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# Pitt Bioengineering Undergraduates Present at the BMES Annual Meeting



## 2024 Undergraduate Student Presentations

**Boldfaced** names represent bioengineering undergraduate students

1. Mechanical Stability of Functionalized Revolutionizing Cancer Spheroid Viability Analysis with Deep Learning  
**Anne R**, Chen YC
2. Gait Metrics During Standard and Novel Assessment of Walking  
**Baker B**, Holland G, Smith W, Redfern M, Cham R
3. Generation of Adipose-Like Tissue from Human Induced Pluripotent Stem Cells for In Vitro Modeling of Obesity-associated Osteoarthritis  
**Bartholomew O**, Makarczyk M, Hines S, Lin H
4. The Effect of Extracellular Matrix Hydrogel Treatments on Fibrosis Production in a Canine Model of Volumetric Muscle Loss  
**DeStefano A**, Kulkarni M, Butler S, Skillen C, Brown B
5. Injury and Therapeutic Response of Cell-Cell Communications in Vascularized Human Kidney Organoids  
**Eley M**, Maggiore JC, Hukriede, NA
6. Comprehensive Histological Evaluation of Murine Elastase Aneurysm Model for Long-Term In Vivo Analysis  
**Felsinger K**, Kohyama K, Wagner W, Kim S
7. Developing Methods for Integrating fNIRS and Virtual Reality  
**Forsythe K**, Huppert T
8. Identifying the Localization of Complications Resulting from Implanted Polypropylene Mesh for Pelvic Organ Prolapse Repair in a Non-Human Primate Model  
**Gaydosh I**, Therriault M, Smith M, King G, Moalli P, Knight K
9. Biofabrication of a Load Bearing 3D Printed Lamina Cribrosa  
**Geno MC, Pemberton BJ**, Shittu RJ, Vande Geest JP
10. Investigating How Astrocytes Respond to Intracortical Microstimulation (ICMS) and How This Response is Affected by Alertness  
**Handoo AH**, Stieger KS, Zhang GZ, Kozai TK
11. Examining Myofibroblast Origin in Excised Mesh-Vaginal Tissue Following Complications with Surgical Mesh Implantation for Pelvic Organ Prolapse Treatment  
**Harinath M**, Therriault MA, Gaydosh I, Knight KM, Moalli PA
12. Towards a Composite Metric of iBCI Performance  
**Heffley J**, Hockeimer W, Collinger J
13. Understanding Heterogeneity within High-Grade Serous Adenocarcinoma  
**Johnston TJ**
14. AI-Enabled Predictive Modeling: Tracking the Morphological and Stress Response Changes in Abdominal Aortic Aneurysms  
**Kottakota A**, Gueldner P, Liang N, Vorp D, Chung T
15. Lapatinib-Treated HER2+ BT474 Tumor Cells Exhibit Higher Pro-Survival and Antiapoptotic Markers Near Fibroblasts in a Mouse Xenograft Model  
**Long JC**, Poskus MD, Zervantonakis I
16. Comparing Signaling Mechanisms to Separate Fibroblast-Mediated Effects Influencing Drug Resistance in HER2+ Breast Cancer  
**Mandal S**

“Every year, I am so impressed with the high quality and quantity of the research presented by our Pitt bioengineering undergraduates at the national BMES conference. The depth and breadth of bioengineering research represented here showcases the many abilities and in-depth knowledge gained by our students in both the classroom and the laboratory.”

— **Sanjeev Shroff, PhD**  
Bioengineering Department  
Chair, Gerald E. McGinnis  
Chair and Distinguished  
Professor of Bioengineering

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17. HemRGB Trichrome Staining for Assessment of Encapsulation of a Novel IL-4-Eluting Polypropylene Mesh in a Mouse Model  
**Maytin HE**, Nolfi AL, Kulkarni M, Skillen C, Brown BN
18. Development of Acetylated LC3 for Characterization of SIRT1 Enzymatic Activity  
**Miller RL**, Krzysiak TC
19. Concentration Dependent Architecture and Biocompatibility of Vaginal Extracellular Matrix Hydrogels for Biomimetic Pelvic Organ Prolapse Repair  
**Miller ZA**, Egnot ML, Therriault M, Moalli P
20. Diabetes Induces Abnormal Vessel Remodeling in the Vagina: Implications in Urogynecologic Surgeries  
**Milone SR**, Liang RU
21. Self-Adjustable and Breathable Lower Limb Prosthetic Liner  
**Moore A, Ven S**
22. Towards the Development of Synthetic Ultrasound Data for Image Classification of Obstructed Defecation Syndrome  
**Munyof N**, Rostaminia G, Abramowitch S
23. Modulating the Compliance of Varied Thrombogenicity Vascular Graft Designs  
**Murphy TR**, Maestas DR, Ye SH, Wagner WR, Vande Geest JP
24. Studying the Impact of Obese Adipose Tissues on Cartilage – A Pilot Study  
**Murrison MM**, Hines SH, Makarczyk MM, Lin HL
25. The Development of an Uniaxial Mechanoculture System for Rapid Elastogenesis  
**O'Malley CE**, Maestas DR, Vande Geest JP
26. Impact of a Biomimetic Coating on the Brain Tissue Reaction to Microdialysis Implants  
**Patel Y**, Shi D, Robbins E, Cui X
27. PLGA Average Molecular Weight Effects on Protein Release  
**Ravikumar T**, Borrelli MA, Little SR
28. Toward Defining a Biomarker for Alcohol Cravings Through Deep Brain Electrode Recordings  
**Sauter L**, Moussawi K
29. Age-Related Changes in Neural Representations of Binaural Temporal Fine-Structure Cues  
**Shah VS**, Parthasarathy AP
30. Arm Swing Responses to Walking Perturbations in People with Vestibular Hypofunction  
**Shores CMV**, Harter MJ, Redfern MS
31. In Vivo Two Photon Imaging Cerebral Blood Flow in Small Vessels of Alzheimer's Mice Show Decreases with Age  
**Singh A**, Shen Y, Schweitzer N, Vazquez A, Iordanova B
32. Post-Menopausal Levels of Follicle Stimulating Hormone are Associated with Muscle Weakness in Aged Female Mice and Adipogenesis of Fibro-Adipogenic Progenitors  
**Sinkar S**, Hettinger Z, Gilmer G, Kopchak R, Houston H, Wang K, Bergmann J, Creed E, Shahshahan N, Hermanto M, Mkandawire T, Miller A, Ambrosio F
33. Evaluating the Effectiveness of an Advanced Vibrational Liner Prototype  
**Stivala N**, Roehrich K
34. Wound healing in *Xenopus Laevis* Embryonic Tissues Under Tension  
**Wang Y**, Yang J, Davidson L
35. Gaze Strategies During Standard and Novel Assessments of Walking  
**Wilson MT**, Holland GA, Smith W, Redfern MS, Cham R
36. Stimulating Endogenous Neurogenesis Improves Tissue Regeneration After ECM Hydrogel Implantation in Stroke  
**Wishneski K**, Didwischus N, Kisel A, Mills M, Modo M
37. Cuffless Blood Pressure Monitoring via the Oscillometric Finger Pressing Method: Optimizing PPG Sensor Placement for Accurate Measurements  
**Zhang JZ**, Freithaler M, Wang S, Sauter L, Mukkamala R