

SLU BIOMEDICAL ENGINEERING NEWSLETTER



SAINT LOUIS UNIVERSITY

DEPARTMENT OF BIOMEDICAL
ENGINEERING

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CONFERENCES

SIGMA XI SYMPOSIUM

The Sigma Xi Scientific Research Honor Society is an honor society that was founded in 1886 and currently has more than 500 chapters in the world. The SLU chapter was founded in 1944 and hosts an annual symposium, the Sigma Xi Symposium, where researchers present on different subdivisions such as biological/life sciences, physical/engineering sciences, and social/behavioral sciences. This year's Sigma Xi Symposium took place at SLU on April 3, 2024. Thank you to our graduate and undergraduate students who presented! BME had an outsized presence at the event and our students won multiple awards!

UNDERGRADUATE STUDENT SHOWCASE

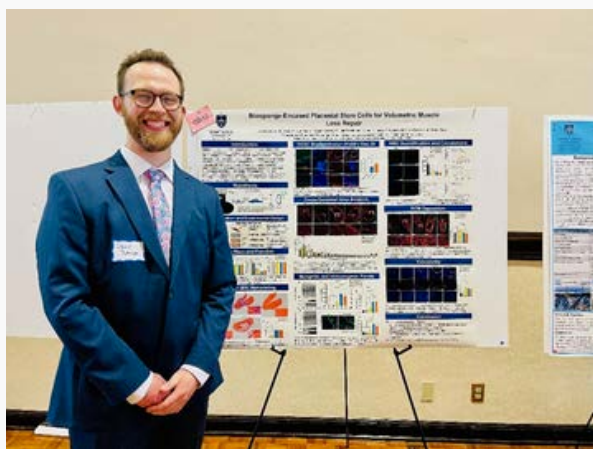
The Undergraduate Student Showcase took place on April 24, 2024. This was an opportunity for our undergraduates to showcase their research and design projects from their capstone experiences in the engineering, science, and aviation programs. Thank you to everyone who made this showcase possible!

GRADUATE STUDENT ASSOCIATION SYMPOSIUM

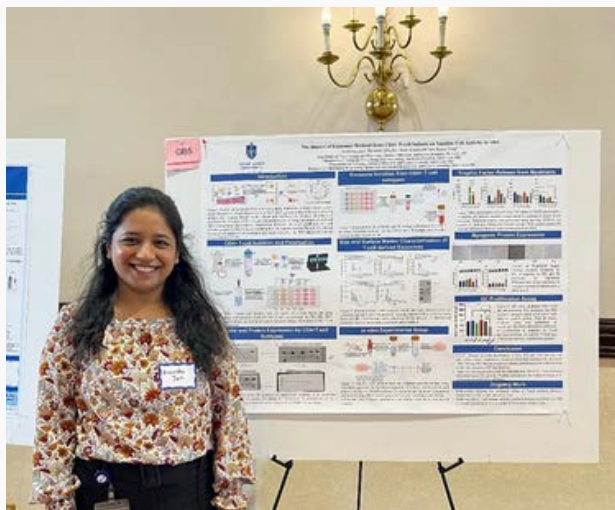
The GSA Symposium took place on April 26, 2024. This symposium showcased graduate student research from across SLU. Thank you to those who presented and attended!

POSTER PRESENTATIONS SIGMA XI SYMPOSIUM

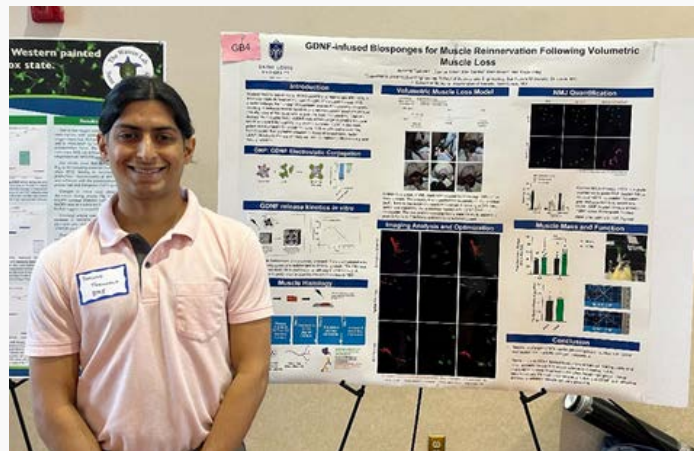
Johnson, D., Ridolfo, M., Mueller, R., Chermack, M., Brockhouse, J., Tadiwala, J., Jain, A., Bertram, K., and **Garg, K.**, "Biosponge-Encased Placental Stem Cells for Volumetric Muscle Loss Repair," Sigma Xi Research Symposium, SLU, April 3, 2024, St. Louis, MO: *2nd Place Poster Award in the Graduate Life Sciences category*



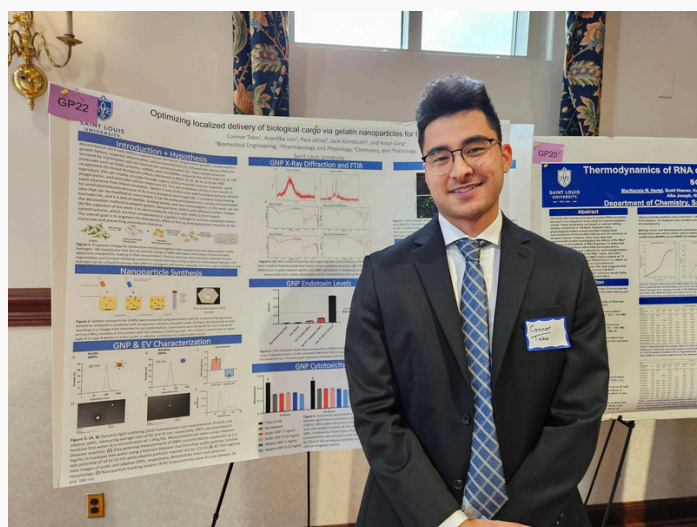
Jain, A., DiPaolo, R., Kornbluth, J., **Garg, K.**, "The Impact of Exosomes Derived from CD4+ T-cell Subsets on Satellite Cell Activity in vitro," Sigma Xi Research Symposium, SLU, April 3, 2024, St. Louis, MO



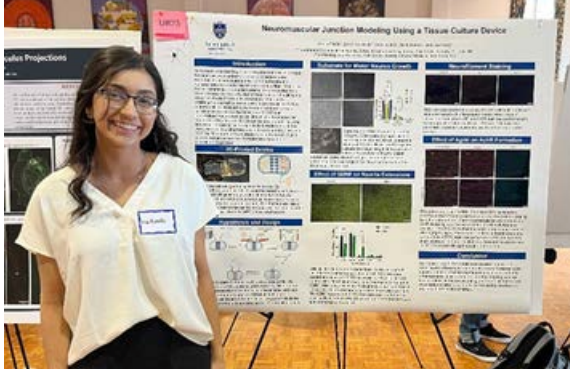
Tadiwala, J., Tobo, C., Ridolfo, M., Garg, K., "GDNF-infused Biosponges for Muscle Reinnervation Following Volumetric Muscle Loss," Sigma Xi Research Symposium, SLU, April 3, 2024, St. Louis, MO



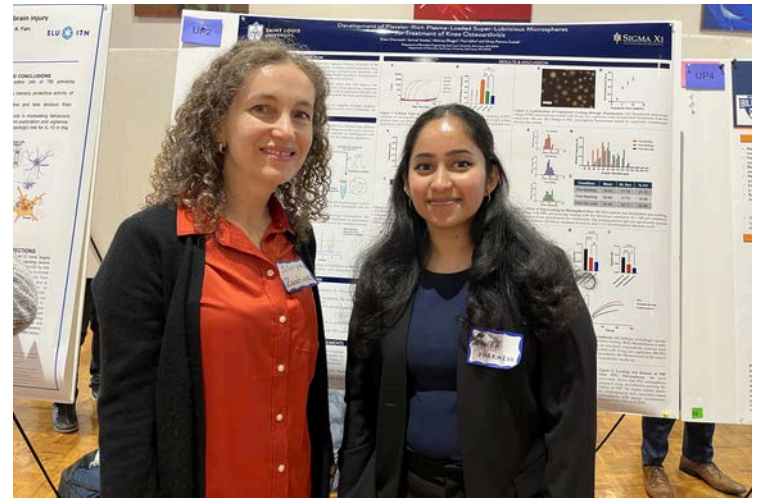
Tobo, C., Jain, A., Jelliss, P., Kornbluth, J., and **Garg, K.**, "Optimizing Localized Delivery of Biological Cargo via Gelatin Nanoparticles for Tissue Injury Sites," Sigma Xi Research Symposium, SLU, April 3, 2024, St. Louis, MO



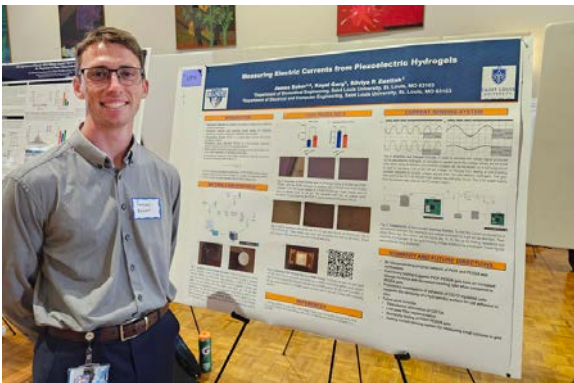
Ridolfo, M., Tadiwala, J., Jain, A., Johnson, D., Garg, K., "Neuromuscular Junction Modeling Using a Tissue Culture Device," Sigma Xi Research Symposium, SLU, April 3, 2024, St. Louis, MO



Dharmesh, E., Stealey, S., Zustiak, S. P., "Development of Platelet-Rich Plasma-Loaded Microgels using Electrospraying for Treatment of Knee Osteoarthritis," Sigma Xi Research Symposium, SLU, April 3, 2024, St. Louis, MO
Best Poster Award, 2nd Place, Undergraduate Physical Sciences Category

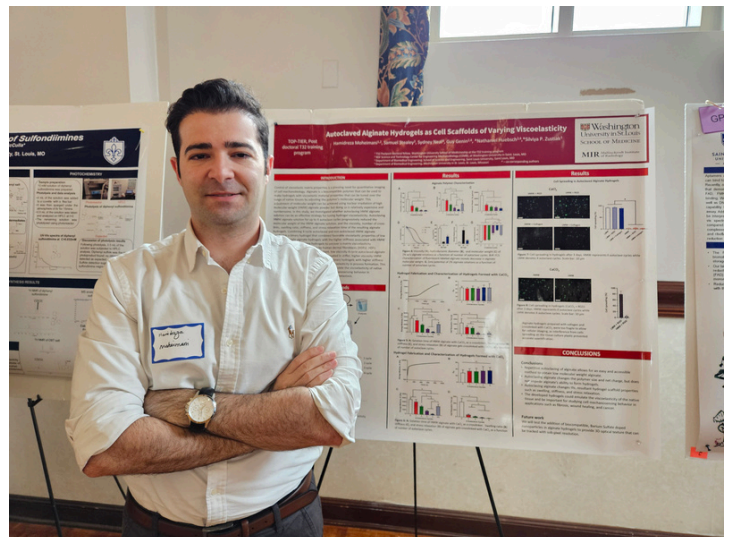
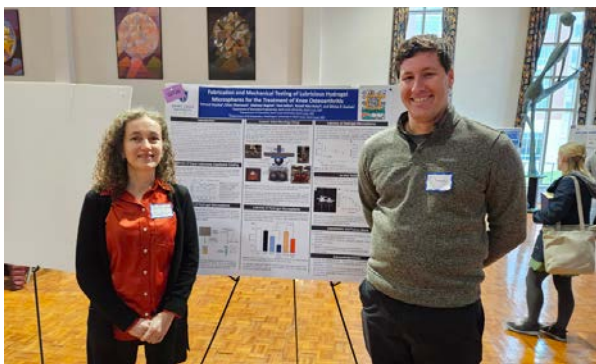


Baker, J., Zustiak, S. P., "Measuring Electric Currents From Piezoelectric Hydrogels," Sigma Xi Research Symposium, SLU, April 3, 2024, St. Louis, MO

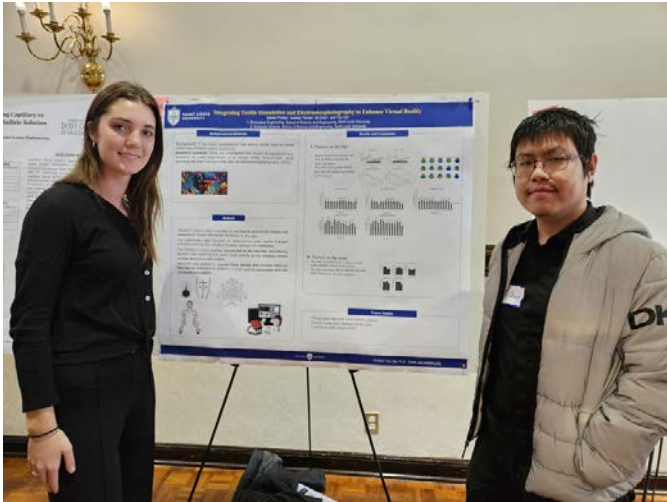


Moheimani, H., Stealey, S., Genin, G., Heusch, N., Zustiak, S. P., "Autoclaved Alginate as a Cell Scaffold with Tunable Viscoelasticity," Sigma Xi Research Symposium, SLU, April 3, 2024, St. Louis, MO

Stealey, S., Baghat, M., Jelliss, P., Zustiak, S. P., "Development of Super-Lubricious Hydrogel Microspheres for Treatment of Knee Osteoarthritis," Sigma Xi Research Symposium, SLU, April 3, 2024, St. Louis, MO



Phelps, N., Tienes, A., Chen, Q., Gai Y., "Integrating Tactile Stimulation and Electroencephalography to Enhance Virtual Reality," Sigma Xi Research Symposium, SLU, April 3, 2024, St. Louis, MO

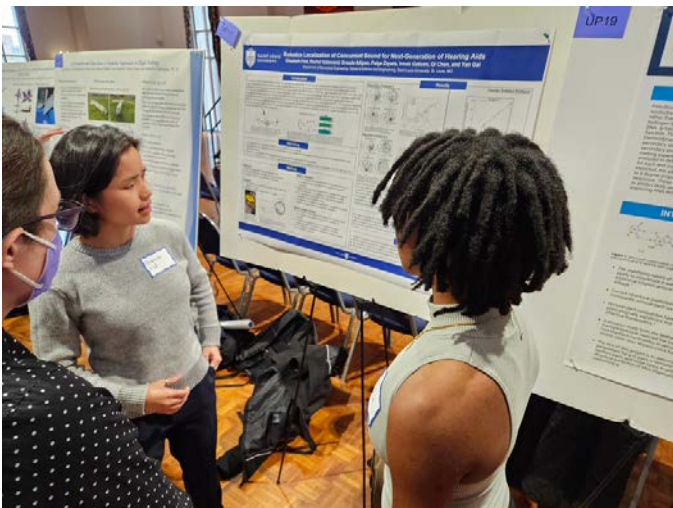


CONFERENCE AWARDS SIGMA XI SYMPOSIUM

David Johnson, 2nd Place Poster Award in the Graduate Life Sciences category!



Flad, E., Gatewood, R., Adigwe, O., Zapata, P., Gokcen, I., Chen, Q., Gai, Y., "Robotics Location of Concurrent Sound for Next-Generation of Hearing Aids," Sigma Xi Research Symposium, SLU, April 3, 2024, St. Louis, MO



Ether Dharmesh, 2nd Place Poster Award in the Undergraduate Physical Sciences category!



POSTER PRESENTATIONS UNDERGRADUATE STUDENT SHOWCASE

Congratulations to our BME seniors for completing their senior design projects! Check out their projects below and find more information by clicking [HERE](#).



DEXTRAGRIP

Grace Almgren, Angie Romanelli, Abby Kieffer, Ryan Mueller



SMARTCANE TECHNOLOGY

Jonel Olar, Robert Bucks, Owen Miller
Cati Welby, Megan Chermack



SMARTWEIGHT SYSTEM

Caroline Murphy, Almar Myrtaj,
Sam Silva, Dimitri Loli



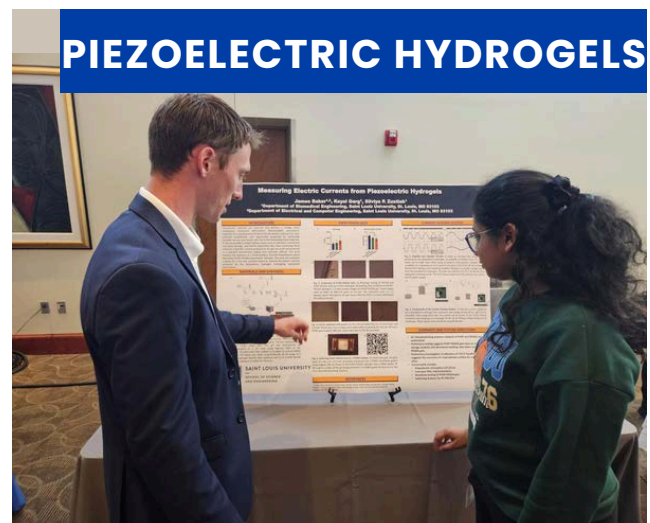
ROBOTIC PROSTHETIC HAND

Gerard Peña, Katie Woehlert, John Melulis,
Natalie Phelps, Talon Krieger



FLUIDIX - LYMPHEDEMA TREATMENT DEVICE

Ether Dharmesh, Saloni Shringarpure, Ryan Hilty,
Julia Brockhouse, Jessica Robinson



PIEZOELECTRIC HYDROGELS

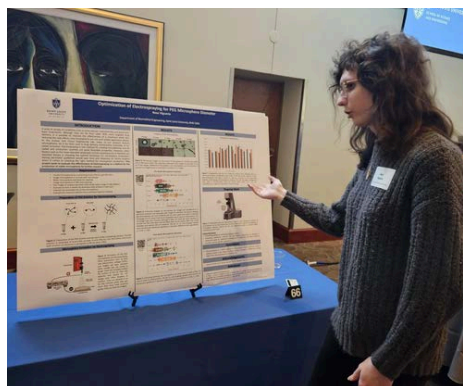
James Baker

POSTER PRESENTATIONS UNDERGRADUATE STUDENT SHOWCASE



SHEAR WAVE TENSIO METER FOR ACHILLIES LOAD MEASUREMENT IN ANIMAL MODELS

Patrick Hinkle



OPTIMIZATION OF ELECTROSPRAY- ING FOR THE CREATION OF LARGE DIAMETER MICROSPHERE FOR VESSEL OCCLUSION

Rose Viguerie

ORAL PRESENTATION GRADUATE STUDENT SYMPOSIUM

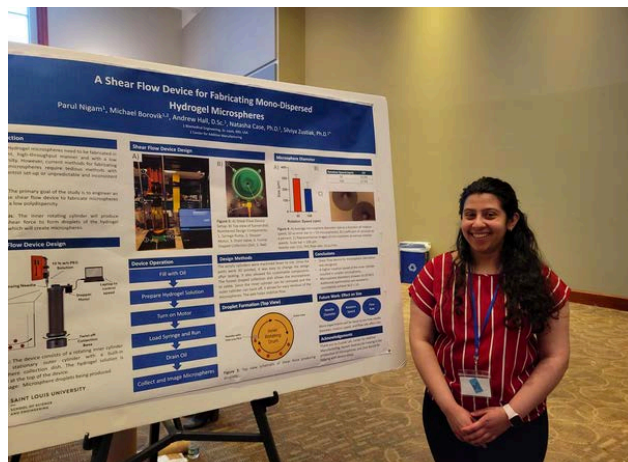
**Johnson D., Ridoflo M.,
Mueller R., Chermack M.,
Brockhouse J., Tadiwala
J., Jain A., Bertram K.,
Garg K.,** "Combination
Therapy of Biosponge
Encapsulated
Placental Stem Cells for
Traumatized Muscle,"



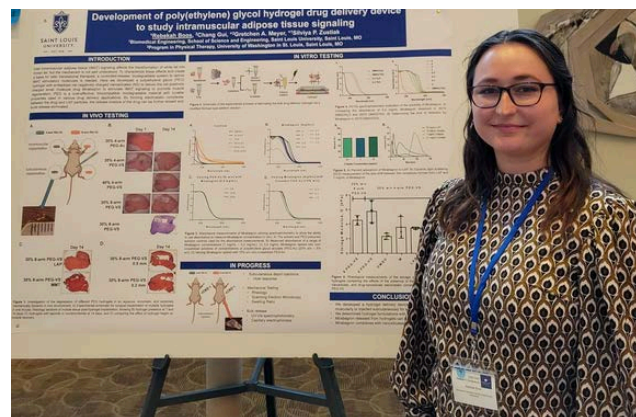
GSA Symposium, SLU, April 26, 2024, St. Louis,
MO: 1st Place Oral Presentation Award in the
Graduate Physical Sciences category

POSTER PRESENTATIONS GRADUATE STUDENT SYMPOSIUM

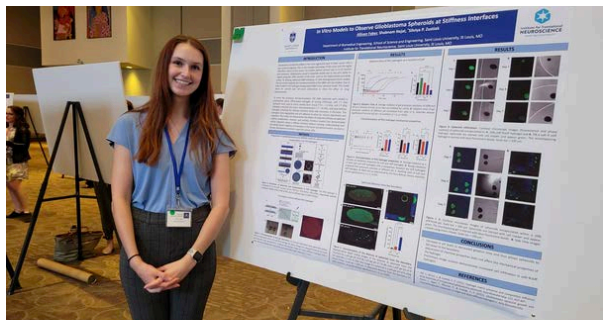
**Nigam, P., Borovik, M., Hall, A., Case, N.,
Zustiak, S. P.,** "A Shear Flow Device for
Fabricating Mono-Dispersed Hydrogel
Microspheres," (Poster), Graduate
Student Association Symposium, SLU,
April 26, 2024, St. Louis, MO



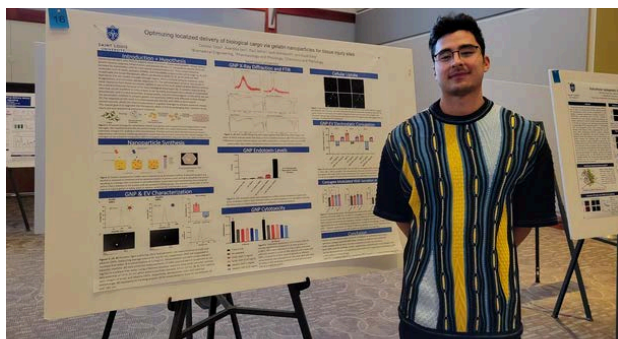
**Boos, R., Gui, C., Meyer, G. A., Zustiak, S.
P.,** "Development of Polyethylene Glycol
Hydrogel Drug Delivery Device to Study
Intramuscular Adipose Tissue
Signaling," (Poster), Graduate Student
Association Symposium, SLU, April 26,
2024, St. Louis, MO



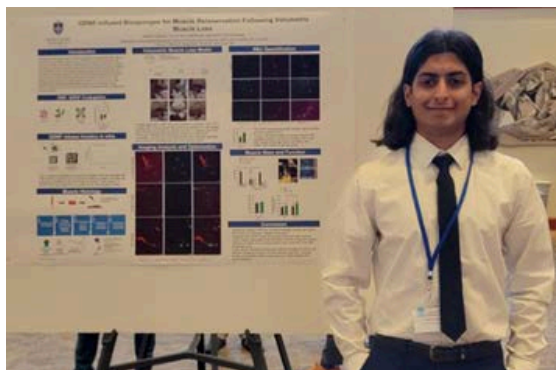
Faber, A., Nejat, S., Zustiak, S. P., "In Vitro Models to Observe Glioblastoma Spheroids at Stiffness Interfaces," (Poster), Graduate Student Association Symposium, SLU, April 26, 2024, St. Louis, MO



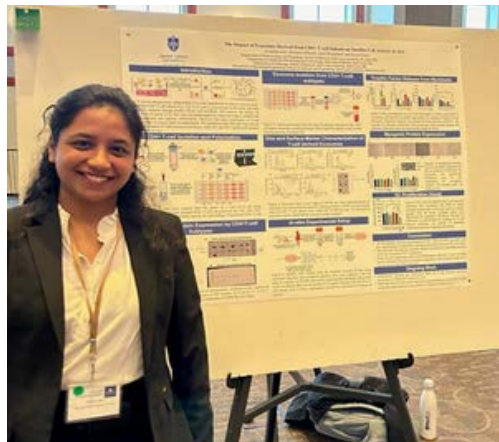
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CONFERENCE AWARDS GSA SYMPOSIUM



Alli Faber, 2nd place, Best Poster Presentation in the Life Sciences category



Rebekah Boos, 3rd place, Best Poster Presentation in the Physical Sciences category

David Johnson, 1st Place, Oral Presentation Award in the Graduate Physical Sciences category



UNDERGRADUATE STUDENT SPOTLIGHT

GRACE ALMGREN

Congratulations to Grace Almgren (Senior) for earning a Fulbright English Teaching Assistantship. Grace will travel to Spain where she will work with students at the early childhood through university level.



[Click the image to see full article!](#)

"The Fulbright Program is the flagship international educational exchange program sponsored by the U.S. government and is designed to increase mutual understanding between the people of the United States and the people of other countries. In partnership with more than 160 countries worldwide, the Fulbright U.S. Student Program offers opportunities to graduating college seniors, graduate students, and young professionals. Program participants pursue graduate study, conduct research, or teach English abroad." ("SLU Students Receive Fulbright Recognition," *SLU Newsroom* online. April 25, 2024)



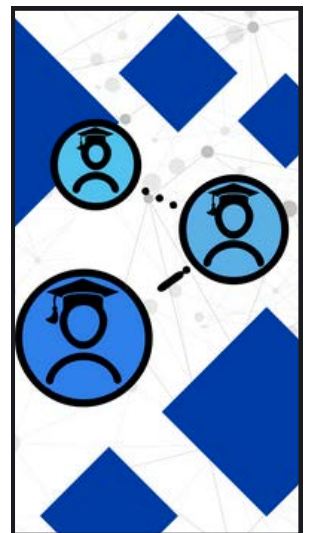
STEREOTAXIS FIELD TRIP

Thank you to Stereotaxis for hosting a tour for BMES and the BME department on April 16th, 2024! We enjoyed seeing their unique approach to pioneering endovascular robotics and look forward to staying connected with them in the future!



ATTENTION 2024 GRADUATES AND BME ALUMNI

Are you graduating this year? Are you a SLU BME Alumni? If so, we invite you to fill out this form telling us where you have landed after graduation. With your permission, we would love to highlight your career achievements and stay connected with you in the future! Thank you!



[**BME ALUMNI FORM**](#)

SOCIAL MEDIA UPDATES

Have you checked out our new series, "Get to Know the Professor" yet? Dr. Gai is the next professor who will be featured in June! As you wait for her interview to be released, check out her science fiction book on Amazon!



Click the image to check out Dr. Gai's book!

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