3D Metal Printing

Green Applications for a Changing World
New Masters Program: Smart, Sustainable Energy Systems

Timothy Li
Supporting the Next Generation of Entrepreneurs and Innovators

Beyond The Campus
The next generation of leaders will emerge from everywhere
OUR CAMPUS CONTINUES TO TRANSFORM this semester with more in-person learning and steps towards returning to pre-pandemic life. Students are bringing new energy, injecting a heightened vibrance into the classrooms, hallways and all across campus.

The goal of the Davidson College of Engineering is to continue to innovate through experiential learning, while utilizing research through hands-on experience that will ultimately have our students succeed in industry and beyond. Our mission is to enable our students to become socially responsible engineers and leaders in Silicon Valley by delivering a world-class education.

The themes of this magazine issue are sustainability, entrepreneurship and emerging technologies. You will see those topics echoed throughout the magazine. Enjoy our stories, and see if there are any fields or 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

“Our mission is to enable our students to become socially responsible engineers and leaders...”

In This Issue

4 College News
5 Green Applications for a Changing World
6 ParkStash The Airbnb of Parking
6 Silicon Valley Small Business Development Center
7 Timothy Li, Fueling the Momentum of the Future
8 3D Metal Printing
10 Beyond the Campus
12 2022 Silicon Valley Women in Engineering Conference
13 Events
14 Alumni Notes
The thermal energy produced by its combustion process is not dissipated into the environment, but is recovered and reused. This makes the SJSU combustion process more efficient than traditional power plants.

It’s no surprise that SJSU, ranked the number 1 most transformative university by Money magazine, has been ahead of the curve when it comes to sustainability. SJSU has been working for years to make the campus sustainable, and now through a new engineering program, is spreading the knowledge to outside communities.

Starting Fall 2022, the Charles W. Davidson College of Engineering will be offering a new Master’s in Sustainable Energy Systems program. Courses that will be offered include: Renewable Energy Systems, Energy Storage Application and Manufacturing, and Power Converters for Alternative Energy Systems. This new program will give engineers key skills that will enable them to learn and develop a wide range of applications for renewable energy solutions. For more information about this exciting new program please visit: https://bit.ly/37n3zfT
ParkStash
The Airbnb of Parking

IN OUR SPRING 2019 ENGINEERING MAGAZINE
we introduced you to alumni Sameer Saran (’18
MS, Computer Engineering) and Hooman Bolandi,
the co-founders of ParkStash. Bolandi
sponsored the original SJSU Silicon Valley
Business Plan Competition that Saran
submitted his idea to.

Saran created the ParkStash app after
many unsuccessful attempts to secure
parking spots in SJSU garages, resulting in
being late for exams and missing
classes. ParkStash, the official parking
app of SJSU, helps people park faster,
reduces traffic congestion by 50% and
reduces violations.

ParkStash is now an all-inclusive
transportation and parking management
platform that supports individual
consumers and organizations. They have added new
features such as the Enterprise Dashboard, E-permits,
and an Interactive Citation Map. The Enterprise
Dashboard provides one
platform for transporting
and parking departments
to keep track of revenue, make data driven decisions,
improve operational efficiency, and provide
sleek analytics solutions.

Their partners and clients now include
SJSU, Woodward Dream Cruise, SMART
Bus, the City of Surrey, hundreds of
small business owners, and thousands of
consumers. ParkStash offered a seamless
park and ride experience for visitors of Ford
Motor Company’s Woodward Dream Cruise.
Over 1.5 million people take part in the
event. ParkStash has over 1,000 available parking
spots on its app for the event and many are
within walking distance to a SMART bus stop
as well.

We appreciate that Sameer continues to stay
connected to SJSU and shares his knowledge with
the next generation of engineers.

Timothy Li, Fueling the
Momentum of the Future
Supporting the Next Generation of
Entrepreneurs and Innovators

TIMOTHY LI, ’03 BS, INDUSTRIAL AND
Systems Engineering, is an alumnus of SJSU’s Charles
W. Davidson College of Engineering. Timothy’s
story begins with his mother who started her stay
in the United States as a political refugee during the
Tiananmen Square uprising. She went on to receive
degrees in the CSU system. After several years,
Timothy was reunited with his mother in San Francisco
at the age of 13. Not knowing a word of English,
Timothy struggled through high school, but pushed on
and was eventually accepted as a freshman at SJSU.

During his time at the college, Timothy met his wife
Vy, who also has a story of humble beginnings. “San
Jose State University means a great deal to us. Not
only did we receive a wonderful college degree, we
also met each other in class and the rest, as they say,
is history,” said Timothy Li.

When Timothy and Vy graduated, the couple went
on to pursue degrees from other universities,
including Harvard. After working for several
technology companies, they decided to be a
part of the SJSU advisory committee. Together
they started their own companies: Alchemy,
an embedded financing software company and
MaxDecisions, an analytics company that employs
over 100 individuals today.

As a way of giving back, the power couple made a
generous donation to the college that allowed
the opening of a new lab, The Vy and Timothy Li
Laboratory for Industrial and Systems Engineering.
This lab honors Dr. Louis Freund, for his decades of
service to engineering students and will help support
the college with its mission to provide a quality, hands-
on education to the next generation.

Silicon Valley Small Business Development Center
One-stop-shop for accelerating small business success

WHEN CHOOSING A FUTURE CAREER,
many students are creating their own path
as entrepreneurs. San José State University
recently opened the Silicon Valley Small Business
Development Center (SBDC) in partnership with
the SJSU Office of Innovation and California Small
Business Development Center to help entrepreneurs.
The SBDC is a resource for people in Santa Clara
County to receive support, training, consulting,
assistance, and connection to resources for
entrepreneurs. Whether it’s access to capital, human
resources, compliance, marketing, accounting, or any
other business need — SBDC is your one-stop shop
for accelerating small business success.

SBDC’s mission is to empower now and next-generation
entrepreneurs with a prepared growth mindset — through
transformative insights, resources, and guidance. They
provide resources to start, grow, or sell your business at
any stage of development.

The Office of Innovation is focused on nurturing and
growing a culture of innovation and entrepreneurship that
will enhance the impact of SJSU research. Visit sjsu.edu/
innovation to learn more about their programs.

SJSU alumni, students, faculty, and staff can receive
assistance with their entrepreneurial ideas through
this center and the larger SBDC network wherever they
are. Industry professionals can work with SBDC to
expand their business locations, innovative products
and services. They can connect with a large network
of over 10,000 NorCal Small Business Entrepreneurs.
Last year, Silicon Valley SBDC helped almost two
thousand clients navigate through a pandemic and
access $27 million in capital to start or grow their
business and create a meaningful impact on the local
community.

Access to SJSU’s innovation and entrepreneurship
resources have helped SJSU alumni companies such as
ParkStash and Alchemy. To learn more about the Silicon
Valley SBDC and to obtain these services, visit svsbdc.org
or email info@svsbdc.org.
Medical implants are an ever increasing business. For example; every year, over a million Americans need knee replacement surgery, and that number is projected to increase to 3.5 million by 2030.

One major issue with current biomedical implants is the density and stiffness of the titanium being used. This can cause the implant to loosen over time, requiring the patient to have it replaced. Utilizing an innovative lattice (a series of points that can be arranged in a distinct pattern) approach, the implants are made lighter and less rigid. The surrounding bones are able to adapt to the replacement and hopefully make it last as long as possible.

In addition to medical implants, the 3D metal printing technology can be used in aerospace and automotive applications. Material scientists are always looking to create future materials that are lighter in weight so less natural resources are required. Some of the most exciting tools that have entered the material science toolbox in recent years are artificial intelligence and machine learning. The data collected has allowed researchers to predict the properties of materials which will speed up both fundamental and applied research. With this application we are witnessing an explosion of what the newly conceived materials are capable of.

Traditional 3D printers start with an image that is used to make a mold, then cast it in a third process. Students using the 3D metal printer start from a concept drawing on a CAD system and print a usable end product. For students and researchers this is a huge advantage. Timothy is currently working on lattice structures to generate different shapes and produce results that are more sustainable and will ultimately use less material.

As we learn to harness the power of 3D metal printing in this new frontier of discovery, many exciting applications are still waiting to be brought to light.
Beyond the Campus

The next generation of leaders will emerge from everywhere.

IN 2013, CHEMICAL

Engineering Professor Melanie McNeil, along with other female professors and campus leaders, was looking for a way to help more women and underrepresented groups land strong jobs in STEM fields. They formed a partnership with nonprofit Braven to empower promising college students with the skills, confidence, experiences, and networks necessary to transition from college to strong economic opportunities.

Over the years SJSU has helped Braven implement innovative career education into the undergraduate experience to support first-generation, children of immigrants, low-income, and/or underrepresented students, regardless of gender.

Students in the Braven program team through a semester-long cohort-based course and then have access to a lighter-touch post-course experience that lasts through college graduation. The cohorts are co-taught by industry leadership coaches.

While developing their leadership style, students learn to value their skills, interest, and how their story uniquely positions them for a job that is tied to their major. They participate in resume workshops, networking, mock interviews and apply for jobs or internships. At the end of the course they participate in a capstone project similar to a hackathon. Employer partner Cisco recently asked the following question: During the pandemic, women and people of color were significantly impacted; how do we retain the diversity of our staff?

Students work in their cohorts using the design thinking framework, conducting empathy-based research, and prototyping solutions to pitch to an employer partner. The employer partners share the ideas with their teams and potentially embed the solutions into their company culture.

Juan Macias ’20 BS, Software Engineering

Juan Macias transferred to SJSU as a software engineering student his junior year. He learned how to advocate for himself within the CSU system and searched for ways to stay engaged. He saw a Braven flyer and thought, “I don’t know if Braven can teach me anything at this point, but maybe there’s something I could take advantage of.”

He learned so much from his leadership coach from LinkedIn. She gave Juan direct valuable feedback and helped him see the world through a different lens. He met people from different backgrounds and learned how to communicate effectively. His experience helped him secure several internships and a great job.

As a Software Engineer at VMware, Juan now participates in the Braven program as an industry leadership coach. He is working to host cohorts on the VMware campus, providing students an opportunity to see people like them in leadership positions and envision themselves working on a similar campus.

Interested in volunteering as a leadership coach, mock interviewer, or learning more about employer partnerships? Connect with us engineering-comm@sjsu.edu.

2022 Silicon Valley Women in Engineering Conference

Engineering Leaders for Tomorrow

THE THEME FOR THIS YEAR’S ANNUAL SILICON

Valley Women in Engineering Conference (SVWiE) was Engineering Leaders for Tomorrow. Conference Chair, Dr. Nicole Okamoto, said “one purpose of this conference is to give you an idea of the possibilities. Our speakers are engineering leaders of today. We rely on you to be our engineering leaders for tomorrow.”

The conference aims to help aspiring engineers gain knowledge about emerging technologies and career strategies, build connections with women technologists, and seek inspiration from high-achieving women leaders. Dr. Inez Fung, keynote speaker and Atmospheric Science Professor at UC Berkeley, said “it’s our future, it’s everyone’s future. We need to get engaged.”

Attendees from all over the country flocked to the virtual SVWiE conference to learn from industry professionals and faculty. They shared their expertise in emerging technologies, professional development, and engineering career panels from a wide range of industries. Dr. Ruthie Lyle, Principal Technical Patent Architect at NVIDIA, said, “Women can combine the power of curiosity with engineering training and a persevering mindset to improve the world.”

The skills and knowledge that the speakers model for young engineers are crucial for the future. The conference exposes student engineers to different job positions and industries they may not have considered from classes. Patti Robb, Senior Vice President of Software at Dexcom, said “Take on roles outside your comfort zone. You won’t begin to imagine what you can do.”

The Silicon Valley Women in Engineering Conference will continue to uplift women in engineering. A heartfelt thanks to our sponsors, the Mark and Carolyn Guidry Foundation, Google, tsmc, Netgear, and Dexcom.
Finding a Balance Between Being an Engineering Student and an Athlete

It can be challenging to find equilibrium between academics and athletics at the college level. This is a challenge that students at the College of Engineering don’t mind taking on.

Shoutout to engineering student athletes Alessia Buffagni, Cynthia Flores, Janne Kaniho, Brendan Manigo, and Juliette Noyer for being recognized as All-Mountain West Honorees! To earn Academic All-Mountain West recognition, a student-athlete must complete at least one semester, maintain a 3.00 or better cumulative GPA, and participate in at least 50 percent of the contests for the season. Sports recognized include men’s and women’s cross country, football, women’s soccer and women’s volleyball. 63 total Spartans were named Mountain West honorees.

Alessia Buffagni (Women’s Volleyball) is a first year student majoring in interdisciplinary engineering... is from Castelnuovo Rangone, Italy.

Cynthia Flores, (Women’s Soccer) is majoring in civil engineering... enjoys watching Youtube and Netflix, wood carving and playing Minecraft and FIFA in her spare time.

Janne Kaniho (Women’s Volleyball) is a first year student majoring in civil engineering... is from Honolulu, Hawaii.

Brendan Manigo (Football) is majoring in biomedical engineering... younger brother of former San José State linebacker Alex Manigo... he is a native of San José.

Juliette Noyer (Women’s Cross Country) is majoring in biomedical engineering... enjoys reading in her free time... was born in Lyon, France.

Dean’s Career Conversations

Days and times vary | ENG 494 and Zoom
Dean Sheryl Ehrman and select 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.

Black Engineer Week Conference

June 18-24, 2022 | Tech Museum and various other locations
This week-long conference about elevating diverse voices and empowering creative solutions for a better future. The conference will include golf, hiking, lunch and learn sessions, interactive tech mixers and more. For more information contact engineering-comm@sjsu.edu.

Silicon Valley Leaders Symposium

Thursdays at noon | ENG 189 and Zoom
Industry and technology leaders talk about business and technology trends. It also features prominent leaders who discuss broader societal and political issues.

Connect with us!

We want to hear your news! We love promoting your stories. Keep the news coming! http://bit.ly/alumnotes

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Spring Commencement Ceremony

Wednesday, May 25, 2022 | Provident Credit Union Event Center
**Alumni Notes**

**SRIDHAR VEROSE**  
'08 MS, Software Engineering

Congratulations to Sridhar Verose on his appointment as the new Vice Mayor of San Ramon! Verose graduated with a master’s degree in software engineering from San José State University and has been working in information technology for the past 25 years. He is currently working as senior manager of cloud operations at Opentext Inc.

**PRATEEK GUPTA**  
'12 BS, Engineering, Business Management

Congratulations to Prateek Gupta on his appointment to the Board of Commissioners of Norman Y. Mineta San Jose International Airport! He boosts business travel, student opportunities, and community engagement at the airport. Gupta works as an entrepreneur and manager in technical startups such as QuestDB.

**STEVE DELIGHT**  
'09 MS, Civil Engineering

Congratulations to Steve Delight for his appointment as district engineer and director of engineering services for the Dublin San Ramon Services District! Delight has worked for the Dublin San Ramon Services District since 2000. He worked as an engineer and the supervisor of the district’s capital improvement program.

**BERNADETTE VALENCIA**  
'92 BS, Aviation

Congratulations to Bernadette Valencia who has been appointed as vice president of sales for Matson Logistics’ Hawaii office. In her new role she will be responsible for all sales and marketing activities. Valencia joined Matson in 2008, in the Guam office, where she started as a sales and customer service manager. She is the co-founder and a board member of ICAN Resources, a Guam nonprofit organization that employs and provides life skills to the disabled community and was recently appointed to the University of Guam Board of Regents.

**DR. VISHNU S. PENDYALA**  
'98 MS, Computer Engineering

Congratulations to Dr. Vishnu S. Pendyala for being elected Chair of the IEEE Computer Society Silicon Valley Chapter in 2022. Dr. Pendyala is an SJSU alumnus and currently a faculty member of the Department of Applied Data Science. He has over two decades of experience in the software industry and is a Distinguished Speaker of the IEEE Section. He enjoys teaching after leaving his previous job as a chemist for Douglas Aircraft and United Technology. He was 89 and lived in Santa Cruz.

**IN MEMORIAM**

**Jacks McKellar**

SJSU Professor John “Jack” McKellar was a long-time teacher in the Tech, Applied Arts and Engineering departments. He loved teaching after leaving his previous job as a chemist for Douglas Aircraft and United Technology. He was 89 and lived in Santa Cruz.

**ADA LOU REED DUAKESEK**  
'49 Aviation

Ada Lou Reed Duacek was born in Clearlake Highlands, California. She was SJSU’s first female graduate with an Aviation degree. She learned to fly a plane before she learned how to drive a car. She chose to attend our aviation program and put herself through school. After graduation, she served in the Navy and attended Monterey for an Aerology Masters degree. She volunteered over 5000 hours for the Navy Marine Corps Relief Society after she retired. Ada was a dedicated Spartan and had a special connection to Women in Engineering.

**THEODORE “TED” FAIRFIELD**  
'56 Civil Engineering

Theodore “Ted” Fairfield had a deep connection to SJSU. In the 1970’s and 1980’s he taught technical writing classes to engineering students. In 1993 he was recognized by the college with the Award of Distinction. After graduation he was a principal in the MacKay & Somps company for many years before starting his own engineering consulting business in Pleasanton. Ted was a good, formal and precise person, while being deeply sensitive to other people, and committed to his community and religion.

**ROBERT JONES**  
'56 BS, Mechanical Engineering

Robert “Rob Hall” Jones served in the Marines and was President of several organizations, such as the Silicon Valley Triathlon Club and The Kennedy Foundation Special Olympics. He started a business, R. H. Jones, P. E. Consulting, advising government entities about transportation of the IF300 rod spent fuel cask that he designed during his time at General Electric Nuclear. Robert was fond of repairing and racing cars, running, and competing. He campaigned for the local water company to become a public utility business, helped change a defunct rail line to a pedestrian path, and became a spokesperson of the Free Iran group to free the Iranian people from the Mullah government.

**Richard “Dick” Ernest Johnson**  
'57 MS, Electrical Engineering

Richard “Dick” Ernest Johnson was born in Eureka, California. He earned a bachelor’s degree from UC Berkeley in Electrical Engineering in 1966 and a master’s degree in Electrical Engineering from SJSU. He designed technologies in computer systems, electro-mechanical products, and emerging direct-to-home satellite television. Dick spent his free time camping and waterskiing on Trinity Lake, snow skiing in Tahoe, completing multiple marathons, traveling to his second home in Shanghai, and watching his beloved Bay Area sports teams and his grandchildren’s many activities.
CONGRATULATIONS!
to the SJSU Aviation Flight Team for their 3rd place win at the Regional flight competition earlier this year, and good luck at Nationals!

RANKED 4TH IN THE NATION 2022
By U.S. News and World Report
Among public engineering programs offering bachelor's and master's degrees, excluding service academies.

CONGRATULATIONS!