



SLU BME Newsletter

| January 2024 | SLU School of Science and Engineering |

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Happy New Year!

A Message from **Dr. Bledsoe**, BME Department Chair:

“Happy New Year everyone. I trust that your holidays have been refreshing, giving you the energy to meet challenges head on. As we enter the new year, let us all remember that we are here to learn, and let us rededicate ourselves to that wonderful opportunity, and let us celebrate our many successes together.”



Number of Publications: 15

Our papers appeared in multiple high-impact journals including *Acta Biomaterialia*, *Advanced Drug Delivery Reviews*, *Journal of Orthopaedic Research*, *Gels*, *Pharmaceuticals*, etc.

Total Amount of Grants and Research Funds Awarded: \$5,398,596

Our research was funded through a variety of sources including the *National Science Foundation*, and the *National Institute of Health* from where we have received an R01 and multiple R15 grants!

Number of Patents Obtained: 2

Congratulations to everyone for their hard work in 2023! We are looking forward to this year’s achievements!



2023 Yearly Recap

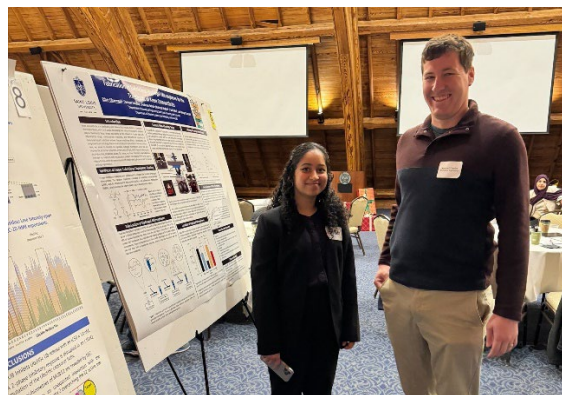
Total Number of Conferences Attended by SLU BME: 21

Notable conferences include the *Orthopedic Research Society* and *American Society for Biochemistry and Molecular Biology* meetings in March, the *Society for Interventional Radiology* and *Society for Biomaterials* meetings in April, and the *Biomedical Engineering Society* meeting in October.

December Research Highlights

Dr. Garg's research was highlighted by Washington University's Musculoskeletal Research Center (MRC) in its December newsletter. See link below.

<https://musculoskeletal.wustl.edu/news/core-a-research-highlights/>



S. Stealey, E. Dharmesh, *S.P. Zustiak, "Understanding Protein Interactions with Two-Dimensional Nanosilicate Particles", (Poster), Inaugural SLU Bio-Chem Research Symposium, SLU, December 9, 2023, St. Louis, MO

E. Dharmesh, S. Stealey, M. Baghat, P. Jelliss, *S.P. Zustiak, "Development of Super-Lubricious Microgels for the Treatment of Knee Osteoarthritis", (Poster), Inaugural SLU Bio-Chem Research Symposium, SLU, December 9, 2023, St. Louis, MO

Conference Presentations

Inaugural SLU Bio-Chem Research Symposium

Thank you to everyone who presented at the Inaugural SLU Bio-Chem Research Symposium!



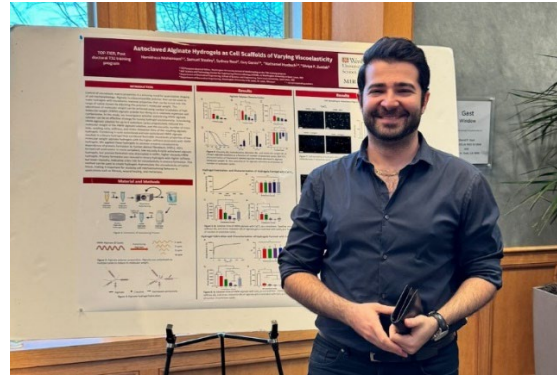
Dr. Zustiak gave a podium presentation titled "Stability of Proteins Released from Hydrogel and Nanocomposite Drug Delivery Devices" at the Inaugural SLU Bio-Chem Research Symposium at SLU on December 9, 2023.

E. Ferchichi, D. Elbert, *S.P. Zustiak, "Gelatin Methacrylate Macroporous Cell Scaffold Fabrication Via One-pot Aqueous Two-Phase Separation", (Poster), Inaugural SLU Bio-Chem Research Symposium, SLU, December 9, 2023, St. Louis, MO

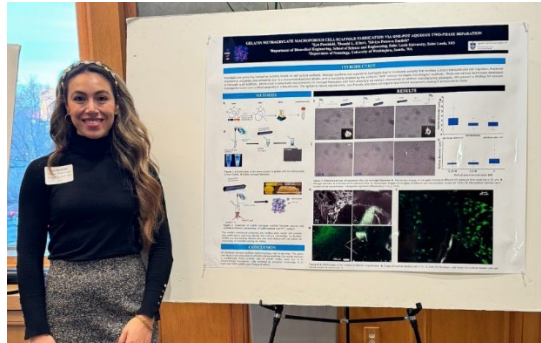
R. Boos, C. Gui, G. Meyer, *S.P. Zustiak, "Development of Poly(Ethylene) Glycol Hydrogel Drug Delivery Device to Study Intramuscular Adipose Tissue Signaling", (Poster), Inaugural SLU Bio-Chem Research Symposium, SLU, December 9, 2023, St. Louis, MO

D. Johnson, M. Ridolfo, J. Tadiwala, A. Jain, J. Brockhouse, R. Mueller, M. Chermack, J. Robinson, S. Shringarpure, K. Bertram, *K. Garg, "Enhancing Stem Cell Treatment via Bisponge Encapsulation and Hypoxic Preconditioning", (Poster), Inaugural SLU Bio-Chem Research Symposium, SLU, December 9, 2023, St. Louis, MO

C. Tobo, A. Jain, P. Jelliss, J. Kornbluth, *K. Garg, "Optimizing Localized Delivery of Biological Cargo via Gelatin Nanoparticles for Tissue Injury Sites", (Poster), Inaugural SLU Bio-Chem Research Symposium, SLU, December 9, 2023, St. Louis, MO

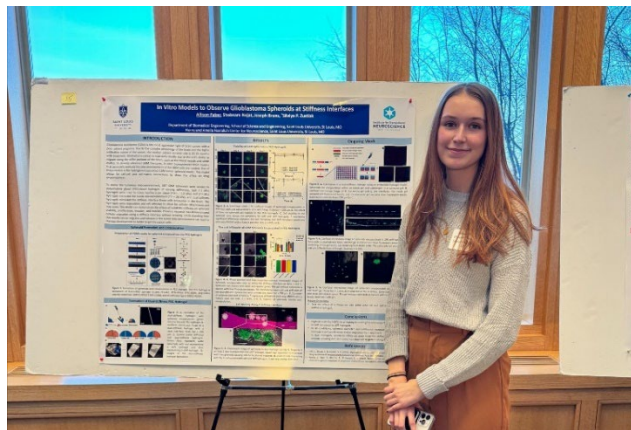


St. Louis Mechanobiology Research Symposium at Washington University



H. Moheimani, S. Stealey, G. Genin, N. Heubsch, *S. P. Zustiak, "Autoclaved alginate as a cell scaffold with tunable viscoelasticity", (Poster), Mechanobiology Research Symposium, WashU, December 13, 2023, St. Louis, MO

E. Ferchichi, D. L. Elbert, *S. P. Zustiak, "Gelatin Methacrylate Macroporous Cell Scaffold Fabrication via One-Pot Aqueous Two-Phase Separation", (Poster), Mechanobiology Research Symposium, WashU, December 13, 2023, St. Louis, MO



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A. Faber, S. Nejat, J. Bruns, *S. P. Zustiak, "Glioblastoma Spheroid Growth, Infiltration, Motility, and Chemotherapeutic Responses in Single and Dual-Stiffness Hydrogels", (Poster), Mechanobiology Research Symposium, WashU, December 13, 2023, St. Louis, MO