



Message from the Chair

It is a busy time on campus as we are approaching the end of another academic year. During the Spring semester, we have completed interviews of faculty candidates for three positions in the Department. We have also welcomed prospective students and parents to campus and the Department. This culminated in Explore SDSU 2024 on Saturday, April 13 when a large number of admitted students and their parents were on campus. It is our hope that many of them will decide to join us in Fall 2024 to take advantage of our program which emphasizes engineering fundamentals but also hands-on experience through laboratory experience, undergraduate research projects, a year-long capstone program where many of the projects are sponsored by industry, internships, and participation in students clubs and organizations. In this Newsletter, we feature the recent accomplishments of our students and Faculty. I hope you enjoy reading the Newsletter. If you would like to arrange a visit or need more information, please do not hesitate to contact us.

Sincerely,

John Abraham, Ph.D., Professor and Chair
[SDSU Mechanical Engineering](#)
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Join Us for Engineering Design Day 2024

31 Mechanical engineering teams will showcase their projects at the Design Day on May 1st, 2024 in Viejas Arena. Additional information about ME projects and free parking is available [here](#).

SAVE THE DATE

Senior Design Day 2024

Wed, May 1st • 1– 4 PM • 



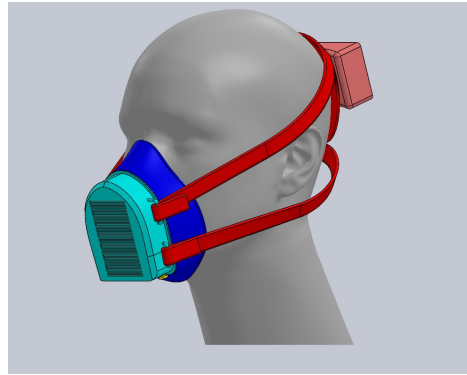
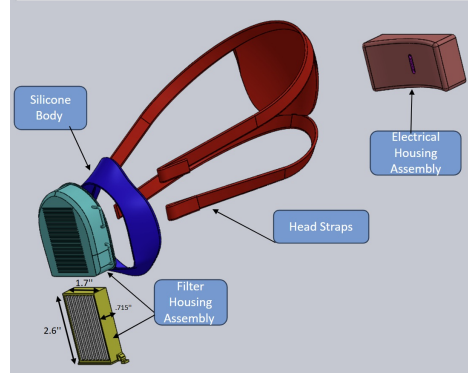
Students Working on Their Capstone Projects in the Northrop Grumman Fabrication Facility



**MediMask Design Team
Manufactures an Elastomeric**

Half-Mask Respirator

The MediMask design team is sponsored by Hiro PPE to design and manufacture an elastomeric half-mask respirator intended for healthcare workers while adhering to strict NIOSH/CDC requirements. Alongside industry professionals, the team has developed a removable filter cartridge that allows the user to replace the filter quickly if the mask were to be compromised. While maintaining filter efficiency, this design solves the problem of single-use medical-grade masks that are commonly used in medical environments today. Read more [here](#).



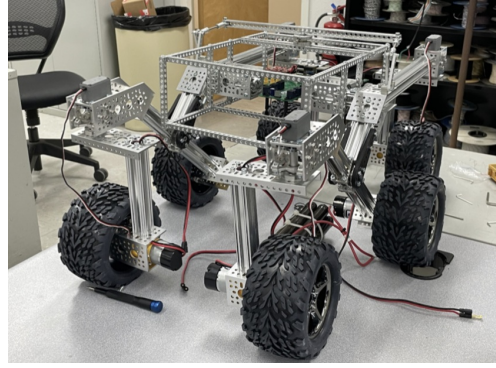
Team Aztec Regolith Environment Sculptor Collaborates with Local Highschools With Hands-On Activities

Team Aztec Regolith Environment Sculptor (ARES) is a joint team composed of Mechanical Engineering, Electrical Engineering, and Computer Engineering undergraduate students participating in the NASA Lunabotics 2024 challenge as part of SDSU's Engineering Senior Design course. Read more [here](#).

Team RASC-AL's Works on Proposal for the NASA Competition

Lately, the team has been working on prototyping for the senior design project. Leading up to March 7th, we have been

working tirelessly on research and developing our proposal for the NASA competition. Read more [here](#).



Fall 2023 Design Day Photos

The Fall 2023 Design Day was held December 7th, 2023 in the EIS courtyard. Seventeen teams showcased their projects to sponsors and visitors. The photos below are images from the displays.



Student Success



Oscar Correa

Oscar Correa's Unusual Path to a BSME Degree

As a non-traditional student, Oscar started his college path almost 20 years ago, originally as a political science and international studies major. After realizing that he was going to school because he was told it was “the next step”, he dropped out of school with about a year left to graduate. Fast forward to today, and his academic path had changed drastically, deciding to pursue a BS in mechanical engineering and facing his fear of math and science. With this new path in front of him, Oscar has been able to overcome his fears of math and science and has been somewhat of an ambassador for engineering and overcoming self-doubt and obstacles. He finally graduated with his BS in mechanical engineering and is currently pursuing his Master’s degree and is active in helping other engineering students achieve their full potential.



Senior Brandon Wells, one of nine San Diego State University students, has received the 2024 Quest for the Best award, recognizing high-achieving SDSU students for outstanding performance in academics and community service.

Read more [here](#).

Engineering students Recognized with awards at the 2024 SDSU Student Research Symposium

More than 600 students showed their scholarly projects at the 2024 Student Research Symposium. Among the awardees are several mechanical engineering students. Read more [here](#).



Paulette Suro, Ahmad Abushanab, Saja Sinnawi, Neharika Ravichandran, Jacob Baker, and Smruthi Jaishankar Iyer
Graduate Research Excellence Award

A Novel Approach in Diabetes Management: The Development and Clinical Implications of a MEMS Cuff Electrode for Vagus Nerve Stimulation
Mentor: Dr. Sam Kassegne



Anil Singh
Graduate Research Excellence Award

Mechanical Properties of Additively Manufactured Fiber-Reinforced Composites
Mentor: Dr. George Youssef



Brandon Huffman
Graduate Research Excellence Award

Material Hybridization for Tunable Performance of 3D Printed Lattice Structures
Mentor: Dr. George Youssef



Celia Rufo Martin
Women in Engineering Award 1st Place

Multi-Faceted Mechanics Analysis of Novel Auxetic Meta-Structures
Mentor: Dr. George Youssef



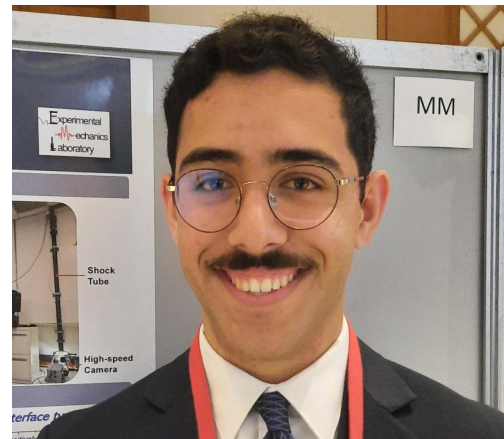
Maryam Ghorbani
Women in Engineering Award 2nd Place

Phase Composition and Sintering Behavior of Chemical Bonded Hydroxyapatite/Biphasic Calcium
Mentor: Dr. Elisa Torresani



Ansel Flanagan
Undergraduate Research Excellence Award

Characterization of 3D Printed Fiber-Reinforced Composites
Mentor: Dr. George Youssef



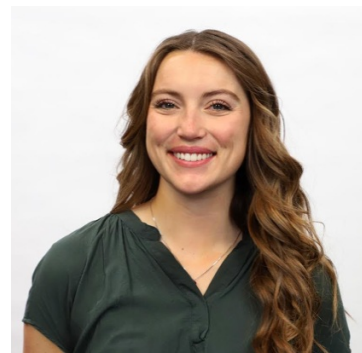
Paul Kouvaka
Undergraduate Research Excellence Award

Tensile Behavior of Density-Graded Polyurea Elastomeric Foams
Mentor: Dr. George Youssef

Reflections from Some of our Outstanding Graduating Seniors



Audrey Meador



Amber O'Brien

Audrey Meador is a Mechanical Engineering student with a Bioengineering Emphasis. On campus, she serves as the president of the Biomedical Engineering Society, works as a peer navigator for the Center for Student Success in Engineering, and is on the SDSU ski & snowboard team. Additionally, she is involved in research in the Cardiovascular Biomechanics Lab with Dr. Karen May-Newman. Read more [here](#).



Jessica Munoz

Looking back at her experience at SDSU as a Mechanical Engineering major, Jessica can firmly say that this was the best school she could have attended. For the past two years, Jessica has interned at SDSU's ZIP Launchpad and has thoroughly enjoyed her experience with various hands-on projects and expanding her skills in a variety of fields that she would not have been exposed to anywhere else. Read more [here](#).

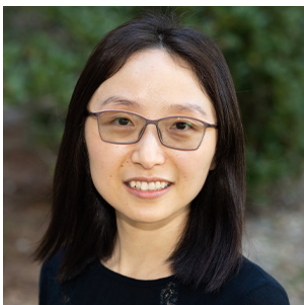
The past four years of learning in the Mechanical Engineering program here at SDSU have been the most challenging and rewarding years of Amber's life. Amber made it a point to completely immerse herself in her major, forming study groups that would meet every day for weeks as they'd struggle through exam after exam all in an effort to learn and understand more than they did the previous week. Read more [here](#).



Devin Seyfarth

Devin Seyfarth is a 4th year Mechanical Engineering student graduating in May 2024. Born and raised in San Diego, he developed a passion for engineering through his high school's 3-year Manufacturing and Construction Pathway. Devin is currently part of Team No Pressure, a Senior Capstone Design team under the sponsorship of Dr. Meysam Heydari Gharacheshmeh and the Advanced Manufacturing for Energy Devices (AMED) Laboratory. Read more [here](#).

Recent Faculty Awards



San Diego State University, Prof. Lingping Kong (PI) and Prof. Chris Mi (Co-PI), in partnership with Solid Energies Inc., have been awarded \$900,000 in funding from the U.S. Department of Energy Advanced Research Projects Agency-Energy (ARPA-E)

The funding is part of ARPA-E's Pioneering Railroad, Oceanic and Plane ELectrification with 1K energy storage systems (PROPEL-1K) program, which aims to develop energy storage systems with "1K" technologies capable of achieving or exceeding 1000 Watt-hour per kilogram (Wh/kg) and 1000 Watt-hour per liter (Wh/L). They will develop a new

generation of safe, high power, energy dense, and long-lasting solid-state Lithium-air batteries (SSLaBs) for heavy duty vehicle application. Dr. Lingping Kong will focus on rational design of three-phase interface with ionic/electronic conductivity and highly active catalyst to promote four-electron involved electrochemical reaction. Read more [here](#).

Dr. Asfaw Beyene, Professor of Mechanical Engineering, has received a grant of \$754,808 from the Department of Energy in support of the SDSU Industrial Assessment Center.



Experimental Mechanics Lab (EML) News

Dr. George Youssef, Professor of Mechanical Engineering, has been elected a Fellow of the American Society of Mechanical Engineers (ASME).

Dr. George Youssef, Professor of Mechanical Engineering, has been selected to receive a Fulbright U.S. Scholar Award in the 2024–2025 academic year to solidify EML's research with our collaborators in Spain.

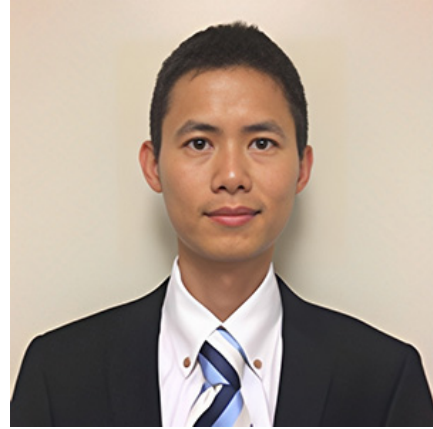
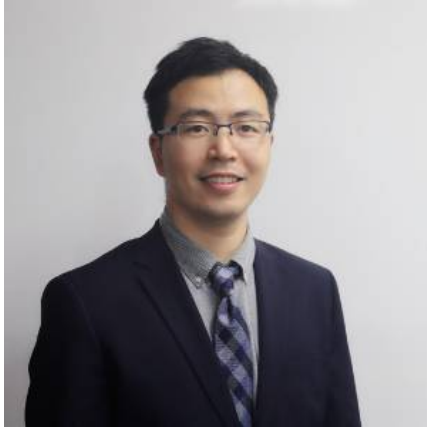


The Experimental Mechanics Laboratory receives a Grant of \$450,552 from the Navy (Office of Naval Research) for innovation in terahertz-based mechanics.

The proposed research aims to fully develop a novel terahertz strainmetry system, i.e., a transformative experimental solid mechanics technique to probe and quantify internal strains, capturing the microstructural evolutions of cellular and bulk polymers during deformation and uncovering the fundamental mechanisms responsible for the overall mechanical behavior. The scientific outcome of the proposed research is the development of the first-of-its-kind deep-learning-based terahertz image correlation analyses for probing the internal strains before, during, or after loading in ungraded and density-graded polymeric foam structures.

Dr. Yang Yang and Dr. Wenwu Xu Use 3D Printer to Develop Protective Gear Inspired by Ocean Life

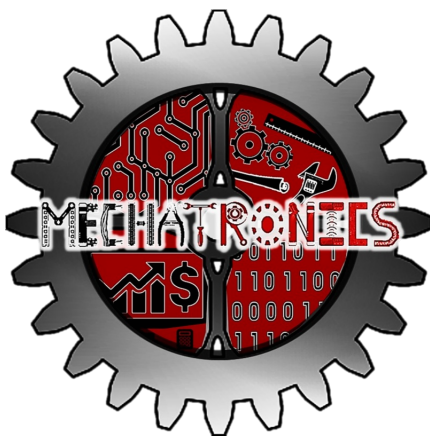
3D printing is making its way to the football field to help athletes stay safe, whether it is in games like the Super Bowl or for amateur athletes. A new protective body armor is inspired by an animal which can live in depths of close to 2,000 feet. Read more [here](#).



STUDENT ORGANIZATIONS



Baja SAE team consists of 35+ members who are challenged every school year to design, test, and build a single seat off road buggy that will compete in 3 nation-wide events where 100 global universities are evaluated in static and dynamic events.



The Mechatronics Club consists of 40 members who are developing an Autonomous Underwater Vehicle (AUV) for the 2019 RoboSub Competition.



Aztec Electric Racing, commonly referred to as AER, is a 501(c)3 nonprofit, electric Formula SAE team at SDSU. They design, build, and race a small-scale, high performance race car each year.



ASME Club sponsors workshops, tours and guest speakers to prepare students for a career in the field of Mechanical Engineering.

BMES Mission: Our mission is to promote the education of our members by supporting academic and professional excellence, and innovative research.



Quality of Life + brings together America's brightest engineering students at leading universities nationwide to create life-transforming assistive technology for our country's injured and ill heroes. Their mission is to foster and generate innovations that aid and improve the quality of life for those who have served our country.

SDSU FACULTY PAGES

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Dr. Samuel
Kassegne

Dr. Wenwu
Xu

Dr. Parag Katira

Dr. Yang Yang

Dr. Lingping
Kong

Dr. George Youssef,
PE

Dr. Karen May-
Newman

ME Dept. Website

From the Baja Car to Senior Capstone Projects to Scholarship support,
your generous giving makes a tremendous difference for our students.
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Welcome | Mechanical Engineering | College of...

The Department is the vibrant home to about 1400 undergraduate and graduate students, several active and award-winning student clubs and organizations, multiple teaching and research laboratories, internationally-renowned faculty who are...

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