurate testing. By simulating real-time conditions, students gain firsthand experience in testing aerodynamic models. This hands-on approach fosters a deep understanding of the complexities involved in designing integrated spacecraft systems and preparing them for the professional world by exposing them to real-world lab conditions.

Stanley Krzesniak wants to ensure that the next generation of aerospace engineers are well-prepared to make significant contributions to the field by instilling a passion for innovation, and encouraging hands-on learning in the club.



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We want to hear your news!

We love promoting your stories.

Keep the news coming!

<http://bit.ly/alumnotes>



Silicon Valley Leaders Symposium

Thursdays at noon | ENG 285

Industry and technology leaders talk about business and technology trends. It also features prominent leaders who discuss broader societal and political issues.



DCC Fall Speakers

Days and times vary | ENG 494

Dean Sheryl Ehrman and students enjoy conversation with alumni and other mentors from a variety of engineering fields.

Interdisciplinary Speaker Series

Fridays at 3pm | via Zoom

Dean Sheryl Ehrman has invited interdisciplinary researchers from academia, government laboratories, and industry to give seminars and to connect with our students and faculty.



Green Talk Speaker Series

Wednesdays at noon | via Zoom

Practicing engineers, scientists, and technical experts deliver up-to-date briefings on how engineers deal with environmental issues.

9th Annual Women in Engineering Conference

Saturday, March 16, 2024 | Diaz Compean Student Union Ballroom

Inspiring the next generation of women innovators by creating a learning community of students, professors, and industry professionals in Silicon Valley and beyond.

2023.siliconvalleywie.org

Engineering Showcase & Celebration

Thursday, April 2024 | Diaz Compean Student Union Ballroom

The Engineering Showcase and Celebration is our annual event where alumni and industry friends engage with the next generation of engineering talent, innovation, research, and design. Thank you to the generous support from the Beall Family Foundation, San José Water, and Salas O'Brien for helping to make this event possible. Please mark your calendar to join us for the 2024 Showcase and Celebration.

Black Engineer Week Conference

June 21 - 28, 2024

This week-long conference is for elevating diverse voices and empowering creative solutions for a better future. The conference included golf, hiking, lunch and learn sessions, interactive tech mixers and more. For more information contact engineering-comm@sjsu.edu.

Alumni Notes

2023 Engineering Award of Distinction winner



GONZALO MENDOZA

'98 Aerospace

Gonzalo Mendoza serves as Director of Engineering at Textron Aviation, Inc, maker of Cessna and Beechcraft

airplanes. Gonzalo has held multiple positions with Textron Aviation in the areas of Aerosciences, Structural Dynamics, Acoustics, and Advanced Design and Technology. He participated in the development of over a dozen new models and derivatives, and received several company awards for leading successful teams in the development of novel flight control concepts, advanced cabin acoustics solutions, and addressed complex regulatory requirements.

Gonzalo also serves as an Adjunct Faculty member at SJSU, teaching graduate and undergraduate aircraft design courses over the last 12 years. He is the chairperson of the Aerospace Flutter and Dynamics Council and is a member of the SJSU Aerospace Engineering Advisory Board.

Gonzalo is an active instrument-rated pilot. His other industry engagements include active participation as company representative and subject matter expert in rulemaking committees for flight control systems, flight testing, and environmental standards.

AWARD OF DISTINCTION NOMINATION

Do you know a fellow SJSU Engineering alumnus or alumna who has achieved superior professional accomplishments and/or has demonstrated outstanding citizenship through significant community or professional service? The Engineering Award of Distinction is presented during our annual Showcase and Celebration. Scan the QR Code to nominate them for the 2024 Engineering Award of Distinction.



WARREN GLEN HIOKI

'92 MS Electrical

Dr. Warren Glen Hioki has been Inducted into the Prestigious Marquis Who's

Who Biographical Registry. Dr. Hioki is recognized for his dedicated career as a professor and administrator with the College of Southern Nevada's School of Advanced and Applied Technologies.

We want to hear your news!

We love promoting your achievements. Keep the news coming! <http://bit.ly/alumnotes>

RALPH PARKMAN

Metallurgical Engineering

Ralph Parkman was born in Penzance, England. His family immigrated to the U.S. in 1924. He grew up in Erie, Pennsylvania and graduated at the top of his class from the University of Pittsburgh with a degree in Metallurgical Engineering. He worked as a Metallurgist but gave up his occupational deferment to join the U.S. navy in 1944. Ralph took advantage of the GI Bill to attend Stanford University where he earned his PhD in Metallurgical Engineering. After retirement, Ralph devoted many years to volunteering with the Second Harvest Food Bank and the Good Samaritan Hospital Auxiliary. He also spent countless hours enjoying his grandchildren's sports and other activities.

Ralph came to San José State University to co-found the Metallurgical Engineering Program. During his career he served as department chairman, and was a visiting professor at the University of Hawaii and at the U.S. Naval postgraduate school. He was the founding chairman of the Santa Clara County Chapter of ASM International for Material Scientists.

HENRY WOODSON NEWTON III

Electrical Engineering

Henry Woodson Newton III was born in Ambridge, Pennsylvania, and was a resident of Metairie, Louisiana. Henry received a Masters Degree in Electrical Engineering from the University of Georgia. Henry's leadership has been evident in every part of his career which started after graduation from the University of Georgia as an engineer and a member of the US Army ROTC program. After graduation, he became a US Army military police officer, (2nd Lt.), and as a Facilities Security Officer for the New Orleans 'Port of Embarkation' and worked in the 'War Room' for the invasion of Cuba in the 60's. During Henry's career as an engineer, he became a certified Professional Engineer, and obtained a Masters in Business Administration (MBA) degree working in the aerospace industry for 32 years.

He also committed countless hours toward helping others in academics and business throughout his lifetime. Early in his engineering career, he served as Advisor to the San José State University College of Engineering Industrial Technology Department's Board of Directors. At night-time Henry was an Adjunct Professor at junior colleges for 12 years teaching classes in Production Management, Manufacturing Research, Long-Range Planning, Advertising & Marketing, Principles of Management in California, and Micro & Macro Economics and Business Planning.

DANIEL L CHEADLE SR.

'70 Electrical Engineering

Around 1955, the Federal Communications Commission (FCC) showed up at a farm on Grimes Avenue, a country road in Modesto, California, looking for an unauthorized radio broadcasting a signal. The FCC found Daniel, who built a radio and connected it to a barbed wire fence as the antenna. This was the springboard that began a pioneering life in the radio frequency and microwave industry.

Daniel L. Cheadle, Sr. went on to earn his Bachelor of Science (1967) and Master of Science in Electrical Engineering (1970) from San José State University. Dan excelled in a career designing RF & microwave amplifiers. He spent 20 years in the RF and microwave world working for Lockheed, Relcom, and Watkins Johnson. After his time in industry, Dan started his own company in his garage in San José.

NORMAN BACH ZIMMERMAN

'67 MS, Electrical Engineering

Norm Bach Zimmerman was born in Northampton Township, Pennsylvania, on Sept. 4, 1928, but lived most of his life in the San Francisco Bay Area, where he moved with his mother, Ida, when he was about 7 years old. After living in the East Bay, Norm and his mother eventually settled in Saratoga. After graduating high school, Norm realized his dream of flying by enlisting in the U.S. Navy's flight program. During his time in the Navy, Norm was stationed in locations that included Okinawa, Japan, and Kodiak, Alaska, where he flew patrols. He left the Navy in 1952 and through the G.I. Bill attended San José State University, where he received a Bachelor's of Science. Norm took an engineering job with NACA (National Advisory Committee for Aeronautics), which was absorbed into NASA in 1958. He spent his career at NASA Ames Research Center in Mountain View, where some highlights included: working on the Space Shuttle program and cataloging tektites, natural glass objects found in meteorite craters, some of which were sent to the Smithsonian Institution's collection in Washington DC. Long time friend, Henry Reynaud, introduced Norm to his future wife, Adrienne, Henry's sister. Norm and Adrienne married in Reno, Nevada, in 1969 and settled in Los Gatos. They built a unique modern home, where they raised their daughter, Heather, and where Norm would live for the rest of life.

RANKED **3RD** IN THE NATION BY U.S. NEWS AND WORLD REPORT **2023**

Among public engineering programs offering bachelor's and master's degrees, excluding service academies.

HAPPENING THIS SUMMER...

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



Flight competition

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



Spartan racing

Electric Vehicle Competition
Brooklyn, MI