



reimagine the future

2021 Virtual Silicon Valley WiE Conference

Title Sponsor

Mark and Carolyn Guidry
Women in Engineering Program Fund

Welcome



Welcome to the 2021 Silicon Valley Women in Engineering Conference! We, at the Charles W. Davidson College of Engineering, in San José State University, are honored to be your virtual hosts this year. This is our seventh annual conference!

No matter where you live, no matter what your circumstances, we all went through the same life-changing events of 2020 together. Our collected generations are weathering these experiences of loss and grief, change and adaptation at the same time, and one of the many qualities we now have in common is RESILIENCE.

We may sometimes wistfully look back to what seemed to be easier days, but really, with so much that we have learned about ourselves and society at large, we don't want to go back to the "old normal." It is time to Reimagine the Future — your future, the future of engineering, and the future of our planet.

We are glad you are here. We expect much from your generation, and this conference is rich with resources for you to envision a better future, and then get the work done. I encourage you to virtually connect with people at this conference who impress you, and build your networks.

Finally, I'd like to express my deepest thanks to all of the sponsors, faculty, speakers, 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



2021 - Reimagine the Future

While it is impossible to know what the future will look like, engineers influence its trajectory through the creation and advancement of technology, whose unimaginable ability can result in both profound good and unintended consequences. Current events such as the pandemic, political polarization, and climate change present urgent challenges for society. Technology undoubtedly has a role to play in the multidisciplinary solutions that will be required for these challenges and others for an evolving and better tomorrow.

Women are 50% of our population, but we are underrepresented in engineering and computing graduates nationwide as well as in the tech workplace. Although we are a small but mighty group, there is untapped potential for us to contribute in a more considerable way to the problem-solving profession — talent and diversity of perspectives are crucial to innovation, and the demand for engineering and computing skills will only increase. This conference gives you a boost into this world by connecting you to trailblazers ahead of you. The more proactive you are at exploring careers that align with your training and passion, and the more you develop a supportive professional network, the more likely you are to successfully navigate the field and to have a fulfilling and rewarding career.

The conference organizers and program committee have worked hard to bring you this event. We have three superstar keynote speakers who will present how they use their engineering and computing backgrounds to influence the current state of the world. There are four technical sessions and two professional development tracks with something for everyone. We will conclude with the Career Panel Discussions and the Innovation Showcase. Incredible women speakers from a range of majors representing diverse industries will present their intriguing projects, career stories, and their sage advice.

I invite you to come be inspired, to celebrate our impact, and to learn from the sisterhood that is women in engineering. Although the conference is again virtual this year, we have built in opportunities for interaction through a virtual lounge, roundtable discussions, and plenty of Q&A. Come alone or with your friends. Practice networking. Invest in your future. Imagine technology that can subdue a pandemic, enable a just society, or heal the planet, and then imagine yourself being part of that.

Reimagine the future!

Jinny Rhee, Conference Chair

Associate Dean, Undergraduate Programs and Student Success
College of Engineering, San José State University

2021 Virtual WiE Conference Schedule

8:30 - 9:30 am

Welcome and Opening Keynotes

Engineers and the Future of Biotech
Ann Lee-Karlon, Ph.D.
Senior Vice President, Genentech

Detecting Misinformation in the Information Age
Renée DiResta
Technical Research Manager, Stanford Internet Observatory

9:30 - 9:45 am

BREAK

Emerging Technologies

Tracks

1. Sustainable Future

2. Hot Topics in Artificial Intelligence

3. Smart Tech

Concurrent Session A

9:45 - 10:45 am

Session A1
Renewable Energy: Devices and Systems

Chair: Lili He

Session A2
AI and Deep Learning Applications

Chair: Feruza Amirkulova

Session A3
Sensors and Biomedical Devices

Chairs: Fariah Mazhabeen and Yun Wang

10:45 - 11:00 am

BREAK

Concurrent Session B

11:00 am - 12:00 pm

Session B1
Water Management

Chair: Olivia Yip

Session B2
AI in FinTech

Chair: Jorjeta Jetcheva

Session B3
Predictive Analytics in Manufacturing

Chair: Fatemeh Davoudi

12:00 - 12:30 pm

LUNCH BREAK

12:30 - 1:30 pm

Lunch Keynote and Roundtable Discussions

On the Roadway to the Moon and Mars
Jessica J. Marquez, Ph.D.
Human-Systems Engineer, NASA Ames Research Center

1:30 - 1:45 pm

BREAK

Concurrent Session C

1:45 - 2:45 pm

Session C1
Sustainable Environment

Chair: Indumathi Jeyachandran

Session C2
Machine Learning for Cybersecurity

Chair: Younghee Park

Session C3
Robotics and Intelligent Systems

Chair: Wencen Wu

2:45 - 3:00 pm

BREAK

Engineering Career Panels

Concurrent Session D

3:00 - 4:30 pm

I. Software and Information Technology

Chair: Xiao Su

II. Electronics and Semiconductor Equipment

Chair: Birsen Sirkeci

III. Biomedical Engineering

Chair: Katy

4:30 - 4:45 pm

BREAK

4:45 - 6:00 pm

WiE Virtual Innovation Showcase and Meet the Sponsors Exhibits

		Professional Development	
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	4. Technology and Society	5. Career Planning	6. Your Career Path
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ufacturing	Session B4 Innovative Transportation Chair: Maria Chierichetti	Session B5 Job and Internship Search during COVID-19 and beyond Chair: Kelly Masegian	Session B6 Entrepreneurship Chair: Magdalini Eirinaki
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ems	Session C4 Engineering solutions to COVID Chair: Dahyun Oh	Session C5 Employer Perspective: Top Tips on Job and Internship Success Chair: Kelly Masegian	Session C6 Career Stories and Strategies Chair: Sheryl Ehrman
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ical and Biotech	IV. Aerospace and Aeronautics Chair: Tina Panontin	V. Building, Infrastructure, and the Environment Chair: Laura Sullivan-Green
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Keynote Speakers



Ann Lee-Karlon, Ph.D.

**Senior Vice President and Head of Portfolio Management and Operations, Research and Early Development
Genentech**

Topic: Engineers and the Future of Biotech

Ann Lee-Karlon is senior vice president and head of Portfolio Management and Operations for Genentech Research and Early Development. Leaders in her group oversee more than 30 drug development teams across oncology, immunology, ophthalmology, infectious diseases, and neuroscience. Ann holds a BS in bioengineering from UC Berkeley, MBA from Stanford University, and Ph.D. in bioengineering from UC San Diego, where she was a National Science Foundation Fellow. She completed a postdoctoral fellowship at University College London as an NSF International Research Fellow. She served as president and board chair for the Genentech Patient Foundation (2016-2019), providing medicines to uninsured and underinsured patients. Ann was elected president and board chair for the Association of Women in Science (2014-2016), based in Washington, D.C. She was honored by the UC President's Office as one of the Remarkable Women of the University of California. Ann is a board member for Eko Health, a startup focused on AI-driven software, advanced stethoscopes, and telemedicine for cardiopulmonary medicine. She is a Fellow of the Aspen Institute and a Fellow of the American Institute for Medical and Biological Engineering.



Renée DiResta

**Technical Research Manager
Stanford Internet Observatory**

Topic: Detecting Misinformation in the Information Age

Renée DiResta is the Technical Research Manager at the Stanford Internet Observatory. She investigates the spread of malign narratives across social and other media networks. Renée's areas of research include disinformation and propaganda by state-sponsored actors, and health misinformation and conspiracy theories. Renée has advised Congress, the State Department, and other academic, civic, and business organizations, and has studied disinformation and computational propaganda in the context of pseudoscience conspiracies, terrorism, and state-sponsored information warfare. Renée regularly writes and speaks about the role that tech platforms and curatorial algorithms play in the proliferation of disinformation and conspiracy theories. She is an Ideas contributor at Wired and The Atlantic. Her tech industry writing, analysis, talks, and data visualizations have been featured or covered by numerous media outlets including the New York Times, The Washington Post, The Wall Street Journal, The Atlantic, CNN, CNBC, Bloomberg, Fast Company, Politico, TechCrunch, Wired, Slate, Forbes, BuzzFeed, The Economist, Journal of Commerce, and more. She is a 2019 Truman National Security Project security fellow, a 2019 Mozilla Fellow in Media, Misinformation, and Trust, and a Council on Foreign Relations term member. Renée is a co-author of *The Hardware Startup: Building your Product, Business, and Brand*, published by O'Reilly Media.



Jessica J. Marquez, Ph.D.

**Human-Systems Engineer
Human System Integration Division
NASA Ames Research Center**

Topic: On the Roadway to the Moon and Mars

As a Human-Systems Engineer at NASA Ames Research Center in the Human Systems Integration Division, Dr. Marquez's research interests include human-automation integration, human-computer interaction, crew autonomy, and space human factors engineering. Throughout her career, she has contributed to various research projects ranging from lunar lander cockpit to planetary spacewalks to concepts of operations for deep space missions. Currently, she is the SPIFe (Scheduling & Planning Interface For exploration) team lead within the Human-Computer Interaction Group. The SPIFe team has developed and deployed planning and scheduling software tools for several space missions, including International Space Station and Mars rovers. This team is developing the next-generation of planning and scheduling systems, Playbook, a web-based, mobile timeline and execution aid. She lends her subject matter expertise to the Human Research Program and the Space Technology Mission Directorate. Over the last two decades, she has supported and conducted research on various Earth analog missions around the globe. She holds a BS in Mechanical Engineering from Princeton University, a SM in Aeronautics and Astronautics from Massachusetts Institute of Technology, and a Ph.D. in Human-Systems Engineering from Massachusetts Institute of Technology.

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.

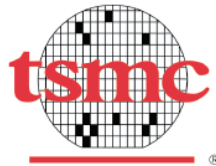
All three of Carolyn and Mark's children graduated with degrees in engineering. The Guidry family strongly believes in the power of education and the importance of developing engineering education in the U.S. for what lies ahead. The Mark and Carolyn Guidry Foundation has been a long-time leader in supporting 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.

We thank our sponsors for their generous support of Women in Engineering!

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