

# BIOENG 1002: Intramural Internship

## 2020 Spring Technical Symposium

Number of presentations = 53

### **Zachary Fritts**

Mentor: Dr. Tamer Ibrahim

*Developing a 56-Channel Transmit Array for 7 Tesla MRI*

### **Danesh Thirukumaran**

Mentor: Dr. Tamer Ibrahim

*Utilization of Diffusion Tensor Imaging Analysis for Sickle Cell Disease Related Cerebral Infarction*

### **Matthew Saich**

Mentor: Dr. Tamer Ibrahim

*Construction and Testing of the Microstrip Tic-Tac-Toe Coil for 7 Tesla MRI*

### **Mitchell Dubaniewz**

Mentor: Dr. Takashi D.Y. Kozai

*Novel Drug to Reduce Immune Response to Chronically Implanted Neural Electrodes*

### **Elliot Hammersley**

Mentor: Dr. William Anderst

*The Effects of Age, Foot Type, and Ground Surface on Plantar Pressure and Symmetry During Walking*

### **Jacob Levy**

Mentor: Dr. William Anderst

*Analysis of Gait Kinematics in Transfemoral Amputees with Socket Prosthetics*

### **Rishabh Seth**

Mentor: Dr. Tagbo Niepa

*Nanoculture-Designing a Novel Culture System to Study Microbial Growth and Dynamics*

### **Joe Sukinik**

Mentor: Dr. Orit Benyamin

*Designing a Testing Procedure Relating Eye Movement and Postural Control in ADHD Patients*

### **Yannis Rigas**

Mentor: Dr. Anthony St. Leger

*Genetically Engineering Ocular Probiotic*

**Pavitra Velan**

Mentor: Dr. Joseph Samosky  
*3D Pressure Sensing Pelvic Exam Simulator*

**Dana Kelly**

Mentor: Dr. Steven Abramowitch  
*Inspiring Tomorrow's Engineers-Camp BioE*

**Liam Martin**

Mentor: Dr. Steven Abramowitch  
*Impact of Pregnancy and Birth on the Maternal Sacrum and Coccyx*

**Aaron McVaugh**

Mentor: Dr. Neeraj Gandhi  
*Comparison of Recording Performance of Laminar Intracortical Electrode Brands*

**Nishita Muppidi**

Mentor: Dr. Howard Aizenstein  
*Using Computational Modeling to Predict Problematic Drinking Behaviors*

**Matthew Rosenblatt**

Mentor: Dr. Howard Aizenstein  
*Comparing Pipelines in Magnetic Resonance Imaging Synthesis*

**Michael Clancy**

Mentor: Dr. Patrick Loughlin  
*Exploring Sensory-Motor Control Through Virtual Object Manipulation*

**Xhoni Pashaj**

Mentor: Dr. William Federspiel  
*Predicting Blood Clot Formation in Blood Pumps Using AI*

**Aamil Shah**

Mentor: Dr. Sarah Haig  
*Increasing the Structural Resilience of Reinforced Concrete through Bioremediation*

**Timothy Snyder**

Mentor: Dr. Mark Redfern  
*Strength and Balance in Older Adults*

**Daniela Krahe**

Mentor: Dr. Tracy Cui  
*Melatonin Injections to Inhibit Immune Response in the Brain*

**Maxwell Lohss**

Mentor: Dr. George Stetten

*The Con-Tactor: A Novel Tactile Stimulator that Makes and Breaks Contact with the Skin***Nicolas Kshatri**

Mentor: Dr. Robert Gaunt

*Characterizing the Effects of an Implantable Soft Silicone Electrode Net on the Urinary Bladder***Natalie Greenlee**

Mentor: Dr. Robert Gaunt

*Spinal Cord Stimulation to Improve Bladder Function***Kristopher Keppel**

Mentor: Dr. Robert Gaunt

*Quantification of Tissue Electrode Interface Voltages During Intracortical Microstimulation***Nathaniel Luketich**

Mentor: Dr. Fabrisia Ambrosio

*Dose Dependency of AAV-Klotho Administration in Restoring Muscle Function in Aged Mice Post Injury***Katherine Miller**

Mentor: Dr. James Wang

*The Effects of Aging on Tendon Wound Healing***Muyun Zhao**

Mentor: Dr. Rui Liang

*Diabetes-Induced Macrophage Senescence and its Impact on Immunity***Megha Murthy**

Mentor: Dr. Bryan Brown

*Biological Material Induces Macrophage Response More Favorable for Angiogenesis***Judy Liang**

Mentor: Dr. Bryan Brown

*Manufacture Polyelectrolyte Coated Contact Lenses for the Treatment of Dry Eye Disease***Harris Chishti**

Mentor: Dr. Alexander Poplawsky

*CBV-Weighted fMRI Responses to Variable Odor Concentration in the Awake Mouse Olfactory Bulb***Jordan Birkhimer**

Mentor: Dr. Stephen Badylak

*Phylogenetic Analysis of Matrix Bound Nanovesicles*

**Sean Tighe**

Mentor: Dr. Thomas Lozito

*Single Cell Sequencing Analysis of Lizard Phagocytic Cell Populations and Their Role in Tail Regeneration*

**Anish Puligilla**

Mentor: Dr. Ian Sigal

*Biaxial Mechanical Testing of Interweaving and Non-Interweaving Fibers*

**Haiden McDonald**

Mentor: Dr. Ian Sigal

*Hemodynamics of the Lamina Cribosa due to Glaucoma*

**Tingjun Hao**

Mentor: Dr. Hang Lin

*The Chondrogenesis Potential of Induced Pluripotent Stem Cells*

**Patrick Bohse**

Mentor: Dr. Rakié Cham

*Role of Attention in Balance Autism Spectrum Disorder*

**Vhakish Suganthan**

Mentor: Dr. Yadong Wang

*Poly(glycerol-sebacate)-based Synthetic Arterial Graft*

**Madeline Johnson**

Mentor: Dr. Gelsy Torres-Oviedo

*Analyzing Leg Speed Perception Using Split-Belt Treadmill*

**Lucy Jones**

Mentor: Dr. Jonathan Vande Geest

*Peripheral Artery Disease: A New Type of Stent*

**Jinghang Li**

Mentor: Dr. Jonathan Vande Geest

*Finite Element Evaluation of Various Stent Mechanical Properties in a Knee Bending Mechanical Environment*

**Rachel Lau**

Mentor: Dr. Jonathan Vande Geest

*Monitoring Cell Monolayer Culture via an Intravital Incubation System*

**Richard Brigandi**

Mentor: Dr. Tamer Ibrahim

*7 Tesla MRI Artifact Processing*

**Seth Eisenberg**

Mentor: Dr. Rajeev Dhupar

*Characterization of MPE-Resident T-Cells: Potential for Use in Adoptive Cell Transfer Therapies***Sreyas Ravi**

Mentor: Dr. Spandan Maiti

*Biomechanical Assessment of Ascending Aortic Aneurysms Based from Valve Phenotype***Amritha Justin**

Mentor: Dr. Alan Wells

*Wound Healing with Tenascin-C and Mesenchymal Stem Cells***Katherine Dunkelberger**

Mentor: Dr. Irene Mena

*Don't Judge a Library by its Book Covers***Larissa Fordyce**

Mentor: Dr. David Vorp

*Mapping Wall Stress in Abdominal Aortic Aneurysms with Machine Learning***Mateus Pinho**

Mentor: Dr. Peter Alexander

*3D Culture Models for Predictive Toxicology***Kevin Lynch**

Mentor: Dr. John Fowler

*Carpal Tunnel Heat Map Study***Jacqueline McHale**

Mentor: Dr. Richard Debski

*Effect of Tibial Slopes on Contact Pressure Following Lateral Extra-Articular Tenodesis***Vatsal Patel**

Mentor: Dr. Partha Roy

*The Effects of Profilin 1 and Mitochondrial Morphology***Connor Gillis**

Mentor: Dr. Partha Roy

*Binding of Lipid Phosphatases to Profilin 1***Neeshil Patel**

Mentor: Dr. Tracy Cui

*Equivalent Circuit Modeling for Surface Coated Neural Electrodes*