

Biomedical Engineering Graduate Program & Research Newsletter

School of Science and Engineering | Saint Louis University



Grants and Patents Awarded

Koyal Garg was awarded US Patent No. 11,744,922 entitled “Biomimetic sponges for tissue regeneration” on Sep 5, 2023. In related news, GenAssist, Inc. (a startup company launched by Dr. Koyal Garg’s students) received a small business innovation research (SBIR) phase 1 grant (\$274,9993) to study the effect of biomimetic sponges in a pig model of volumetric muscle loss. [https://patents.google.com/patent/US20190151513A1/en?q=\(koyal\)&inventor=garg&oq=koyal+garg](https://patents.google.com/patent/US20190151513A1/en?q=(koyal)&inventor=garg&oq=koyal+garg)

Koyal Garg (PI) received Institute of Translational Neuroscience (ITN) research award of \$10,000 for project entitled “Improving Functional Recovery from Traumatic Injuries through Enhanced Myofiber Innervation”. Mia Ridolfo (an ITN SURGE fellow in Dr. Garg’s lab) has begun working on this project with **Jamshid Tadiwala** (a PhD student in Garg lab).

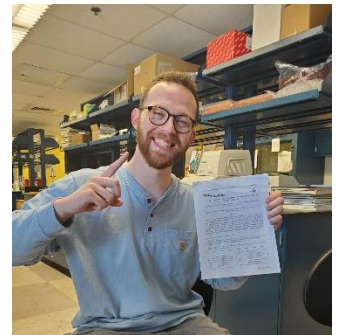
Publications

J. Bruns, S. Nejat, A. Faber, *S. P. Zustiak, “Tumor Spheroid Fabrication and Encapsulation in Polyethylene Glycol Hydrogels for Studying Spheroid-Matrix Interactions”, 2023, Journal of Visualized Experiments, in press
INVITED for Special Issue on “Biomaterial-based Tumor Spheroid and Organoid Models for Drug Screening Applications”

*S. P. Zustiak, *E. Jain, “Editorial: Feature Reviews in Pharmaceutical Technology”, Pharmaceuticals. 2023, 16(10), 1336

J. Orr, *Y. Gai, “Localizing Concurrent Sound Sources with Binaural Microphones: A Simulation Study” has been accepted by the Journal of “Hearing Research”.

David Johnson and 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). Article is currently in press.



Faculty Promotions

Newly promoted faculty, **Drs. Cooperstein** (promoted to Assistant Professor), **Zustiak** (promoted to Professor) and **Hall** (granted Emeritus Associated Professor), were honored at the Newly Promoted, Tenured and Emeritus Faculty 2023 celebration organized by SLU. Featured from left to right are Andy Hall, SSE Dean Triplett, Silviya Zustiak and Marta Cooperstein.

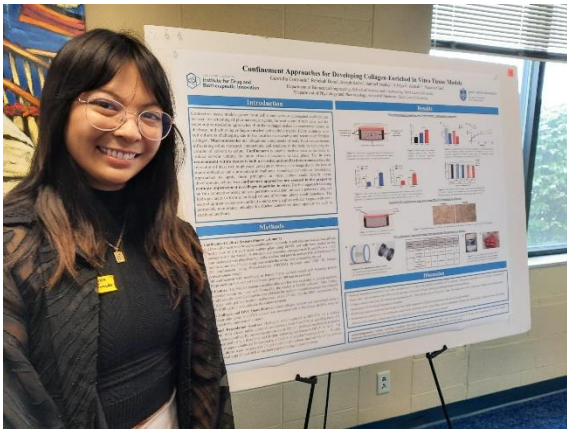


Conference Presentations

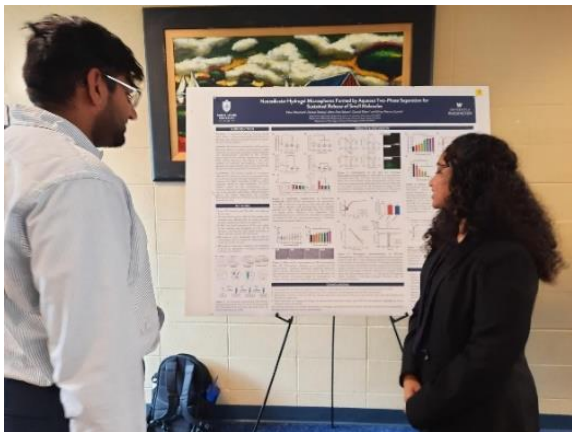
SLU Institute of Drug and Biotherapeutics Innovation

BME students and faculty participated in the 2nd Annual IDBI Symposium at SLU on Friday, September 8th. BME students presented 5 posters featured below.

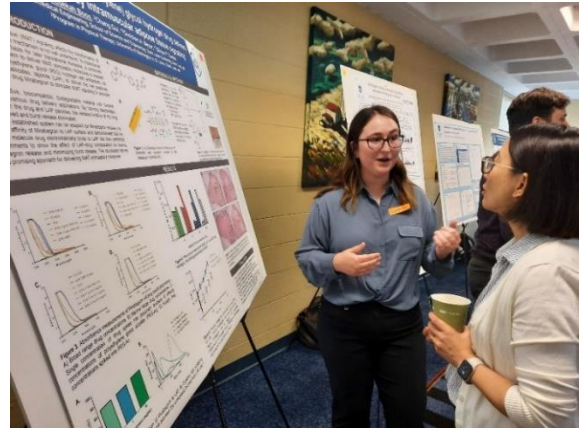
G. Coronado, R. Boos, A. Mahmoud, M. Borovik, S. P. Zustiak, N. Case “Confinement Approaches for Developing Collagen-Enriched In Vitro Tissue Models”, (Poster), SLU Institute for Drug and Biotherapeutic Innovation Symposium, September 8, 2023, St. Louis, MO



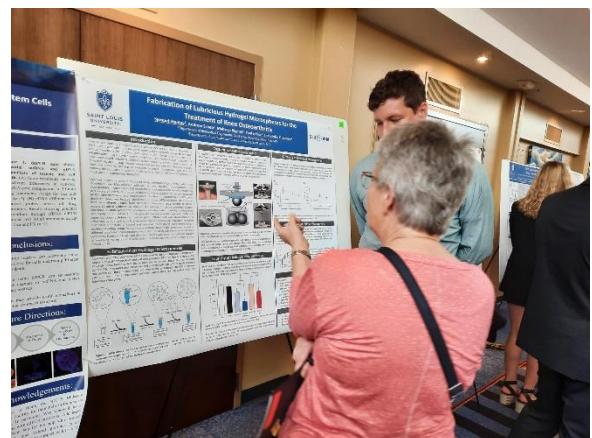
E. Dharmesh, S. Stealey, M. Salazar, D. Elbert, *S. P. Zustiak, “Nanosilicate-Hydrogel Microspheres Formed by Aqueous Two-Phase Separation for Sustained Release of Small Molecules”, (Poster), SLU Institute for Drug and Biotherapeutic Innovation Symposium, September 8, 2023, St. Louis, MO



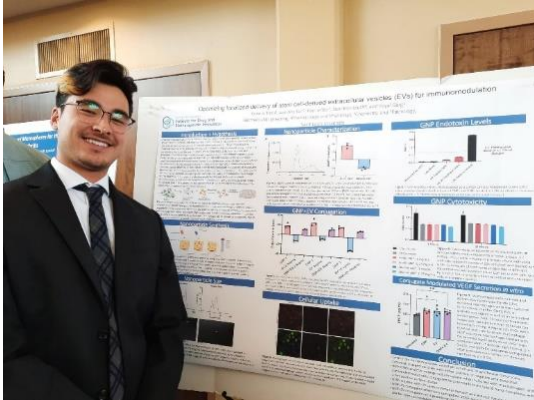
R. Boos, C. Gui, G. A. Meyer, *S. P. Zustiak, “Development of Poly(ethylene) glycol vinyl sulfone hydrogel drug delivery device to study intramuscular adipose tissue signaling”, (Poster), SLU Institute for Drug and Biotherapeutic Innovation Symposium, September 8, 2023, St. Louis, MO



S. Stealey, A. Schab, M. Baghat, P. Jelliss, *S. P. Zustiak, “Development of Super-Lubricious Hydrogel Microspheres for Treatment of Knee Osteoarthritis”, (Poster), SLU Institute for Drug and Biotherapeutic Innovation Symposium, September 8, 2023, St. Louis, MO

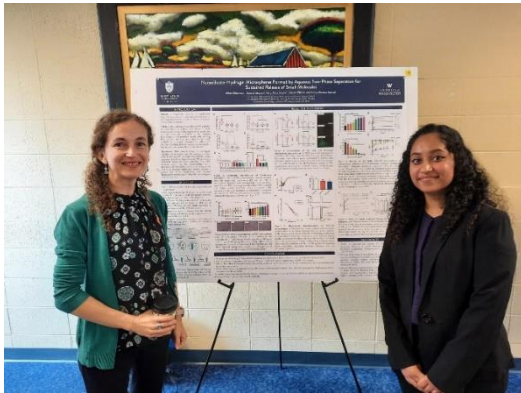


C. Tobo, A. Jain, P. Jellis, J. Kornbluth, K. Garg
 “Optimizing localized delivery of stem cell-derived extracellular vesicles (EVs) for immunomodulation”, (Poster), SLU Institute for Drug and Biotherapeutic Innovation Symposium, September 8, 2023, St. Louis, MO



Poster Awards

Best Poster award, 1st Place in the undergraduate category to undergraduate researcher Ether Dharmesh, Annual SLU IDBI Symposium, St Louis, MO, September 8. Congrats!



Best Poster award in the postdoc category to postdoc Samuel Stealey, Annual SLU IDBI Symposium, St Louis, MO, September 8. Congrats!



Retirement Party for Dr. Hall

The Biomedical Engineering Department celebrated **Dr. Andy Hall's retirement** with a party in his honor hosted by Dr. Gary Bledsoe. The faculty gifted Dr. Hall with a travel guitar and wished him a happy retirement!



BME Graduate Welcome Picnic and Orientation

Thank you to everyone who attended the 2nd annual BME Graduate Welcome Picnic and Orientation this past Sunday September 24th at Forest Park! Check out the fun with pictures of students and faculty competing in a cornhole/bags tournament, enjoying the wonderful weather, and appreciating everyone's company. Welcome again to all the new graduate students, looking forward to another great year!

