

SLU BIOMEDICAL ENGINEERING NEWSLETTER



SAINT LOUIS UNIVERSITY

DEPARTMENT OF BIOMEDICAL
ENGINEERING

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NEW FUNDING FOR MUSCULOSKELETAL TISSUE ENGINEERING LAB



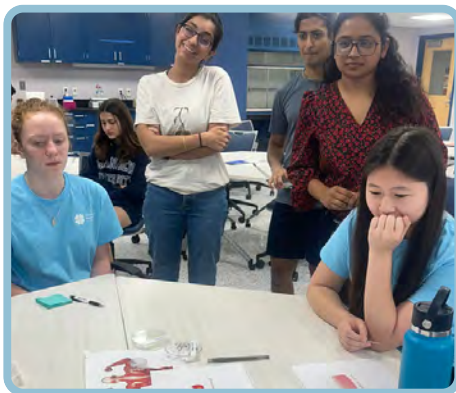
Wake Forest
School of Medicine
Institute for Regenerative Medicine

NIH National Institute of
General Medical Sciences

Dr. Koyal Garg received a research grant of \$749,172 as Principal Investigator from the [Department of Defense Peer-Reviewed Orthopedic Research Program \(PRORP\)](#) titled, "Regenerative Rehabilitation for Complex Musculoskeletal Trauma." The collaborators include Dr. Sara McBride-Gagyi (Ohio State University) and Dr. Ken Bertram (Wake Forest Institute of Regenerative Medicine). Additionally, Dr. Garg received an NIH equipment supplement of \$98,046 for her ongoing R15 grant to acquire a Nanoparticle Tracking Analysis System (NanoSightPro).

SLU BME WELCOMES COR JESU ACADEMY STUDENTS - JUNE 4, 2024

The Biomedical Engineering (BME) Department recently held an exciting event for high school students from Cor Jesu Academy that was both fun and interactive! Dr. Silviya Zustiak, BME Professor and Associate Chair, introduced the field of BME. Then, Dr. Koyal Garg and her enthusiastic students led the curious high schoolers through a series of hands-on activities, making the complex concepts of biomaterials and stem cells for tissue replacement and regeneration come to life in an engaging and fascinating way. Ph.D. students in Dr. Garg's lab, **Avantika Jain** and **Jamshid Tadiwala**, provided a sneak peek into their research projects and answered a slew of intriguing questions!



ORAL AND POSTER PRESENTATIONS



Dr. Silviya Zustiak and students from her lab presented at the Society of In Vitro Biology Annual Meeting in St. Louis, MO, June 8-12.

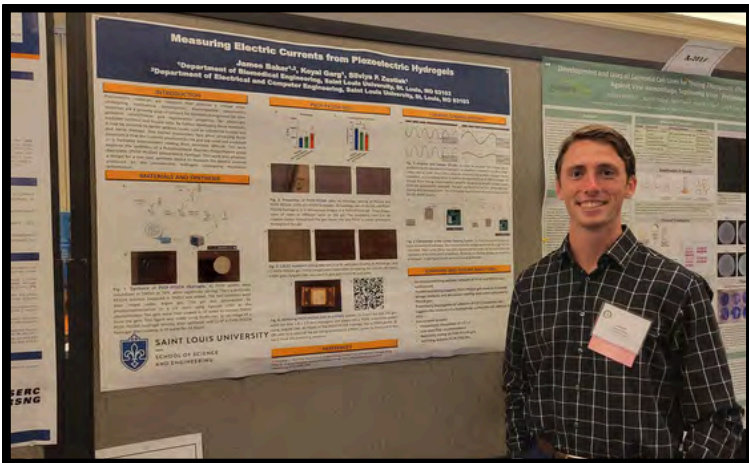
S. P. Zustiak,
"Synthetic Hydrogels as Drug Screening Platforms and Biotherapeutic Delivery Devices," (Invited Talk)



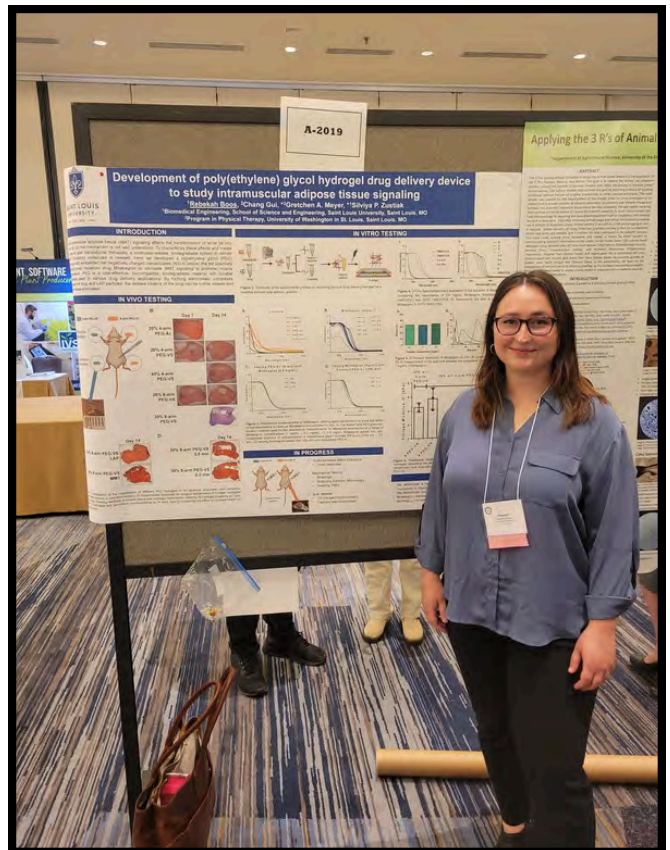
A. Faber, S. Nejat, S. P. Zustiak, "In Vitro Models to Observe Glioblastoma Spheroids at Stiffness Interfaces," (Oral)



J. Baker, K. Garg, S. P. Zustiak,
"Measuring Electric Currents from Piezoelectric Hydrogels," (Poster)



R. Boos, C. Gui, G. A. Meyer, S. P. Zustiak, "Development of polyethylene glycol hydrogel drug delivery device to study intramuscular adipose tissue signaling," (Poster)



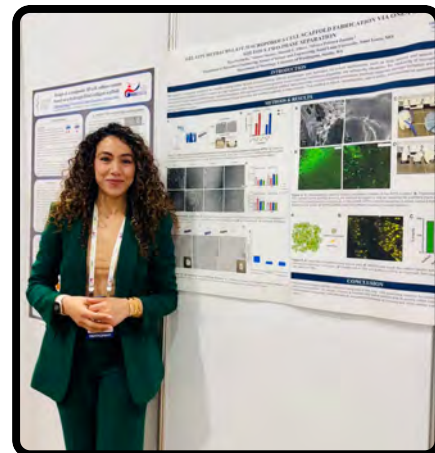
ORAL AND POSTER PRESENTATIONS CONT.



E. Ferchichi, A. Faber, B. Bromet, S. Nejat, S. P. Zustiak, "In Vitro Hydrogel-Based Models to Observe Glioblastoma Spheroid Growth, Invasion and Therapy Responsiveness at Matrix Interfaces," (Oral)



Eya Ferchichi, Ph.D. candidate in Dr. Silviya Zustiak's soft tissue engineering lab, represented SLU BME at the World Biomaterials Congress in Daegu, Korea in May. This international meeting occurs every four years and is organized by the Society for Biomaterials. Eya presented both an oral presentation and a poster at the conference.



E. Ferchichi, D. L. Elbert, S. P. Zustiak, "Gelatin Methacrylate Macroporous Cell Scaffold Fabrication via One-Pot Aqueous Two-Phase Separation," (Poster)

NEW PUBLICATION

2024 BME graduate, David Johnson, Ph.D., had his paper, "Combined Regenerative Rehabilitation Improves Recovery Following Volumetric Muscle Loss Injury in a Rat Model" published in the Journal of Biomedical Materials Research Part B: Applied Biomaterials. Contributing authors included **Connor Tobo, Jeffrey Au, Aakash Nagarapu, Natalia Ziemkiewicz, Hannah Chauvin, Jessica Robinson, Saloni Shringarpure, Jamshid Tadiwala, Julia Brockhouse**, Colin A. Flaveny, and **Koyal Garg**. To read the article click [here](#).



AIMS BIOMEDICAL ENGINEERING HANDS-ON PROGRAM



Saint Louis University's outreach program, [Adventures in Medicine and Science \(AIMS\)](#) recently hosted a weeklong camp for over 70 local high school students. Attendees had the opportunity to learn about the various subspecialties in the healthcare field through lectures and hands-on activities. Dr. Gary Bledsoe, Professor and Department Chair of Biomedical Engineering, was invited to talk to the students about the many different paths a biomedical engineer can take. Using drinking straws and other craft supplies, students were then challenged to make a prototype working hand that could pick up a golf ball and a small bottle. Nineteen different design groups accepted the challenge. While not all groups were successful, everyone seemed to have fun trying! The students asked great questions and could not wait to present their ideas to their peers at the end of the activity!



MASTER'S THESIS DEFENSE



Congratulations to **Alli Faber**, M.S., who successfully defended her master's thesis titled, "A Dual Stiffness Embedded Hydrogel Model to Study Glioblastoma Multiforme Motility at a Stiffness Interface" on June 18, 2024. Alli celebrated with students in Dr. Zustiak's lab.



ATTENTION 2024 GRADUATES AND BME ALUMNI

Did you graduate this year? Are you a SLU BME Alumni? If so, we'd like to invite you to fill out the form below to give us your updated contact information (email) and tell 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!



[BME ALUMNI FORM](#)



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