

Welcome



Sheryl H. Ehrman

Welcome to the 2023 Silicon Valley Women in Engineering Conference! We at the Charles W. Davidson College of Engineering, at San José State University, are honored to be your host this year. This is our ninth annual conference!

The theme of our conference is ***Engineering a Better World***. From the music you listen to and the phone in your hand, to the clean water you drink and the innovations that are helping to restore our oceans, engineering and technology are at the heart of everything. Engineers bring ideas to life, turn dreams into reality and find solutions to enormous challenges. They design, create, repair and enhance, and are always moving the technology needle to create a Better World. You are a part of this amazing community!

Today you will hear from speakers who will discuss space innovations, advances in semiconductor technology and also, the future of work. If you have ever taken a selfie, you can thank space innovation technology. Semiconductor innovation in materials has enabled electrons to move up to 4 times faster in circuits than before. Imagine what this could mean for the future of technology.

The conference also provides opportunities to deepen your technical knowledge and to widen your professional network. I encourage you to connect with people at this conference who impress you, inspire you and who you want to build your network with. We are here for you and for each other!

Finally, I'd like to express my deepest thanks to all of the sponsors, speakers, panelists, faculty, professional development session leaders, students, and support staff who help to make this conference possible. We very much appreciate your contributions.

Enjoy the conference!

Sheryl H. Ehrman

Don Beall Dean

Charles W. Davidson College of Engineering

San José State University

Message from the Conference Chair

Engineering a Better World

We are confronted by many pressing challenges in our society such as those posed by climate change, a global pandemic, artificial intelligence, infrastructure, and geopolitical concerns. Technological innovations are important components in tackling these challenges. As women engineers, we have a responsibility to generate solutions to these problems to **engineer a better world**, which is the theme for this year's conference.

On behalf of this year's conference program committee, I am thrilled to welcome you to this year's conference. Our mission is to educate, inspire, and foster a community of aspiring women engineers, professors, and leaders in addressing these challenges. This conference is an excellent opportunity for you to gain insights from women engineers in the industry, network with your peers, and learn about the latest developments in the field. There will be 2 morning sessions and 1 afternoon session with a total of 12 technical sessions and 6 professional development sessions to choose from. You will have the chance to hear from our 3 keynote speakers who are women leaders that have made significant contributions to the engineering community and the workforce. Our last session in the afternoon are the Career Panels. Attend the Career Panel in your field to get advice and inspiration from women leaders. Visit the Innovation Showcase to learn and view the latest technologies and meet hiring managers. Finally, don't miss the chance to win prizes at the conclusion of the conference.

We believe that your participation in this conference will not only enrich your educational experience but also help you to establish a network of peers and mentors who will support you throughout your career. Plan for a day of learning, networking, and getting inspired to help **engineer a better world**.

Katy Kao, Ph.D.

Professor, Department of Chemical and Materials Engineering
Chair, 2023 Silicon Valley Women in Engineering Conference
San José State University



Katy Kao

Keynote Speakers



Tsu-Jae King Liu, Ph.D.

Dean, College of Engineering, UC Berkeley
Board Member, Intel Corporation

Topic: Semiconductor Chips: the New Oil Powering the World

Tsu-Jae King Liu is Dean and Roy W. Carlson Professor of Engineering at UC Berkeley, where she has been a professor in the EECS department since 1996. She is best known for the development of polycrystalline silicon-germanium thin film technology for applications in integrated circuits and microsystems, and for co-developing the three-dimensional “FinFET” transistor design that is used in all leading-edge microprocessor chips today.

She earned her B.S., M.S. and Ph.D. degrees in Electrical Engineering from Stanford University. Before joining the UC Berkeley faculty, she worked at the Xerox Palo Alto Research Center as a Member of Research Staff. Her awards include the DARPA Significant Technical Achievement Award (2000) for development of the FinFET, the IEEE Kiyo Tomiyasu Award (2010) for contributions to nanoscale MOS transistors, memory devices, and MEMs devices, the Semiconductor Industry Association Outstanding Researcher Award (2014), and the Semiconductor Research Corporation Aristotle Award (2016). She has authored or co-authored over 500 publications and holds over 90 patents. Liu is a Fellow of the IEEE, an elected member of the U.S. National Academy of Engineering, and a Fellow of the U.S. National Academy of Inventors. She also serves on the Board of Directors of Intel Corporation.



Heather McDonald

Chief Engineer, International Space
Station (ISS) Program, NASA

Topic: Engineering Out of This World - The International Space Station and Beyond

Heather is the first female to hold the position of Chief Engineer in the more than 20-year history of the ISS. In that role, Mrs. McDonald is responsible for integrating the work of about 20 different engineering units involving hundreds of engineers across NASA. Her purview covers all space station engineering responsibilities plus eight additional spacecraft transporting crew and cargo to and from the ISS. These include US commercial as well as internationally developed spacecraft. She is also responsible for the safe execution of crew spacewalks external to the ISS.

Mrs. McDonald is an internationally recognized expert and leader in rendezvous and docking operations and technologies, ultimately leading a successful international effort to develop rendezvous standards for future exploration missions. She has spent her career at the NASA Johnson Space Center. Throughout her career, she has served in key roles for several Space Shuttle flight tests, was a successful flight software and flight hardware developer, and project manager. During her NASA career, Heather has received numerous prestigious awards including a Silver Snoopy (NASA’s highest award from the Astronaut Office for contributions to crew safety and mission success), some of the Agency’s top awards like the Space Flight Awareness Launch Honoree and the Exceptional Achievement Medal.

Mrs. McDonald received a B.S. in Aerospace Engineering and Mechanics from the University of Minnesota in 1992. She is married, with three adult children and two adult stepchildren.



Erica Lockheimer

Vice President, Software Engineering,
LinkedIn Talent Solutions
Women In Tech Lead, LinkedIn WIT
Executive Team

Topic: The Future of Work

Erica Lockheimer has been at LinkedIn since 2010. She held the role of Sr. Director of Engineering heading the Growth Engineering team for over four years, with a focus on increasing growth in new members and deepening engagement with members across LinkedIn’s products. Erica started the Growth Team from the ground up to a 120-person team. She is also responsible for founding LinkedIn’s Women In Tech (WIT) initiative, focused on empowering women in technical roles at LinkedIn.

In 2018, she took on the role of VP of Engineering for the LinkedIn Learning team, formerly known as Lynda.com. She continued to expand her role and began to oversee LinkedIn’s Glint engineering team in 2019. Most recently in 2021, she took on the additional role of running LinkedIn’s Talent Solutions/Careers team that connects LinkedIn members to career opportunities and helps recruiters find the best candidates for their companies.

Erica loves the challenge of starting with something nascent and carving out the right strategy, hiring the best people, and plotting a course to drive results. In 2014 and 2015, Erica was voted amongst the top 22 women engineers in the world by Business Insider. Erica is a San Francisco Bay Area native, has 2 kids, loves to run and is a graduate from San Jose State University with a B.S. in Computer Engineering.

Title Sponsor



Mark and Carolyn Guidry
Women in Engineering Program Fund

Carolyn Guidry (1937-2009) was born in Mississippi and spent her childhood in the Deep South. She earned her Bachelor of Science in Electrical Engineering at Louisiana State University in 1959. One week after graduation, she married Mark Guidry (1937-2020), a fellow electrical engineering major she met at LSU. Carolyn began her career at Boeing, but soon put her career on hold and devoted 20 years to raising their three children. She returned to school and earned her Master's degree in Computer Engineering from SJSU in 1979. She joined Hewlett-Packard and was directly responsible for the development of a new flexible interconnect cable and the microcode for a new computer.

In partnership with Mark, Carolyn founded two successful companies in semiconductor design software and semiconductor product development. Both companies were later acquired and became leaders in their respective fields. After the second company was acquired by Integrated Circuit Systems in 1993, she founded the Mark and Carolyn Guidry Foundation and managed all aspects of the organization. She received an Award of Distinction from SJSU Davidson College of Engineering in 2006. Both she and Mark were inducted into the LSU College of Engineering Hall of Distinction in 2001.

Mark was a Louisiana native. After receiving his BSEE from LSU, he took a position at Boeing. He subsequently earned an MSEE from University of Washington and a Ph.D. from Iowa State University. He taught at LSU, where he conducted research in semiconductor technology, laser technology and radio wave propagation. Prior to founding their companies, Mark worked at Fairchild Semiconductor in Palo Alto, a small San Diego company, and Texas Instruments in Houston.

All three of Carolyn and Mark's children graduated with degrees in engineering. The Guidry family strongly believes in the power of education and the importance of developing engineering education in the U.S. for what lies ahead. The Mark and Carolyn Guidry Foundation has been a long-time leader in supporting women in engineering at SJSU. Its commitment and on-going support have made the Silicon Valley Women in Engineering program a model of success for educating new woman innovators regionally and nationally.

2023 WiE Conference Schedule

7:30 - 8:30 am
Ballroom Foyer
& Ballroom A/B/C

CONFERENCE REGISTRATION AND CONTINENTAL BREAKFAST

8:30 - 9:30 am

Welcome and Opening Keynotes

Semiconductor Chips: the New Oil Powering the World
Tsu-Jae King Liu, Ph.D.
Dean of Engineering, UC Berkeley; Intel Board Member

Ballroom A/B/C

9:30 - 9:45 am

BREAK

Emerging Technologies

Tracks

1. Climate Change

Session A1
Climate Resilience

Chairs: Ayca Erdogan, Hongrui Liu
Meeting Room: 4A

2. New Frontiers

Session A2
Wearable Technologies

Chairs: Lin Jiang, Wencen Wu
Meeting Room: 2

3. Cutting Edge Technologies

Session A3
Artificial Intelligence for
Cybersecurity

Chair: Young Park
Meeting Room: 3

**Concurrent
Session A**

9:45 - 10:45 am

10:45 - 11:00 am

BREAK

Session B1
Renewable Energy Generation
and Storage

Chair: Dahyun Oh
Meeting Room: 4A

Session B2
Space and Air Technologies

Chairs: Maria Chierichetti, Sheryl Ehrman
Meeting Room: 4B

Session B3
Advances in Semiconductor
Technologies

Chairs: Fatemeh Davoudi, Lili He
Meeting Room: 2

**Concurrent
Session B**

11:00 am - 12:00 pm

12:00 - 12:45 pm

LUNCH

Ballroom A/B/C

12:45 - 1:15 pm

Lunch Keynote

The Future of Work

Erica Lockheimer, VP, Software Engineering, LinkedIn Talent Solutions

1:15 - 1:45 pm

Roundtable Discussions

1:45 - 2:00 pm

BREAK

Session C1
Electric and Self Driving Vehicles

Chair: Lin Jiang
Meeting Room: 2

Session C2
Quantum Computing

Chairs: Hilary Hurst, Hiu Yung Wong
Meeting Room: 4A

Session C3
Next Generation Biotech

Chairs: Crystal Han, Yun Wang
Meeting Room: 4B

**Concurrent
Session C**

2:00 - 3:00 pm

3:00 - 3:15 pm

BREAK

Engineering Career Panels

**I. Software and Information
Technology**

Chair: Magdalini Eirinaki
Student Union Theater

II. Semiconductor and Electronics

Chair: Xiao Su
Meeting Room: 4B

III. Biomedical and Biotech

Chair: Nicole Okamoto
Meeting Room: 3

**Concurrent
Session D**

3:15 - 4:45 pm

4:45 - 5:00 pm

BREAK

5:00 - 7:00 pm

Ballroom C
& Ballroom Foyer

WiE Innovation Showcase, Networking Reception, and Prize Drawing

Engineering Out of This World - The International Space Station and Beyond

Heather McDonald

Chief Engineer, International Space Station (ISS) Program, NASA

Professional Development

4. Better Living

Session A4

Virtual Reality and Augmented Reality

Chairs: Birsen Sirkeci, Nanci Solomon
Meeting Room: 4B

5. Career Launch

Session A5

Job and Internship Search

Chair/Speaker: Kelly Masegian
Meeting Room: 1A

6. Career Development

Session A6

Confident Communication

Leader: Marie Haverfield
Meeting Room: 1B

Session B4

Responsible AI

Chair: Mahima Agumbe Suresh
Meeting Room: 3

Session B5

Employer Perspective: Top Tips on Job and Internship Success

Chair: Kelly Masegian
Meeting Room: 1A

Session B6

Secrets of Salary Negotiation Workshop

Leader: Sandra De Leon
Meeting Room: 1B

Session C4

Technologies for Entertainment

Chair: Jorjeta Jetcheva
Meeting Room: 3

Session C5

Engineering Career Pathways

Chairs: Debra Caires, Kelly Masegian
Meeting Room: 1A

Session C6

Manage Money Like a Boss: Learn and Earn

Leader: Denise Thurlow
Meeting Room: 1B

IV. Aerospace and Aeronautics

Chair: Tina Panontin
Meeting Room: 4A

V. Building, Infrastructure, and the Environment

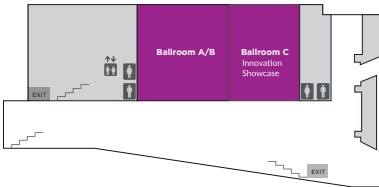
Chairs: Thalia Anagnos, Olivia Yip
Meeting Room: 1B

2023 WiE Innovation Showcase And Networking Reception

5:00-7:00 PM

Connect with peers, potential future co-workers, and mentors, while enjoying good food and music at Silicon Valley's best conference for women in engineering

Ballroom C & Foyer (Student Union 2nd Floor)



Come Learn about Agilent's Intern & Campus Roles!

Are you interested in learning about Agilent's intern & campus hiring process and the types of roles that Agilent hires for? Stop by our booth to learn more about our opportunities and make sure you speak to our Recruiters & hiring teams at the Innovation Showcase to get the latest updates and ask any questions you may have!

Agilent is a global leader in laboratory technologies for the life sciences, diagnostics, and applied chemical markets, delivering insight and innovation that advance the quality of life. It is the quality of our products and services, our intense focus, and our uncompromising integrity that enable our customers to discover new frontiers and make continuous advancements in areas such as: cancer research and diagnostics, drug development, food safety and their labs' performance and efficiency. Whatever the challenge, our One Agilent global team is dedicated to delivering trusted answers to our customers' critical questions in our collective quest to improve the world around us.



Applied Materials is the leader in materials engineering solutions used to produce virtually every new chip and advanced display in the world. Our expertise in modifying materials at atomic levels and on an industrial scale enables customers to transform possibilities into reality.

Please stop by our booth to learn more about Summer 2023 Internships and career opportunities. Our Internship Program and New

College Graduate Programs are designed to train and engage emerging technology professionals in a variety of disciplines. We provide networking, leadership and team-building opportunities so you'll gain valuable business contacts as well as practical skills. If you have a flexible and adaptable mindset and thrive in a results-driven culture, join us to Make Possible a Better Future.

Dexcom

Dexcom is a pioneer and leader in continuous glucose monitoring (CGM). We develop innovative and life-changing technology that transforms how people and their loved ones manage diabetes. Our more than 8,000 employees across the globe are committed to working together to develop industry-leading solutions for our customers and for those who have yet to experience CGM. And we're just getting started.

Make sure to stop by our Innovation Showcase to see how Continuous Glucose Monitoring technology works. We'll highlight how our portfolio is making our vision to empower people to take control of their health a reality, including Dexcom G7, our next-generation CGM product that launched in the U.S. earlier this year.



At Google, a problem isn't truly solved until it's solved for all. Googlers build products that help create opportunities for everyone, whether down the street or across the globe. Bring your insight, imagination and a healthy disregard for the impossible. Bring everything that makes you unique. Together, we can build for everyone. Come connect with Googlers to learn more about their day

to day work. We are excited to meet with you all throughout the showcase! Fill out this form if you are interested in receiving additional information, resources, events, and opportunities (goo.gl/SV2023). Questions? Reach out to hsistudentquestions@google.com.



Disaster Recovery of a Modern Application

Lisa (Runyu) Jin, IBM Research

In events like a hurricane or earthquake, an entire data center can be brought down resulting in significant lost revenue to a business. Hence, business continuity should include using disaster recovery solutions to protect and recover affected applications and its data. One disaster recovery option is to replicate the applications and data in the home data center to a recovery data center, which has much smaller recovery time compared to back up and restore process, which is needed for applications that cannot tolerate long downtime. This demo shows a successful recovery of a simulated disaster of a modern application as well as the successful return of the application to the home data center once it is repaired.

Label Sleuth: From Unlabeled Text to a Classifier in a Few Hours

Marina Danilevsky, IBM Research

Text classification can be useful in many real-world scenarios, saving a lot of time for end users. However, building a custom classifier typically requires coding skills and ML knowledge, which poses a significant barrier for many potential users. To lift this barrier, we introduce Label Sleuth (www.label-sleuth.org), a free open source

system for labeling and creating text classifiers. This system is unique for (a) being a no-code system, making NLP accessible to non-experts, (b) guiding users through the entire labeling process until they obtain a custom classifier, making the process efficient - from cold start to classifier in a few hours, and (c) being open for configuration and extension by developers. By open sourcing Label Sleuth we hope to build a community of users and developers that will broaden the utilization of NLP models.

Secure and Private Federated Learning

Yi Zhou, IBM Research

Federated Learning (FL) is an emerging machine learning approach that allows multiple entities (a.k.a. parties or clients) to collaboratively train a machine learning model under the coordination of an aggregator (a.k.a. server) without directly revealing their private training data. In this demo, we will walk through basics of federated learning and discuss the reasons and approaches to further protect federated learning.

NETGEAR®

NETGEAR Walkthrough and Summer Internship Program

NETGEAR is looking forward to connecting with you at our Innovation Showcase booth where you can learn about our premium products and services, our culture, and how you can stand out as a candidate for our Summer Internship Program.

Since 1996, NETGEAR® has been the innovative leader in connecting the world to the internet with advanced networking technologies for homes, businesses, and service providers around the world. As staying connected has become more important than ever, NETGEAR delivers award-winning network solutions for remote work, distance

learning, UHD streaming, online game play and more. By enabling people to collaborate and connect to a world of information and entertainment, NETGEAR is dedicated to providing a range of connected solutions from easy-to-use high-performance Orbi Mesh WiFi systems, the Nighthawk portfolio of WiFi routers, cable modems and mobile wireless, cloud-based subscription services for enhanced control and security, to smart networking products and video over Ethernet for Pro AV applications.



Perforene - Graphene Composite Membrane Technology

Since the ancient Egyptians first filtered water through sand, man has used screens and filters for everything from large-scale industrial processes to brewing beverages to delicate medical procedures. Today, filtration and separation processes are all around us, in almost every industry in some form, and the need for improved performance and efficiency is greater than ever. Lockheed Martin is making revolutionary breakthroughs with its graphene composite membrane technology, Perforene. The active layer of our membranes is an atomically thin layer of perforated graphene, which puts the theoretical limits of membrane performance within reach. Visit the Lockheed Martin booth to hold a Perforene sample with your own hands, and discuss other exciting opportunities at Lockheed Martin.



Marvell delivers the data infrastructure technology that connects the world, we're building solutions on the most powerful foundation: our partnerships with our customers. Trusted by the world's leading technology companies for 25 years, we move, store, process and secure the

world's data with semiconductor solutions designed for our customers' current needs and future ambitions. Through a process of deep collaboration and transparency, we're ultimately changing the way tomorrow's enterprise, cloud, automotive, and carrier architectures transform—for the better. To learn more, visit: www.marvell.com.

Visit the Marvell Innovation Showcase to see a demo of Switched Camera Video over End-to-End Ethernet

Zone-based end-to-end Ethernet is the technical foundation for the software-defined vehicle. This demo shows the transmission of camera video over a zonal, end-to-end Ethernet in-vehicle network based on two multi-gigabit automotive Ethernet switches and a 10 Gbps Ethernet backbone link.



AR/VR

Come say "hi" and experience VR and AR demos to get a sense of how these technologies are transforming the ways we learn, work and play.

Discover the many cross-disciplinary opportunities, and the steps you can take to immerse yourself in the field. If you have an interest in hardware or software development, AI, human factors and user interface, graphics, mechanics, optics, audio, kinesiology, psychology, or art and design, there's a place for you. Google, Meta, Microsoft, Apple, Valve, Amazon, and Niantic are just a few companies actively developing AR/VR devices and platforms.



College of Engineering Opportunities

Looking for opportunities to participate in research projects mentored by faculty and/or

sponsored by external grants? Considering graduate school? Want to know about the graduate scholarship offered by the College of Engineering? This booth will host information flyers about faculty research projects in the College of Engineering that are recruiting students, Spartan Accelerated Graduate Education (SAGE) program, and the Future of Silicon Valley Graduate Scholarship.



TSMC pioneered the pure-play foundry business model when it was founded in 1987 and has been the world's leading dedicated semiconductor foundry ever since. TSMC supports a thriving ecosystem of global customers and partners with the industry's leading process technologies and a portfolio of design enablement solutions to unleash innovation for the global semiconductor industry. With global operations spanning Asia, Europe, and North America, in 2022, TSMC deployed 288 distinct process technologies and manufactured 12,698 products for 532 customers by providing a broad range of advanced, specialty and advanced packaging technology services. The Company is headquartered in Hsinchu, Taiwan.

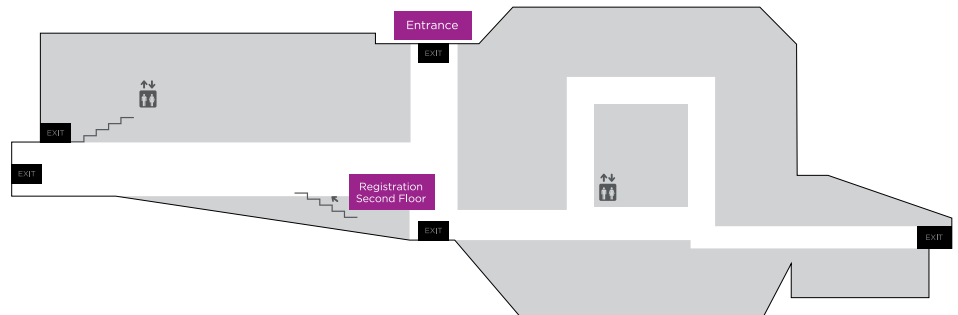
In North America, TSMC has a strong Sales and Service organization that works with customers by helping them achieve silicon success with cutting-edge technologies and manufacturing excellence. TSMC has continued to accelerate its R&D investment and manpower and is expanding its manufacturing footprint to support customer innovation with 3DIC technologies and optimal manufacturing capacity.

Visit our booth to learn more about TSMC and career opportunities. Discover more and make your dreams come true at TSMC.com.

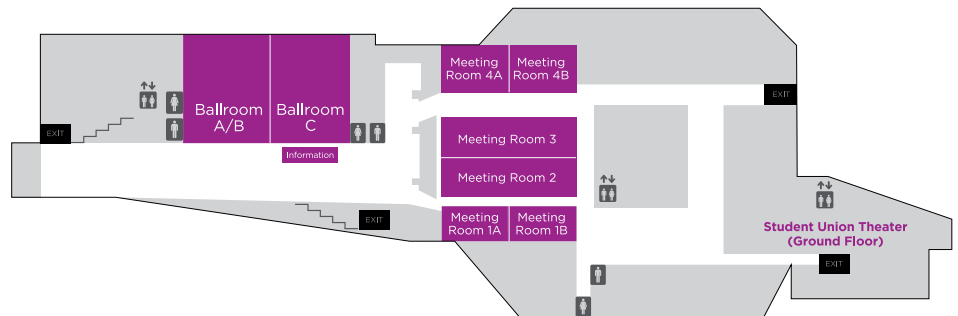
Event and Session Locations

Student Union

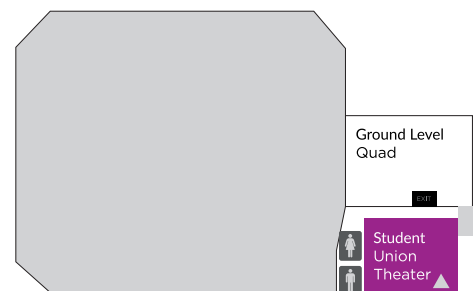
Student Union 1st Floor



Student Union 2nd Floor (Meeting Rooms)



Student Union Ground Floor



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