

BME Bulletin

The Official SLU Biomedical Engineering Newsletter
School of Science and Engineering | Saint Louis University

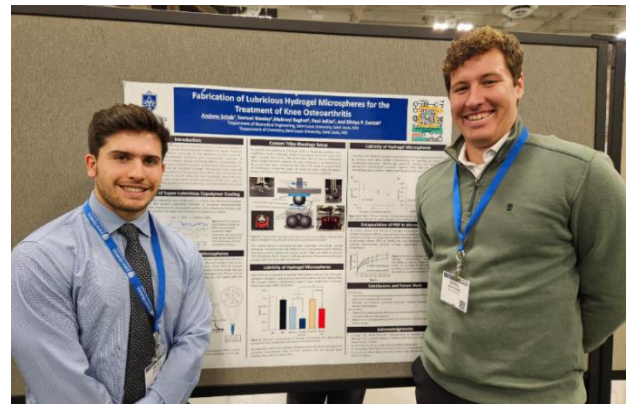


Grants and Publications

Dr. Yan Gai's NIH-R15 project (1R15DC021563-01), titled "Speech Localization and Enhancement for Next-Generation Hearing Devices", has been recommended for funding by the National Deafness and Other Communication Disorders Advisory Council.

David Johnson and **Dr. Koyal Garg** published original research article "Treatment of volumetric muscle loss in female rats with biomimetic sponges" in European cells and materials journal (IF: 4.325).
<https://www.ecmjournal.org/papers/vol046/pdf/v046a02.pdf>

1. **A. Schab, S. Stealey, P. Jelliss, *S. P. Zustiak**, "Synthesis and optimization of Poly(DMA-co-SBMA) polymer as a lubricous coating for microgels: Towards Application in the Treatment of Knee Osteoarthritis", (Poster).

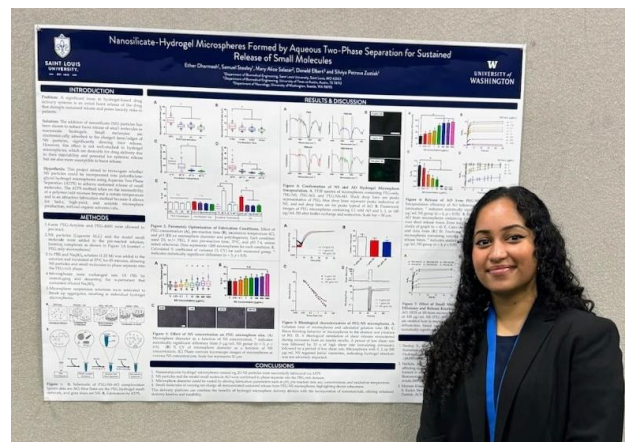


Conference Presentations

VCU BME Seminar Series

Dr. Koyal Garg presented her research work entitled "Regenerative and Rehabilitative Strategies for Functional Muscle Recovery Following Trauma" at Virginia Commonwealth University (VCU) Biomedical Engineering Seminar Series on Oct 18, 2023.

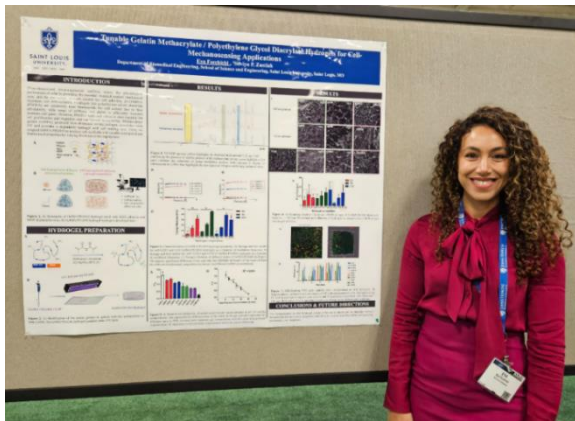
2. **E. Dharmesh, S. Stealey, M. Salazar, D. Elbert, *S. P. Zustiak**, "Nanosilicate-Hydrogel Microspheres Formed by Aqueous Two-Phase Separation for Sustained Release of Small Molecules", (Poster).



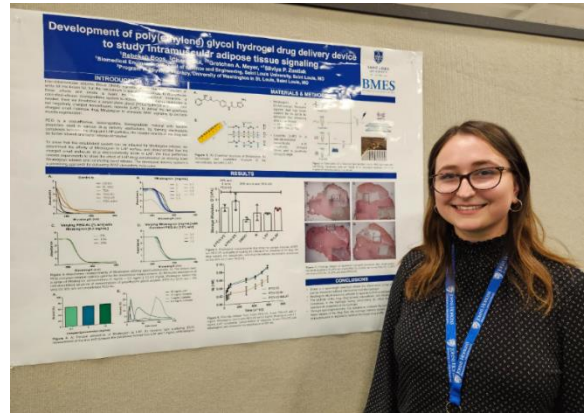
BMES 2023 Annual Meeting

Thank you to everyone who presented at the 2023 Biomedical Engineering Society Annual Meeting in Seattle, Washington, October 11-14.

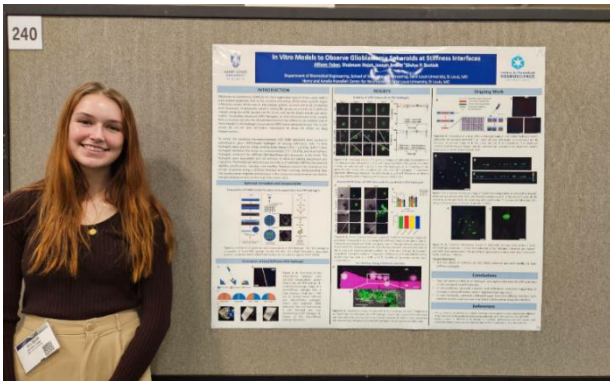
3. **E. Ferchichi**, ***S. P. Zustiak**, “Tunable gelatin methacrylate polyethylene glycol hydrogels for GBM mechanosensing applications”, (Poster).



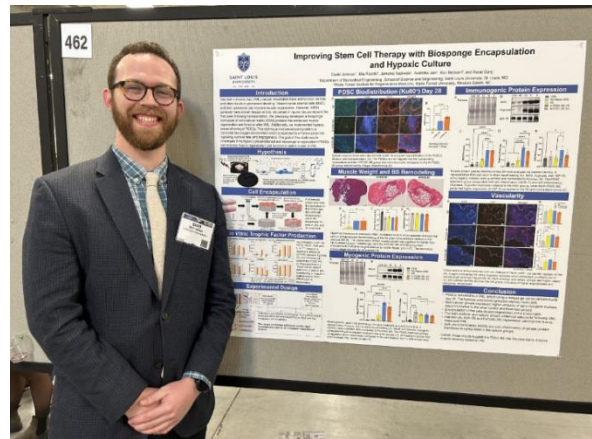
6. **#R. Boos**, C. Gui, G. Meyer, ***S. P. Zustiak**, “Development of poly(ethylene) glycol hydrogel drug delivery device to study intramuscular adipose tissue signaling”, (Poster).



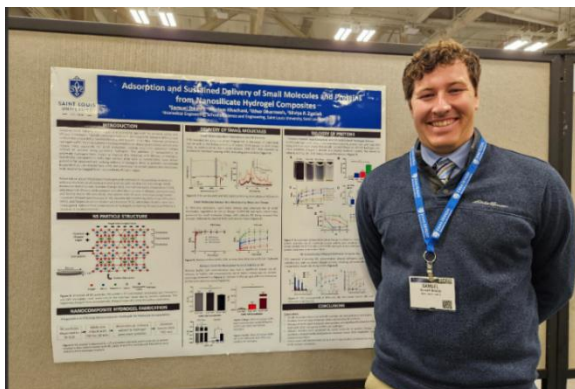
4. **A. Faber**, S. Nejat, J. Bruns, ***S. P. Zustiak**, “Glioblastoma Spheroid Growth, Infiltration, Motility, and Chemotherapeutic Responses in Single and Dual-Stiffness Hydrogels”, (Poster).



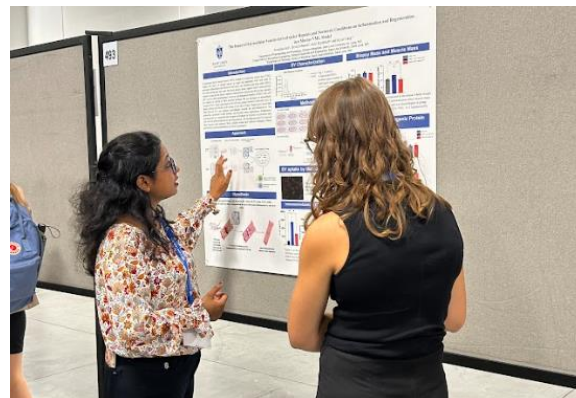
7. **#D. Johnson**, M. Ridolfo, J. Tadiwala, A. Jain, K. Bertram, ***K.Garg**, “Improving Stem Cell Therapy with Biosponge Encapsulation and Hypoxic Culture”, (Poster).



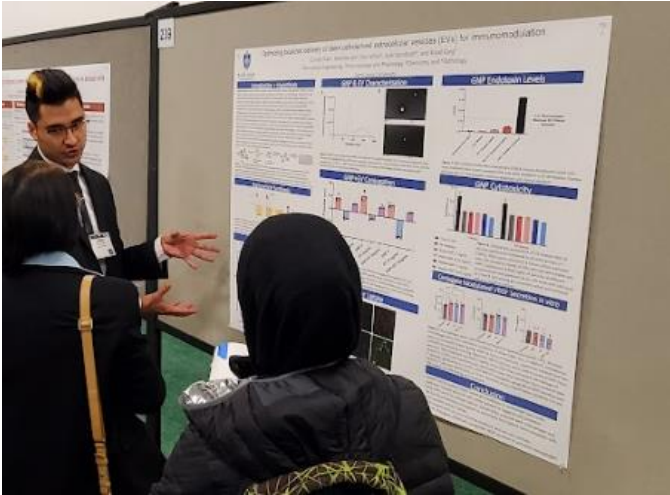
5. **#S. Stealey**, A. Gaharwar, ***S. P. Zustiak**, “Nanosilicate Hydrogel Composites for Sustained Delivery of Small Molecules and Proteins”, (Poster).



8. **#A. Jain**, **D. Johnson**, J. Kornbluth, and ***K. Garg**, “The Impact of Extracellular Vesicles derived under Hypoxic and Normoxic Conditions on Inflammation and Regeneration in a Murine VML Model”, (Poster).



9. #C. Tobo, A. Jain, P. Jellis, J. Kornbluth, *K. Garg “Optimizing localized delivery of stem cell-derived extracellular vesicles (EVs) for immunomodulation”, (Poster).



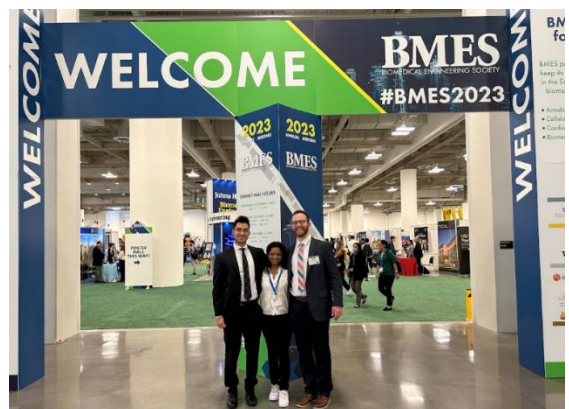
We also had a collaborative oral presentation by one of our collaborators:

#S. G. Zambuto, S. S. Kolluru, A. M. Mascot, E. Ferchichi, S. P. Zustiak, J. L. Lowder, *M. L. Oyen, “Composite gelatin methacryloyl hydrogels and electrospun elastin fibers for vaginal tissue engineering applications”, (Oral).

This year the SLU BME Department managed a booth at the conference where many prospective graduate students were able to stop by the booth and check out the program and talk with current graduate students and faculty.



Check out other moments captured at the conference! Thank you again to BMES and all the students and faculty who made this possible!



2023 Annual Meeting of the Missouri Physiological Society (MOPHYS)

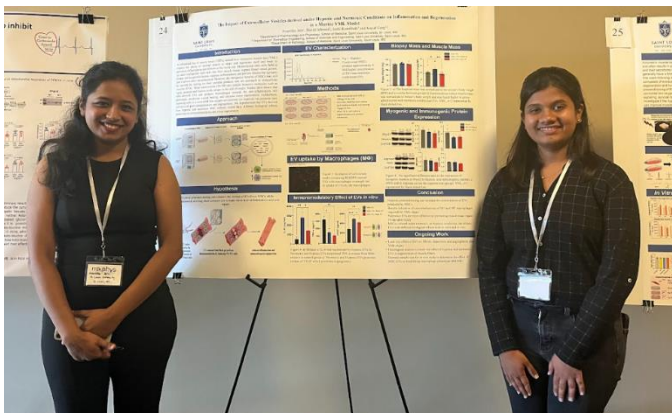
Thank you to those who presented at MOPHYS on September 30, 2023 at the Education Union at SLU.

David Johnson from Dr. Garg's lab presented a flash talk and poster on "Improving Stem Cell Therapy with Biosponge Encapsulation and Hypoxic Culture."

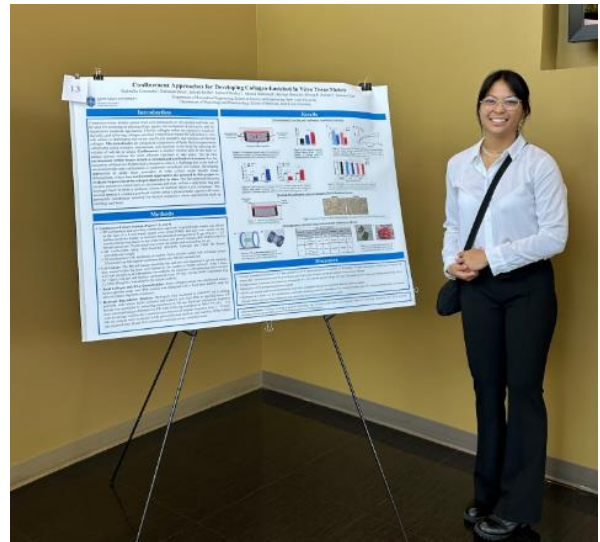
1. #**D. Johnson**, M. Ridolfo, **J. Tadiwala**, **A. Jain**, K. Bertram, ***K.Garg**, "Improving Stem Cell Therapy with Biosponge Encapsulation and Hypoxic Culture", (Poster), MOPHYS, September 30th 2023, St. Louis, MO



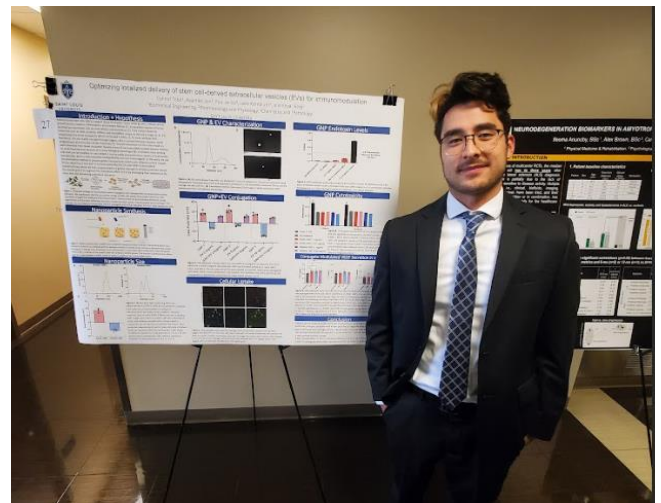
2. #**A. Jain**, **D. Johnson**, J. Kronbluth, ***K. Garg**, "The Impact of Extracellular Vesicles under Hypoxic and Normoxic Conditions on Inflammation and Regeneration in a Murine VML Model,"(Poster), MOPHYS, September 30th 2023, St. Louis, MO



3. #**G. Coronado**, **R. Boos**, **J. Krebs**, **S. Stealey**, **A. Mahmoud**, **M. Borovik**, **S. Zustiak**, ***N. Case** "Confinement Approaches for Developing Collagen-Enriched In Vitro Tissue Models", (Poster), MOPHYS, September 30th, 2023, St. Louis, MO



4. #**C. Tobo**, **A. Jain**, P. Jellis, J. Kornbluth, ***K. Garg** "Optimizing localized delivery of stem cell-derived extracellular vesicles (EVs) for immunomodulation", (Poster), September 30th, 2023, St. Louis, MO



Additional pictures can be found here:
<https://mophys.org/mophys-2023-pictures>.

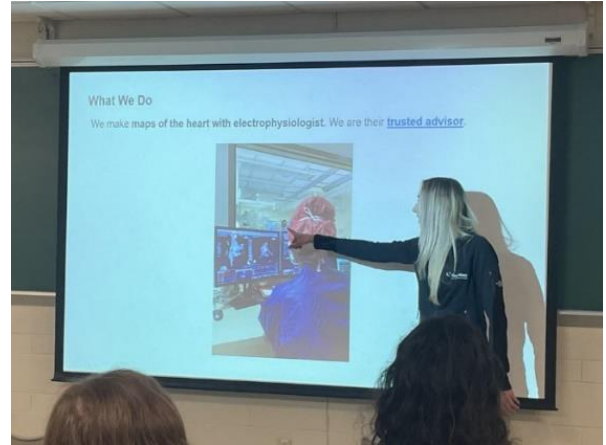
Poster Awards

2nd Place in 2nd-3rd year PhD category was awarded to Avantika Jain, Annual meeting of the Missouri Physiological Society (MOPHYS), St. Louis, MO, September 8. Congrats!

2nd Place in the 4th year PhD and postdoc category was awarded to David Johnson, Annual meeting of the Missouri Physiological Society (MOPHYS), St. Louis, MO, September 8. Congrats!



Thank you also to Biosense Webster for presenting to the Biomedical Engineering Society Student Chapter (BMES) about electrophysiology on October 10, 2023. Take a look at pictures from this event!



Undergraduate Student Spotlight

Srishti Mitra, a current undergraduate in SLU's BME program also had the opportunity to go to BMES in collaboration with WASHU's School of Medicine.

#S. Mitra, E. Morris, N. Khanal, A. Bauer, "Behavioral Movement Classification of Optogenetically-Evoked Motor Output in Awake Thy1-ChR2 Mice Using B-SOiD", (Poster), Biomedical Engineering Society Annual Meeting, October 11-14, 2023, Seattle, WA

