



# Poster

## SESSIONS

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2022 ANNUAL MEETING

**BMES**

BIOMEDICAL ENGINEERING SOCIETY

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 1

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### Machine Learning for Biomedical Applications (Summer Undergraduate)

**Abstract Title:** Computational Analysis of Optical Fingerprints for Protein Identification and Quantification

**Presenter:** Sophia Ty

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 2

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### Machine Learning for Biomedical Applications

**Abstract Title:** Optimizing Hyperparameters for Bayesian Optimal Experimental Designs in the BMP Signaling Pathway

**Presenter:** Angelique Espino

**Principal Investigator:** Elliot Hui

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 3

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### Machine Learning for Biomedical Applications

**Abstract Title:** Fairness in the Prediction of Acute Postoperative Pain using Machine Learning Models

**Presenter:** Anis Davoudi

**Principal Investigator:** N/A

**Author(s):**

Ruba Sajdeya

Ronald Ison

Parisa Rashidi

Patrick Tighe

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 4

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### Machine Learning for Biomedical Applications

**Abstract Title:** Automatic Segmentation of the Left Atrium in CTA Images

**Presenter:** Amaan Kazi

**Principal Investigator:** N/A

**Author(s):**

Sage Betko

Prahlad Menon

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 5

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Machine Learning for Biomedical Applications**

**Abstract Title:** Virtual AFM: Generating Synthetic 2D Multi-view Images from 3D Protein Structure

**Presenter:** Anwasha Sarkar

**Principal Investigator:** N/A

**Author(s):**

Jaydeep Rade

Soumik Sarkar

Adarsh Krishnamurthy

Anwasha Sarkar

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 6

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Analysis of Cell Signaling**

**Abstract Title:** Repetitive Mild Traumatic Brain Injuries Drive Distinct Acute Cytokine and MAPK Signaling Patterns

**Presenter:** Alyssa Pybus

**Principal Investigator:** N/A

**Author(s):**

Sara Bitarafan

Lilly Rohrer

Kareena Udeshi

Arushi Khaitan

Brae Davies

Erin Buckley

Levi Wood

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 7

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Analysis of Cell Signaling**

**Abstract Title:** Stochastic Modeling of BMP Receptor Pathways: Complex Formation and Signal Transduction in Zebrafish Embryogenesis

**Presenter:** Nissa Larson

**Principal Investigator:** N/A

**Author(s):**

David Umulis

Aasakiran Madamanchi

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 8

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Analysis of Cell Signaling**

**Abstract Title:** Deriving PLC $\gamma$  Single-Molecule Activation Statistics from Deterministic Simulations

**Presenter:** Ravikanth Appalabhotla

**Principal Investigator:** Jason Haugh

**Author(s):**

Jason Haugh

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 9

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

### Multiscale Computation Modeling

**Abstract Title:** Requirement for booster doses in healthy, cancer and immunosuppressed patients infected with the ancestral or variant SARS-CoV-2: Insights from a mechanistic mathematical model

**Presenter:** Chrysovalantis Voutouri

**Principal Investigator:** Lance L Munn

**Author(s):**

Mohammadreza Nikmaneshi

Triantafyllos Stylianopoulos

Lance Munn

Rakesh Jain

Justin Gainor

Melin Khandekar

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 10

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

### Multiscale Computation Modeling

**Abstract Title:** Probing Function and Degeneration in Elastic Biopolymers

**Presenter:** Anna Tarakanova

**Principal Investigator:** Anna Tarakanova

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 11

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

### Multiscale Computation Modeling

**Abstract Title:** Modeling the Progression of Fibrosis with Dysregulation of TGF-beta in COVID19 Patients

**Presenter:** Ashlee Ford Versypt

**Principal Investigator:** N/A

**Author(s):**

Mohammad Aminul Islam

Ashlee Ford Versypt

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 12

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

### Multiscale Computation Modeling

**Abstract Title:** Cell-specific mechanisms of neocortical slow oscillations: a computational modeling study.

**Presenter:** Beatriz Herrera

**Principal Investigator:** Jorge J Riera

**Author(s):**

Beatriz Herrera

Jeffrey Schall

Jorge Riera

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 13

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

**Multiscale Computation Modeling**

**Abstract Title:** Mechanistic Computational  
Modeling of IL6R/IL8R Signaling and Inhibition

**Presenter:** Christina Ray

**Principal Investigator:** Feilim Mac Gabhann

**Author(s):**

Christina Ray

Huilin Yang

Jamie Spangler

Feilim Mac Gabhann

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 14

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

**Multiscale Computation Modeling**

**Abstract Title:** Model of Antiviral Timing, Potency,  
Heterogeneity Effects on Epithelial Tissue Infected by  
SARS-2

**Presenter:** Juliano Ferrari Gianlupi

**Principal Investigator:** N/A

**Author(s):**

Tarunendu Mapder

T.J. Seago

James Sluka

Sara Quinney

Morgan Craig

Robert Stratford

James Glazier

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 14

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

**Abstract Title:** BioModME for Building and  
Simulating Dynamic Computational Models of  
Complex Biological Networks

**Presenter:** Justin Womack

**Principal Investigator:** N/A

**Author(s):**

N/A Said

Audi Scott

Terhune Ranjan

Dash

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 15

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

**Multiscale Computation Modeling**

**Abstract Title:** Meso-scale model for virus-cell  
adhesion: spike-like protein and meshless membrane

**Presenter:** Luke Wang

**Principal Investigator:** N/A

**Author(s):**

Anand Jagota

Xiaohui (Frank) Zhang



# Northeastern University College of Engineering Bioengineering



## AT THE INTERFACE OF ENGINEERING AND MEDICINE

Northeastern University's Bioengineering Program provides a broad-based, interdisciplinary engineering curriculum that offers a rigorous yet flexible education. The Department of Bioengineering has a robust Bachelors, Masters and PhD Program. The goal of the curriculum in Bioengineering is to provide students with a broad understanding of the quantitative analysis of biological systems and a deep expertise in an area of engineering of their choice.

Bioengineering students will have unique opportunities in the classroom, research labs, and experiential learning. The projects that they may be able to contribute to include bio-bandages that monitor bacterial growth or that help damaged ligaments heal faster; sheets of cells folded like origami to form a working kidney; and new materials that—like a leaf in the sun—automatically sense and adapt to changes in the environment.

### There are four concentrations:

- Biomechanics, Biotransport and MechanoBiology
- Devices, Imaging, Instrumentation and Signal Processing
- Molecular, Cell and Tissue Engineering
- Systems, Synthetic and Computational Bioengineering



**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster**Number:** 16**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Multiscale Computation Modeling****Abstract Title:** The Role of Gravity and Mechanical Properties of Elastin and Collagen on Lung Pressure-Volume Curves**Presenter:** Linzheng Shi**Principal Investigator:** N/A**Author(s):**

Linzheng Shi

Jacob Herrmann

Samer Bou Jawde

Jason Bates

Hadi Nia

Bela Suki

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster**Number:** 17**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Multiscale Computation Modeling****Abstract Title:** Estimation of myocardial mechanical properties by deep learning approach**Presenter:** Rana Raza Mehdi**Principal Investigator:** N/A**Author(s):**

Emilio Mendiola

Adam Sears

Roderic Pettigrew

Reza Avaz

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster**Number:** 18**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Other / Non-specified (Summer Undergraduate)****Abstract Title:** An Agent-Based Model to Compare Mycobacterium avium Infection in Pre-Menopausal vs. Post-Menopausal Patients**Presenter:** Alexa Stern**Principal Investigator:** Elsje Pienaar**Author(s):**

Catherine Weathered

Elsje Pienaar

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster**Number:** 19**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Precision and Predictive Medicine****Abstract Title:** Using Gaussian Process Models to Generate Semi-Synthetic Clinical Data**Presenter:** Joshua Fuller**Principal Investigator:** N/A**Author(s):**

Joshua Fuller

Alexey Abramov

Philippe Lemaitre

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: C, Poster  
**Number:** 20

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

### **Microphysiological Systems (MPS) Manufacturing**

**Abstract Title:** Modular Integration Of  
Endothelialized Barrier For Disease Modelling.

**Presenter:** Bhumi Suthar

**Principal Investigator:** N/A

**Author(s):**

Bhumi Suthar

Charles Alver

Ashutosh Agarwal

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster  
**Number:** 41

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

### **Microphysiological Systems (MPS) Manufacturing**

**Abstract Title:** A Novel Tissue Bioreactor for Retinal  
Organoid Microenvironmental Control

**Presenter:** Emma Drabbe

**Principal Investigator:** N/A

**Author(s):**

Emma Drabbe

Ashutosh Agarwal

Timothy Arcari

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster  
**Number:** 42

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

### **Microphysiological Systems (MPS) Manufacturing**

**Abstract Title:** Dimensionality-dependent  
Mechanical Stretch Regulation of Cell Behavior

**Presenter:** kun man

**Principal Investigator:** N/A

**Author(s):**

Jiafeng Liu

Khang Phan

Hamid Sadat

Yong Yang

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster  
**Number:** 43

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

### **Biomaterials**

**Abstract Title:** Cell-adhesive peptide density  
positively correlates with oligodendrocyte progenitor  
cell (OPC) growth in Rapidly Assembling  
Pentapeptides for Injectable Delivery (RAPID)  
hydrogels

**Presenter:** Anna Kittel

**Principal Investigator:** N/A

**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster**Number:** 44**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Biomaterials****Abstract Title:** Cell Coating with Chondroitin Sulfate Mimetic Peptide Amphiphiles for Enhanced Bioregeneration**Presenter:** Christopher Sollenberger**Principal Investigator:** Samuel Stupp**Author(s):**

Ruomeng Qiu

Samuel Stupp

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster**Number:** 45**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Abstract Title:** ECM Gel Injection Enhances Recovery from Disuse and Degenerative Muscle Atrophy**Presenter:** Chris Slavin**Principal Investigator:** N/A**Author(s):**

Jeff Wolchok

Tai Huynh

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster**Number:** 46**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Biomaterials****Abstract Title:** Biphasic 3D-Printed Osteochondral Biomaterial for Temporomandibular Joint (TMJ) Mandibular Condyle Regeneration**Presenter:** David NedreLOW**Principal Investigator:** N/A**Author(s):**

David NedreLOW

Ali Rassi

Boushra Ajeeb

Pedro Huebner

Fabio Ritto

Wendy Williams

Michael Detamore

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster**Number:** 47**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Biomaterials****Abstract Title:** Nerve Regeneration Facilitated by Electrical Stimulation of Dual Layer Microspheres for Drug Delivery**Presenter:** Ahmad Zunnu Rain**Principal Investigator:** Harini Sundararaghavan**Author(s):**

Harini Sundararaghavan

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster

**Number:** 48

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

Biomaterials

**Abstract Title:** The Effect Of Substrate Stiffness On Human Schwann Cell Behavior

**Presenter:** Christine Hampton

**Principal Investigator:** Christine Hampton

**Author(s):**

Harini Sundararaghavan

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster

**Number:** 49

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Biomaterials**

**Abstract Title:** Enhanced tissue regeneration using human serum albumin nanoparticles

**Presenter:** Jinmyoung Joo

**Principal Investigator:** Jinmyoung Joo

**Author(s):**

N/A

#### **POSTDOCTORAL POSITIONS IN SYNTHETIC TISSUE DEVELOPMENT**

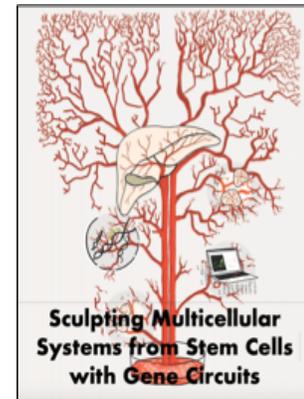
The **laboratory of Synthetic Biology and Regenerative Medicine** at the University of Pittsburgh is looking for two postdoc candidates to join our research program on **developing multicellular systems and human organoids**. The projects will use synthetic gene circuits to direct the morphogenesis of human tissues in vitro. The candidate applies different technologies (including the gene-editing developed in the PI lab) to further engineer and/or record information within developmental events at the level of single-cell and tissues. Additionally, s/he has a chance to collaborate with computational biology scientists in collaborator labs at **Johns Hopkins University and Carnegie Mellon University**. The tissues are developed from human iPSCs and will be scalable, with high robustness and functionality.

The lab is located within the world-class **Pittsburgh Liver Research Center (PLRC)**, home to a cutting-edge interdisciplinary research program on liver diseases. We are also part of the **McGowan Institute for Regenerative Medicine, Departments of Pathology and Bioengineering**. The candidate will have the opportunity to **lead cutting-edge, highly interdisciplinary projects with collaborators at Carnegie Mellon University, the University of British Columbia, and Johns Hopkins University**. The candidate will engage with the **stem cell and synthetic biology** communities by presenting work at conferences and publishing high-impact papers and patents.

**Minimum/Basic Qualifications:** MD and/or Ph.D. degree in a related field of study (bioengineering, molecular biology, and/or cell biology). Attention to detail, a high degree of organization and analytical skills, and the ability to perform standard molecular biology and mammalian cell culture techniques are needed. Familiarity with synthetic and systems biology techniques, stem cells and organoids, in vivo mouse models, liver biology, and the hematopoietic system is a plus. A good track record of publication and the ability to lead projects in fast-paced environments is needed.

For more information, please see [www.ebrahimkhanilab.bio](http://www.ebrahimkhanilab.bio)

**Applicants from underrepresented groups are encouraged to apply.** Interested candidates should contact Dr. Mo Ebrahimkhani ([mo.ebr@pitt.edu](mailto:mo.ebr@pitt.edu)) with their **CV, cover letter, and contact information of at least two referees** included in the email.



**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster**Number:** 50**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Biomaterials****Abstract Title:** Development of a Multi-Structured Scaffold for Regeneration of the Myotendinous Junction**Presenter:** Kariman Shama**Principal Investigator:** Brittany Taylor**Author(s):**

Marisa Pacheco

Sebastian Kharileh

Andrea McPherson

Brittany Taylor

Whitney Stoppel

Kaitlyn Turner

Elizabeth Aikman

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster**Number:** 51**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Biomaterials****Abstract Title:** Atomic vacancies in nanomaterials boost mitochondrial biogenesis and bioenergetics**Presenter:** John Soukar**Principal Investigator:** N/A**Author(s):**

Kanwar Abhay Singh

Anna Keller

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster**Number:** 52**Track:** BIOMATERIALS**Biomaterials (Summer Undergraduate)****Abstract Title:** Designing and Confirming a Model for Predicting Diffusion Behavior through Granular Hydrogels**Presenter:** Veronica Bubay**Principal Investigator:** Edward A. Phelps (PhD)**Author(s):**

Adrienne Widener

Rebecca Erwin

Edward Phelps

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster**Number:** 53**Track:** BIOMATERIALS**Biomaterials (Summer Undergraduate)****Abstract Title:** Bridging the Gap: Developing Self-Rolling Azlactone Hydrogels for Nerve Injury Applications**Presenter:** Annabelle Hendrickson**Principal Investigator:** Maren Buck**Author(s):**

Arshiyam Alam Laaj

Jueun Lee

Melany Garcia

Alexis Ziemba

Maren Buck

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster

**Number:** 54

**Track:** BIOMATERIALS

### **Biomaterials (Summer Undergraduate)**

**Abstract Title:** Evaluation of Glutaraldehyde Crosslinked Chitosan-Elastin Electrospun Membranes for skin wounds

**Presenter:** Ethan Wales

**Principal Investigator:** Joel D. Bumgardner

**Author(s):**

Alex Bryan

ALI SADEGHIANMARYAN

Joel Bumgardner

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster

**Number:** 55

**Track:** BIOMATERIALS

### **Biomaterials (Summer Undergraduate)**

**Abstract Title:** Electrospun Silk Fibroin and Hyaluronic Acid Based Nerve Conduit for Peripheral Nerve Regeneration

**Presenter:** Madeline Badrak

**Principal Investigator:** N/A

**Author(s):**

Judy Senanayake

C H

Harini Sundararaghavan

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster

**Number:** 56

**Track:** BIOMATERIALS

### **Biomaterials (Summer Undergraduate)**

**Abstract Title:** Determining the Effect of an Infusible Extracellular Matrix Material in an In-Vitro Model of Endothelial Cell Activation

**Presenter:** Filiberto Quintero Karen Christman

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster

**Number:** 57

**Track:** BIOMATERIALS

### **Biomaterials (Summer Undergraduate)**

**Abstract Title:** Meniscus Cell Mechano-Activation During Microgel Assisted Tissue Bulking

**Presenter:** Seth J. Ack Robert L. Mauck

**Principal Investigator:** N/A

**Author(s):**

Ryan Locke

Ryan Daniels

Robert Mauck

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster  
**Number:** 58

**Track:** BIOMATERIALS  
**Biomaterials (Summer Undergraduate)**

**Abstract Title:** PDGFR $\alpha$  Expression of Hydrogel-Cultured Human Lung Fibroblasts

**Presenter:** Shachaf Orren

**Principal Investigator:** N/A

**Author(s):**

Madeline Eiken

Claudia Loebel

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster  
**Number:** 59

**Track:** BIOMATERIALS  
**Biomaterials**

**Abstract Title:** Applications of Chitosan-PVA Hydrogel for Wound Healing

**Presenter:** Ruchi Borole

**Principal Investigator:** Vladimir Reukov

**Author(s):**

Bryan Shim

Lucas Tavares Tavares

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: D, Poster  
**Number:** 60

**Track:** BIOMATERIALS  
**Biomaterials**

**Abstract Title:** Technical Considerations and Recommendations for Assessment of Decellularized Tissues

**Presenter:** Allison Campbell

**Principal Investigator:** N/A

**Author(s):**

Deanna Bousalis

Allison Campbell

Gopal Agarwal

Elisa Nieves

Michaela McCrary

Shruti Kolli

Young Hye Song

Christine Schmidt

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster  
**Number:** 81

**Track:** BIOMATERIALS  
**Biomaterials**

**Abstract Title:** Oxygen Eluting GelMA Microneedle Arrays for the Treatment of Chronic Wounds

**Presenter:** Lindsay Barnum

**Principal Investigator:** Ali Tamayol

**Author(s):**

Mohamadmahdi Samandari

Pejman Ghelich

Jacob Quint

Ali Tamayol

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster

**Number:** 82

**Track:** BIOMATERIALS

### **Biomaterials**

**Abstract Title:** Functional Tunability of a Hyaluronan-Protein Bioconjugate for Peripheral Nerve Applications

**Presenter:** Bassam Smadi

**Principal Investigator:** N/A

**Author(s):**

Abdullah Afridi

Yuan Li

Madison Cydis

Mary Kasper

Christine Schmidt

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster

**Number:** 83

**Track:** BIOMATERIALS

### **Biomaterials**

**Abstract Title:** Shape Memory Polymer (SMP) Bioglass Composite Scaffolds to Heal Complex Bone Defects

**Presenter:** Brandon Nitschke

**Principal Investigator:** N/A

**Author(s):**

Melissa Grunlan

Whitney Sloan

Alexander Konz

Ashley Hicks

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster

**Number:** 84

**Track:** BIOMATERIALS

### **Biomaterials**

**Abstract Title:** Functionalization of PVDF-TrFE with decellularized ECM directs Schwann Cell Phenotype

**Presenter:** Andrew Bryan

**Principal Investigator:** N/A

**Author(s):**

Jacob Orkwis

Ann Wolf

Zachary Mularczyk

Greg Harris

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster

**Number:** 85

**Track:** BIOMATERIALS

### **Biomaterials**

**Abstract Title:** A dynamic cell-based therapy patch for accelerating wound healing

**Presenter:** Christian Schreib

**Principal Investigator:** N/A

**Author(s):**

Omid Veisoh

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster  
**Number:** 86

**Track:** BIOMATERIALS  
**Biomaterials**

**Abstract Title:** Antimicrobial Peptide Functionalized Bacterial Cellulose for Chronic Wound Dressing Applications

**Presenter:** Elizabeth van Zyl  
**Principal Investigator:** N/A  
**Author(s):**  
Elizabeth van Zyl  
Jeannine Coburn

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster  
**Number:** 87

**Track:** BIOMATERIALS  
**Biomaterials**

**Abstract Title:** Effect of Fibrous Biomimetic Basement Membranes on Wound Healing

**Presenter:** Dina Gadalla  
**Principal Investigator:** N/A  
**Author(s):**  
Mustafa Suppah

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster  
**Number:** 88

**Track:** BIOMATERIALS  
**Biomaterials**

**Abstract Title:** Shape Memory Polymer Nanocomposites for Rapid Hemostasis of Gunshot Wounds

**Presenter:** Giriraj Lokhande  
**Principal Investigator:** N/A  
**Author(s):**  
Lindy Jang  
Sarah Hargett  
Duncan Maitland  
Akhilesh Gaharwar

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster  
**Number:** 89

**Track:** BIOMATERIALS  
**Biomaterials**

**Abstract Title:** Nanoceria (CeO<sub>2</sub>) and its Effects on Lactic Acid Production from Streptococcus mutans

**Presenter:** Herchel Patel  
**Principal Investigator:** N/A  
**Author(s):**  
Herchel Patel  
Kamal Patel  
Rani Patel  
Dhruvi Patel  
Vladimir Undergraduatekov  
Anton Sorokin  
VIJAY MOHAKAR  
alyssa che  
Sejal Gandhi



# BIOMEDICAL ENGINEERING

1972 AT TEXAS A&M 2022



◀ THEN



NOW ▶



# LEADING BIOMEDICAL ENGINEERING INNOVATION



TEXAS A&M UNIVERSITY  
Department of  
Biomedical Engineering

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**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster**Number:** 90**Track:** BIOMATERIALS**Biomaterials****Abstract Title:** Core-shell electrospun nanofibrils containing hyaluronic acid for corneal regeneration**Presenter:** Hyuksang Yoo**Principal Investigator:** N/A**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster**Number:** 91**Track:** BIOMATERIALS**Biomaterials****Abstract Title:** Anti-infective strontium-based nanocomposite hydrogel for enhanced periodontal regeneration**Presenter:** Isha Mutreja**Principal Investigator:** Isha Mutreja**Author(s):**

Dhiraj Kumar

Conrado Aparicio

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster**Number:** 92**Track:** BIOMATERIALS**Biomaterials****Abstract Title:** 316L Stainless Steel Modified via Plasma Electrolytic Oxidation for Orthopedic Implants**Presenter:** James A Michael**Principal Investigator:** N/A**Author(s):**

Ketul Popat

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster**Number:** 93**Track:** BIOMATERIALS**Biomaterials****Abstract Title:** Neurotrophin-3 mRNA Delivery from Electrospun Fibers for Neural Tissue Engineering Applications**Presenter:** Jessica Funnell**Principal Investigator:** N/A**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster**Number:** 94**Track:** BIOMATERIALS**Biomaterials****Abstract Title:** EDC/NHS Cross-Linked ECM Sponge: Hemostasis And Tissue Remodeling After Kidney Tumor Removal Surgery**Presenter:** Jae Yun Kim**Principal Investigator:** N/A**Author(s):**

Dong-Woo Cho

Tugce Sen

Jae Yeon Lee

## Thursday, October 13

9:30 AM - 10:30 AM

Poster Session: A, Section: C, Row: E,  
Poster **Number:** 95

**Track:** BIOMATERIALS  
**Biomaterials**

**Abstract Title:** A Novel Fibrin-Fibronectin Matrix Accelerates Mice Skin Wound Healing

**Presenter:** Li Han

**Principal Investigator:** N/A

**Author(s):**  
Yuguo Lei

## Thursday, October 13

9:30 AM - 10:30 AM

Poster Session: A, Section: C, Row: E,  
Poster **Number:** 97

**Track:** BIOMATERIALS  
**Biomaterials**

**Abstract Title:** miR-200c-Incorporated Gelatin Coatings on 3D-Printed PCL Scaffolds Enhance Bone Regeneration

**Presenter:** Maria Mendez Santos

**Principal Investigator:** N/A

**Author(s):**  
Brad Amendt  
Liu Hong

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**Dr. Keyue Shen**

## Thursday, October 13

9:30 AM - 10:30 AM

Poster Session: A, Section: C, Row: E, Poster  
**Number:** 97

**Track:** BIOMATERIALS  
**Biomaterials**

**Abstract Title:** Evaluating regenerative dressings in a clinically relevant pre-clinical model

**Presenter:** Maria Mendez Santos

**Principal Investigator:** N/A

**Author(s):**  
Chongwen Duan  
Guillermo Ameer

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster  
**Number:** 98

**Track:** BIOMATERIALS

**Biomaterials**

**Abstract Title:** Development and Characterization of a Piezoelectric Nanofiber Conduit for Nerve Regeneration

**Presenter:** Zachary Mularczyk

**Principal Investigator:** N/A

**Author(s):**

Maksym Krutko

Andrew Bryan

Jacob Orkwis

Ryan Collar

Greg Harris

Leyla Esfandiari

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster  
**Number:** 99

**Track:** BIOMATERIALS

**Biomaterials**

**Abstract Title:** Aligned, Crosslinked Fibrin Sponges for Skeletal Muscle Tissue Regeneration

**Presenter:** Natalie Kozan

**Principal Investigator:** Jonathan Grasman

**Author(s):**

Jonathan Grasman

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: E, Poster  
**Number:** 100

**Track:** BIOMATERIALS

Biomaterials

**Abstract Title:** Highly Optimized Iron Oxide Embedded Poly (Lactic Acid) Nanocomposites for Effective Magnetic Hyperthermia and Biosecurity

**Presenter:** Chiseon Ryu

**Principal Investigator:** N/A

**Author(s):**

Jae Young Lee

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: F, Poster  
**Number:** 121

**Track:** BIOMATERIALS

**Biomaterials**

**Abstract Title:** Human Heart ECM Preconditioning Enhances iPSC Cardiac Differentiation and Functional Maturity

**Presenter:** S. Gulberk Ozcebe

**Principal Investigator:** N/A

**Author(s):**

Pinar Zorlutuna

**Thursday, October 13**

9:30 AM - 10:30 AM

Poster Session: A, Section: C, Row: F, Poster

Number: 122

Track: BIOMATERIALS

**Biomaterials**

**Abstract Title:** Laser-Activated Sealants For Gastrointestinal Tissue Sealing and Repair

**Presenter:** Vanshika Singh

**Principal Investigator:** Kaushal Rege

**Author(s):**

Vanshika Singh

Deepanjan Ghosh

MALLIKARJUN GOSANGI

Subhadeep Dutta

Jordan Yaron

Kaushal Rege

**Thursday, October 13**

9:30 AM - 10:30 AM

Poster Session: A, Section: C, Row: F,

Poster Number: 123

Track: BIOMATERIALS

**Biomaterials**

**Abstract Title:** A Novel Acellular Tissue Engineered Vascular Graft using Fibroblast-based Extracellular Matrix

**Presenter:** Yeh-Chia Tseng

**Principal Investigator:** Feng Zhao

**Author(s):**

Weilue He

Yeh-Chia Tseng

Feng ZHao

**Thursday, October 13**

9:30 AM - 10:30 AM

Poster Session: A, Section: C, Row: F, Poster

Number: 124

Track: BIOMATERIALS

**Biomaterials**

**Abstract Title:** Engineering pro-angiogenic biomaterials via chemoselective extracellular vesicle immobilization

**Presenter:** Yunhui Xing

**Principal Investigator:** N/A

**Author(s):**

Phil Campbell

Xi Ren

Rebecca Taylor

Saigopalakrishna Yerneni

Weitao Wang

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**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: F, Poster  
**Number:** 126

**Track:** BIOMATERIALS  
**Drug Delivering Biomaterials**

**Abstract Title:** Engineering Controlled Multi-Therapeutic Release from 3D-Printed PDMS-based Scaffolds

**Presenter:** Taylor Lansberry

**Principal Investigator:** Cherie Stabler

**Author(s):**

Taylor Lansberry

Robert Accolla

Jiapu Liang

Justin Walsh

Cherie Stabler

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: F, Poster  
**Number:** 127

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling In Biomechanics**

**Abstract Title:** Patent-Specific Finite Element Modeling to Predict Risks of Percutaneous Pulmonary Valve Implantation

**Presenter:** Carly Donahue

**Principal Investigator:** Victor H. Barocas

**Author(s):**

VARUN AGGARWAL

Victor Barocas

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: F, Poster  
**Number:** 128

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling In Biomechanics**

**Abstract Title:** Musculoskeletal Modelling for Gait Control Studies in Spinal Cord Injury with OpenSim Moco

**Presenter:** Holly Warner

**Principal Investigator:** Ronald Triolo

**Author(s):**

Musa Audu

Gabrielle Labrozzi

Nathan Makowski

Ronald Triolo

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: F, Poster  
**Number:** 129

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling In Biomechanics**

**Abstract Title:** A Physics-Based Multiscale Model of Mechanical Ventilation of COVID-19-Infected Lungs

**Presenter:** Shea Middleton

**Principal Investigator:** N/A

**Author(s):**

Ali Vahdati

Stephanie George

Elizabeth Dimbath

Andrew Ju

Matthew Peach

Veeranna Maddipati

## Thursday, October 13

9:30 AM - 10:30 AM

Poster Session: A, Section: C, Row: F, Poster  
Number: 130

Track: BIOMECHANICS

### Human Performance/Sports Biomechanics

**Abstract Title:** A Wearable Sensor System for Measuring Pathological Gait Parameters  
**Presenter:** Wenwen Zhang  
**Principal Investigator:** Peyman Servati/ Calvin Kuo  
**Author(s):**  
Calvin Kuo  
Peyman Servati

## Thursday, October 13

9:30 AM - 10:30 AM

Poster Session: A, Section: C, Row: F, Poster  
Number: 131

Track: BIOMECHANICS

### Human Performance/Sports Biomechanics (Summer Undergraduate)

**Abstract Title:** Changes in Articular Cartilage Thickness Following Passive and Active Recovery  
**Presenter:** Kust Shu-Jin  
**Principal Investigator:** N/A  
**Author(s):**  
Dana Voinier  
Dawn Elliott  
Daniel White  
Axel Moore

## Thursday, October 13

9:30 AM - 10:30 AM

Poster Session: A, Section: C, Row: F, Poster  
Number: 132

Track: BIOMECHANICS

### Cellular and Molecular Biomechanics: Mechanobiology (Summer Undergraduate)

**Abstract Title:** Assessing Cell-Cell Adhesion and Force Transmission Using Bulk Rheology  
**Presenter:** Venkat Maruthamuthu  
**Principal Investigator:** Bhavana Bhavanam  
**Author(s):**  
Bhavana Bhavanam

## Thursday, October 13

9:30 AM - 10:30 AM

Poster Session: A, Section: C, Row: F, Poster  
Number: 133

Track: BIOMECHANICS

### Computational and Multiscale Modeling In Biomechanics (Summer Undergraduate)

**Abstract Title:** Visualizing the Biomechanical Stresses on Abdominal Aortic Aneurysms using Augmented Reality  
**Presenter:** Aakash Kottakota  
**Principal Investigator:** N/A  
**Author(s):**  
David Vorp  
Timothy Chung

## Thursday, October 13

9:30 AM - 10:30 AM

Poster Session: A, Section: C, Row: F, Poster  
Number: 134

Track: BIOMECHANICS

### Computational and Multiscale Modeling In Biomechanics (Summer Undergraduate)

**Abstract Title:** Toward Development of a Finite Element Model of Skull Representing Average Adult Femal  
**Presenter:** Allison Kosub  
**Principal Investigator:** Marzieh Hajiaghamemar  
**Author(s):**  
Marzieh Hajiaghamemar  
Mohammadreza Ramzanpour

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: F, Poster  
**Number:** 135

**Track:** BIOMECHANICS  
**Computational and Multiscale  
Modeling In Biomechanics (Summer  
Undergraduate)**

**Abstract Title:** Computational Fluid Dynamics  
Simulations of Pulmonary Hypertension in Sickle  
Cell Disease Patients  
**Presenter:** Gracie Finnegan  
**Principal Investigator:** N/A  
**Author(s):**  
Gracie Finnegan  
Fatemeh Bahmani  
Stephanie George

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: F, Poster  
**Number:** 136

**Track:** BIOMECHANICS  
**Computational and Multiscale  
Modeling In Biomechanics (Summer  
Undergraduate)**

**Abstract Title:** Development of a Finite Element  
Model of Ferret Brain to Study Traumatic Brain  
Injury  
**Presenter:** Paulina Munoz Santos  
**Principal Investigator:** N/A  
**Author(s):**  
Mohammadreza Ramzanpour  
Marzieh Hajiaghamemar

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: F, Poster  
**Number:** 137

**Track:** BIOMECHANICS  
**Human Performance/Sports  
Biomechanics (Summer Undergraduate)**

**Abstract Title:** Flexor Hallucis Longus Muscle  
Activation in Dancers versus Non-Dancers  
**Presenter:** Maya Acampora  
**Principal Investigator:** N/A  
**Author(s):**  
Andrew Boyd  
Jennifer Currey  
Amy Loya

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: F, Poster  
**Number:** 138

**Track:** BIOMECHANICS  
**Human Performance/Sports  
Biomechanics (Summer Undergraduate)**

**Abstract Title:** Myoelectric Manifestations of  
Muscular Fatigue in the Bicep Brachii when Using  
The Life Handle.  
**Presenter:** Andrew Boyd  
**Principal Investigator:** N/A  
**Author(s):**  
Amy Loya  
Jennifer Currey  
Maya Acampora



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**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: F, Poster**Number:** 139**Track:** BIOMECHANICS**Human Performance/Sports  
Biomechanics (Summer Undergraduate)****Abstract Title:** Design and Development of Testing System to Evaluate Hand-Arm Coordination**Presenter:** Daniella Pinho**Principal Investigator:** N/A**Author(s):**

Takafumi Asaki

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: F, Poster**Number:** 140**Track:** BIOMECHANICS**Human Performance/Sports  
Biomechanics (Summer Undergraduate)****Abstract Title:** Heels Up Vs. Heels Down: A Pilot Study On The Kinetics Of Small Ballet Jumps**Presenter:** Kathleen Bieryla**Principal Investigator:** Katt Gamblin**Author(s):**

Katherine Gamblin

Jessica Yoshioka

Glenna Clifton

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster**Number:** 161**Track:** BIOMECHANICS**Human Performance/Sports  
Biomechanics (Summer Undergraduate)****Abstract Title:** The Effect of Safety Modifications on Head Accelerations Experienced During a Punch Front Tuck**Presenter:** Kambrie Brandt**Principal Investigator:** Joel D. Stitzel and Jillian E. Urban**Author(s):**

Nicholas Pritchard

Logan Miller

Joel Stitzel

Jillian Urban

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster**Number:** 162**Track:** BIOMECHANICS**Human Performance/Sports  
Biomechanics (Summer Undergraduate)****Abstract Title:** Characterization of Head Acceleration Exposure in Dirt Track Motorsport**Presenter:** Nicholas Tom**Principal Investigator:** Joel Stitzel**Author(s):**

Nitya Venkatiaghari

Tanner Filben

Nicholas Pritchard

Garrett Bullock

Logan Miller

Laura Flashman

Christopher Miles

Jillian Urban

Joel Stitzel

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 163

**Track:** BIOMECHANICS  
**Human Performance/Sports  
Biomechanics (Summer Undergraduate)**

**Abstract Title:** Comparing Vehicle Crash Accelerations and Self-Reported Concussion Symptoms in Dirt Track Racing  
**Presenter:** Nitya Venkatiaghari  
**Principal Investigator:** N/A  
**Author(s):**  
Nicholas Tom  
Tanner Filben  
Nicholas Pritchard  
Logan Miller  
Garrett Bullock  
Laura Flashman  
Christopher Miles  
Jillian Urban  
Joel Stitzel

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 164

**Track:** BIOMECHANICS

**Abstract Title:** Heterogeneous Nuclear Uptake in Cancer  
**Presenter:** Nick Scott  
**Principal Investigator:** N/A  
**Author(s):**  
N/A Sapun  
Parekh

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 165

**Track:** BIOMECHANICS  
**Human Performance/Sports  
Biomechanics (Summer Undergraduate)**

**Abstract Title:** Comparison of Soccer Heading Technique and Head Impact Magnitude Between Sexes and Levels of Play  
**Presenter:** Zoie Mink  
**Principal Investigator:** Jillian Urban, Joel Stitzel  
**Author(s):**  
Tanner Filben  
Logan Miller  
Joel Stitzel  
Kristen Nicholson  
Jillian Urban

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 166

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling  
in Biomechanics**

**Abstract Title:** Obtaining all Material Sensitivities of a Biomechanical Model from a Single Simulation  
**Presenter:** Douglas Cook  
**Principal Investigator:** Douglas D. Cook  
**Author(s):**  
Joseph Carter  
Christopher Stubbs  
Andrew Gibbons  
Anton Bowden

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 167

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling  
in Biomechanics**

**Abstract Title:** Assessment of Injury Thresholds in a  
Typical Human Lumbar Vertebral System

**Presenter:** Anindya Deb

**Principal Investigator:** N/A

**Author(s):**

Sanketh Ramachandra

Ananya Barui

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 168

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling  
in Biomechanics**

**Abstract Title:** Contractile Adaptation of Left  
Ventricular Myocardium Following Myocardial  
Infarction

**Presenter:** Emilio Mendiola

**Principal Investigator:** N/A

**Author(s):**

Sunder Neelakantan

Reza Avaz

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 169

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling  
in Biomechanics**

**Abstract Title:** Physical Modeling to Optimize  
Design of Therapeutic T Cells

**Presenter:** Roberto Alonso Matilla

**Principal Investigator:** N/A

**Author(s):**

Paolo Provenzano

David Odde

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 170

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling  
in Biomechanics**

**Abstract Title:** Nanoscale Simulations of Stretching-  
induced Deformation of Complex Neuronal  
Membranes With versus Without Cholesterol

**Presenter:** Anh Vo

**Principal Investigator:** N/A

**Author(s):**

Anh Vo

Michael Murphy

Phong Phan

Raheleh Miralami

Sara Adibi Sedeh

Filip To

Tonya Stone

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 171

**Track:** BIOMECHANICS

### Computational and Multiscale Modeling in Biomechanics

**Abstract Title:** A 1D Computational Model  
of Lymphatics: Pacemakers and Spatiotemporal  
Distribution of Contractions  
**Presenter:** Farbod Sedaghati  
**Principal Investigator:** N/A  
**Author(s):**  
Brandon Dixon  
Rudolph Gleason

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 172

**Track:** BIOMECHANICS

### Computational and Multiscale Modeling in Biomechanics

**Abstract Title:** Development of 3D Geometry of the  
Ovine Thorax for Finite Element Modeling  
**Presenter:** Juliette Caffrey  
**Principal Investigator:** N/A  
**Author(s):**  
Juliette Caffrey  
Patricia Thomas  
Francis Gayzik

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 173

**Track:** BIOMECHANICS

### Computational and Multiscale Modeling in Biomechanics

**Abstract Title:** 3D-DIC Analysis of Skin Penetration  
in Ballistic Impact  
**Presenter:** Joseph LeSueur  
**Principal Investigator:** N/A  
**Author(s):**  
Jared Koser  
Carolyn Hampton  
Frank Pintar

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 174

**Track:** BIOMECHANICS

### Computational and Multiscale Modeling in Biomechanics

**Abstract Title:** A Model of Differential Cortical  
Expansion Predicts Cortical Stress and Microstructure  
during Folding  
**Presenter:** Kara Garcia  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 175

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling  
in Biomechanics**

**Abstract Title:** Calibration and Validation of a Biomechanical Model of Neuronal Migration and Cortical Folding  
**Presenter:** Maria Holland  
**Principal Investigator:** N/A  
**Author(s):**  
Shuolun Wang  
Kengo Saito  
Hiroshi Kawasaki  
Maria Holland

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 176

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling  
in Biomechanics**

**Abstract Title:** Finite Element Modeling of the Female Pelvic Floor and Associated Structures  
**Presenter:** Marc Mounzer  
**Principal Investigator:** N/A  
**Author(s):**  
Sriram Balasubramanian  
Anita Singh

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 177

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling  
in Biomechanics**

**Abstract Title:** Blood Clot Adhesion to Material Surfaces: Modeling and Tensile Testing  
**Presenter:** Nicolas Tobin  
**Principal Investigator:** N/A  
**Author(s):**  
Jose Monclova  
Keefe Manning  
Eathan DiTullio

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster  
**Number:** 178

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling  
in Biomechanics**

**Abstract Title:** Development and Finite Element Analysis of Foot-Ankle Complex Biomechanics for Sport Wearable Device Assessment  
**Presenter:** Phong Phan  
**Principal Investigator:** N/A  
**Author(s):**  
Phong Phan  
Anh Vo  
Amirhamed Bakhtiarydavijani  
Harish Chander  
Undergraduateben Burch  
Youssef Hammi

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**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster**Number:** 179**Track:** BIOMECHANICS**Computational and Multiscale Modeling in Biomechanics****Abstract Title:** Characterization on Mechanical Behavior of Gastrocnemius: Analytical and Finite Element Analyses**Presenter:** Shunafrika White**Principal Investigator:** Matthew B.A. McCullough**Author(s):**

Shunafrika White

Matthew McCullough

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: G, Poster**Number:** 180**Track:** BIOMECHANICS**Computational and Multiscale Modeling in Biomechanics****Abstract Title:** Development of Virtual Pediatric Spinal Biomechanical Models**Presenter:** Than Huynh**Principal Investigator:** N/A**Author(s):**

James Stadler

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster**Number:** 201**Track:** BIOMECHANICS**Computational and Multiscale Modeling in Biomechanics****Abstract Title:** Development of a Two – Dimensional Finite Element Model of the Neonatal Brachial Plexus with Anatomical Variations Compared to a Validated Control Model.**Presenter:** Sarah Trapp**Principal Investigator:** N/A**Author(s):**

Michele Grimm

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster**Number:** 202**Track:** BIOMECHANICS**Computational and Multiscale Modeling in Biomechanics****Abstract Title:** Computational modeling of collective cell migration: wound healing, cancer invasion, and gastrulation**Presenter:** Zi Chen**Principal Investigator:** Zi Chen**Author(s):**

Jacopo Ferruzzi

Jeffrey Fredberg

Hamed Hosseinzadeh

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 203

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling  
in Biomechanics**

**Abstract Title:** Development of an Empirical  
Correlation to Predict Cooling Penetration into  
Tissue for Practical Use

**Presenter:** Liang Zhu

**Principal Investigator:** N/A

**Author(s):**

Alexander Caporale

Jacob Lombardo

Manpreet Singh

Liang Zhu

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 204

**Track:** BIOMECHANICS  
**Human Performance/Sports  
Biomechanics**

**Abstract Title:** Statistical Parametric Mapping for  
the Analysis of Muscle Forces: An Alternative to Peak  
Forces

**Presenter:** Michael Torry

**Principal Investigator:** JACOB MICHAEL  
TORRY

**Author(s):**

Michael Torry

Adam Jagodinsky

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 205

**Track:** BIOMECHANICS  
**Human Performance/Sports  
Biomechanics**

**Abstract Title:** A Computational Modelling Method  
for Stiffness Measurement of American Football  
Facemasks

**Presenter:** Noah Wright

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 206

**Track:** BIOMECHANICS  
**Human Performance/Sports  
Biomechanics**

**Abstract Title:** A Method to Estimate the Exercise  
Capability of Cardiopulmonary Patients.

**Presenter:** Pooja Rajesh Shukla

**Principal Investigator:** N/A

**Author(s):**

Jinglu Tan

Pooja Rajesh Shukla

Limberg Jacqueline

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 207**Track:** BIOMECHANICS  
**Human Performance/Sports  
Biomechanics****Abstract Title:** Characterization of Head  
Acceleration Exposure during Youth Football Practice  
Drills Using an Instrumented Mouthpiece  
**Presenter:** Ty Holcomb  
**Principal Investigator:** N/A  
**Author(s):**  
Jillian Urban  
Madison Marks  
Joel Stitzel  
Logan Miller  
Nicholas Pritchard  
Mark Espeland  
Christopher Miles  
Ty Holcomb**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 208**Track:** BIOMECHANICS  
**Biomechanics In Cell and Tissue  
Engineering****Abstract Title:** Evolution of Solid Stresses in Normal  
Brain by Age  
**Presenter:** Siyi Zheng  
**Principal Investigator:** Hadi Tavakoli Nia  
**Author(s):**  
Rohin Banerji  
Hadi Nia  
Sue Zhang**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 209**Track:** BIOMECHANICS  
**Mechanics of the Respiratory System****Abstract Title:** Micro-elastography of the  
Functioning Lung at Multiple Length Scales in Health  
and Disease  
**Presenter:** Robert LeBourdais  
**Principal Investigator:** Hadi Nia  
**Author(s):**  
Hadi Nia  
Gabrielle Grifno  
Kathryn Regan  
Rohin Banerji**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 210**Track:** BIOMECHANICS  
**Biomechanics in Cell and Tissue  
Engineering****Abstract Title:** Multiplexed mechanical mapping  
reveals macrophage mediated remodeling of brain in  
vivo  
**Presenter:** Woong Young So  
**Principal Investigator:** Kandice Tanner  
**Author(s):**  
Giuliano Scarcelli  
Kandice Tanner

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 211

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

### Design and Curriculum

**Abstract Title:** Optimization of Lung Tissue  
Processing to Preserve Cell Subpopulations Using  
Nebulized mRNA

**Presenter:** Aram Shajii

**Principal Investigator:** James Dahlman

**Author(s):**

Hyejin Kim

Ryan Zenhausern

James Dahlman

Andrea Li

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 212

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

### K-12 Outreach

**Abstract Title:** Hands-on Biomedical Engineering  
Immersion for K-12 students to Build STEM  
Curiosity

**Presenter:** Abbie Clevenger

**Principal Investigator:** Shreya Raghavan

**Author(s):**

Sabrina VandenHeuvel

Valentina Garcia

Claudia Collier

Shreya Raghavan

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 213

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

### Industry and Biomedical Engineering (Summer Undergraduate)

**Abstract Title:** The Development of an ATD-like  
Human Model for the THOR M50

**Presenter:** Diego Pensado

**Principal Investigator:** F. Scott Gayzik

**Author(s):**

Seth Mischo

Brian von Kleeck

Francis Gayzik

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 214

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

### Other / Non-specified (Summer Undergraduate)

**Abstract Title:** CT Imaging of Gold-Loaded  
Polymersomes to Detect Glioblastoma

**Presenter:** Emily Barnett

**Principal Investigator:** Jessica Larsen & Angela  
Alexander-Bryant

**Author(s):**

Joseph LaValla

Emily Barnett

Jessica Larsen

Angela Alexander-Bryant

Megan Pitz

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 215

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**ABET Program Criteria, Student  
Outcomes (Summer Undergraduate)**

**Abstract Title:** Application of Supervised  
Machine Learning for Bacteria Analysis in Droplet  
Microfluidics

**Presenter:** Shawn Bliss

**Principal Investigator:** Melikhan Tanyeri

**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 216

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**ABET Program Criteria, Student  
Outcomes (Summer Undergraduate)**

**Abstract Title:** Brain Spatial Multi-Omic Imaging  
& Analysis Protocol: Alzheimer's Disease Proof-of-  
Concept

**Presenter:** Thomas Paterson

**Principal Investigator:** Colleen Crouch

**Author(s):**

Ryan Thompson

Anna Crouch

Daniel Jacobson

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 217

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**ABET Program Criteria, Student  
Outcomes**

**Abstract Title:** Preparing Future Ethical Engineers:  
Comparing Experiences with Ethics in Industry  
Practice and Academic Research

**Presenter:** Justin Hess

**Principal Investigator:** N/A

**Author(s):**

Nicholas Fila

Alison Kerr

Athena Lin

Michael Loui

Carla Zoltowski

Andrew Brightman

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 218

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Experiential Learning (Curricular and  
Co-Curricular)**

**Abstract Title:** Gleaning Best Practices from  
Emergency Online Delivery of a Biomaterials  
Research & Innovation Course

**Presenter:** Karen Burg

**Principal Investigator:** N/A

**Author(s):**

Timothy Burg

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 219

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Experiential Learning (Curricular and  
Co-Curricular)**

**Abstract Title:** Design Thinking Project (Design  
Project Zero) in First-Year Biomedical Engineering  
Lab Course Increases Learning and Builds  
Community

**Presenter:** Anatheia Pepperl

**Principal Investigator:** Thea Pepperl

**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: C, Row: H, Poster  
**Number:** 220

**Track: BIOMEDICAL ENGINEERING  
EDUCATION (BME)**

Experiential Learning (Curricular and Co-  
Curricular)

**Abstract Title:** Data management program for a  
biomedical engineering research group

**Presenter:** Joshua Borycz

**Principal Investigator:** Audrey Bowden

**Author(s):**

Audrey Bowden

POSTER SESSIONS

BMEES 2022



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**Research Areas**

- Biomedical & Biological Imaging
- Cardiovascular Engineering
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- Orthopedic Engineering
- Regenerative Engineering in Medicine
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**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 241**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)**Experiential Learning (Curricular and  
Co-Curricular)****Abstract Title:** Experiential Pedagogy: Learn by  
Building in Millifluidics**Presenter:** siavash ahrar**Principal Investigator:** N/A**Author(s):**

Chung Thai

Drew Ramos

THaotho Nguyen

Christian Hernandez

Kunaal Sarhaya

siavash ahrar

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 242**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)**Experiential Learning (Curricular and  
Co-Curricular)****Abstract Title:** Student-Perceived Self-Efficacy  
Improvements in an Intensive Clinical Needs-  
Identification Course**Presenter:** Joseph Towles**Principal Investigator:** N/A**Author(s):**

Joseph Towles

Ross Venook

David Camarillo

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 243**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Abstract Title:** Differentiation of multiple tumor-  
targeted NIR nanoprobe using a single-chip image  
sensor for simultaneous detection of heterogeneous  
tumors**Presenter:** Benjamin Lew**Principal Investigator:** Viktor Gruev**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 244**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Abstract Title:** Design and Fabrication of Porcine  
Crystal Ribcage for High Resolution Ex Vivo Imaging**Presenter:** Dylan Smolen**Principal Investigator:** Hadi Nia**Author(s):**

Hadi Nia

Rohin Banerji

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 245

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Abstract Title:** Born-normalization approach to address optical property heterogeneities in fluorescent emission tomography

**Presenter:** Hang Nguyen

**Principal Investigator:** Kenneth M. Tichauer

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 246

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Abstract Title:** Toward creating muscle fascicle B-mode ultrasound phantoms with SLA 3D printed elastic resin

**Presenter:** Samuel Gillespie

**Principal Investigator:** Wendy Murray

**Author(s):**

Samuel Gillespie

Caralyn Collins

Eric Perreault

Cheng Sun

Wendy Murray

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 247

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Imaging Tissue, Organs, and Physiological Systems (Summer Undergraduate)**

**Abstract Title:** Comparing Confocal and Airyscan Microscopy to Identify and Quantify Filopodia-like Spine Precursors

**Presenter:** Nicole Bohatch

**Principal Investigator:** Karen Litwa

**Author(s):**

Karen Litwa

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 248

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Imaging Tissue, Organs, and Physiological Systems (Summer Undergraduate)**

**Abstract Title:** Designing Engineering Solutions to Characterize Sickle Cell Disease in an Ovine Model

**Presenter:** Emma Warrner

**Principal Investigator:** Graca Almeida-Porada

**Author(s):**

Ritu Ramamurthy

Caroline Kuczynski

Misha Regouski

Iuri Viotti Perisse

Anthony Atala

Irina Polejaeva

Christopher Porada

Graca Almeida-Porada

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 249**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Imaging Tissue, Organs, and  
Physiological Systems (Summer  
Undergraduate)****Abstract Title:** Wearable Transcranial Doppler  
Ultrasound Device for Stroke Prevention**Presenter:** Kiersten Reeser**Principal Investigator:** Greg Bashford**Author(s):**

Sequoia Truong

Ethan Krings

Greg Bashford

Eric Markvicka

Jared Zollinger

Benjamin Hage

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 250**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Imaging Tissue, Organs, and  
Physiological Systems (Summer  
Undergraduate)****Abstract Title:** Methodology for Formalin-Fixed  
Paraffin Embedded Cardiac Tissue Analysis**Presenter:** Leah Gutzwiller**Principal Investigator:** Colleen Crouch**Author(s):**

Anna Crouch

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 251**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Imaging Tissue, Organs, and  
Physiological Systems (Summer  
Undergraduate)****Abstract Title:** Decoding Gut Choreography:  
Intestinal Motility Monitoring Informs Enteric  
Sensory Neuron Function**Presenter:** Runxin Wu**Principal Investigator:** David Linden**Author(s):**

Xi Yu

Arthur Beyder

David Linden

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 252**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Imaging Tissue, Organs, and  
Physiological Systems (Summer  
Undergraduate)****Abstract Title:** Design and Development of a  
Wearable Ultrasound Patch for Measuring Cerebral  
Blood Flow**Presenter:** Sequoia Truong**Principal Investigator:** Eric Markvicka**Author(s):**

Kiersten Reeser

Ethan Krings

Eric Markvicka

Benjamin Hage

Greg Bashford

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 253

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

### **Imaging Tissue, Organs, and Physiological Systems (Summer Undergraduate)**

**Abstract Title:** 3D Investigation of Porcine Cochlea's Morphological Characteristics and LGR5 Expression

**Presenter:** Sasank Sivadanam

**Principal Investigator:** Alon Greenbaum

**Author(s):**

chen li

Sasank Sivadanam

Yuheng Cai

Frances Ligler

Alon Greenbaum

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 254

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

### **Contrast-Enhanced Ultrasound and Therapeutic Ultrasound (US)**

**Abstract Title:** Exploring Use of Ultrasound Therapy for Improved Metabolic Hormone Release from Thyroid Gland

**Presenter:** Bridget Thorpe

**Principal Investigator:** N/A

**Author(s):**

Bridget Thorpe

Andrew Chen

Michael Ryan

julia stern

Aleksandar Jeremic

Vesna Zderic

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 255

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

### **Contrast-Enhanced Ultrasound and Therapeutic Ultrasound (US)**

**Abstract Title:** Deep Learning Method for Detecting Mixed Population Ultrasound Contrast Agents with Different Shells

**Presenter:** Nasrin Akter

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 256

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

### **Contrast-Enhanced Ultrasound and Therapeutic Ultrasound (US)**

**Abstract Title:** Ultra-resolution Elasto-acoustic Gram as a Noninvasive Method to Predict Early Osteoarthritis and Subchondral Bone Alteration

**Presenter:** Yi-Xian Qin

**Principal Investigator:** N/A

**Author(s):**

Adnan Rayes

Qifa Zhou

Carmen Shum

Elias Georgas

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 257

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Deep Learning and Artificial Intelligence  
in Microstructural Imaging**

**Abstract Title:** Virtual Immunohistochemical  
Staining of Label-free Breast Tissue Using Deep  
Learning

**Presenter:** Bijie Bai

**Principal Investigator:** N/A

**Author(s):**

Hongda Wang

Yuzhu Li

Kevin de Haan

Yijie Zhang

Jingxi Li

Morgan Darrow

Elham Kamangar

Yair Rivenson

Aydogan Ozcan

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 258

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Deep Learning and Artificial Intelligence  
in Microstructural Imaging**

**Abstract Title:** Deep Learning Based Method  
for Illumination Beam Correction in Light-Sheet  
Fluorescence Microscopy

**Presenter:** Chen Li

**Principal Investigator:** N/A

**Author(s):**

Man Rai

Alon Greenbaum

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 259

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Deep Learning and Artificial Intelligence  
in Microstructural Imaging**

**Abstract Title:** Automated Segmentation of  
Fluorescent Neurons using Deep Learning

**Presenter:** Marina Ayad

**Principal Investigator:** N/A

**Author(s):**

Marina Ayad

Ilker Hacihaliloglu

Timothy Mahon

Marina Minto Cararo Lopes

Bonnie Firestein

Nada Boustany

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: I, Poster  
**Number:** 260

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Deep Learning and Artificial Intelligence  
in Microstructural Imaging**

**Abstract Title:** Automatic Detection and  
Classification of Neurons and Glia in Tissue Cleared  
Mouse Brains

**Presenter:** Yuheng Cai

**Principal Investigator:** Alon Greenbaum

**Author(s):**

Yuheng Cai

Xuying Zhang

Chen Li

Troy Ghashghaei

Alon Greenbaum

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 281**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Imaging Tissue, Organs, and  
Physiological Systems****Abstract Title:** Role of Adaptor Molecule MyD88 in  
Host Immunity Against *S. aureus* Undergraduates and *P.  
aeruginosa* in Wounded Skin**Presenter:** Alex Vargas**Principal Investigator:** Scott I. Simon**Author(s):**

Scott Simon

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 282**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Imaging Tissue, Organs, and  
Physiological Systems****Abstract Title:** Optogenetic Control of *Drosophila*  
Cardiac Function with ChRmine Opsin**Presenter:** Fei Wang**Principal Investigator:** CHao Zhou**Author(s):**

Elena Gracheva

Abby Matt

Hongwu Liang

CHao Zhou

Matthew Fishman

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 283**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Imaging Tissue, Organs, and  
Physiological Systems****Abstract Title:** Comparing Two 3-Dimensional  
Tissue Imaging Methods**Presenter:** Fiza Qureshi**Principal Investigator:** N/A**Author(s):**

Bernard Choi

Danny Xie

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 284**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Imaging Tissue, Organs, and  
Physiological Systems****Abstract Title:** Incorporation of Quantum Dots to  
Enhance Electrochemical Impedance Spectroscopy for  
Plaque Detection**Presenter:** Justin Chen**Principal Investigator:** N/A**Author(s):**

TZUNG KEITH MD, PHD HSAI

Qingyu Cui

KAIDONG WANG

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 285**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Imaging Tissue, Organs, and  
Physiological Systems****Abstract Title:** A Rapid Method of Fluorescent  
Microsphere Measurement of Regional Organ  
Perfusion**Presenter:** Michael Nelappana**Principal Investigator:** N/A**Author(s):**

Wawrzyniec Dobrucki

Michael Nelappana

Karl Baumgartel

Iwona Dobrucki

Michael Insana

Leopold Pinot

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 286**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Deep Learning and Artificial Intelligence  
in Microstructural Imaging****Abstract Title:** Quantitative Analysis of In Vitro  
Angiogenesis Using Region-Based Convolutional  
Neural Networks**Presenter:** Sugiyama Suguru**Principal Investigator:** N/A**Author(s):**

Cocoro Ito

Kosuke Tsukada

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 287**Track:** CANCER TECHNOLOGIES  
**Cancer Drug Delivery****Abstract Title:** Fusogenic Peptide-Mediated Delivery  
of siRNA in vivo for Ovarian Cancer Treatment**Presenter:** Kharimat Alatisé**Principal Investigator:** Angela Alexander-Bryant**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 288**Track:** CANCER TECHNOLOGIES  
**Cancer Drug Delivery****Abstract Title:** Local and systemic tumor control of  
pancreatic cancer using intratumoral nanoseed eluting  
immunotherapy**Presenter:** Corrine Ying Xuan Chua**Principal Investigator:** Alessandro Grattoni**Author(s):**

Hsuan-Chen Liu

Alessandro Grattoni

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster

**Number:** 289

**Track:** CANCER TECHNOLOGIES

### Computational Modeling of Cancer

**Abstract Title:** Using the Lorentz Model to Investigate Breast Cancer Invasion

**Presenter:** Emmanuel Mintah

**Principal Investigator:** Corey S. O'Hern

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster

**Number:** 290

**Track:** CANCER TECHNOLOGIES

### Computational Modeling of Cancer

**Abstract Title:** Characterizing the Three-Dimensional Nuclear Morphology of Normal Appearing, Immune, and Cancer Cells in Cancer Tumor Microenvironment

**Presenter:** Kanika Yadav

**Principal Investigator:** Shikhar Uttam

**Author(s):**

Shikhar Uttam

Aatur Singhi

Rajdeep Pawar

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster

**Number:** 291

**Track:** CANCER TECHNOLOGIES

### Imaging Strategies In Cancer Detection, Diagnosis, and Prognosis

**Abstract Title:** Informing the dosing schedule design of cancer immunotherapy by monitoring the size variation of tumor draining lymph nodes

**Presenter:** Yanpu

**Principal Investigator:** Angela M. Belcher

**Author(s):**

Angela Belcher

Shengnan Huang

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster

**Number:** 292

**Track:** CANCER TECHNOLOGIES

### Imaging Strategies In Cancer Detection, Diagnosis, and Prognosis

**Abstract Title:** Early prediction of Breast Cancer: Urine-based biosensor (iBiosenC) with Machine Learning Model

**Presenter:** Saundarya Prithweeraj

**Principal Investigator:** Saundarya Prithweeraj

**Author(s):**

Hemalatha Kanniyappan

Mathew Mathew

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster

**Number:** 293

**Track:** CANCER TECHNOLOGIES

### Tumor Microenvironment

**Abstract Title:** Examination of the Effect of Glucose on Cancer-Associated Fibroblast Phenotype

**Presenter:** Madison Bates

**Principal Investigator:** Cynthia A. Reinhart-King

**Author(s):**

Cynthia Reinhart-King

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 294

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment**

**Abstract Title:** Investigating Extracellular Matrix Influence on Cancer Cell Interactions in an Engineered Hydrogel System

**Presenter:** Benjamin Kaufman

**Principal Investigator:** Blanka Sharma

**Author(s):**

Blanka Sharma

Madison Temples

Suzanne Lightsey

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 295

**Track:** CANCER TECHNOLOGIES  
**Cancer Drug Delivery (Summer Undergraduate)**

**Abstract Title:** Selective Functionalization of Leukocyte Subpopulations with E-Selectin Liposomes

**Presenter:** Sarah Shibuya

**Principal Investigator:** N/A

**Author(s):**

Zhenjiang Zhang

Jenna Dombroski

Michael King

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 296

**Track:** CANCER TECHNOLOGIES  
**Computational Modeling of Cancer**

**Abstract Title:** Stochastic Cancer Immune Evasion via Tumor Antigen Downregulation Sculpts Post-Escape Immunogenicity

**Presenter:** Annice Najafi

**Principal Investigator:** Jason George

**Author(s):**

Jason George

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 297

**Track:** CANCER TECHNOLOGIES  
**Molecular Profiling In Cancer (Summer Undergraduate)**

**Abstract Title:** Development and Characterization of Radioresistant Syngeneic Breast Cancer Cells

**Presenter:** Chloe Demellier

**Principal Investigator:** Anna Sorace

**Author(s):**

Chloe Demellier

Patrick Song

Carlos Gallegos

Shannon Lynch

Anna Sorace

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 298

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment (Summer Undergraduate)**

**Abstract Title:** Cancer-Associated Fibroblasts Regulate Cadherin Expression in a 3D Co-Culture System

**Presenter:** Mary Kathryn Sewell-Loftin

**Principal Investigator:** Mary Kathryn Sewell-Loftin

**Author(s):**

Faith Muriuki

Vaishali Bala

Mary Kathryn Sewell-Loftin

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 299

**Track:** CANCER TECHNOLOGIES  
**Computational Modeling of Cancer**

**Abstract Title:** Optimizing combination anti-angiogenic treatment and chemotherapy to control drug delivery and tumor growth

**Presenter:** Lance Munn

**Principal Investigator:** N/A

**Author(s):**

Rakesh Jain

Mohammadreza Nikmaneshi

Lance Munn

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: J, Poster  
**Number:** 300

**Track:** CANCER TECHNOLOGIES  
**Computational Modeling of Cancer**

**Abstract Title:** Mathematically Modeling the Spatio-Temporal Response of Breast Cancer Cells Treated with Doxorubicin

**Presenter:** Hugo Miniere

**Principal Investigator:** N/A

**Author(s):**

Thomas Yankeelov

Amy Brock

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 321

**Track:** CANCER TECHNOLOGIES  
**Computational Modeling of Cancer**

**Abstract Title:** A Cell-Based Computational Model to Quantify Impact of Organ-Specific Microenvironment on Cancer Cells

**Presenter:** Morgan Connaughton

**Principal Investigator:** N/A

**Author(s):**

Mahsa Dabagh

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 322

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment (Summer Undergraduate)**

**Abstract Title:** The Effect of Fibronectin on the Reactivation of Breast Cancer Cells from Dormancy to Proliferation

**Presenter:** Grace May

**Principal Investigator:** Luis Solorio

**Author(s):**

Jordanna Payne

Luis Solorio

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 323

**Track:** CANCER TECHNOLOGIES  
**Cancer Drug Delivery**

**Abstract Title:** Microfluidic Fabrication and Characterization of Radiopaque Barium Sulfate PEG Hydrogel Microspheres

**Presenter:** Ether Dharmesh

**Principal Investigator:** N/A

**Author(s):**

Ether Dharmesh

Samuel Stealey

Silviya Zustiak

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 324

**Track:** CANCER TECHNOLOGIES  
**Cancer Drug Delivery**

**Abstract Title:** Light-Activatable Ethanol Injection for the Treatment of Locally Unresectable Tumors

**Presenter:** Jeffrey Yang

**Principal Investigator:** N/A

**Author(s):**

Jeffrey Yang

Chen-Hua Ma

Huang Chiao Huang

Jenna Mueller

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 325

**Track:** CANCER TECHNOLOGIES  
**Cancer Drug Delivery**

**Abstract Title:** Reducing Hypoxia in Glioblastoma with PLGA-encapsulated Manganese Oxide Nanoparticles

**Presenter:** Ryan Blanchard

**Principal Investigator:** N/A

**Author(s):**

Isaac Adjei

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster

**Number:** 326

**Track:** CANCER TECHNOLOGIES  
**Imaging Strategies in Cancer Detection, Diagnosis, and Prognosis**

**Abstract Title:** Forward-View Optical Coherence Tomography Probe for Renal Cell Carcinoma Diagnosis

**Presenter:** Chen Wang

**Principal Investigator:** N/A

**Author(s):**

Paul Calle

Feng Yan

Kar-Ming Fung

Chongle Pan

Qinggong Tang

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster

**Number:** 327

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment**

**Abstract Title:** Incorporation of Tumor Spheroids into an ex-vivo Tissue Culture Model for Investigating Cancer Cell- Microvascular Interactions

**Presenter:** Arinola Lampejo

**Principal Investigator:** N/A

**Author(s):**

Suzanne Lightsey

Blanka Sharma

Walter Murfee

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster

**Number:** 328

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment**

**Abstract Title:** TAM Receptors Influence Cancer-Immune Cell Crosstalk

**Presenter:** Anisha Datta

**Principal Investigator:** N/A

**Author(s):**

Douglas Lauffenburger

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster

**Number:** 329

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment**

**Abstract Title:** Role of the HU177 Cryptic Collagen Epitope in Differentially Controlling Breast Tumor Cell Behavior

**Presenter:** Jordan Miner

**Principal Investigator:** N/A

**Author(s):**

Jordan Miner

Karissa Tilbury

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 330

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment**

**Abstract Title:** Migration of MDA-MB-231 Cells Towards Mechanically-Active Tumor Microenvironments

**Presenter:** Mary Kathryn Sewell-Loftin

**Principal Investigator:** M.K. Sewell-Loftin

**Author(s):**

Adam Kotar

Mary Kathryn Sewell-Loftin

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 331

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment**

**Abstract Title:** Glioblastoma on-a-Chip to Investigate Tumor-Perivascular Niche Interactions at Single-Cell Resolution

**Presenter:** Mehdi Nikkhah

**Principal Investigator:** N/A

**Author(s):**

Jaimeson Veldhuizen

Samantha O'Connor

Emmanuella Adjei-Sowah

Shwetal Mehta

Costanza Lo Cascio

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 332

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment**

**Abstract Title:** In vivo Collagen Morphology Analysis from Immunotherapy-Treated and Control Mouse Melanoma Tumors

**Presenter:** Nate Burkard

**Principal Investigator:** N/A

**Author(s):**

Alexa Heaton

Melissa Skala

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 333

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment**

**Abstract Title:** Confined mitosis combines with myosin-II suppression to increase heritable loss of chromosomes

**Presenter:** Steven Phan

**Principal Investigator:** N/A

**Author(s):**

Steven Phan

Brandon Hayes

Mai Wang

Dennis Discher

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 334

**Track:** CANCER TECHNOLOGIES  
**Metastasis, Dormancy & Treatment Response**

**Abstract Title:** Cathepsin-B Promotes Triple-Negative Breast Cancer Chemotherapy Resistance

**Presenter:** Emily Henrich

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 335

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** In Vitro Piezoelectric Heart-on-Chip Platform as Drug Screening Tool for Cardiomyopathy

**Presenter:** Kartik Balachandran

**Principal Investigator:** Alexis Applequist

**Author(s):**

Alexis Applequist

Lance Cordes

Ishita Tandon

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 336

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** Novel Pneumatic Cardiac Machine Perfusion Device Preserves Porcine Hearts up to 24 hours

**Presenter:** Riley Lopez

**Principal Investigator:** N/A

**Author(s):**

Riley Lopez

Exal Cisneros Tuch

Isabella Cano

Rafael Veraza

Kristina Andrijauskaite

Zachary Maxwell

Michelle Watt

LEONID BUNEGIN

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 337

**Track:** CARDIOVASCULAR ENGINEERING  
**Other / Non-specified**

**Abstract Title:** A Comparative Analysis of Fluorescent Probes Used for the Identification of Cardiovascular Calcification

**Presenter:** Aashiya Kolengaden

**Principal Investigator:** Joshua Hutcheson

**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 338

**Track:** CARDIOVASCULAR ENGINEERING  
**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** Extracellular Vesicle Isolation from Perivascular Adipose Tissue and Skeletal Muscle

**Presenter:** Anne Barnes

**Principal Investigator:** Alisa Clyne

**Author(s):**

Gurneet Sangha

Alisa Clyne

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 339

**Track:** CARDIOVASCULAR ENGINEERING

**Abstract Title:** Effect of Topographical Micropatterning on the Thrombogenicity of Endothelial Cells

**Presenter:** Hannah Cooper

**Principal Investigator:** N/A

**Author(s):**

Meghan Fallon

Monica Hinds

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: K, Poster  
**Number:** 340

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** A novel wireless ECG system for prolonged monitoring of multiple zebrafish for heart disease and drug screening studies

**Presenter:** Tai Le

**Principal Investigator:** Hung Cao

**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster  
**Number:** 361

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** Addressing Unmet Clinical Need- Polymeric Valve Technology to Optimize TAVR Devices and Dedicated Design for Treating Unique Patient Anatomies

**Presenter:** Brandon Kovarovic

**Principal Investigator:** N/A

**Author(s):**

Ryan Helbock

Kyle Baylous

Oren Rotman

Marvin Slepian

Danny Bluestein

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster  
**Number:** 362

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** Fluid Dynamic Study of the Penn State Pediatric Total Artificial Heart

**Presenter:** Cody Kubicki

**Principal Investigator:** N/A

**Author(s):**

Peter Selinsky

Emma Raich

Sailahari Ponnaluri

Steven Deutsch

William Weiss

Keefe Manning

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster  
**Number:** 363

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** Bioadhesive pacing lead for atraumatic cardiac monitoring and stimulation in vivo

**Presenter:** Jue Deng

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster  
**Number:** 364

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** High Fidelity Simulation Of Heartmate Iii Left Ventricular Assist Device

**Presenter:** Hamid Sadat

**Principal Investigator:** N/A

**Author(s):**

Mishal Raza

Morteza Heydari

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster  
**Number:** 365

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** Dynamic Prediction of Right Ventricular Decompensation After Left Ventricular Mechanical Unloading

**Presenter:** Kimberly Lamberti

**Principal Investigator:** Elazer R. Edelman

**Author(s):**

Steven Keller

Elazer Edelman

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster  
**Number:** 366

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** Abnormal Red Blood Cell and Leukocyte Interactions Induced by Mechanical Circulatory Support Devices

**Presenter:** Kylie Foster

**Principal Investigator:** N/A

**Author(s):**

Kylie Foster

Hendra Setiadi

Phillip Coghill

Zheila Azartash-Namin

Ahmed El Banayosy

Edgar O'Rear

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster  
**Number:** 367

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** Effects of ECM-Envelope on Fibrous Capsules of Pacemaker Implants

**Presenter:** Roche de Guzman

**Principal Investigator:** N/A

**Author(s):**

Allison Meer

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster  
**Number:** 368

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** The Process Of Innovating Medical Technology: Aortic Endograft Explantation

**Presenter:** Solyman Hatami

**Principal Investigator:** Maham Rahimi

**Author(s):**

Shannon Lu

Vamsi Maturi

Alwin Mathew

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster  
**Number:** 369

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** Investigation of Metal Stent Expansion in a Theoretical Aorta

**Presenter:** Tre Welch

**Principal Investigator:** Tre Welch

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster

**Number:** 370

**Track:** CARDIOVASCULAR ENGINEERING

### Cardiovascular Devices

**Abstract Title:** Prohealing Multifunctional Nanomatrix Coated Stent Evaluation in the Rabbit Iliac Artery Balloon Injury Model

**Presenter:** Xixi Zhang

**Principal Investigator:** N/A

**Author(s):**

Patrick Hwang

Jun Chen

Brigitta Brott

Hanjoong Jo

Ho-Wook Jun

Peter Anderson

Renu Virmani

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster

**Number:** 371

**Track:** CARDIOVASCULAR ENGINEERING

### Cardiovascular Devices

**Abstract Title:** An Ex-Vivo Model Study to Determine the Impact of Drug Coated Balloon Delivery Parameters

**Presenter:** Saami Yazdani

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster

**Number:** 372

**Track:** CARDIOVASCULAR ENGINEERING

### Cardiovascular Devices

**Abstract Title:** Differential Protein Expressions on Calcified and Non-calcified Bioprosthetic Heart Valve Explants

**Presenter:** Yingfei Xue

**Principal Investigator:** N/A

**Author(s):**

Alexey Abramov

Rajesh SONI

Giovanni Ferrari

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster

**Number:** 373

**Track:** CARDIOVASCULAR ENGINEERING

### Other / Non-specified

**Abstract Title:** Tubular Perfusion Bioreactor for Endothelialization of Surface-Modified Silicone Tubes to Model Percutaneous Transluminal Angioplasty In Vitro

**Presenter:** Luis Soto-Garcia

**Principal Investigator:** N/A

**Author(s):**

Enrique Villafuerte

Safia Baset

Austin Armentrout

Kytai Nguyen

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster**Number:** 374**Track:** CARDIOVASCULAR ENGINEERING**Other / Non-specified****Abstract Title:** Opportunities for Mass Spectrometry Imaging in Cardiovascular Studies: Proof-of-Concept in Murine Models**Presenter:** Anna Crouch**Principal Investigator:** N/A**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster**Number:** 375**Track:** CARDIOVASCULAR ENGINEERING**Other / Non-specified****Abstract Title:** An Investigation on Sphingolipid Metabolism in Vascular Endothelial Cells under Oxidative Stress**Presenter:** Jordan Johnson**Principal Investigator:** N/A**Author(s):**

Isra Alam

G. Ekin Atilla-Gokcumen

B. Rita Alevriadou

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster**Number:** 376**Track:** CARDIOVASCULAR ENGINEERING**Other / Non-specified****Abstract Title:** Understanding Endovascular Aortic Repair Limitations by Investigating Endograft-Aorta Geometric Compatibility**Presenter:** Junsung Kim**Principal Investigator:** N/A**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster**Number:** 377**Track:** CARDIOVASCULAR ENGINEERING**Other / Non-specified****Abstract Title:** Assessing Local Delivery Capability of a Novel Septal Ablation System via an ex vivo Pig Heart Model**Presenter:** Jun Liao**Principal Investigator:** N/A**Author(s):**

Katherine Copeland

Uday Chintapula

Joyita Roy

Liping Tang

Yi Hong

Kytai Nguyen

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster**Number:** 378**Track:** CARDIOVASCULAR ENGINEERING**Other / Non-specified****Abstract Title:** Glutamine Upregulates Both Contractile and Glycolytic Genes in Vascular Smooth Muscle Cells**Presenter:** Pattie Mathieu**Principal Investigator:** N/A**Author(s):**

Alisa Clyne

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster  
**Number:** 379

**Track:** CARDIOVASCULAR ENGINEERING  
**Other / Non-specified**

**Abstract Title:** Phenotypic States of Smooth Muscle Cells in a Coculture Model under High Wall Shear Stress Condition

**Presenter:** Kaoru Sawasaki

**Principal Investigator:** N/A

**Author(s):**

Masanori Nakamura

Naoyuki Kimura

koji kawahito

HIROMICHI FUJIE

Naoya Sakamoto

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: L, Poster  
**Number:** 380

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics (Summer Undergraduate)**

**Abstract Title:** Mechanical and In Vitro Functional Assessment of a Pediatric Pulmonary Heart Valve Scaffold

**Presenter:** Ben Leslie

**Principal Investigator:** William R. Wagner

**Author(s):**

Drake Pedersen

Antonio D'Amore

William Wagner

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 401

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices (Summer Undergraduate)**

**Abstract Title:** Comprehensive Mechanical Assessment of Metallic Scaffolds in Percutaneous Cardiac Devices

**Presenter:** Kara Ngheim

**Principal Investigator:** N/A

**Author(s):**

Youngjae Chun

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 402

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** A Finite Element Investigation Into Aortic Arch Dissection Repair With Stenting

**Presenter:** Žiga Donik

**Principal Investigator:** N/A

**Author(s):**

Janez Kramberger

Seth Sankary

Luka Pocivavsek

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 403

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Reprogramming/Directed  
Differentiation In Stem Cell Engineering**

**Abstract Title:** Synergistic Genetic and  
Microenvironmental Engineering for Human iPSC-  
derived Hepatocyte Maturation

**Presenter:** Kristen Cotton

**Principal Investigator:** Salman Khetani

**Author(s):**

Kristen Cotton

Yang Yuan

Kyle Mathes

Shang Gao

Xinge Wang

Yang Dai

Jalees Rehman

Bradley Merrill

Salman Khetani

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 404

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Reprogramming/Directed  
Differentiation In Stem Cell Engineering**

**Abstract Title:** Electrogenic Gene Dynamics During  
Forebrain Differentiation from Embryonic Stem Cells

**Presenter:** Luke Zirretta

**Principal Investigator:** Adele Doyle

**Author(s):**

Adele Doyle

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 405

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Reprogramming/Directed  
Differentiation In Stem Cell Engineering**

**Abstract Title:** Reversing Cisplatin-Induced Acute  
Kidney Injury using Mesenchymal Stem Cell Derived  
Extracellular Vesicles

**Presenter:** Raina Kikani Avnesh Thakor

**Principal Investigator:** N/A

**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 406

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Micro/Nano Tools In Molecular Biology  
(Genomics, Proteomics) (Summer  
Undergraduate)**

**Abstract Title:** Comparing CRISPR/Cas9 Knockout  
and shRNA Knockdown for EPH Receptors in  
Colorectal Cancer Cell Lines

**Presenter:** Aaron Streit

**Principal Investigator:** Giovanna Tosato

**Author(s):**

Michael DiPrima

Giovanna Tosato

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 407

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### **Micro/Nano Tools In Molecular Biology (Genomics, Proteomics) (Summer Undergraduate)**

**Abstract Title:** Substrate Optimization for Tunable  
Expansion Microscopy

**Presenter:** Rylee Newport

**Principal Investigator:** Stefan Wilhelm

**Author(s):**

Vinit Sheth

Stefan Wilhelm

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 409

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### **Epigenetics and Chromatin Regulation**

**Abstract Title:** Nuclear actin polymerization  
promotes DNA damage response

**Presenter:** Alice Anais Varlet

**Principal Investigator:** Jan Lammerding

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 410

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### **Epigenetics and Chromatin Regulation**

**Abstract Title:** Using CRISPR-Cas9 to Understand  
the Role of SNAI2 in Malignant Peripheral Nerve  
Sheath Tumors (MPNST) Cell Lines

**Presenter:** Hilda Jafarah

**Principal Investigator:** N/A

**Author(s):**

Hilda Jafarah

Xiyuan Zhang

Bega Murray

John Shern

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 411

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### **Epigenetics and Chromatin Regulation**

**Abstract Title:** Chromatin Remodeling in MSC on  
the Application of Hyper Oxidative Stress

**Presenter:** Lauren Monroe

**Principal Investigator:** Soham Ghosh

**Author(s):**

Lauren Monroe

Samantha Kaonis

Neda Kabi

Abigail Fennell

Jack Forman

Soham Ghosh

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 412**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Micro/Nano Tools in Molecular Biology  
(Genomics, Proteomics)****Abstract Title:** Genetically encoded phase-separation sensors for intracellular probing of biomolecular condensates**Presenter:** Alexa Regina Avecilla**Principal Investigator:** N/A**Author(s):**

Jeremy Thomas

Felipe Quiroz

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 413**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Reprogramming/Directed  
Differentiation in Stem Cell Engineering****Abstract Title:** Stretch Mechanotransduction for MSC Osteogenesis and the Role of YAP and ROCK**Presenter:** Kim Eunju**Principal Investigator:** N/A**Author(s):**

Jung Yul Lim

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 414**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Reprogramming/Directed  
Differentiation in Stem Cell Engineering****Abstract Title:** Generation of endothelial cells from pluripotent stem cells through CRISPR activation of ETV2**Presenter:** Aining Fan**Principal Investigator:** Jeffrey Millman**Author(s):**

Jeffrey Millman

Matthew Ishahak

Kameron Bradley

Erica Marquez

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 415**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Reprogramming/Directed  
Differentiation in Stem Cell Engineering****Abstract Title:** Nanotechnology-driven Non-viral Vasculogenic and Neurogenic Reprogramming of Fibroblasts: Potential Applications in the Treatment of Alzheimer's Disease**Presenter:** Diego Alzate Correa**Principal Investigator:** Daniel Gallego Perez**Author(s):**

Jonathan Stranan

Maria Angelica Rincon Benavides

William Lawrence

Natalia Higuera-Castro

Daniel Gallego-Perez

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 416

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Reprogramming/Directed  
Differentiation in Stem Cell Engineering**

**Abstract Title:** FOXA1/2 Depletion Drives Global  
Reprogramming Of Differentiation State And  
Metabolism In A Human Hepatic Cell Line and  
Human Stem Cell-Derived Hepatic Progenitor Cells

**Presenter:** Daniel Guiggey

**Principal Investigator:** N/A

**Author(s):**

Daniel Guiggey

Natesh Parashurama

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 418

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Reprogramming/Directed  
Differentiation in Stem Cell Engineering**

**Abstract Title:** CRISPR-activation of a Novel  
Gene Increases Target Gene Expression in CRISPR-  
activation Multiplex Upregulated Cells

**Presenter:** Hunter Levis

**Principal Investigator:** Robby D. Bowles

**Author(s):**

Elise Stockham

Jacob Weston

Robert Bowles

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 417

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Reprogramming/Directed  
Differentiation in Stem Cell Engineering**

**Abstract Title:** Highly Efficient Reprogramming of  
Adult Human Fibroblasts into Endothelial Cells by  
ETV2 and Sox17

**Presenter:** Alexander Grath

**Principal Investigator:** GuoHao Dai

**Author(s):**

GuoHao Dai

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 419

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Reprogramming/Directed  
Differentiation in Stem Cell Engineering**

**Abstract Title:** Sphingosine-1-phosphate regulate  
Alveolar Type I cell behavior during repair of acute  
lung injury

**Presenter:** Manwai Chan

**Principal Investigator:** N/A

**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: M, Poster  
**Number:** 420**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Reprogramming/Directed  
Differentiation in Stem Cell Engineering****Abstract Title:** Interplay of Wnt/BMP Signaling  
with Cellular Metabolism and Epigenetics for  
Enhanced Multipotency of Skin Derived Neural Crest  
Stem Cells**Presenter:** Pihu Mehrotra**Principal Investigator:** Stelios Andreadis**Author(s):**

Izuagie Ikhapoh

Pedro Lei

Georgios Tseropoulos

Yali Zhang

Jianmin Wang

Stelios Andreadis

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 441**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Reprogramming/Directed  
Differentiation in Stem Cell Engineering****Abstract Title:** It Takes a Heart to Make the Lung:  
Recapitulate Human Cardio-pulmonary Co-  
development Using Stem Cells**Presenter:** Xi Ren**Principal Investigator:** N/A**Author(s):**

Wai Hoe Ng

Elizabeth Johnston

Jacqueline Bliley

Adam Feinberg

Xi Ren

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 442**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Reprogramming/Directed  
Differentiation in Stem Cell Engineering****Abstract Title:** ModRNA-based CRISPR Systems  
for Robust Genome Editing in Human Stem Cells**Presenter:** Xiaojun Lian**Principal Investigator:** Xiaojun Lian**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 443**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Cell Migration****Abstract Title:** Inhibition of Neutrophil Extracellular  
Traps in Brain Metastatic Breast Cancer Limits  
Tumor-Associated Neutrophil Infiltration and Tumor  
Invasion**Presenter:** Simrit Safarulla Musallyarakath Arakkal**Principal Investigator:** Arvind Chandrasekaran**Author(s):**

Arvind Chandrasekaran

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 444

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Assistive Technology (Summer  
Undergraduate)**

**Abstract Title:** Survey of Quadriplegics to Find the  
Advantages and Disadvantages of Robotic Assistive  
Feeding Devices

**Presenter:** Sierra Andrews

**Principal Investigator:** Eric Schearer

**Author(s):**

Eric Schearer

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 445

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Assistive Technology (Summer  
Undergraduate)**

**Abstract Title:** Development of three-dimensional  
visualization system for pills

**Presenter:** Juhui Lee

**Principal Investigator:** N/A

**Author(s):**

Young Jae Kim

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 446

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Assistive Technology (Summer  
Undergraduate)**

**Abstract Title:** Analyzing Kinematics of ASL Signs  
Versus Transitional Articulator Movements Using  
Multi-Modal Sensing Data

**Presenter:** Rebecca Keating

**Principal Investigator:** Evie Malaia

**Author(s):**

Evguenia Malaia

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 447

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Assistive Technology (Summer  
Undergraduate)**

**Abstract Title:** Using Motion Planning for Successful  
Bite Transfers

**Presenter:** Brian Ngoh Eric Schearer

**Principal Investigator:** N/A

**Author(s):**

Eric Schearer

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 448

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Assistive Technology**

**Abstract Title:** Safety Analysis Of A Tissue  
Retraction Ring For Use During Unicondylar Knee  
Arthroplasty

**Presenter:** Nicolette Fournelis

**Principal Investigator:** N/A

**Author(s):**  
Lauren Paffrath

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 449

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Assistive Technology**

**Abstract Title:** Ergonomic Design of the Enteral  
Syringe to Improve Patient Quality of Life

**Presenter:** Susan Freudzon

**Principal Investigator:** N/A

**Author(s):**  
Susan FUndergraduatedzon

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 450

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Assistive Technology**

**Abstract Title:** Sonomyography Enables  
Investigation of Motor Control Principles at the  
Single Joint Level

**Presenter:** Shriniwas Patwardhan

**Principal Investigator:** N/A

**Author(s):**  
Jonathon Schofield  
Wilsaan Joiner  
Siddhartha Sikdar

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 451

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Design and Control of Prostheses and  
Exoskeletons**

**Abstract Title:** Using Trajectory Corrections from an  
Exoskeleton to Improve the System Identification of  
an Electrically Stimulated Arm: A Simulation Study

**Presenter:** Cameron LaMack

**Principal Investigator:** N/A

**Author(s):**  
Eric Schearer

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 452

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### **Design and Control of Prostheses and Exoskeletons**

**Abstract Title:** Development of a Soft Self-Powered  
Elbow Exoskeleton

**Presenter:** Emma Treadway

**Principal Investigator:** N/A

**Author(s):**

Camille Heidelbaugh

Aislinn Marcee

Emma Treadway

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 453

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### **Design and Control of Prostheses and Exoskeletons**

**Abstract Title:** Hip Joint Brace For Improved Patient  
Outcomes During Athletic Activity

**Presenter:** Megan Mentzer

**Principal Investigator:** N/A

**Author(s):**

Sarah Breen

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 454

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### **Implantable Sensors and Devices**

**Abstract Title:** Treatment effects on natural  
biomaterial-based oxygen sensors: oxygen sensitivity  
and mechanical properties of different hydrogel  
matrices

**Presenter:** Waqas Saleem

**Principal Investigator:** N/A

**Author(s):**

Waqas Saleem

ANANTHAKRISHNAN SOUNDARAM

JEEVARATHINAM

Michael McShane

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 455

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### **Implantable Sensors and Devices**

**Abstract Title:** Near-Infrared Emissive  
Phosphorescent Nanoparticles for Oxygen and  
Metabolite Monitoring

**Presenter:** Ananthakrishnan Soundaram

Jeevarathinam

**Principal Investigator:** N/A

**Author(s):**

Waqas Saleem

ANANTHAKRISHNAN SOUNDARAM

JEEVARATHINAM

Michael McShane

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 456**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Implantable Sensors and Devices****Abstract Title:** Effects of Data Processing Algorithm  
and Strain Gage Configuration on Applied Load  
Prediction Accuracy in a Prototype Instrumented  
Trapezium**Presenter:** Josephine Kalshoven**Principal Investigator:** N/A**Author(s):**

Josephine Kalshoven

Amy Morton

Rohit Badida

Julia Henke

Douglas Moore

Joseph Crisco

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 457**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Implantable Sensors and Devices****Abstract Title:** Hydrogel Sensor for Monitoring  
Glucose during Hypoglycemia**Presenter:** Ridhi Pradhan**Principal Investigator:** N/A**Author(s):**

Michael McShane

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 458**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Implantable Sensors and Devices****Abstract Title:** Development of Implantable Dual  
L-glutamateGABA Microsensors for Neuroscience  
Studies**Presenter:** Sung Sik Chu**Principal Investigator:** N/A**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 459**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Implantable Sensors and Devices****Abstract Title:** Glucose Biosensors Based on  
Poly(ethylene glycol) Hydrogels with Chemo-Optical  
Sensing Microdomains**Presenter:** Tyrell Williams**Principal Investigator:** Daniel Alge**Author(s):**

Michael McShane

Tyrell Williams

Daniel Alge

ANANTHAKRISHNAN SOUNDARAM

JEEVARATHINAM

Paul Kim

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: D, Row: N, Poster  
**Number:** 460

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### Implantable Sensors and Devices

**Abstract Title:** Pulsed Plasma Deposition of  
Amorphous Silicon Carbide for Implantable Medical  
Devices

**Presenter:** Yupeng Wu

**Principal Investigator:** N/A

**Author(s):**

Alexandra Joshi-Imre

Stuart Cogan

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 481

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### Biosensors

**Abstract Title:** Planar Conformal Radio-frequency  
Sensors for Detection of Tissue Abnormality

**Presenter:** J.C. Chiao

**Principal Investigator:** N/A

**Author(s):**

Sen Bing

Khengdauliu Chawang

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 482

**Track:** DRUG DELIVERY

### Cancer Drug Delivery

**Abstract Title:** Optimization of a Nanogel-Cytokine  
Conjugate for Macrophage Immunotherapy

**Presenter:** Danuta Radyna

**Principal Investigator:** John R. Clegg

**Author(s):**

Danuta Radyna

Rana Ajeeb

Trinity Hoff

John Clegg

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 483

**Track:** DRUG DELIVERY

### Cancer Drug Delivery

**Abstract Title:** Evaluating the Mechanisms of Yoda1  
Sensitization of TRAIL-Mediated Apoptosis in  
Glioblastoma Cells

**Presenter:** Shanay Desai

**Principal Investigator:** Michael King

**Author(s):**

Samantha Knoblauch

Jenna Dombroski

Nicole Sarna

Michael King

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 484

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery**

**Abstract Title:** Layer-By-Layer Nanoparticles for Targeted Delivery to Ovarian Cancer and Immune Cells

**Presenter:** Victoria Gomerding  
**Principal Investigator:** Paula T. Hammond  
**Author(s):**  
Victoria Gomerding  
Apoorv Shanker  
Gil Covarrubias  
Ivan Pires

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 485

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery**

**Abstract Title:** Intraoperative cone-beam CT scans can inform drug retention following intratumoral delivery of cisplatin in lung tumors.

**Presenter:** Victor Mori  
**Principal Investigator:** N/A  
**Author(s):**  
Lisa Pierre  
Jason Bates  
C. Matthew Kinsey

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 486

**Track:** DRUG DELIVERY  
**Respiratory Drug Delivery**

**Abstract Title:** Anti-Inflammatory Effects of Organ-Specific Electrosprayed Extracellular Matrix Nanoparticles

**Presenter:** Keith Li  
**Principal Investigator:** Rebecca Heise  
**Author(s):**  
Rebecca Heise  
Casie Slaybaugh

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 487

**Track:** DRUG DELIVERY  
**Respiratory Drug Delivery**

**Abstract Title:** Extracellular Matrix Nanoparticles Modulate Immune Response to Lipopolysaccharide-Induced Lung Injury

**Presenter:** Jessica Nguyen  
**Principal Investigator:** Rebecca L Heise  
**Author(s):**  
N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 488

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery (Summer Undergraduate)**

**Abstract Title:** Controlled Release Oral Medication for Long-Term Pain Management of Cancer Patients

**Presenter:** Devina Jaiswal

**Principal Investigator:** Leah Mikkelson

**Author(s):**

Leah Mikkelson

Madison Jakielaszek

Sara Cunha

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 489

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery (Summer Undergraduate)**

**Abstract Title:** Ultrahigh Drug Loaded Micelles for Drug Delivery Applications

**Presenter:** Jean Jerome

**Principal Investigator:** Richard D'Arcy

**Author(s):**

Richard d'Arcy

Craig Duvall

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 490

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery (Summer Undergraduate)**

**Abstract Title:** Higher Collagen Content in Pancreatic Cancer Correlates with Reduced Drug Delivery

**Presenter:** Dhruv Ranjan

**Principal Investigator:** Kenneth Tichauer

**Author(s):**

Cody Rounds

Kenneth Tichauer

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 491

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery (Summer Undergraduate)**

**Abstract Title:** Stably Conjugated Endosomal Release Domains Improve Cancer Vaccine Delivery by VIPER

**Presenter:** Tran Luu

**Principal Investigator:** Suzie H. Pun

**Author(s):**

Tran Luu

Dinh Chuong Nguyen

Kefan Song

Suzie Pun

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 492

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery (Summer Undergraduate)**

**Abstract Title:** Vandetanib-loaded Radiopaque Drug-eluting Beads for Transarterial Chemoembolization of Liver Tumors  
**Presenter:** Aneesh Zutshi  
**Principal Investigator:** Bradford J. Wood  
**Author(s):**  
Andrew Mikhail  
Bradford Wood

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 493

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery**

**Abstract Title:** Evaluation of the Composition and Shelf-life of the Novel Doxorubicin Loaded Starch-Based Hydrogel  
**Presenter:** Anna Jones  
**Principal Investigator:** N/A  
**Author(s):**  
Anna Jones  
Elizabeth Barker  
Jenny Patel  
Rachel Ivy  
Alissa Hendricks

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 494

**Track:** DRUG DELIVERY

**Abstract Title:** Platinum Nanoparticles' Mechanism of Action in Triple Negative Breast Cancer  
**Presenter:** Ashish Kokkula  
**Principal Investigator:** Aida Lopez Ruiz, Kathleen McEnnis  
**Author(s):**  
N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 495

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery**

**Abstract Title:** Tissue-specific Nanoparticle PEGylation Strategies to Overcome the ECM Barrier  
**Presenter:** Devorah Cahn  
**Principal Investigator:** N/A  
**Author(s):**  
Matthew Wolf  
Gregg Duncan

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster

**Number:** 496

**Track:** DRUG DELIVERY

### Cancer Drug Delivery

**Abstract Title:** Tumor-Targeted Oxidative Stress-Amplifying Micelles for Combination Anticancer Therapy

**Presenter:** Dongwon Lee

**Principal Investigator:** Dongwon Lee

**Author(s):**

Sooyeon Kim

hayoung jun

Gayoung Kwon

Soonyoung Kwon

Nuri Kim

Dongwon Lee

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster

**Number:** 497

**Track:** DRUG DELIVERY

### Cancer Drug Delivery

**Abstract Title:** Carbohydrate-based Ionic Liquid Coated Polymer Nanoparticles for Selective Targeting of Cancer Cell

**Presenter:** Gagandeep Singh

**Principal Investigator:** N/A

**Author(s):**

Eden Tanner

Gaya Dasanayake

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster

**Number:** 498

**Track:** DRUG DELIVERY

### Cancer Drug Delivery

**Abstract Title:** Remote Loading of Doxorubicin and Gas Bubbles into PLA Microcapsules: A novel strategy for on-demand drug release and in vivo targeting

**Presenter:** Ghazal Rastegar

**Principal Investigator:** Shashank Sirsi

**Author(s):**

Shashank Sirsi

Arvin Honari

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster

**Number:** 499

**Track:** DRUG DELIVERY

### Cancer Drug Delivery

**Abstract Title:** Novel Tunable Amyloid Aggregates for Cancer Drug Delivery

**Presenter:** Mathumai Kanapathipillai

**Principal Investigator:** N/A

**Author(s):**

Maytham Ismail

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: O, Poster  
**Number:** 500

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery**

**Abstract Title:** Hyper-Compliant Polyacrylamide  
Microparticles for Hydrophobic Drug Delivery

**Presenter:** Rebeka Sowers

**Principal Investigator:** N/A

**Author(s):**

Rebeka Sowers

Joseph Urban

Edith Mathiowitz

Eric Darling

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster  
**Number:** 521

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery**

**Abstract Title:** Development of an In Vitro Test Bed  
for the Optimization of Drug Diffusion in Pediatric  
Solid Tumors

**Presenter:** Rachel Ivy

**Principal Investigator:** N/A

**Author(s):**

Anna Jones

Rachel Ivy

Alissa Hendricks

Elizabeth Barker

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster  
**Number:** 522

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery**

**Abstract Title:** Nanoparticle-Protein Interaction is  
Sensitive to Isomeric Differences in Surface Chemistry

**Presenter:** Sridevi Baradhvaj Conjeevaram

**Principal Investigator:** N/A

**Author(s):**

Sridevi Baradhvaj Conjeevaram

Shelby McCoy

Amulya Kadaba

Isaac Adjei

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster  
**Number:** 523

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery**

**Abstract Title:** Novel Drug Delivery System  
Embedded within Vesosomes for Controlled and  
Sustained Drug Release

**Presenter:** Seoyoon Song

**Principal Investigator:** N/A

**Author(s):**

Seoyoon Song

Mina Lee

Sunhee Yoon

Sun Min Kim

Tae-Joon Jeon

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster  
**Number:** 524

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery**

**Abstract Title:** Niclosamide-loaded Polyanhydride Nanoparticles for Breast Cancer Therapy

**Presenter:** Susheel Kumar Nethi

**Principal Investigator:** Surya K Mallapragada

**Author(s):**

Brianna White

satyanarayana Rachagani

Surya Mallapragada

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster  
**Number:** 525

**Track:** DRUG DELIVERY  
**Respiratory Drug Delivery**

**Abstract Title:** Pharmacodynamic Model of Tobramycin and Colistin Activity Against Pseudomonas Aeruginosa Biofilms

**Presenter:** Swarnima Roychowdhury

**Principal Investigator:** Charles Roth

**Author(s):**

Swarnima Roychowdhury

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster  
**Number:** 526

**Track:** DRUG DELIVERY  
**Respiratory Drug Delivery**

**Abstract Title:** Impact of Nebulization on the Physicochemical Properties of Polymeric Nanoparticles for Pulmonary Drug Delivery

**Presenter:** Jyothi Menon

**Principal Investigator:** N/A

**Author(s):**

Andrea Gonsalves

Kalindu Perera

Jyothi Menon

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster  
**Number:** 527

**Track:** DRUG DELIVERY  
**Respiratory Drug Delivery**

**Abstract Title:** Mechanical Properties of Injured Swine Airway Treated with Corticosteroid Coated ET Tube

**Presenter:** Gabriela Cervantes-Gonzales

**Principal Investigator:** Teja Guda

**Author(s):**

Teja Guda

Solaleh Miar

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster**Number:** 528**Track:** DRUG DELIVERY**Respiratory Drug Delivery****Abstract Title:** Mucus Penetrating Biodegradable Nanoparticles for Treatment of Idiopathic Pulmonary Fibrosis**Presenter:** Harish Ramachandramoorthy**Principal Investigator:** N/A**Author(s):**

kun man

Trinh Nguyen

Uday Chintapula

Tanviben Kotadia

Tam Nguyen

Yong Yang

Kytai Nguyen

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster**Number:** 529**Track:** DRUG DELIVERY**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Polymersomes deliver stress granule deaggregating peptides as aids in peripheral nerve regeneration**Presenter:** Kayleigh Trumbull**Principal Investigator:** Conner Nathaniel Lumb, Jessica Larsen**Author(s):**

Conner Lumb

Jessica Larsen

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster**Number:** 530**Track:** DRUG DELIVERY**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Membrane-Wrapped Alginate Microgels as Tunable Drug Release Depots**Presenter:** Lauren Mottel**Principal Investigator:** Jason Gleghorn**Author(s):**

Allyson Dang

Jason Gleghorn

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster**Number:** 531**Track:** DRUG DELIVERY**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Polyethylene glycol-b-poly(lactic acid) polymersome elongation through osmotic pressure mediated membrane tension and fusion**Presenter:** Owen Tabah**Principal Investigator:** Jessica Larsen**Author(s):**

Jessica Larsen

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster

**Number:** 532

**Track:** DRUG DELIVERY

**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** Expedited Development and Characterization of Tablet Formulations

**Presenter:** Ternya Gibson

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster

**Number:** 533

**Track:** DRUG DELIVERY

**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** Cholesterol Depletion Increases Nanogel Uptake in iPSC Derived Brain Microvascular Endothelial Cells

**Presenter:** Viviana Alpizar

**Principal Investigator:** Alisa Morss Clyne

**Author(s):**

Alisa Clyne

Tao Lowe

Bilal Moiz

Eman Mirdamadi

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster

**Number:** 534

**Track:** NANO AND MICRO TECHNOLOGIES

**Micro/Nano Technologies In Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Biocompatible Gelatin-Gallic acid Microcomplexes Releasing GO/Cu Nanocomposites for Antibacterial and Anti-biofilm Effect

**Presenter:** Jiwon Kim

**Principal Investigator:** N/A

**Author(s):**

Jonghoon Choi

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster

**Number:** 534

**Track:** NANO AND MICRO TECHNOLOGIES

**Organ-on-Chip for Regenerative Medicine**

**Abstract Title:** Biodegradable membrane-based glomerulus-on-a-chip for modeling blood filtration

**Presenter:** Jiwon Kim

**Principal Investigator:** N/A

**Author(s):**

Xingrui Mou

Jessica Shah

Samira Musah

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster  
**Number:** 535

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies In Molecular and Cellular Bioengineering, Medicine and Biology (Summer Undergraduate)**

**Abstract Title:** Systematic Degradation and Toxicity Analysis of Copper-Based Semiconductor Nanomaterials  
**Presenter:** George Katsarakes  
**Principal Investigator:** Allison Dennis  
**Author(s):**  
Xingjian Zhong  
Allison Dennis

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster  
**Number:** 536

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies In Molecular and Cellular Bioengineering, Medicine and Biology (Summer Undergraduate)**

**Abstract Title:** Engineering Hybrid Exosomes for Biomedical Applications  
**Presenter:** Daniela De Nobrega Viaje  
**Principal Investigator:** N/A  
**Author(s):**  
Brandon Bakka  
Tyrone Porter

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster  
**Number:** 537

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies In Molecular and Cellular Bioengineering, Medicine and Biology (Summer Undergraduate)**

**Abstract Title:** Analysis of the Trauma Biomarker Hyaluronic Acid using Solid-State Nanopores  
**Presenter:** Carla Rodriguez  
**Principal Investigator:** Adam R. Hall  
**Author(s):**  
Adam Hall

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster  
**Number:** 538

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies In Molecular and Cellular Bioengineering, Medicine and Biology (Summer Undergraduate)**

**Abstract Title:** Decoupling Vasculogenic Cell-Based and Extracellular Vesicle Therapy for Alzheimer's Disease  
**Presenter:** Natalia Mendonca  
**Principal Investigator:** Natalia Higueta-Castro  
**Author(s):**  
Natalia Mendonca  
Diego Alzate Correa  
Jonathan Stranan  
Maria Angelica Rincon Benavides  
Luke Lemmerman  
Ludmila Diaz-Starokozheva  
William Lawrence  
Daniel Gallego-Perez  
Natalia Higueta-Castro

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster

**Number:** 539

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies In Molecular and Cellular Bioengineering, Medicine and Biology (Summer Undergraduate)**

**Abstract Title:** Heparosan-Conjugated Nanoparticles Demonstrate Increased Uptake in Innate Immune Cells

**Presenter:** Sarah Butterfield

**Principal Investigator:** Stefan Wilhelm

**Author(s):**

Wen Yang

Stefan Wilhelm

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: P, Poster

**Number:** 540

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies In Molecular and Cellular Bioengineering, Medicine and Biology (Summer Undergraduate)**

**Abstract Title:** Fabrication of Magnetically Tunable Erythrocyte Based Micromotors

**Presenter:** Sarah Gatti

**Principal Investigator:** Jamel Ali

**Author(s):**

David Quashie

Sophie Jermyn

Jamel Ali

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster

**Number:** 561

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies In Molecular and Cellular Bioengineering, Medicine and Biology (Summer Undergraduate)**

**Abstract Title:** Exposure to Nanoplastics Induces an Inflammatory Response in Healthy and Type 2 Diabetic Primary Human Proximal Tubular Epithelial Cells

**Presenter:** Shereen Yassine

**Principal Investigator:** Steven T. Haller and David J. Kennedy

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster

**Number:** 562

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies In Molecular and Cellular Bioengineering, Medicine and Biology (Summer Undergraduate)**

**Abstract Title:** Accessing Superhydrophobic Microwell Arrays Devices for High-Throughput Culture of 3D Cancer Models

**Presenter:** TinTin Nguyen

**Principal Investigator:** Michael R. King

**Author(s):**

N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster  
**Number:** 563

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies In Molecular and Cellular Bioengineering, Medicine and Biology (Summer Undergraduate)**

**Abstract Title:** Anti-inflammatory Polymer Decorated Nanoparticles for Sepsis Control  
**Presenter:** Yitian Zhu  
**Principal Investigator:** Paula Hammond  
**Author(s):**  
Apoorv Shanker  
Paula Hammond

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster  
**Number:** 564

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies In Molecular and Cellular Bioengineering, Medicine and Biology (Summer Undergraduate)**

**Abstract Title:** Role of macrophages in processing nanotherapeutics in breast cancer liver metastasis  
**Presenter:** Anjana Tiwari Biana Godin  
**Principal Investigator:** N/A  
**Author(s):**  
Eric Chau  
Karem Pinto  
Biana Godin

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster  
**Number:** 565

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Machine Learning Based Flow Cytometer for Biomedical and Clinical Applications  
**Presenter:** Dharmakeerthi Nawarathna  
**Principal Investigator:** N/A  
**Author(s):**  
Umamaheswara Rao Tida  
Noah Vandal

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster  
**Number:** 566

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Examining the Effects of Nanoscale Patterning of TGF- $\beta$  Receptors and Viscoelastic Material Properties on Regulating TGF- $\beta$  Signaling  
**Presenter:** Aryssa Simpson  
**Principal Investigator:** N/A  
**Author(s):**  
Ashley Brown

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster

**Number:** 567

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** An Abuse-Deterrent Formulation Against Smoking of Prescription Opioids

**Presenter:** Anastasiia Vasiukhina

**Principal Investigator:** Luis Solorio

**Author(s):**

Anastasiia Vasiukhina

sheryhan Gad

Elyssia Wellington

Danielle Wilmes

Yoon Yeo

Luis Solorio

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster

**Number:** 568

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Effect of Topography and Micropattern Geometry on YAP localization in Corneal Fibroblasts

**Presenter:** David Schmidtke

**Principal Investigator:** N/A

**Author(s):**

Divya Subramanian

Nathaniel Tjahjono

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster

**Number:** 569

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** DMEM as a Base Medium for Production of GPMVs in a Friendlier Cell Culture Environment

**Presenter:** William Doherty

**Principal Investigator:** N/A

**Author(s):**

Ryan Koppes

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster

**Number:** 570

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Exosomes Derived from Differentiated Human ADMSC with the Schwann Cell Phenotype Modulate Peripheral Nerve-Related Cellular Functions and Regeneration

**Presenter:** Bin Duan

**Principal Investigator:** N/A

**Author(s):**

Bo Liu

Yunfan Kong

Wen Shi

Mitchell Kuss

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster  
**Number:** 571

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Quantification of Extracellular Nitric Oxide Released by Cells Via Carbon Nanotube Sensor Platforms  
**Presenter:** Ivon Acosta Ramirez  
**Principal Investigator:** N/A  
**Author(s):**  
Nicole Iverson

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster  
**Number:** 572

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Lipid Nanoparticles Optimization for mRNA Delivery in Skin Cells  
**Presenter:** Karem Court  
**Principal Investigator:** N/A  
**Author(s):**  
Biana Godin

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster  
**Number:** 573

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Wound Repair in Stentor Coeruleus Depends on Cell Size and Wound Size  
**Presenter:** Kevin Zhang  
**Principal Investigator:** N/A  
**Author(s):**  
Kevin Zhang  
Ambika Nadkarni  
Rebecca McGillivray  
Wallace Marshall  
Sindy Kam Yan Tang

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster  
**Number:** 574

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Fabrication of Superhydrophobic Microwell Arrays for High-Throughput Culture of 3D Cancer Models  
**Presenter:** Maria Lopez Cavestany  
**Principal Investigator:** Michael R. King  
**Author(s):**  
Kalana Jayawardana  
Olivia Wright  
Noah Reckhorn  
Michael King

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster

**Number:** 575

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Temperature Drives Non-Fibrillar Assembly Conformations of Co-Assembling Synthetic Peptides

**Presenter:** Ryan Clark

**Principal Investigator:** N/A

**Author(s):**

Gregory Hudalla

Benjamin Keselowsky

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster

**Number:** 576

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** In Vitro Bioreactor for Mechanical Control and Characterization of Tissue Constructs

**Presenter:** Samuel Coeyman

**Principal Investigator:** N/A

**Author(s):**

Amy Bradshaw

William Richardson

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster

**Number:** 577

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Exploring a Novel Biomimetic Nanostructure as a Cancer Targeted T2-weighted MRI Contrast Agent

**Presenter:** Shiva Rahmati

**Principal Investigator:** N/A

**Author(s):**

Allan David

Xin Fan

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster

**Number:** 578

**Track:** NANO AND MICRO TECHNOLOGIES

### **Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Oxygen Loaded Dextran Based Nanobubbles for Treatment of Central Retinal Artery Occlusion

**Presenter:** Victoria Messerschmidt

**Principal Investigator:** N/A

**Author(s):**

Joseph Irudayaraj

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster  
**Number:** 579

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Rapid magnetic purification of Baculovirus via E3 and K3 coiled-coil binding  
**Presenter:** Xiaoyue Yang  
**Principal Investigator:** N/A  
**Author(s):**  
ZhongcHao Yi  
Sheng Tong  
Chiziterem Onyenekwe

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: Q, Poster  
**Number:** 580

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies in Molecular and Cellular Bioengineering, Medicine and Biology**

**Abstract Title:** Monolithic Silica Microchannels Enable Thin Layer Chromatography Analysis of Single Cells  
**Presenter:** Ming Yao  
**Principal Investigator:** N/A  
**Author(s):**  
Yuli Wang  
Christopher Sims  
Nancy Allbritton

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 601

**Track:** NEURAL ENGINEERING  
**Neural Device Interfaces**

**Abstract Title:** Towards In-situ Monitoring of Electrode Health During Low Frequency Alternating Current Stimulation  
**Presenter:** Tyler Johnson  
**Principal Investigator:** N/A  
**Author(s):**  
Justin-Thuy Parks  
Abigail Beard  
Ken Yoshida

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 602

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Peripheral Nerve Stimulation**

**Abstract Title:** Characterizing Feasibility and Performance of Injectable Gold Microwires for Neural Interfacing  
**Presenter:** Danny Lam  
**Principal Investigator:** Andrew Shoffstall  
**Author(s):**  
N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 603

**Track:** NEURAL ENGINEERING  
**Computational Neural Modeling  
(Summer Undergraduate)**

**Abstract Title:** Modeling Selective Activation of the Median Nerve

**Presenter:** Marianna Urdaneta Morillo

**Principal Investigator:** Katharine H. Polasek

**Author(s):**

Marianna Urdaneta Morillo

Madelyne Klunder

Katharine Polasek

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 604

**Track:** NEURAL ENGINEERING  
**Computational Neural Modeling  
(Summer Undergraduate)**

**Abstract Title:** In-Ear Silicon Electrodes to Detect Neural Brain Abnormalities

**Presenter:** Ryan Ahmed

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 605

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Peripheral Nerve  
Stimulation (Summer Undergraduate)**

**Abstract Title:** Towards an Ultrasonic Tibial Nerve Stimulation Platform

**Presenter:** Michael Sobota

**Principal Investigator:** Steve Majerus

**Author(s):**

Steve Majerus

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 606

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Peripheral Nerve  
Stimulation (Summer Undergraduate)**

**Abstract Title:** Comparing Cortical Responses to Mechanically- and Electrically-Evoked Somatosensations

**Presenter:** Peter Ruffolo

**Principal Investigator:** Katharine Polasek

**Author(s):**

Peter Ruffolo

Sarah Heinowski

Carolyn Atkinson

Katharine Polasek

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 607

**Track:** NEURAL ENGINEERING  
**Computational Neural Modeling**

**Abstract Title:** Adomian Decomposition Solution to FitzHugh Nagumo Model of Neural Membrane Conductance

**Presenter:** Benjamin Schwartz

**Principal Investigator:** N/A

**Author(s):**  
Benjamin Schwartz  
Shaun Brown  
Jonathan Duncan  
Jit Muthuswamy

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 608

**Track:** NEURAL ENGINEERING  
**Computational Neural Modeling**

**Abstract Title:** Role of Graphene Oxide in Disentangling Amyloid Beta Fibrils

**Presenter:** Brianna Duswalt

**Principal Investigator:** N/A

**Author(s):**  
Brianna Duswalt

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 609

**Track:** NEURAL ENGINEERING  
**Computational Neural Modeling**

**Abstract Title:** Transcranial Alternating Current Stimulation Induces Neural Entrainment in Neuronal Network Models

**Presenter:** Zhihe ZHao

**Principal Investigator:** Alexander Opitz

**Author(s):**  
Sina Shirinpour  
Harry Tran  
Alexander Opitz

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 610

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Peripheral Nerve Stimulation**

**Abstract Title:** Spatial and Hybrid Optical-electrical Modulation of Optogenetic Peripheral Motor Nerve Activity

**Presenter:** Jordan Williams

**Principal Investigator:** N/A

**Author(s):**  
Jordan Williams

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 611

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Peripheral Nerve Stimulation**

**Abstract Title:** Ramped Kilohertz-Frequency Signals Enable Nerve Conduction Block without Transient Excitation

**Presenter:** Edgar Pena

**Principal Investigator:** N/A

**Author(s):**  
Warren Grill  
Nicole (Nikki) Pelot

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 612

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Orthopedic and Rehabilitation  
Engineering: Implant and Prosthetic  
Biomechanics**

**Abstract Title:** Effect of Magneto hydrodynamics  
Induced Fluid Shear Stress on Fibroblast Migration

**Presenter:** Eyerusalem Gebreyesus

**Principal Investigator:** Keat Ghee Ong

**Author(s):**

Eyerusalem Gebreyesus

Alice Park

Robert Guldborg

Keat Ghee Ong

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 613

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING (Late  
Breaking) > - Orthopedic and Rehabilitation  
Engineering: Implant and Prosthetic Biomechanics  
(Late Breaking)

**Orthopedic and Rehabilitation  
Engineering: Implant and Prosthetic  
Biomechanics**

**Abstract Title:** Osseointegrated interface reduces  
pain and improves limb preference during gait in the  
transfemoral amputee: a case study

**Presenter:** Sonia-Frida Ndifon

**Principal Investigator:** N/A

**Author(s):**

Kacie Hanna

Sonia-Frida Ndifon

Brock Lindsey

Sergiy Yakovenko

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 614

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING (Summer  
REU) > - Orthopedic and Rehabilitation  
Engineering: Implant and Prosthetic Biomechanics  
(Summer REU)

**Orthopedic and Rehabilitation  
Engineering: Implant and Prosthetic  
Biomechanics (Summer Undergraduate)**

**Abstract Title:** Scratch Assay for in Vitro Wound  
Healing on Plasticized Silk Scaffold

**Presenter:** Victoria Williams

**Principal Investigator:** N/A

**Author(s):**

Chiara Ghezzi

Neal Lojek

Miryam Adelfio

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 615

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING >  
Orthopedic and Rehabilitation Engineering: Implant  
and Prosthetic Biomechanics

**Orthopedic and Rehabilitation  
Engineering: Implant and Prosthetic  
Biomechanics**

**Abstract Title:** Biofabrication and Analysis of 3D  
Printed Implants Containing Metalized Halloysite  
Nanotube

**Presenter:** Femi Alakija

**Principal Investigator:** David K. Mills

**Author(s):**

David Mills

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster**Number:** 616

**Track:** ORTHOPAEDIC AND REHABILITATION ENGINEERING > Orthopedic and Rehabilitation Engineering: Implant and Prosthetic Biomechanics

**Orthopedic and Rehabilitation Engineering: Implant and Prosthetic Biomechanics**

**Abstract Title:** A Biomechanical Investigation of Shape Memory Staple Configurations

**Presenter:** Denis DiAngelo**Principal Investigator:** N/A**Author(s):**

Perri Johnson

Parker Duncan

Clayton Bettin

Chase Mareno

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster**Number:** 617

**Track:** ORTHOPAEDIC AND REHABILITATION ENGINEERING > Orthopedic and Rehabilitation Engineering: Implant and Prosthetic Biomechanics

**Orthopedic and Rehabilitation Engineering: Implant and Prosthetic Biomechanics**

**Abstract Title:** The Hubble: A Novel Magnetic Length Modulating Hip Implant

**Presenter:** Melanie Peterson**Principal Investigator:** N/A**Author(s):**

Sang-Eun Song

Ezat El-said

Michael Tyrel Garner

Austin Wynn

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster**Number:** 618

**Track:** ORTHOPAEDIC AND REHABILITATION ENGINEERING > Orthopedic and Rehabilitation Engineering: Implant and Prosthetic Biomechanics

**Orthopedic and Rehabilitation Engineering: Implant and Prosthetic Biomechanics**

**Abstract Title:** Plasticized Silk Scaffold for Improved Mechanical Interface with Transdermal Prostheses

**Presenter:** Neal Lojek**Principal Investigator:** N/A**Author(s):**

Miryam Adelfio

Chiara Ghezzi

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster**Number:** 619

**Track:** ORTHOPAEDIC AND REHABILITATION ENGINEERING > Articular Cartilage, Meniscus and Joints

**Articular Cartilage, Meniscus and Joints**

**Abstract Title:** Cartilage Protection with a Tissue-Infiltrating Hyaluronic Acid Hydrogel System

**Presenter:** Jay Patel**Principal Investigator:** N/A**Author(s):**

Michael Kowalski

Jay Patel

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: R, Poster  
**Number:** 620

**Track:** TISSUE ENGINEERING  
**Biomechanics of Engineered Tissues**

**Abstract Title:** Neutrophil Extracellular Traps (NETs) Must Spread and Overlap to Adversely Affect Mucus Rheology

**Presenter:** Simrit Safarulla Musallyarakath Arakkal

**Principal Investigator:** Arvind Chandrasekaran

**Author(s):**

Arvind Chandrasekaran

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 641

**Track:** TISSUE ENGINEERING  
**Biomechanics of Engineered Tissues**

**Abstract Title:** Cell-Mediated Hydrogel Compaction as a Tool for Engineering Tumor Stroma with Structural and Mechanical Properties that Mimic Solid Tumors

**Presenter:** Jae McKee Mark Mondrinos

**Principal Investigator:** Kyle Lampe

**Author(s):**

Elisabet Olsen

Wills Kpeli

Mark Mondrinos

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 642

**Track:** TISSUE ENGINEERING  
**Stem Cells In Tissue Engineering and Disease Modeling**

**Abstract Title:** Matrix Metalloproteinases as Diagnostic Tools within an In Vitro Blood-Brain Barrier Modeling Acute Inflammation

**Presenter:** Daniel DiMartino

**Principal Investigator:** Thomas Gaborski

**Author(s):**

Daniel DiMartino

Louis Widom

Thomas Gaborski

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 643

**Track:** TISSUE ENGINEERING  
**Stem Cells In Tissue Engineering and Disease Modeling**

**Abstract Title:** Tissue-Engineered Blood Vessel Aortic Aneurysm Model using hiPSC-Derived Smooth Muscle Cells

**Presenter:** Ying Yang

**Principal Investigator:** N/A

**Author(s):**

Dogukan Mizrak

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 644

**Track:** TISSUE ENGINEERING  
**Stem Cells In Tissue Engineering and Disease Modeling**

**Abstract Title:** Development of a cGMP-compliant L7 Medium for Reprogramming and Expansion of Human Induced Pluripotent Stem Cells  
**Presenter:** Suman Nath  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 645

**Track:** TISSUE ENGINEERING  
**Stem Cells In Tissue Engineering and Disease Modeling**

**Abstract Title:** Adaptation of Microfluidic System for Use in Scalable Cell Encapsulation  
**Presenter:** Ravi Nataraj  
**Principal Investigator:** N/A  
**Author(s):**  
Mohammadjafar Hashemi  
Yuan Tian  
Ferdous Finklea  
Elizabeth Lipke

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 646

**Track:** TISSUE ENGINEERING  
**Stem Cells In Tissue Engineering and Disease Modeling**

**Abstract Title:** Characterization of Effects of inkjet Bioprinting of Human Fibroblasts into Stem Cell Environment Using RNA Sequencing Analysis  
**Presenter:** Patricia Ablanado Morales  
**Principal Investigator:** N/A  
**Author(s):**  
Kayla Molina  
April Ruiz  
Jonathon Mohl  
Thomas Boland

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 647

**Track:** TISSUE ENGINEERING  
**Multi-Cellular Engineered Living Systems**

**Abstract Title:** Optimizing Human Hepatocyte Organoid Expansion for In Vitro Testing  
**Presenter:** Shannon Mitchell  
**Principal Investigator:** N/A  
**Author(s):**  
Sarah Saxton  
Kelly Stevens  
Inkyung Kang

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 648

**Track:** TISSUE ENGINEERING  
**Biomechanics of Engineered Tissues  
(Summer Undergraduate)**

**Abstract Title:** A Low Cost, Customized System For  
Exogenous Cell Stretch

**Presenter:** Ari Rapalino

**Principal Investigator:** Nathaniel Huebsch

**Author(s):**

Nathaniel Huebsch

David Schuftan

Lavanya Aryan

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 649

**Track:** TISSUE ENGINEERING  
**Biomechanics of Engineered Tissues  
(Summer Undergraduate)**

**Abstract Title:** Collagen Matrix Remodeling:  
Normal versus DC Fibroblasts

**Presenter:** Xuan Fey Chew

**Principal Investigator:** N/A

**Author(s):**

Austin Segrest

Mel Vaughan

Gang Xu

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 650

**Track:** TISSUE ENGINEERING  
**Developmental Biology and  
Morphogenesis of Engineered Tissues  
(Summer Undergraduate)**

**Abstract Title:** Comparing Intrinsic Profibrotic  
Potential of Lung Cancer Associated Fibroblasts  
and Normal Lung Fibroblasts in 2D Cultures and  
Engineered Anisotropic Tissues

**Presenter:** Keefer Boone

**Principal Investigator:** Mark Mondrinos

**Author(s):**

Elisabet Olsen

Ashley Martier

Mark Mondrinos

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 651

**Track:** TISSUE ENGINEERING  
**Developmental Biology and  
Morphogenesis of Engineered Tissues  
(Summer Undergraduate)**

**Abstract Title:** Whole-mount in situ Hybridization  
Reveals the Pattern of Expression of pitx1 in *A. sagrei*

**Presenter:** Lily Gowens

**Principal Investigator:** Douglas B. Menke

**Author(s):**

Amber Rittgers

Douglas Menke

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 652

**Track:** TISSUE ENGINEERING  
**Stem Cells In Tissue Engineering  
and Disease Modeling (Summer  
Undergraduate)**

**Abstract Title:** Collective Behaviors Drive Vascular  
Network Formation in Fetal Liver Organoids  
**Presenter:** Rayna Schoenberger  
**Principal Investigator:** N/A  
**Author(s):**  
Joshua Hislop  
Mo Ebrahimkhani

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 653

**Track:** TISSUE ENGINEERING  
**Stem Cells In Tissue Engineering  
and Disease Modeling (Summer  
Undergraduate)**

**Abstract Title:** Incorporation of Tricalcium  
Phosphate in 2D Bone Scaffolds and Effect on MCF-  
7 Cancer Cell Behavior  
**Presenter:** Emma Worthington  
**Principal Investigator:** Karen J.L. Burg  
**Author(s):**  
Weitong Chen  
Timothy Burg  
Karen Burg

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 654

**Track:** TISSUE ENGINEERING  
**Stem Cells In Tissue Engineering  
and Disease Modeling (Summer  
Undergraduate)**

**Abstract Title:** Electrospun Collagen/HA  
Composite Nanofibers for Bone Tissue Engineering  
**Presenter:** Noah Sinishtaj  
**Principal Investigator:** Yawen Li  
**Author(s):**  
Yawen Li  
Therese Bou-Akl

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster  
**Number:** 655

**Track:** TISSUE ENGINEERING  
**Stem Cells In Tissue Engineering  
and Disease Modeling (Summer  
Undergraduate)**

**Abstract Title:** Effect of SIRT1 Increased Expression  
on Myogenesis and Angiogenesis In Tissue  
Engineered Skeletal Muscle  
**Presenter:** Anthony Gisolfi Christopher Rathbone  
**Principal Investigator:** N/A  
**Author(s):**  
Settimio Pacelli  
Bryan Sullivan  
Chris Rathbone

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster

**Number:** 656

**Track:** TISSUE ENGINEERING

### Biomechanics of Engineered Tissues

**Abstract Title:** Plant-derived Biomaterials for Vascular Tissue Engineering

**Presenter:** Nicholas Merna

**Principal Investigator:** N/A

**Author(s):**

Gianna Rinaldi

Nicholas Merna

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster

**Number:** 657

**Track:** TISSUE ENGINEERING

### Biomechanics of Engineered Tissues

**Abstract Title:** Effect of cellular environment on nuclear morphology of cultured aortic smooth muscle cells: toward tissue engineering application

**Presenter:** SHUKEI SUGITA

**Principal Investigator:** N/A

**Author(s):**

Hideto OHKITA

Yoshihiro Ujihara

Masanori Nakamura

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster

**Number:** 658

**Track:** TISSUE ENGINEERING

### Developmental Biology and Morphogenesis of Engineered Tissues

**Abstract Title:** The Role of Cell-ECM Crosstalk in Mediating the Progression of Fibrosis in a 3D Culture Model

**Presenter:** Kristin Kim

**Principal Investigator:** N/A

**Author(s):**

Christopher Lemmon

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster

**Number:** 659

**Track:** TISSUE ENGINEERING

### Developmental Biology and Morphogenesis of Engineered Tissues

**Abstract Title:** Harnessing CNC Micromilling to Engineer Epithelial – Mesenchyme Microtissues to Study Cell – Cell Signaling

**Presenter:** Jacob Reynolds

**Principal Investigator:** N/A

**Author(s):**

Jacob Reynolds

Brian Johnson

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: S, Poster

**Number:** 660

**Track:** TISSUE ENGINEERING

### Developmental Biology and Morphogenesis of Engineered Tissues

**Abstract Title:** Vascular Engineering to Study Sexual Dimorphisms During Development

**Presenter:** Taylor Chavez

**Principal Investigator:** N/A

**Author(s):**

Eda Yildirim

Sharon Gerecht

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 681

**Track:** TISSUE ENGINEERING  
**Stem Cells in Tissue Engineering and Disease Modeling**

**Abstract Title:** Unveiling Calcium Mishandling Mechanism of Hypertrophic Cardiomyopathy using iPSC Micro Heart Muscle

**Presenter:** Jingxuan Guo

**Principal Investigator:** N/A

**Author(s):**

Jingxuan Guo

Huanzhu Jiang

David Schuftan

Druv Bhagavan

Daniel Simmons

Nathaniel Huebsch

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 682

**Track:** TISSUE ENGINEERING  
**Stem Cells in Tissue Engineering and Disease Modeling**

**Abstract Title:** A Comparison of Small Molecule and Growth Factor Based hiPSC-EP Differentiation Methods

**Presenter:** Brett Stern

**Principal Investigator:** N/A

**Author(s):**

Janet Zoldan

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 683

**Track:** TISSUE ENGINEERING  
**Stem Cells in Tissue Engineering and Disease Modeling**

**Abstract Title:** Proline Restores Mitochondrial Function and Reverses Aging Hallmarks in Aged Stem Cells

**Presenter:** Debanik Choudhury

**Principal Investigator:** N/A

**Author(s):**

Debanik Choudhury

Na Rong

Ramkumar Thiyagarajan

yulun wu

Nika Rajabian

Ashis Kumar Podder

Pihu Mehrotra

Kenneth Seldeen

Bruce Troen

Stelios Andreadis

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 684

**Track:** TISSUE ENGINEERING

**Stem Cells in Tissue Engineering and Disease Modeling**

**Abstract Title:** Developing a combinational stem cell-based tissue engineering approach to treat spina bifida before birth

**Presenter:** Dake Hao

**Principal Investigator:** N/A

**Author(s):**

Dake Hao

Su Yeon Lee

Christopher Pivetti

Abd-elrahman Hassan

Priyadarsini Kumar

Edwin Kulubya

Kent Leach

Diana Farmer

Aijun Wang

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 685

**Track:** TISSUE ENGINEERING

**Stem Cells in Tissue Engineering and Disease Modeling**

**Abstract Title:** Metabolic Driver Of IPSC Differentiation Into Lymphatic Endothelial Cells

**Presenter:** Donghyun Jeong

**Principal Investigator:** N/A

**Author(s):**

Donghyun Jeong

Sanjoy Saha

Donny Hanjaya-Putra

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 686

**Track:** TISSUE ENGINEERING

**Stem Cells in Tissue Engineering and Disease Modeling**

**Abstract Title:** Impact of alginate-gelatin hydrogel properties on chondrogenic differentiation of mesenchymal stem cells

**Presenter:** Gargi Ghosh

**Principal Investigator:** N/A

**Author(s):**

Mohamad Orabi

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 687

**Track:** TISSUE ENGINEERING

**Stem Cells in Tissue Engineering and Disease Modeling**

**Abstract Title:** A Biocompatible Scaffold Engineered with Proangiogenic Proteoglycan Mimetics and Loaded with Endothelial Cells Promotes Deep Burn Wound Healing

**Presenter:** Hengyue Song

**Principal Investigator:** N/A

**Author(s):**

Kewa Gao

Dake Hao

Andrew Li

Ruiwu Liu

Qianyu Jin

Alyssa Panitch

Diana Farmer

Aijun Wang

Bryan Anggito

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 688

**Track:** TISSUE ENGINEERING  
**Stem Cells in Tissue Engineering and  
Disease Modeling**

**Abstract Title:** Heuristic Method for the Discovery  
of a Common Media for hPSC Derived Diabetes-On-  
Chip Platform  
**Presenter:** Ishan Goswami  
**Principal Investigator:** Kevin E. Healy  
**Author(s):**  
Kevin Healy

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 689

**Track:** TISSUE ENGINEERING  
**Stem Cells in Tissue Engineering and  
Disease Modeling**

**Abstract Title:** Gelatin-based Microparticle Scaffolds  
for Enhanced Mesenchymal Stem Cell Osteogenic  
Differentiation  
**Presenter:** Seth Edwards  
**Principal Investigator:** KyungJae Jeong  
**Author(s):**  
KyungJae Jeong

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 690

**Track:** TISSUE ENGINEERING  
**Stem Cells in Tissue Engineering and  
Disease Modeling**

**Abstract Title:** Bioprinted Human Liver Organoids  
(HLOs) on a Pillar/Perfusion Plate Platform for  
High-Throughput Compound Screening  
**Presenter:** Sunil Shrestha  
**Principal Investigator:** Moo-Yeal Lee  
**Author(s):**  
N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 691

**Track:** TISSUE ENGINEERING  
**Stem Cells in Tissue Engineering and  
Disease Modeling**

**Abstract Title:** Patient-Specific Biological  
Engineered Blood Vessels Based on Adipose Stem  
Cells and Fibroblasts  
**Presenter:** Bryan Wonski  
**Principal Investigator:** N/A  
**Author(s):**  
Mai Lam

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 692

**Track:** TISSUE ENGINEERING

### Stem Cells in Tissue Engineering and Disease Modeling

**Abstract Title:** Comparing Extracellular Vesicles from Bone Marrow-Derived and Adipose-Derived Mesenchymal Stem Cells

**Presenter:** Yuan Liu

**Principal Investigator:** N/A

**Author(s):**

Yuan Liu

Li Sun

Leanne Duke

Christina Holmes

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 693

**Track:** TISSUE ENGINEERING

### Stem Cells in Tissue Engineering and Disease Modeling

**Abstract Title:** Impact of Simulated Microgravity on Brain Micro-Architecture through Human Organoid Models

**Presenter:** Yu Huang

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 694

**Track:** TISSUE ENGINEERING

**Abstract Title:** Effect Of Electrical Stimulation On Plexiform Neurofibroma Schwann Cells

**Presenter:** Judy Senanayake

**Principal Investigator:** N/A

**Author(s):**

Judy Snanayake

Harini Sundararaghavan

Ray Mattingly

## Thursday, October 13

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 695

**Track:** WOMEN'S HEALTH

### Other / Non-specified

**Abstract Title:** Uterine Fibroids Exhibit Distinct Structural and Mechanical Properties

**Presenter:** Daniella Fodera

**Principal Investigator:** Kristin Myers

**Author(s):**

Daniella Fodera

Johanna Lund

Shuyang Fang

Michelle Oyen

Kristin Myers

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 696

**Track:** WOMEN'S HEALTH  
**Menopause related Technologies  
(Summer Undergraduate)**

**Abstract Title:** Quantification of Fibrogenesis Following Vaginal Prolapse Mesh Implantation Under Normoglycemic and Hyperglycemic Conditions  
**Presenter:** Abigail Fisk  
**Principal Investigator:** Rui Liang  
**Author(s):**  
Abigail Fisk  
Rui Liang

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 697

**Track:** WOMEN'S HEALTH  
**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** The Differential Role of Sex Hormones in the Angiogenesis of Male and Female Pulmonary Endothelial Cells  
**Presenter:** Catherine Clark  
**Principal Investigator:** Jason P. Gleghorn  
**Author(s):**  
N/A

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 698

**Track:** WOMEN'S HEALTH

**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** Ethnicity-linked Error in Machine Learning Methods to predict BV status  
**Presenter:** Dion Ming  
**Principal Investigator:** Ivana Parker  
**Author(s):**  
Ivana Parker  
Zoe Schaefer

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 699

**Track:** WOMEN'S HEALTH  
**Other / Non-specified**

**Abstract Title:** A Pipeline of Engineered Cultures and Human Sera for Elucidating Liver Functional Changes During Pregnancy  
**Presenter:** Dinithi Samarasekera  
**Principal Investigator:** N/A  
**Author(s):**  
Dinithi Samarasekera  
Beatriz Peñalver Bernabé  
Salman Khetani

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: T, Poster  
**Number:** 700

**Track:** WOMEN'S HEALTH  
**Other / Non-specified**

**Abstract Title:** Estradiol Promotes Integrity of the Inner Blood Retinal Barrier in Diabetic Retinopathy of Females  
**Presenter:** Maribel Vazquez  
**Principal Investigator:** N/A  
**Author(s):**  
Natalia Castro  
Juan Pena

**Thursday, October 13**

9:30 AM - 10:30 AM

**Poster Session:** A, Section: E, Row: U, Poster**Number:** 721**Track:** WOMEN'S HEALTH**Other / Non-specified****Abstract Title:** Development of Novel Morcellation Tool for Laparoscopic Myomectomy**Presenter:** Anita Kodali**Principal Investigator:** N/A**Author(s):**

Olivia Coiado

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** B, Section: C, Row: G, Poster**Number:** 186**Track:** CELLULAR AND MOLECULAR BIOENGINEERING**Biomechanics of Rehabilitation/Injury (Summer Undergraduate)****Abstract Title:** The Effect of Body Checking Technique on Head Kinematics in Ice Hockey**Presenter:** Keith Kolaczyk**Principal Investigator:** Joel D. Stitzel**Author(s):**

Abigail Swenson

Nicholas Pritchard

Logan Miller

Jillian Urban

Joel Stitzel

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster**Number:** 1**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Multiscale Computation Modeling****Abstract Title:** In Silico Model Characterizing In Vitro M. Tuberculosis Granuloma Dynamics**Presenter:** Alexis Hoerter**Principal Investigator:** Elsje Pienaar**Author(s):**

Alexa Petrucciani

Elsje Pienaar

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster**Number:** 2**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Multiscale Computation Modeling****Abstract Title:** Monitoring PRN Medications for Polypharmacy Patients**Presenter:** Colin Drummond**Principal Investigator:** Colin K. Drummond**Author(s):**

Joel Setya

Himanshu Setya

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster  
**Number:** 3

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

**Analysis of Cell Signaling (Summer Undergraduate)**

**Abstract Title:** A Mathematical Model of Endothelial Cell Nitric Oxide and Endothelin-1 Dynamics

**Presenter:** Acharya Ranawat Naomi Chesler

**Principal Investigator:** N/A

**Author(s):**

Acharya Ranawat  
Naomi Chesler  
Mitchel Colebank

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster  
**Number:** 4

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

**Analysis of Cell Signaling (Summer Undergraduate)**

**Abstract Title:** Towards a computational model of endothelin-1 signaling in valve interstitial cells

**Presenter:** Mia Zheng Daniel Howsmon

**Principal Investigator:** N/A

**Author(s):**

Toni West  
Mia Zheng  
Michael Sacks

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster  
**Number:** 5

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

**Multiscale Computation Modeling (Summer Undergraduate)**

**Abstract Title:** Its More than the Amount: Finite-Element Models Reveal that the Regional Distribution of Fat Infiltration Influences Muscle Force Production in the Medial Gastrocnemius Muscle

**Presenter:** Mackenzie Conner

**Principal Investigator:** Silvia Blemker

**Author(s):**

Ridhi Sahani  
Allison McCrady  
Silvia Blemker

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster  
**Number:** 6

**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY

**Multiscale Computation Modeling (Summer Undergraduate)**

**Abstract Title:** 3D Finite Element Models Reveal that the Position of Volumetric Muscle Loss Injuries Influence Muscle Force in the Rat Lateral Gastrocnemius Muscle

**Presenter:** Makayla Garner

**Principal Investigator:** Silvia Salinas Blemker

**Author(s):**

Matthew DiSalvo  
Silvia Blemker

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster**Number:** 7**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Multiscale Computation Modeling (Summer Undergraduate)****Abstract Title:** miRNA Regulation of Glycosylation Genes in Cancer Cell Lines**Presenter:** Lavie Ngo**Principal Investigator:** Sepideh Dolatshahi**Author(s):**

Sepideh Dolatshahi

Remziye Erdogan

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster**Number:** 9**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Machine Learning for Biomedical Applications****Abstract Title:** Topological Data Analysis of Hierarchical Self-Organized Patterning in Heterogeneous Cell Populations**Presenter:** Dhananjay Bhaskar**Principal Investigator:** Smita Krishnaswamy**Author(s):**

William Zhang

Ian Wong

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster**Number:** 10**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Machine Learning for Biomedical Applications****Abstract Title:** Problem Behavior Prediction for Severe Autism Spectrum Disorder using Patient and Environmental Data**Presenter:** Jenny Ferina**Principal Investigator:** Juergen Hahn**Author(s):**

Jennifer Ferina

Melanie Kruger

Uwe Kruger

Daniel Ryan

Conor Anderson

Jenny Foster

Theresa Hamlin

Juergen Hahn

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster**Number:** 11**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Machine Learning for Biomedical Applications****Abstract Title:** Automating Endocrine Cell Quantification in Human Pancreata**Presenter:** Hunter Hakimian**Principal Investigator:** N/A**Author(s):**

Jerelyn Nick

Kevin Otto

Hunter Hakimian

Marda Jorgensen

Mark Atkinson

Clive Wasserfall

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster**Number:** 12**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Machine Learning for Biomedical Applications****Abstract Title:** Deep Learning-Based Phenotyping of Breast Cancer Cells Using Lens-Free Digital In-line Holography**Presenter:** Kwonmoo Lee**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster**Number:** 13**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Machine Learning for Biomedical Applications****Abstract Title:** Structure-Informed Improvement of Machine Learning-Assisted Directed Evolution Approaches**Presenter:** Lane Yutzy**Principal Investigator:** Philip Jung**Author(s):**

Lane Yutzy

Philip Jung

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster**Number:** 14**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Machine Learning for Biomedical Applications****Abstract Title:** Brain Connectivity Analysis via Deep Learning for Parkinson's Diagnosis**Presenter:** Diego Machado Reyes**Principal Investigator:** N/A**Author(s):**

Hanqing CHao

ManSu Kim

Li Shen

Pingkun Yan

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster**Number:** 15**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Machine Learning for Biomedical Applications****Abstract Title:** Application of Machine Learning Pipeline to Elucidate Cell Type-dependent Uptake of Therapeutic Triblock Amphiphilic Polymer P188**Presenter:** Anne Alsup**Principal Investigator:** N/A**Author(s):**

Kelli Fowlds

Naghah Alatrash

Rafiul Shihab

Jacob Luber

Michael Cho

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster  
**Number:** 16**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY**Machine Learning for Biomedical  
Applications****Abstract Title:** Development of Machine Learning  
Algorithms for Automated Analysis of Calcium  
Dynamics in  $\beta$ -Cells**Presenter:** Kelli Fowlds**Principal Investigator:** N/A**Author(s):**

Anne Alsup

Michael Cho

Jacob Lubner

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster  
**Number:** 17**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY**Machine Learning for Biomedical  
Applications****Abstract Title:** A Data Augmentation Method to  
Generate New Patient Data Using Regression and  
Linear Optimization**Presenter:** Timothy Chung**Principal Investigator:** N/A**Author(s):**

David Vorp

Jason Lee

Isabelle Chickanosky

Pete Gueldner

Timothy Chung

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster  
**Number:** 18**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY**Machine Learning for Biomedical  
Applications****Abstract Title:** Integrating Nonlinear Analysis and  
Machine Learning for Cardiotoxicity Classification  
Based on hiPSC-Derived Cardiomyocytes**Presenter:** Zhen Ma**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster  
**Number:** 19**Track:** BIOINFORMATICS, COMPUTATIONAL  
AND SYSTEMS BIOLOGY**Other / Non-specified****Abstract Title:** Inhibition of Interactions between  
Nucleoside Diphosphate Kinase and G protein via  
Graphene Oxide**Presenter:** Ryan Jaworski**Principal Investigator:** N/A**Author(s):**

RyanRyan JaworJaworskiski

Alexa Fiorica

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: C, Poster**Number:** 20**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Other / Non-specified****Abstract Title:** Graphical Model of Engineered Multipopulational Bacterial Systems**Presenter:** Kayla Chun**Principal Investigator:** N/A**Author(s):**

Kayla Chun

William Bentley

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 41**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Other / Non-specified****Abstract Title:** Computational Modeling of Gene Delivery Emphasizes Effects of Post-Nuclear Events in Successful Transfection of Human Mesenchymal Stem Cells**Presenter:** Luke Samuelson**Principal Investigator:** N/A**Author(s):**

Angela Pannier

Tadeusz Wysocki

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 42**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Other / Non-specified****Abstract Title:** Developing a Deep Learning Based Algorithm Trained by CFD to Predict Aneurysm Growth**Presenter:** Pushyan Jhaveri**Principal Investigator:** N/A**Author(s):**

Mahsa Dabagh

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 43**Track:** BIOMANUFACTURING**Biomaterials for Cell Manufacturing and Tissue Biofabrication****Abstract Title:** Adding Hyaluronic Acid Methacrylate (HAMA) and Poly(lactic-co-glycolic acid) (PLGA) Nanoparticles to Gelatin Methacryloyl (GelMA) Creates an Extrudable Biomaterial Ink Suitable for Mimicking the Blood-Brain Barrier (BBB)**Presenter:** Cody Crosby**Principal Investigator:** N/A**Author(s):**

Kristie Cheng

Noah Pyles

John Clegg

Cody Crosby

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 44**Track:** BIOMANUFACTURING**Cellular Biomanufacturing****Abstract Title:** Designing Bioactive Microcapsules for Maintenance of Primary Hepatocytes**Presenter:** Kihak Gwon**Principal Investigator:** Alexander Revzin**Author(s):**

Jose de Hoyos Vega

Alexander Revzin

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 45**Track:** BIOMANUFACTURING**Cellular Biomanufacturing (Summer Undergraduate)****Abstract Title:** Impacts on Protein Transportation and Localization by Overexpression of SAR1A in CHO Cells**Presenter:** Haaris Jilani**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 46**Track:** BIOMANUFACTURING**Molecular Biomanufacturing (Summer Undergraduate)****Abstract Title:** Characterizing and Optimizing Silicatein Biomineralization for the Sustainable Biomanufacturing of Nanoparticles**Presenter:** Mary-Jean Rowson**Principal Investigator:** Bryan Berger**Author(s):**

Toriana Vigil

Bryan Berger

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 47**Track:** BIOMANUFACTURING**Biomaterials for Cell Manufacturing and Tissue Biofabrication****Abstract Title:** Development Of Integrin-Guided Substrates To Improve Cardiac Cell Yields And Potency**Presenter:** Carlos Barreto Gamarra**Principal Investigator:** N/A**Author(s):**

Maribella Domenech

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 48**Track:** BIOMANUFACTURING**Cellular Biomanufacturing****Abstract Title:** Numerical And Experimental Analysis Of Mechanical Forces In Bioprinted Blood Vessels**Presenter:** Kunal Mitra**Principal Investigator:** N/A**Author(s):**

Khemraj Deshmukh

Saurabh Gupta

Arindam Bit

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 49**Track:** BIOMANUFACTURING**Cellular Biomanufacturing****Abstract Title:** An Integrated Generation of Induced Pluripotent Stem Cells in a Low-Cost Device**Presenter:** Li Han**Principal Investigator:** Yuguo Lei**Author(s):**

Yuguo Lei

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 50**Track:** BIOMANUFACTURING**Cellular Biomanufacturing****Abstract Title:** Scale-Down Modeling of Dissolved Oxygen Transport for a Stir-Tank Bioreactor**Presenter:** Luke Perreault**Principal Investigator:** N/A**Author(s):**

Luke Perreault

Simon Hubbard

Radu Cimpeanu

Glenn Gaudette

Daniel Harris

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 51**Track:** BIOMANUFACTURING**Cellular Biomanufacturing****Abstract Title:** MSC Morphological Screening Identifies Heparan Sulfate Variants that Improve Growth and Function**Presenter:** Thomas Spoerer**Principal Investigator:** N/A**Author(s):**

Thomas Spoerer

Kanupriya Daga

Andrew Larey

Ross Marklein

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 52**Track:** BIOMATERIALS**Biomechanics of Biomaterials****Abstract Title:** Differential Temporal Remodeling of Collagen I:Fibrin Matrices Via Musculoskeletal Progenitor Cells**Presenter:** Gennifer Chiou**Principal Investigator:** Teja Guda**Author(s):**

Joo Ong

Rena Bizios

Teja Guda

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 53**Track:** BIOMATERIALS**Biomechanics of Biomaterials****Abstract Title:** Gel Adhesive Puncture-Sealing Sutures for Wound Closure**Presenter:** Zhenwei Ma**Principal Investigator:** Jianyu Li**Author(s):**

Jianyu Li

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 54**Track:** BIOMATERIALS**Engineering the Stem Cell****Microenvironment****Abstract Title:** Investigating the Effect of Porosity in Microporous Annealed Particle Scaffolds on Stem Cell Function**Presenter:** Blaise Pfaff**Principal Investigator:** Donald R. Griffin**Author(s):**

Donald Griffin

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 55**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Peptomers for Tunable Degradation of Biomaterial Platforms**Presenter:** Carolyn Watkins**Principal Investigator:** Adrienne Rosales**Author(s):**

Adrienne Rosales

Mariah Austin

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 56**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Crosslinked Chitosan and Carboxymethyl Cellulose Formulation Enhance Wound Closure While Inhibiting Bacterial Growth**Presenter:** Abdul-Razak Masoud**Principal Investigator:** David Keith Mills**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 57**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Sex-specific Valvular Myofibroblast Activation in Response to Nano-scale Stiffness Cues**Presenter:** Rayyan Gorashi**Principal Investigator:** Brian Aguado**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster**Number:** 58**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Controlling Probiotic Release in Engineered Living Materials**Presenter:** Tyler Corazao**Principal Investigator:** Taylor Ware**Author(s):**

Laura Rivera

Manivannan Sivaperuman Kalairaj

Mahjabeen Javed

Sargurunathan Subashchandrabose

Philippe Zimmern

Taylor Ware

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster  
**Number:** 59

**Track:** BIOMATERIALS  
**Other / Non-specified**

**Abstract Title:** The Electrochemical Behavior of Peri-Implant Artificial Saliva with Inflammatory Properties

**Presenter:** Sara Kishta

**Principal Investigator:** Mathew Mathew

**Author(s):**

Mostafa Alhamad

Mathew Mathew

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: D, Poster  
**Number:** 60

**Track:** BIOMATERIALS  
**Biomechanics of Biomaterials (Summer Undergraduate)**

**Abstract Title:** Mechanical Characterization of Isolated Electrospun PCL Fibers

**Presenter:** Ethan Ramos

**Principal Investigator:** Manuel Rausch

**Author(s):**

Alberto Madariaga

Manuel Rausch

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 81

**Track:** BIOMATERIALS  
**Biomechanics of Biomaterials (Summer Undergraduate)**

**Abstract Title:** Determining Cell Stiffness Properties via Hyperspectral Imaging Analysis

**Presenter:** James Bell

**Principal Investigator:** N/A

**Author(s):**

QUYNH HOANG

Jeanette Hariharan

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 82

**Track:** BIOMATERIALS  
**Biomechanics of Biomaterials (Summer Undergraduate)**

**Abstract Title:** Shear Generation in Tissue Samples with a Biaxial Testing Machine

**Presenter:** Michael Chiariello

**Principal Investigator:** N/A

**Author(s):**

Daniel Pearce

Colleen Witzenburg

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 83

**Track:** BIOMATERIALS  
**Biomechanics of Biomaterials (Summer Undergraduate)**

**Abstract Title:** Mechanical Properties of Fibrin Fibers Alongside Erythrocytes

**Presenter:** Paula Delgado Sapun Parekh

**Principal Investigator:** N/A

**Author(s):**

Sapun Parekh

Yu-Jen Wang

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster

**Number:** 84

**Track:** BIOMATERIALS

**Biomechanics of Biomaterials (Summer Undergraduate)**

**Abstract Title:** Tuning Viscoelastic Response of Pentenoate-Functionalized Hyaluronic Acid (PHA) Hydrogels for Probing Cellular Behavior

**Presenter:** Ravi Nataraj

**Principal Investigator:** Jenny Robinson

**Author(s):**

Jennifer Robinson

Philip Elrod

Kyley Burkey

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster

**Number:** 85

**Track:** BIOMATERIALS

**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** A Comparison Study of Nitric-Oxide Releasing Polyurethanes for Blood-Contacting Medical Devices

**Presenter:** Terence Dupree

**Principal Investigator:** Elizabeth Brisbois

**Author(s):**

N/A

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster

**Number:** 86

**Track:** BIOMATERIALS

**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** The Impact of Cell Adhesion Motifs on Peptide Hydrogel Assembly Using Molecular Dynamics Simulations

**Presenter:** Andrew Thede

**Principal Investigator:** Kyle J. Lampe

**Author(s):**

Clare Cocker

Justin Kim

Kyle Lampe

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster

**Number:** 87

**Track:** BIOMATERIALS

**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** An Analysis of S-nitroso-N-acetylpenicillamine (SNAP) Stability within Varying Polymeric Make-ups

**Presenter:** Emily Reitz

**Principal Investigator:** Hitesh Handa, Elizabeth J. Brisbois

**Author(s):**

Sarah Wilson

Elizabeth Brisbois

Hitesh Handa

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 88

**Track:** BIOMATERIALS  
**Other / Non-specified**

**Abstract Title:** Ultrasound-Induced Degradation of Polycaprolactone Polymers

**Presenter:** Tyus Yeingst

**Principal Investigator:** N/A

**Author(s):**

Julien Arrizabalaga

Ferdousi Sabera Rawnaque

Julianna Simon

Daniel Hayes

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 89

**Track:** BIOMATERIALS  
**Biomechanics of Biomaterials**

**Abstract Title:** Measuring Interactions of Polymers with Porous Protein Crystals by Atomic Force Microscopy and Tuning Cell Responses via Ligand Presentation

**Presenter:** Dafu Wang

**Principal Investigator:** N/A

**Author(s):**

Mohammadhasan Hedayati

Julius Stuart

Ketul Papat

Christopher Snow

Matt Kipper

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 90

**Track:** BIOMATERIALS  
**Biomechanics of Biomaterials**

**Abstract Title:** Tough Thermo-Sensitive Bioadhesives Based on Gelatin-Caffeic Acid Conjugates

**Presenter:** Hossein Montazerian

**Principal Investigator:** N/A

**Author(s):**

Hossein Montazerian

Elham Davoodi

Nasim Annabi

Alireza Khademhosseini

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 91

**Track:** BIOMATERIALS  
**Biomechanics of Biomaterials**

**Abstract Title:** Boolean Logic-Degradable Crosslinkers for On-demand Control of Mechanical Stimuli in Hydrogels

**Presenter:** Jonah Kern

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 92**Track:** BIOMATERIALS**Biomechanics of Biomaterials****Abstract Title:** Surface modification of IOL in IOL: Lens Capsule Interactions and PCO potential**Presenter:** Joyita Roy**Principal Investigator:** N/A**Author(s):**

Arjun Jaitli

Liping Tang

Amjad Chatila

Jun Liao

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 93**Track:** BIOMATERIALS**Biomechanics of Biomaterials****Abstract Title:** Novel High-Range Adhesion Force Apparatus to Investigate PCO Potential of IOLs In Vitro**Presenter:** Le Hoang**Principal Investigator:** N/A**Author(s):**

Amjad Chatila

Joyita Roy

Liping Tang

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 94**Track:** BIOMATERIALS**Biomechanics of Biomaterials****Abstract Title:** Quantitative Polarization Microscopy as a Potential Tool for Quantification of Stresses within 3D Matrices**Presenter:** Reza Alavi**Principal Investigator:** N/A**Author(s):**

Reza Alavi

Louise Dewit

Carole Luthold

LEO PIQUET

Solange Landreville

Hamid Akbarzadeh

Francois Bordeleau

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 95**Track:** BIOMATERIALS**Engineering the Stem Cell Microenvironment****Abstract Title:** Synthetic Hydrogels Induce Expression Changes to Central Histone Acetylators and Methylators in Human Stem Cells**Presenter:** Anna Kersey**Principal Investigator:** N/A**Author(s):**

Akhilesh Gaharwar

Kaivalya Deo

Irtisha Singh

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 96

**Track:** BIOMATERIALS  
**Engineering the Stem Cell  
Microenvironment**

**Abstract Title:** Silk Hydrogels Mimic Native Salivary Gland Matrix Mechanics and Support Basement Membrane Deposition  
**Presenter:** Eugenia Morales Carrillo  
**Principal Investigator:** N/A  
**Author(s):**  
Solaleh Miari  
Chih-Ko Yeh  
Joo Ong  
Teja Guda

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 97

**Track:** BIOMATERIALS  
**Engineering the Stem Cell  
Microenvironment**

**Abstract Title:** Localized Passive Diffusion Device for Patterning Human Forebrain Organoids  
**Presenter:** Feiyu Yang  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 98

**Track:** BIOMATERIALS  
**Engineering the Stem Cell  
Microenvironment**

**Abstract Title:** Gelatin Maleimide Granular Hydrogels for a Model of the Hematopoietic Perivascular Niche  
**Presenter:** Gunnar Thompson  
**Principal Investigator:** N/A  
**Author(s):**  
Ana Mora-Boza  
Andres Garcia  
Brendan Harley

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 99

**Track:** BIOMATERIALS  
**Engineering the Stem Cell  
Microenvironment**

**Abstract Title:** Design of 3D Hydrogels Towards Modeling Pulmonary Fibrosis in Alveolar Epithelial Organoids  
**Presenter:** Madeline Eiken  
**Principal Investigator:** N/A  
**Author(s):**  
Madeline Eiken  
Jason Spence  
Claudia Loebel

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: E, Poster  
**Number:** 100

**Track:** BIOMATERIALS  
**Engineering the Stem Cell  
 Microenvironment**

**Abstract Title:** Photopatterning Facilitates Deterministic Crypt Formation in iPSC-Derived Intestinal Organoids  
**Presenter:** Michael Blatchley  
**Principal Investigator:** Kristi Anseth  
**Author(s):**  
 Francis Yavitt  
 Patrick McGrath  
 Peter Dempsey  
 Kristi Anseth

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster  
**Number:** 121

**Track:** BIOMATERIALS  
**Engineering the Stem Cell  
 Microenvironment**

**Abstract Title:** In Vitro Midbrain Model Using hiPSC-derived Neuronal Cultured in Hyaluronic Acid-Based Hydrogel  
**Presenter:** Ze Zhong Wang  
**Principal Investigator:** N/A  
**Author(s):**  
 Stephanie Seidlits

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster  
**Number:** 122

**Track:** BIOMATERIALS  
**Other / Non-specified**

**Abstract Title:** Tunable MeHA Hydrogel Microneedles for Analyte Uptake from Interstitial Fluid  
**Presenter:** Emilee Madsen  
**Principal Investigator:** N/A  
**Author(s):**  
 Emilee Madsen  
 Jacqueline Linnes

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster  
**Number:** 123

**Track:** BIOMATERIALS  
**Other / Non-specified**

**Abstract Title:** Direct Modification of DNA Origami Scaffolds for Highly Functional DNA Nanoparticles  
**Presenter:** Esra Oktay  
**Principal Investigator:** N/A  
**Author(s):**  
 Joshua Bush  
 Remi Veneziano  
 Dylan Scarton

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster**Number:** 124**Track:** BIOMATERIALS**Other / Non-specified****Abstract Title:** Novel 3D Cell Culture Technique Utilizing a Silicon Titanium Diboride Micropatterned Substrate for Differentiating Mesenchymal Stem Cells into Insulin Producing Cells**Presenter:** Fatima Merchant**Principal Investigator:** Fatima Merchant**Author(s):**

Jefferson Friguglietti

MARAM QUTTINA

Wanda Zagozdzon-Wosik

Fatima Merchant

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster**Number:** 125**Track:** BIOMATERIALS**Other / Non-specified****Abstract Title:** A Flipped External Ester Group Methacrylate Macromer as a Potential EGDMA Alternative in Dental Formulations**Presenter:** Dhiraj Kumar**Principal Investigator:** N/A**Author(s):**

Robert Bolskar

Robert Jones

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster**Number:** 126**Track:** BIOMATERIALS**Other / Non-specified****Abstract Title:** Fabrication and Characterization of Biopsy Tract Sealants Based on Hydrogel/Shape Memory Polymer Foam Composites**Presenter:** Matthew Jungmann**Principal Investigator:** Daniel Alge**Author(s):**

Tyler Touchet

Duncan Maitland

Daniel Alge

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster**Number:** 127**Track:** BIOMATERIALS**Other / Non-specified****Abstract Title:** Evaluation of Silicone Meta-Structure Material Hardness for Use in Diabetic Foot Orthoses**Presenter:** Kyle Walker**Principal Investigator:** N/A**Author(s):**

Adam Johnson

John DesJardins

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster**Number:** 128**Track:** BIOMATERIALS**Other / Non-specified****Abstract Title:** Calorimetric Study of Nanoceria's Impact on Cellular Metabolism**Presenter:** Jani Maxwell**Principal Investigator:** Vladimir Reukov**Author(s):**

Maxwell Jani

Stephen Joseph

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster

**Number:** 129

**Track:** BIOMATERIALS

**Other / Non-specified**

**Abstract Title:** Predicting Microparticle Hydrogel Properties from Compositions of a Poly(Ethylene Glycol) and Dextran Aqueous Two Phase System

**Presenter:** Thomas Tigner

**Principal Investigator:** N/A

**Author(s):**

Grant Scull

Ashley Brown

Daniel Alge

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster

**Number:** 130

**Track:** BIOMATERIALS

**Other / Non-specified**

**Abstract Title:** Development of Wüstite Nanoparticles as ROS-Inducing Agents for Cancer Therapy

**Presenter:** Zhonghao Yi

**Principal Investigator:** Sheng Tong

**Author(s):**

Sheng Tong

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster

**Number:** 131

**Track:** BIOMATERIALS

**Natural and Bioinspired Biomaterials (Summer Undergraduate)**

**Abstract Title:** Bioinspired adhesive patch for sutureless repair of gastrointestinal defects

**Presenter:** Jingjing Wu

**Principal Investigator:** N/A

**Author(s):**

N/A

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster

**Number:** 132

**Track:** BIOMATERIALS

**Biomaterials for Immunoengineering (Summer Undergraduate)**

**Abstract Title:** Engineered Scaffolds to Surveil Immune-Related Prenatal Complications

**Presenter:** Lauren Hesse

**Principal Investigator:** Lonnie Shea

**Author(s):**

Lonnie Shea

Elizabeth Lombard

Chengchuan Xiao

Russell Urie

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster

**Number:** 133

**Track:** BIOMECHANICS

**Mechanobiology of Stem Cell Engineering**

**Abstract Title:** Characterization of mechanics driven phenotypic distribution in human BM-MSC

**Presenter:** Samantha Kaonis

**Principal Investigator:** Samantha Kaonis

**Author(s):**

Samantha Kaonis

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster  
**Number:** 134

**Track:** BIOMECHANICS  
**Cancer Mechanobiology (Summer Undergraduate)**

**Abstract Title:** YAP/TAZ Activity and Collagen Density Modulate 3D Breast Cancer Invasion  
**Presenter:** Jacopo Ferruzzi  
**Principal Investigator:** Haider Ali  
**Author(s):**  
Haider Ali

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster  
**Number:** 135

**Track:** BIOMECHANICS  
**Cancer Mechanobiology (Summer Undergraduate)**

**Abstract Title:** Biomechanical Characterization of Human Colorectal Cancer  
**Presenter:** Nicole Huning  
**Principal Investigator:** Jacopo Ferruzzi  
**Author(s):**  
Adil Khan  
Jacopo Ferruzzi

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster  
**Number:** 136

**Track:** BIOMECHANICS  
**Mechanics of the Respiratory System (Summer Undergraduate)**

**Abstract Title:** Computational Modeling of Vocal Fold Vibration and its Relationship with Lung Pressure

**Presenter:** Durwash Badr  
**Principal Investigator:** N/A  
**Author(s):**  
Isabella McCollum  
Alexis Throop  
Rana Zakerzadeh

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster  
**Number:** 137

**Track:** BIOMECHANICS  
**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** Bone Mechanical Property Changes in Rats Exposed to Galactic Cosmic Radiation  
**Presenter:** Alexandra Stibler  
**Principal Investigator:** Anthony G. Lau  
**Author(s):**  
Anthony Lau  
Catherine Davis

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster  
**Number:** 138

**Track:** BIOMECHANICS  
**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** Mechanical Properties of the Mammalian Cochlea  
**Presenter:** Elyse Jones  
**Principal Investigator:** Jong-Hoon Nam  
**Author(s):**  
Elyse Jones  
Jong-Hoon Nam

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster  
**Number:** 139**Track:** BIOMECHANICS  
**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Characterizing Diaphragm Muscle Tissue Mechanical Properties During In Vivo Loading Conditions**Presenter:** Kaitlyn Hixson**Principal Investigator:** Silvia Blemker**Author(s):**

Kaitlyn Hixson

Ridhi Sahani

Silvia Blemker

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: F, Poster  
**Number:** 140**Track:** BIOMECHANICS  
**Other / Non-specified (Summer Undergraduate)****Abstract Title:** The Effects of Galactic Cosmic Radiation on Mechanical Properties of Bone**Presenter:** Michelle Meyers**Principal Investigator:** Anthony Lau**Author(s):**

Anthony Lau

Catherine Davis

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 161**Track:** BIOMECHANICS  
**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Ex-Vivo Compound Action Potential Measurements: Implications For Those With Vocal Fold Paralysis**Presenter:** Zachary Miller**Principal Investigator:** Jonathan Vande Geest**Author(s):**

Nicholas Vasas

Jonathan Vande Geest

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 162**Track:** BIOMECHANICS  
**Biofluid Mechanics (Summer Undergraduate)****Abstract Title:** Fabrication of a 3D-Printed Blood-Brain Barrier Model**Presenter:** Aidan Curran**Principal Investigator:** N/A**Author(s):**

Aidan Curran`

Louis Paone

Peter Galie

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 163

**Track:** BIOMECHANICS

**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** Translation from Research to Practice: Development of Anti-Vibration Glove Selection Tool

**Presenter:** Kyle Dickinson

**Principal Investigator:** N/A

**Author(s):**

Takafumi Asaki

Donald Peterson

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 164

**Track:** BIOMECHANICS

**Biofluid Mechanics**

**Abstract Title:** Multiplex Approach to Study Circulating Prostate Cancer Cell Mechanotransduction Under Shear Stress

**Presenter:** Abigail Fabiano

**Principal Investigator:** N/A

**Author(s):**

Abigail Fabiano

Michael King

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 165

**Track:** BIOMECHANICS

**Biofluid Mechanics**

**Abstract Title:** Prediction of Flows through Y-shaped Biological Structures using Physics-Informed and Geometry-Informed Neural Networks

**Presenter:** Abdullahi Olapojoye

**Principal Investigator:** N/A

**Author(s):**

fatemeh hassanipour

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 166

**Track:** BIOMECHANICS

**Biofluid Mechanics**

**Abstract Title:** Vibration-Induced Reduction of Perfusion Flow Rate in Vocal Fold Models

**Presenter:** Cooper Thacker

**Principal Investigator:** N/A

**Author(s):**

Scott Thomson

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 167

**Track:** BIOMECHANICS

**Biofluid Mechanics**

**Abstract Title:** 3D Printed Cone Rheometer for High-Throughput Characterization of Fluid Mechanotransduction

**Presenter:** Sarah Kubik

**Principal Investigator:** N/A

**Author(s):**

Sarah Kubik

Gi-hun Lee

Frances Ligler

William Polacheck

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 168

**Track:** BIOMECHANICS  
**Biofluid Mechanics**

**Abstract Title:** Transient Valve Effects in Obstructed Ventricular Catheters

**Presenter:** Shreyash Gulati

**Principal Investigator:** N/A

**Author(s):**

James Killeffer

James Coder

Stephanie TerMaath

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 169

**Track:** BIOMECHANICS  
**Biofluid Mechanics**

**Abstract Title:** Optimization of Extraoral Suction Device to Minimize Aerosol Dispersion in Dental Clinics

**Presenter:** Shamudra Dey

**Principal Investigator:** N/A

**Author(s):**

GUILHERME GARCIA

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 170

**Track:** BIOMECHANICS  
**Cancer Mechanobiology**

**Abstract Title:** Mechanical regulation of chromosome loss in lung adenocarcinoma spheroids

**Presenter:** Alisya Anlas

**Principal Investigator:** N/A

**Author(s):**

Dennis Discher

Brandon Hayes

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 171

**Track:** BIOMECHANICS  
**Cancer Mechanobiology**

**Abstract Title:** Increased Nuclear Compliance Confers Enhanced Invasive Potential in Mesenchymal Glioblastoma

**Presenter:** Landon Teer

**Principal Investigator:** Joseph Chen

**Author(s):**

Landon Teer

Joseph Chen

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 172**Track:** BIOMECHANICS  
**Cancer Mechanobiology****Abstract Title:** Piezo-1 Regulated Calcium Flux is Modulated by Matrix Stiffness, Controlling EMT in Prostate Cancer Cells**Presenter:** Maria Lopez Cavestany**Principal Investigator:** Michael R. King**Author(s):**

Jacob Hope

Noah Reckhorn

Joshua Greenlee

Samantha Schwager

Jacob VanderBurgh

Cynthia Reinhart-King

Michael King

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 173**Track:** BIOMECHANICS  
**Cancer Mechanobiology****Abstract Title:** In vivo multiscale measurements of solid stresses in tumors reveal scale-dependent stress transmission**Presenter:** Sue Zhang**Principal Investigator:** N/A**Author(s):**

Sue Zhang

Rachel Passaro

Kathryn Regan

Gabrielle Grifno

Siyi Zheng

Rohin Banerji

Darren Roblyer

Mark Grinstaff

Hadi Nia

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 174**Track:** BIOMECHANICS  
**Cancer Mechanobiology****Abstract Title:** Tumor Evolution through Selection by ECM Stiffness**Presenter:** Ting-Ching Wang**Principal Investigator:** Tanmay Lele**Author(s):**

Ting-Ching Wang

Charles Baer

Tanmay Lele

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 175**Track:** BIOMECHANICS  
**Mechanobiology of Stem Cell Engineering****Abstract Title:** Cyclic mechanical stretch sustains multipotency of human mesenchymal stem cells**Presenter:** Kun Man**Principal Investigator:** N/A**Author(s):**

Jiafeng Liu

Yong Yang

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 176**Track:** BIOMECHANICS  
**Other / Non-specified****Abstract Title:** Comparative Testing of the Standard Endotracheal Tube and a Novel Endotracheal Tube System**Presenter:** Carlos Bedolla**Principal Investigator:** N/A**Author(s):**  
Lyle Hood**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 177**Track:** BIOMECHANICS  
**Other / Non-specified****Abstract Title:** ECIS Analysis of Acute Respiratory Distress Syndrome Model of Epithelial Cell Damage and Recovery**Presenter:** Carolina Chi**Principal Investigator:** N/A**Author(s):**  
Eiichiro Yamaguchi  
Donald Gaver**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 178**Track:** BIOMECHANICS  
**Other / Non-specified****Abstract Title:** The Posterior Deep Subregion of the Supraspinatus Muscle Acts as an External Rotator**Presenter:** Hugo Giambini**Principal Investigator:** N/A**Author(s):**

Takuma Yuri

Jose Treviño

Alexander Hooke

Hugo Giambini

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 179**Track:** BIOMECHANICS  
**Other / Non-specified****Abstract Title:** Role of Mechanotransduction on Decision Making for Treatment of Chronic Wounds**Presenter:** Kelly McElvain**Principal Investigator:** Mahsa Dabagh**Author(s):**  
Alessandra Ebben  
Joshua Klister  
Mahsa Dabagh**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: G, Poster  
**Number:** 180**Track:** BIOMECHANICS  
**Other / Non-specified****Abstract Title:** Impact Performance Assessment of Bull Riding Helmets: Test Method Development and Preliminary Results**Presenter:** Madysn Cardinal**Principal Investigator:** N/A**Author(s):**  
Madysn Cardinal  
John DesJardins  
Gregory Batt  
Katharine Gruber  
William Ferriell

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 201

**Track:** BIOMECHANICS  
**Other / Non-specified**

**Abstract Title:** Material Testing and Modeling of Ovine Hide

**Presenter:** Patricia Thomas  
**Principal Investigator:** N/A  
**Author(s):**  
Juliette Caffrey  
Francis Gayzik

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 202

**Track:** BIOMECHANICS  
**Other / Non-specified**

**Abstract Title:** Quantifying Embryonic Torsion

**Presenter:** Ashok Ramasubramanian  
**Principal Investigator:** N/A  
**Author(s):**  
Takashi Buma  
Sebastian Santelices

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 203

**Track:** BIOMECHANICS  
**Other / Non-specified**

**Abstract Title:** Device for Testing Partial Trunk Control in Adults

**Presenter:** Rachel Necky  
**Principal Investigator:** N/A  
**Author(s):**  
Dylan Mulligan  
Mary Arico

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 204

**Track:** BIOMECHANICS  
**Other / Non-specified**

**Abstract Title:** Gait symmetric adaptation and retention to functional electrical stimulation during treadmill walking

**Presenter:** Seung-Jae Kim  
**Principal Investigator:** N/A  
**Author(s):**  
Elijah Brown

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 205

**Track:** BIOMECHANICS  
**Other / Non-specified**

**Abstract Title:** Plasma Cofactor Regulation of the Proteolytic Cleavage of von Willebrand Factor

**Presenter:** Yi Liu  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 206**Track:** BIOMECHANICS  
**Other / Non-specified****Abstract Title:** Kinetic Analysis of an Ovine Model of Hypophosphatasia**Presenter:** Aaron Henry**Principal Investigator:** Andrew B. Robbins**Author(s):**

Aaron Henry

Michael Moreno

Andrew Robbins

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 207**Track:** BIOMECHANICS  
**Biomechanics of Rehabilitation/Injury****Abstract Title:** In-vivo Biomechanical Responses of Hypoxic Neonatal Brachial Plexus**Presenter:** Anita Singh**Principal Investigator:** N/A**Author(s):**

Rachel Magee

Virginia Orozco

Sriram Balasubramanian

Anita Singh

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 208**Track:** BIOMECHANICS**Cellular and Molecular Biomechanics:  
Mechanobiology****Abstract Title:** Genotoxic Stress- and Oxidative Stress-Induced DNA Damage and Senescence in Vascular Endothelial Cells**Presenter:** Erick Munoz**Principal Investigator:** N/A**Author(s):**

B. Rita Alevriadou

Anthony Donato

Jisok Lim

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 209**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)**Diversity, Equity, and Inclusion****Abstract Title:** A Systematic Review Towards Understanding the Role of Graduate Engineering Lab Microcultures for Underrepresented Students**Presenter:** Cheryl Gomillion**Principal Investigator:** Cheryl Gomillion**Author(s):**

Patterson Shriner

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 210**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)**Other/Non-specified****Abstract Title:** Simple Force Sensing Apparatus as an Educational Tool for Motion Planning Experiments**Presenter:** Arturo Ramirez**Principal Investigator:** James L. Patton**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 211

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Teaching, Learning, and Pedagogy**

**Abstract Title:** Preliminary Perceptions of Online  
PBL Facilitators within an In-Person Modality  
Introductory BME Course

**Presenter:** Sara Arena

**Principal Investigator:** Sara Arena

**Author(s):**

Liesl Baum

Andre Muelenaer

Christopher Arena

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 212

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Mentorship (Summer Undergraduate)**

**Abstract Title:** Cardiac Phantom for Magnetic  
Resonance Imaging

**Presenter:** Anna Andrews

**Principal Investigator:** Mathews Jacob

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 213

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Mentorship (Summer Undergraduate)**

**Abstract Title:** Ball Size and Weight Effects on  
Pitching Kinematics and Kinetics in Youth Baseball  
Athletes

**Presenter:** Charles Jay Arnold Kristen Faith  
Nicholson

**Principal Investigator:** N/A

**Author(s):**

Garrett Bullock

Kristen Nicholson

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 214

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Mentorship (Summer Undergraduate)**

**Abstract Title:** K14+ Leader Cell and Cancer-  
Associated Fibroblast Interactions Control Cancer  
Cell Migration

**Presenter:** Trey P. Redman Priscilla Y. Hwang

**Principal Investigator:** N/A

**Author(s):**

Priscilla Hwang

Jessanne Lichtenberg

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 215

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Other/Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Synthesis of Metal Organic  
Frameworks Conjugated with Gold Nanorods

**Presenter:** Maria MEJIA

**Principal Investigator:** Maria Catalina Cabarique  
Mejia

**Author(s):**

Mohammed Attia

Jing Yong Ye

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 216

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Other/Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Promoting a Culture of Wellness in  
Engineering: Perceptions and Ideas from Faculty and  
Staff

**Presenter:** Sara Vohra

**Principal Investigator:** Karin Jensen

**Author(s):**

Eileen Johnson

Joseph Mirabelli

Jeanne Sanders

Karin Jensen

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 217

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Other/Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Shear Stress in Ovarian Cancer  
Metastasis via MUC15 Down-regulation

**Presenter:** Zoe Jackson

**Principal Investigator:** Geeta Mehta

**Author(s):**

Eric Horst

Geeta Mehta

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 218

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Multidisciplinary and Interdisciplinary  
Curriculum**

**Abstract Title:** Click Actuating Implantable Pump  
for Bolus Drug Self Administration

**Presenter:** Cho Rim Kim

**Principal Investigator:** N/A

**Author(s):**

Cho Rim Kim

Yong Chan Cho

Jae Hoon Han

Min Ji Kim

Han Bi Ji

Chang Hee Min

Young Bin Choy

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 219

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Multidisciplinary and Interdisciplinary  
Curriculum**

**Abstract Title:** Impact of Biomedical Engineering  
Accelerator Program: Teaching Translational  
Innovation to Diverse Multidisciplinary Teams  
**Presenter:** Meghan Pinezich  
**Principal Investigator:** Andrew Laine  
**Author(s):**  
Andrew Laine

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 220

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Teaching, Learning, and Pedagogy**

**Abstract Title:** Impact of Immersing Students in  
Biomolecular Engineering Through Visual-based and  
Inquiry-based Learning  
**Presenter:** Charles Patrick  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 241

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Teaching, Learning, and Pedagogy**

**Abstract Title:** Implementation of a Health Equity-  
focused Python/Machine Learning Module in an  
Introductory Course  
**Presenter:** Eileen Haase  
**Principal Investigator:** N/A  
**Author(s):**  
Kaitlyn Storm  
Jerry Zhang

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 242

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Teaching, Learning, and Pedagogy**

**Abstract Title:** Disparities in response, motivations,  
and self-efficacy to Entrepreneurially Minded  
Learning within underrepresented students' groups  
**Presenter:** Mostafa Elsaadany  
**Principal Investigator:** N/A  
**Author(s):**  
Kaitlin Hall  
Raj Rao  
Mostafa Elsaadany

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 243**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)**Teaching, Learning, and Pedagogy****Abstract Title:** Evaluating Virtual Resources  
Designed to Enhance Graduate Pedagogy in a High  
School STEM Program**Presenter:** Nhien Tran-Nguyen**Principal Investigator:** N/A**Author(s):**

Nhien Tran-Nguyen

Nicolas Ivanov

Fatima Ali

Joshua Mogyoros

Dawn Kilkenny

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 244**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Other / Non-specified****Abstract Title:** Electrograms Denoise and Artifact  
Removal using Coordinate-based Autoencoder**Presenter:** Hansong Gao**Principal Investigator:** N/A**Author(s):**

ZicHao Wen

Zhexian Sun

Yong Wang

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 245**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Other / Non-specified****Abstract Title:** Treatment-related Cognitive  
Impairment and Neurovascular Coupling in Cancer  
Patients**Presenter:** Summer Edwards**Principal Investigator:** Han Yuan**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 246**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Other / Non-specified****Abstract Title:** Nitrogen Vacancy Diamond  
Nanoparticles for High Spatial Resolution  $\mu$ T Scale  
Magnetometry**Presenter:** Yash Gokhale**Principal Investigator:** N/A**Author(s):**

Yash Gokhale

Tsani Rogers

Maya Lines

Jack Phillips

Tianxiang Zhu

Alireza Ashtiani

Aviad Hai

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 247

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Abstract Title:** Design of CHAMP-3: Controlled Heating Apparatus for Microfluidics and Portability

**Presenter:** Alexander Pueschel

**Principal Investigator:** N/A

**Author(s):**

Margaret Bennowitz

Kasey Freshwater

Hassan Alkadrawi

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 248

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Abstract Title:** Using Convolutional Neural Networks and Magnetic Resonance Images to Screen Obstructive Sleep Apnea

**Presenter:** Sarthak Tiwari

**Principal Investigator:** Sarthak Tiwari

**Author(s):**

Bhaswati Roy

Rajesh Kumar

Daniel Tward

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 249

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

Deep Learning and Artificial Intelligence In Microstructural Imaging (Summer Undergraduate)

**Abstract Title:** Using Convolutional Neural Network and Different Data Augmentation Techniques for Automatic Detection of Astrocyte Reactivity Following Traumatic Brain Injury

**Presenter:** Marissa Redington

**Principal Investigator:** Marzieh Hajiaghamemar

**Author(s):**

Mohammadreza Ramzanpour

Marzieh Hajiaghamemar

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 250

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Deep Learning and Artificial Intelligence In Microstructural Imaging (Summer Undergraduate)**

**Abstract Title:** Bridging the Gap Between Clinical and Laboratory Label-free Two-photon Excitation Microscopy

**Presenter:** Tien Long Dinh

**Principal Investigator:** Irene Georgakoudi

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 251**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Magnetic Resonance Imaging  
and Applications (MRI) (Summer  
Undergraduate)****Abstract Title:** Assessment of Oxidative Stress and  
Neuronal Activity Affected in PTSD Subjects**Presenter:** Antonia Susnjar**Principal Investigator:** Meden Issac Lamb**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 252**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Magnetic Resonance Imaging  
and Applications (MRI) (Summer  
Undergraduate)****Abstract Title:** Measuring Brain Hemodynamics  
with Quantitative BOLD imaging: Accuracy and  
Mean Squared Error**Presenter:** Anahita Tavakoli**Principal Investigator:** Audrey Fan**Author(s):**

Linh Le

Greg Wheeler

Audrey Fan

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 253**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Magnetic Resonance Imaging  
and Applications (MRI) (Summer  
Undergraduate)****Abstract Title:** Association of Cerebral Blood  
Flow with Affective Symptoms after Sport-Related  
Concussion**Presenter:** Daniel Hudson**Principal Investigator:** Christopher Whitlow**Author(s):**

Richard Barcus

Christopher Sheridan

Megan Lipford

Christopher Whitlow

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 254**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Magnetic Resonance Imaging  
and Applications (MRI) (Summer  
Undergraduate)****Abstract Title:** White Matter Changes Associated  
with Sleep Disturbance after Sport-Related  
Concussion.**Presenter:** Hannah Chapman**Principal Investigator:** Christopher T. Whitlow**Author(s):**

Christopher Sheridan

Richard Barcus

Christopher Whitlow

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 255**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Magnetic Resonance Imaging  
and Applications (MRI) (Summer  
Undergraduate)****Abstract Title:** Automated Positioning System For  
Benchtop Characterization Of RF Coils**Presenter:** Jeanpaul Posso**Principal Investigator:** N/A**Author(s):**

Vy Chu

Jacob Degitz

Carla Bassil

Joseph Busher

Edith Valle

Mary McDougall

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 256**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Magnetic Resonance Imaging  
and Applications (MRI) (Summer  
Undergraduate)****Abstract Title:** Brain Temperature as a Potential  
Marker for Chronic Pain**Presenter:** Rishab Agarwal**Principal Investigator:** Candace C. Fleischer**Author(s):**

Daniel Harper

Candace Fleischer

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 257**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Magnetic Resonance Imaging and  
Applications (MRI)****Abstract Title:** Graphical User Interface for  
Multi-channel Magnetic Resonance Spectroscopy  
Combination**Presenter:** Travis Carrell**Principal Investigator:** Mary McDougall**Author(s):**

Travis Carrell

Mary McDougall

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 258**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Magnetic Resonance Imaging and  
Applications (MRI)****Abstract Title:** Post-Surgical Metal Wear Particle  
Artifact Correction in MR Imaging by Deep Neural  
Networks**Presenter:** Dominique Barnes**Principal Investigator:** Braden C. Flemming**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 259

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Magnetic Resonance Imaging and  
Applications (MRI)**

**Abstract Title:** Impact of Sickle Cell Disease on  
Cerebral Blood Flow, Neuropathic Pain and Fluid  
Cognition: A Pilot Study

**Presenter:** Daniel Sop

**Principal Investigator:** N/A

**Author(s):**

Joel Steinberg

Wally Smith

John Wilson

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: I, Poster  
**Number:** 260

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Magnetic Resonance Imaging and  
Applications (MRI)**

**Abstract Title:** Reporting of Race, Sex, and Ethnicity  
in Neuroimaging Studies: A Systematic Review

**Presenter:** Elijah Sterling

**Principal Investigator:** N/A

**Author(s):**

Hannah Pearl

Zexuan Liu

Jason Allen

Candace Fleischer

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 281

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Magnetic Resonance Imaging and  
Applications (MRI)**

**Abstract Title:** High-Intensity Exercise Affects Brain  
Stiffness and Executive Function

**Presenter:** Grace McIlvain

**Principal Investigator:** N/A

**Author(s):**

Grace McIlvain

Emily Magoon

Rebecca Clements

Curtis Johnson

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 282

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Magnetic Resonance Imaging and  
Applications (MRI)**

**Abstract Title:** Agreement between hemodynamic  
delay maps derived from breathing task and resting  
state fMRI data

**Presenter:** Jingxuan Gong

**Principal Investigator:** N/A

**Author(s):**

Rachael Stickland

Molly Bright

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 283

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Magnetic Resonance Imaging and  
Applications (MRI)**

**Abstract Title:** The Application of Nested Coils for  
Multinuclear NMR

**Presenter:** Joseph Busher

**Principal Investigator:** Mary P. McDougall

**Author(s):**

Joseph Busher

Edith Valle

Steven Wright

Mary McDougall

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 284

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Magnetic Resonance Imaging and  
Applications (MRI)**

**Abstract Title:** Shear Stiffness Gradients in the Brain  
During Development and Maturation

**Presenter:** Kyra Twohy

**Principal Investigator:** N/A

**Author(s):**

Kyra Twohy

Grace McIlvain

Curtis Johnson

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 285

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Magnetic Resonance Imaging and  
Applications (MRI)**

**Abstract Title:** MR Elastography with Pre-Strain to  
Determine Nonlinear Mechanical Properties

**Presenter:** Olivia Bailey

**Principal Investigator:** N/A

**Author(s):**

Olivia Bailey

Alexa Diano

Mary Kramer

Curtis Johnson

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 286

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Magnetic Resonance Imaging and  
Applications (MRI)**

**Abstract Title:** Modeling of Microwave and  
Radiofrequency Wave Propagation through the Brain

**Presenter:** Robert Thurston

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 287

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Magnetic Resonance Imaging and Applications (MRI)**

**Abstract Title:** Improved Myocardial Image Registration using Classification-based Super-Resolution Reconstruction

**Presenter:** Tanmay Mukherjee

**Principal Investigator:** Reza Avazmohammadi

**Author(s):**

Tanmay Mukherjee

Maziyar Keshavarzian

Elizabeth Fugate

Diana Lindquist

Sakthivel Sadayappan

Reza Avaz

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 288

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Magnetic Resonance Imaging and Applications (MRI)**

**Abstract Title:** MRI Preamplifier Design

**Presenter:** Folk Narongrit

**Principal Investigator:** Joseph V. Rispoli

**Author(s):**

Folk Narongrit

Joseph Rispoli

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 289

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Magnetic Resonance Imaging and Applications (MRI)**

**Abstract Title:** Quantitative assessment of oxygenation levels within biocompatible hydrogels

**Presenter:** Yuka Sugamura

**Principal Investigator:** N/A

**Author(s):**

Amy Emerson

Jessica Weaver

Vikram Kodibagkar

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 290

**Track:** CANCER TECHNOLOGIES

**Cancer Immunoengineering, Immunomodulation and Immunotherapy**

**Abstract Title:** Microfluidic Co-Cultures of Cancer Spheroids and Leukocytes for Testing Immunotherapy

**Presenter:** Alan Gonzalez-Suarez

**Principal Investigator:** Alexander Revzin

**Author(s):**

Alexander Revzin

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 291

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Aptamer-functionalized Resins  
for Continuous Flow Cell Isolation of Blood Cell  
Populations

**Presenter:** Melissa Ling

**Principal Investigator:** Suzie Pun

**Author(s):**

Kefan Song

Suzie Pun

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 292

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Development of Immunotherapy for  
Acute Lymphoblastic Leukemia by Targeting Cancer  
Exosomes

**Presenter:** Lauren Spadt

**Principal Investigator:** N/A

**Author(s):**

Farnaz Naeemikia

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 293

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy (Summer  
Undergraduate)**

**Abstract Title:** T Cell Infiltration in Murine  
Mammary Tumors Treated with Radiation Therapy

**Presenter:** Erica Lin

**Principal Investigator:** Marjan Rafat

**Author(s):**

Benjamin Hacker

Shannon Martello

Charles Caskey

Marjan Rafat

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 294

**Track:** CANCER TECHNOLOGIES  
**Heart Valve Structure, Function, and  
Disease (Summer Undergraduate)**

**Abstract Title:** Feasibility of an In Vitro Cardiac  
Flow Loop System for Planning Valve-in-Valve TAVR  
Procedures

**Presenter:** Emma Minadeo

**Principal Investigator:** N/A

**Author(s):**

Christine Miller-Buffinton

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 295

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Enhancing Immunotherapy via  
Chemokine-Driven Natural Killer Cells in 3D  
Melanoma Organoids  
**Presenter:** Srijia Chakraborty  
**Principal Investigator:** Aleksander Skardal  
**Author(s):**  
Aleksander Skardal

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 296

**Track:** CANCER TECHNOLOGIES  
**Cancer mmunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Facile discovery of a therapeutic agent  
for NK-mediated synergistic antitumor effects using a  
patient-derived 3D platform  
**Presenter:** Eunjung Lee  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 297

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Chromosomal Instability Can Favor  
Macrophage-mediated Tumor Clearance & Anti-  
Cancer Acquired Immunity  
**Presenter:** Brandon Hayes  
**Principal Investigator:** N/A  
**Author(s):**  
Brandon Hayes  
Mai Wang  
Hui Zhu  
Jason Andrechak  
Dennis Discher

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 298

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Applied Fluid Shear Stress Enhances  
Ex Vivo Activation of Mouse Bone Marrow Dendritic  
Cells  
**Presenter:** Jenna Dombroski  
**Principal Investigator:** Michael King  
**Author(s):**  
Jenna Dombroski  
Schyler Rowland  
Jacob Hope  
Michael King

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 299**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy****Abstract Title:** Evaluating The Impact of Interstitial  
Fluid Flow on CAR T Cell Therapy For GBM In  
Vitro**Presenter:** Julio Arroyo**Principal Investigator:** N/A**Author(s):**

Julio Arroyo

Gabriela Geraldo Mendes

Conner Brocke

Jenny Munson

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: J, Poster  
**Number:** 300**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy****Abstract Title:** Cell-Sized Lipid Vesicles as Artificial  
Antigen-Presenting Cells for Antigen-Specific T Cell  
Activation**Presenter:** Jui Yi Chen**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 321**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy****Abstract Title:** Genetic Reprogramming of  
Melanoma via Signal 2 and 3 Delivery Drives an Anti-  
Tumor Response In Vivo**Presenter:** Kathryn Luly**Principal Investigator:** N/A**Author(s):**

Jordan Green

Stephany Tzeng

Joel Sunshine

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 322**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy****Abstract Title:** Promoting T-Lymphocyte Cancer  
Cytotoxicity Via an Immune Enhanced Tumor on a  
Chip Platform (iTOC)**Presenter:** Marco Antonio Rodriguez**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 323

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Losartan prevents immunotherapy-associated edema and enhances survival in glioblastoma  
**Presenter:** Meenal Datta  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 324

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Systems biology analysis of anti-tumor immunity  
**Presenter:** Lance Munn  
**Principal Investigator:** N/A  
**Author(s):**  
Mohammadreza Nikmaneshi  
Timothy Padera  
James Baish  
Lance Munn

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 325

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** NanoEngineering gone viral: plant virus-based cancer immunotherapies  
**Presenter:** Nicole Steinmetz  
**Principal Investigator:** Nicole Steinmetz  
**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 326

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Harnessing Cell Death Mechanisms After Irreversible Electroporation And High-Frequency Irreversible Electroporation In Breast Cancer  
**Presenter:** Sofie Saunier  
**Principal Investigator:** N/A  
**Author(s):**  
Nastaran Alinezhad  
Rafael Davalos

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 327

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Polymer-Drug Conjugates for  
STING Pathway Activation to Enhance Cancer  
Immunotherapy

**Presenter:** Taylor Sheehy

**Principal Investigator:** N/A

**Author(s):**

KARAN ARORA

David Florian

Blaise Kimmel

John Wilson

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 328

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Longitudinal Monitoring of  
Angiogenesis of Pancreatic Tumor using Optical  
Coherence Tomography

**Presenter:** Trisha Valerio

**Principal Investigator:** Wei R. Chen

**Author(s):**

Feng Yan

Qinggong Tang

Wei Chen

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 329

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Analyzing Mechanisms for  
the Enhanced Immunogenicity of Irreversible  
Electroporation Cancer Lysates

**Presenter:** Joseph Vallin

**Principal Investigator:** N/A

**Author(s):**

Samira Azarin

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 330

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Individualization of Immunotherapy  
by Mechanobiology and Machine Learning

**Presenter:** Xin Wang

**Principal Investigator:** N/A

**Author(s):**

Lance Kam

Lingting Shi

Jia Guo

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 331

**Track:** CANCER TECHNOLOGIES  
**Imaging Strategies in Cancer Detection,  
Diagnosis, and Prognosis**

**Abstract Title:** Targeting Prostate Specific Membrane Antigen For Fluorescence Image Guided Surgery Of Breast Cancer

**Presenter:** Aditi Shirke

**Principal Investigator:** James P Basilion

**Author(s):**

Xinning Wang

Gopal Ramamurthy

James Basilion

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 332

**Track:** CANCER TECHNOLOGIES  
**Imaging Strategies in Cancer Detection,  
Diagnosis, and Prognosis**

**Abstract Title:** Detection of Kidney Tumor using Polarization-Sensitive Optical Coherence Tomography in Ex Vivo Human Kidneys

**Presenter:** Feng Yan

**Principal Investigator:** N/A

**Author(s):**

Chen Wang

Yuyang Yan

Zaid Alhajeri

Aubrey McNiel

Kar-Ming Fung

Qinggong Tang

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 333

**Track:** CANCER TECHNOLOGIES  
**Imaging Strategies in Cancer Detection,  
Diagnosis, and Prognosis**

**Abstract Title:** Wavelet-Based Anisotropy Analysis of SHG Imaged Breast Tissue Trends with BI-RADS Assessment Score

**Presenter:** Joshua Hamilton

**Principal Investigator:** N/A

**Author(s):**

Joshua Hamilton

Mary Isabelle Wisell

Karissa Tilbury

Andre Khalil

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 334

**Track:** CANCER TECHNOLOGIES  
**Imaging Strategies in Cancer Detection,  
Diagnosis, and Prognosis**

**Abstract Title:** Wireless Implantable In Vivo Light Dosimetry System For Photodynamic Therapy

**Presenter:** Sung Il Park

**Principal Investigator:** N/A

**Author(s):**

Sungcheol Hong

Ibrahim Khot

David Jayne

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 335**Track:** CANCER TECHNOLOGIES  
**Imaging Strategies In Cancer Detection, Diagnosis, and Prognosis (Summer Undergraduate)****Abstract Title:** Altered Metabolism in Gliomas with Isocitrate Dehydrogenase Mutations  
**Presenter:** Hannah Pearl  
**Principal Investigator:** Candace C. Fleischer  
**Author(s):**  
Candace Fleischer**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 336**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiac/Cardiovascular Regeneration and Stem Cells****Abstract Title:** hiPSC-Cardiomyocyte Mechanobiology: Modeling Altered Biomechanics of Hypertrophic Cardiomyopathy  
**Presenter:** Alison Vander Roest  
**Principal Investigator:** Alison Vander Roest  
**Author(s):**  
N/A**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 337**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiac/Cardiovascular Regeneration and Stem Cells****Abstract Title:** Pentagalloyl Glucose Reduces Macrophage Induced Smooth Muscle Cell Pathogenicity  
**Presenter:** Gregory Halsey  
**Principal Investigator:** Naren Vyavahare  
**Author(s):**  
Narendra Vyavahare**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 338**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics****Abstract Title:** Image-guided Subject-specific Modeling of Glymphatic Transport and Amyloid Deposition  
**Presenter:** SHaolie Hossain  
**Principal Investigator:** N/A  
**Author(s):**  
Michael Johnson  
Michael Abdelmalik  
Frimpong Baidoo  
Andrew Badachhape  
Thomas Hughes  
SHaolie Hossain

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 339

**Track:** CARDIOVASCULAR ENGINEERING  
**Heart Valve Structure, Function, and Disease (Summer Undergraduate)**

**Abstract Title:** Inflammatory Factors from Macrophages and Aortic Valve Stenosis Patient Sera Differentially Activate Male and Female Valvular Myofibroblasts

**Presenter:** Adam Engler

**Principal Investigator:** Steven Robles Blasini, Brian Aguado

**Author(s):**

Brian Aguado

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: K, Poster  
**Number:** 340

**Track:** CARDIOVASCULAR ENGINEERING  
**Heart Valve Structure, Function, and Disease (Summer Undergraduate)**

**Abstract Title:** Patient-Specific 3D Printed Models for Determining Ideal Procedure for Carotid Disease Patients

**Presenter:** CORY ARNOLD

**Principal Investigator:** N/A

**Author(s):**

Evan Garner

Lucas Jentsch

Kunaal Sarhaya

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 361

**Track:** CARDIOVASCULAR ENGINEERING  
**Heart Valve Structure, Function, and Disease (Summer Undergraduate)**

**Abstract Title:** Quantitative Polarized Light Imaging of Aortic Heart Valve Leaflets

**Presenter:** Connor Link

**Principal Investigator:** Colleen M. Witzenburg

**Author(s):**

Colleen Witzenburg

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 362

**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics**

**Abstract Title:** An Extensive Review Regarding the Deposition of Calcium in Coronary Atherosclerotic Plaque

**Presenter:** Nathan Nguyen Heather Hayenga

**Principal Investigator:** Heather Hayenga

**Author(s):**

Fatima Rehman

Quynh Tran

Jeremy Warren

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 363

**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics  
(Summer Undergraduate)**

**Abstract Title:** Resuscitation from Hemorrhagic Shock (HS) Comparing Synthetic Crystalloids, Synthetic Colloids and Natural Colloids

**Presenter:** Carlos Munoz

**Principal Investigator:** Bridget Floss, Pedro Cabrales

**Author(s):**

Carlos Munoz

Bridgit Floss

Daniela Lucas

Cynthia Rodrigues Muller

Pedro Cabrales

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 364

**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics  
(Summer Undergraduate)**

**Abstract Title:** Development of a Closed-loop, Task-Based, Behavioral Feedback and Data Acquisition System with Concurrent Wide-Field Optical Imaging

**Presenter:** Evan William Morris Dr. Adam Q. Bauer

**Principal Investigator:** N/A

**Author(s):**

Adam Bauer

Jonah Padawer-curry

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 365

**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics  
(Summer Undergraduate)**

**Abstract Title:** On the Presence of Porous Intraluminal Thrombus and Oxygen Flow in Abdominal Aortic Aneurysms

**Presenter:** Alexis Throop

**Principal Investigator:** Rana Zakerzadeh

**Author(s):**

Durwash Badr

Rana Zakerzadeh

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 366

**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics  
(Summer Undergraduate)**

**Abstract Title:** Toward mechanical characterization of perivascular tissues: a combined in situ-ex vivo biomechanical analysis of murine arteries

**Presenter:** Zach Tentor

**Principal Investigator:** Matthew Bersi

**Author(s):**

Matthew Bersi

Caleb Snider

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster

**Number:** 367

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiac/Cardiovascular  
Regeneration and Stem Cells (Summer  
Undergraduate)**

**Abstract Title:** Optimizing iPSC-CM  
Normalization Using Micropattern Assays for a High  
Throughput Analysis of Cardiomyocyte Alignment  
and Morphology

**Presenter:** Sharvari Apte Christopher Chen

**Principal Investigator:** N/A

**Author(s):**

Christopher Chen

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster

**Number:** 368

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiac/Cardiovascular Regeneration  
and Stem Cells**

**Abstract Title:** Stress Pathways Govern Cardiac  
Matrix Responses after Injury in a lncRNA-dependent  
Manner

**Presenter:** Alex Whitehead

**Principal Investigator:** N/A

**Author(s):**

Adam Engler

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster

**Number:** 369

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiac/Cardiovascular Regeneration  
and Stem Cells**

**Abstract Title:** Cardiomyocyte-Specific In Vivo  
Reprogramming to Pluripotency in Mice

**Presenter:** Irene de Lazaro

**Principal Investigator:** N/A

**Author(s):**

David Mooney

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster

**Number:** 370

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiac/Cardiovascular Regeneration  
and Stem Cells**

**Abstract Title:** A Novel Approach to Establishing  
a Hypoxic Zebrafish Model for Cardiovascular  
Applications

**Presenter:** Jimmy Zhang

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 371

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiac/Cardiovascular Regeneration  
and Stem Cells**

**Abstract Title:** Biomimetic Substrate Impact on  
iPSC-CM Differentiation and Function

**Presenter:** Nikhith Kalkunte

**Principal Investigator:** Janet Zoldan

**Author(s):**

Talia Delambre

Sogu Sohn

Janet Zoldan

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 372

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics**

**Abstract Title:**  $\beta$ IV-spectrin is responsible for  
orienting concentric versus eccentric cardiomyocyte  
hypertrophy

**Presenter:** Shivangi Mohta

**Principal Investigator:** Thomas Hund

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 373

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics**

**Abstract Title:** Investigating the Mechanical  
properties of the Murine Thoracic Aorta During  
Pregnancy

**Presenter:** Ana Vargas

**Principal Investigator:** Chiara Bellini, Rouzbeh  
Amini

**Author(s):**

Rouzbeh Amini

Chiara Bellini

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 374

**Track:** CARDIOVASCULAR ENGINEERING  
**Other / Non-specified**

**Abstract Title:** Aortic Shape Sparse Sample Predicts  
Successful Thoracic Endovascular Aortic Repair

**Presenter:** Kameel Khabaz

**Principal Investigator:** Luka Pocivavsek

**Author(s):**

Kameel Khabaz

Karen Yuan

Seth Sankary

Luka Pocivavsek

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 375

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics (Summer Undergraduate)**

**Abstract Title:** The Effects of Pathological Shear Stress on Macrophages in Discrete Subaortic Stenosis

**Presenter:** Griffin Kingsley

**Principal Investigator:** K. Jane Grande-Allen

**Author(s):**

Elysa Jui

Jane Grande-Allen

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 376

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics (Summer Undergraduate)**

**Abstract Title:** Investigating Endothelial Cell Response to Pathological Macrophage Secretome in Discrete Subaortic Stenosis

**Presenter:** Sarah Jimenez

**Principal Investigator:** K. Jane Grande-Allen

**Author(s):**

Jane Grande-Allen

Jennifer Connell

Elysa Jui

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 377

**Track:** CARDIOVASCULAR ENGINEERING  
**Heart Valve Structure, Function, and Disease**

**Abstract Title:** On Changes in the Human Mitral Valve In-Vivo Functional State in Transcatheter Edge-to-Edge Repair

**Presenter:** Natalie Simonian

**Principal Investigator:** N/A

**Author(s):**

Natalie Simonian

Hao Liu

Joseph Gorman

Michael Sacks

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 378

**Track:** CARDIOVASCULAR ENGINEERING  
**Heart Valve Structure, Function, and Disease**

**Abstract Title:** A Clot Generation Device for Mechanical Heart Valves

**Presenter:** Sreyashi Chakraborty

**Principal Investigator:** N/A

**Author(s):**

Alessandro Bellofiore

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 379

**Track:** CARDIOVASCULAR ENGINEERING  
**Heart Valve Structure, Function, and Disease**

**Abstract Title:** Ex-vivo Assessments of Calcification Hardness of Aortic Stenosis Valves  
**Presenter:** Takashi Shirakawa  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: L, Poster  
**Number:** 380

**Track:** CARDIOVASCULAR ENGINEERING  
**Heart Valve Structure, Function, and Disease**

**Abstract Title:** Polyoxazoline Modification of Bioprosthetic Heart Valve Leaflets Mitigates Protein-Glycation Induced Structural Degeneration  
**Presenter:** Andrey Zakharchenko  
**Principal Investigator:** Robert Levy  
**Author(s):**  
Samuel Keeney  
Giovanni Ferrari  
Yingfei Xue  
Michael Chorny  
Hajime Takano  
Stanley Stachelek  
Ivan Alferiev  
Robert Levy

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster  
**Number:** 401

**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics**

**Abstract Title:** A Computational Assessment of Aortic Arch Hemodynamics for Stroke Prediction  
**Presenter:** Brennan Vogl  
**Principal Investigator:** N/A  
**Author(s):**  
Brennan Vogl  
Hoda Hatoum

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster  
**Number:** 402

**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics**

**Abstract Title:** Computational Characterization of Subaortic Flow Dynamics in Steepened Left Ventricular Outflow Tracts: Potential Significance to Discrete Subaortic Stenosis and Secondary Valvopathy  
**Presenter:** Philippe Sucusky  
**Principal Investigator:** N/A  
**Author(s):**  
Jason Shar  
Sundeeep Keswani  
Jane Grande-Allen  
Philippe Sucusky

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster**Number:** 403**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics****Abstract Title:** A Parallel Plate Flow Chamber to Investigate Endothelial Glycocalyx Remodeling After Pneumonectomy**Presenter:** Taylor Paradis**Principal Investigator:** N/A**Author(s):**

Natasha Cruz-Calderon

Gillian Miller

Lydia Masse

Samantha Raskind

Aaron Waxman

Kristen Billiar

SOLOMON MENSAH

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster**Number:** 404**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics****Abstract Title:** Modeling Blood Flow and Clot Migration in an Anatomical Cerebral Vascular Model**Presenter:** Saurabh Bhardwaj**Principal Investigator:** N/A**Author(s):**

Brent Craven

Francesco Costanzo

Scott Simon

Keefe Manning

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster**Number:** 405**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics****Abstract Title:** Computational Estimation of Segment-specific Shear Stress Heterogeneity at the Capillary Level in Angiogenic Rat Mesenteric Microvascular Networks**Presenter:** Nien-Wen Hu**Principal Investigator:** N/A**Author(s):**

Nien-Wen Hu

Mir Md Nasim Hossain

Walter Murfee

Peter Balogh

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster**Number:** 406**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Tissue Engineering****Abstract Title:** Engineering cardiac organoid vascularization via fluid shear stress and vascular-promoting growth factors**Presenter:** Angello Huerta Gomez**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster  
**Number:** 407

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Tissue Engineering**

**Abstract Title:** Tissue Engineered Vascular Sheets with Atherosclerosis Features for Drug Evaluation

**Presenter:** Jun Chen

**Principal Investigator:** N/A

**Author(s):**

Jun Chen

Xixi Zhang

Brigitta Brott

Hanjoong Jo

Young-sup Yoon

Jeonga Kim

Ho-Wook Jun

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster  
**Number:** 408

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Tissue Engineering**

**Abstract Title:** Vascular Patch Repair in Pediatric Patients

**Presenter:** Dipasha Sinha

**Principal Investigator:** N/A

**Author(s):**

Dipasha Sinha

Narendra Vyavahare

Agnes Nagy-Mehesz

John Mayer

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster  
**Number:** 409

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Tissue Engineering**

**Abstract Title:** Stem Cell-Derived Tissue Engineered Blood Vessels to Study Radiation-Induced Vascular Damage

**Presenter:** Danielle Yarbrough

**Principal Investigator:** N/A

**Author(s):**

Danielle Yarbrough

Sharon Gerecht

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster  
**Number:** 410

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Abstract Title:** The Batten disease gene product CLN3 is required for the clearance of glycerophosphodiester from lysosomes

**Presenter:** Wentao Dong

**Principal Investigator:** N/A

**Author(s):**

N/A

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster

**Number:** 411

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Engineering and the Microbiome

**Abstract Title:** Non-replicating Bacterial Minicells for Target-specific Delivery of Anti-cancer Treatments to Colon Cancer

**Presenter:** Woojung Shin

**Principal Investigator:** N/A

**Author(s):**

Jack xiaoyu Chen

Makoto Lalwani

Qianchang Wang

Nayoung Kim

Jim Collins

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster

**Number:** 412

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Other / Non-specified

**Abstract Title:** Antimicrobial Activities of Amyloid-beta Aggregates

**Presenter:** Fahimeh Maghsoodi

**Principal Investigator:** Eva Y. Chi

**Author(s):**

Eva Chi

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster

**Number:** 413

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Other / Non-specified

**Abstract Title:** The Disulfide Bonds in the C-terminal Domains of the Insulin Receptor Regulate Insulin-mediated Receptor Endocytosis

**Presenter:** Stella Park

**Principal Investigator:** Eunhee Choi

**Author(s):**

N/A

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster

**Number:** 414

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Other / Non-specified

**Abstract Title:** Identification of Senescent Cells after Heterochronic Blood Exchange

**Presenter:** Zachery Robinson

**Principal Investigator:** Irina M. Conboy

**Author(s):**

N/A

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster

**Number:** 415

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Single-Cell Measurements and Models

**Abstract Title:** Developing New Strategies to Uncover Single-Cell Metabolic Heterogeneity

**Presenter:** Gianna Busch

**Principal Investigator:** Arjun Raj

**Author(s):**

Gianna Busch

Ryan Boe

Arjun Raj

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster  
**Number:** 416

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Engineering and the Microbiome  
(Summer Undergraduate)**

**Abstract Title:** Increasing Carbohydrate Metabolism Capabilities of Lactococcus lactis  
**Presenter:** Amy Apgar  
**Principal Investigator:** Thomas Mansell  
**Author(s):**  
Amy Apgar  
Swastik Sen  
Thomas Mansell

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster  
**Number:** 417

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Degradation of the Environmental Hazard 1,2,3-Trichloropropane (TCP) Using the Thermal Stabilized DhaA31 Haloalkane Dehalogenase.  
**Presenter:** Sachely Antuna  
**Principal Investigator:** Sagar Khare  
**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster  
**Number:** 418

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Maresin 1 Mediation of Muscle Regeneration Following Volumetric Muscle Loss  
**Presenter:** Bonnie Spence  
**Principal Investigator:** Carlos Aguilar  
**Author(s):**  
Carlos Aguilar  
Jacqueline Larouche  
Emily Wallace

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster  
**Number:** 419

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Elucidation of the Mechanical Properties of Mesenchymal Stem Cells on a Collagen Surface  
**Presenter:** Janie Johnson  
**Principal Investigator:** Masahiro Kino-Oka  
**Author(s):**  
N/A

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: M, Poster  
**Number:** 420

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Mitochondrial Dysfunction Linked  
to Pathologic Enzyme Activity as a Biomarker for  
GM1 Gangliosidosis

**Presenter:** Morgan Ethridge

**Principal Investigator:** Jessica Larsen

**Author(s):**

Jessica Larsen

Alexandria Hood

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 441

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Development of an Age-Appropriate  
Parkinson's Disease Model in Zebrafish

**Presenter:** Minhyun Shin

**Principal Investigator:** Jessica Larsen

**Author(s):**

Emmeline Bagwell

Jessica Larsen

Doris Migliaccio

Nicole Henkel

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 442

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** A Comparative Study on the  
Application of Human Plasma and Serum as a Culture  
Media for Endothelial Cells

**Presenter:** Mitesh Rathod

**Principal Investigator:** William Polacheck

**Author(s):**

William Polacheck

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 443

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Assessing Endothelial Cell Behavior  
in an in vitro PEG-DA Hydrogel Cell Culture Assay  
of Idiopathic Pulmonary Fibrosis

**Presenter:** Tara Tavakol

**Principal Investigator:** Shayn M. Peirce

**Author(s):**

Tara Tavakol

Julie Leonard-Duke

Caleb Tyson

Yixuan Yuan

Annika Szytniec

Shayn Peirce

Lakeshia Taite

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 444

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Reprogramming/Directed  
Differentiation In Stem Cell Engineering  
(Summer Undergraduate)**

**Abstract Title:** Integrating atb\_miRNA-375 via  
BXB1 mediated recombination into a suicide circuit  
to select for endodermic/pancreatic cells in teratomas

**Presenter:** Adam Engler

**Principal Investigator:** Nikolai Haines, Prashant  
Mali

**Author(s):**  
Hammza Hammza Khaliq  
Prashant Mali

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 445

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular Bioengineering (Summer  
Undergraduate)**

**Abstract Title:** Modeling the Effects of Stiffness on  
Ovarian Cancer Peritoneal Metastasis

**Presenter:** Burton Carbino

**Principal Investigator:** David I. Shreiber

**Author(s):**  
David Shreiber  
Kelly Kyker-Snowman

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 446

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular Bioengineering (Summer  
Undergraduate)**

**Abstract Title:** PsychLight: a Genetically Encoded  
Fluorescent Sensor for Drug Discovery

**Presenter:** Caroline Daggett Melikan Tanyeri

**Principal Investigator:** N/A

**Author(s):**  
Melikhan Tanyeri

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 447

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular Bioengineering (Summer  
Undergraduate)**

**Abstract Title:** Vinculin Phosphorylation of  
Fibroblasts due to Magnetically Tunable ECM  
Substrate Stiffness

**Presenter:** Hayley Sussman

**Principal Investigator:** Elise Corbin

**Author(s):**  
Elise Corbin  
Atia Rahman

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 449

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Single-Cell Measurements and Models (Summer Undergraduate)

**Abstract Title:** Fibroblast Extracellular Matrix  
Remodeling: Differences in Idiopathic and Normal  
Pulmonary Fibrosis

**Presenter:** Celine Ertin

**Principal Investigator:** Samir Ghadiali

**Author(s):**

Celine Ertin

Vasudha Shukla

Samir Ghadiali

Caymen Novak

Megan Ballinger

Landon Locke

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 450

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Single-Cell Measurements and Models (Summer Undergraduate)

**Abstract Title:** Integrating Shear Flow and Trypsin  
Susceptibility to Assess Adhesion Strength

**Presenter:** Venkat Maruthamuthu

**Principal Investigator:** Antra Patel

**Author(s):**

Antra Patel

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 451

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Engineering and the Microbiome

**Abstract Title:** Alteration of the Gut Microbiota Can  
Influence Bone Matrix Strength Without New Bone  
Formation

**Presenter:** Erika Cyphert

**Principal Investigator:** N/A

**Author(s):**

Chongshan Liu

Jacob Nixon

Angie Morales

Nicholas Natsoulas

Christopher Hernandez

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 452

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Engineering and the Microbiome

**Abstract Title:** A long-term in vitro 3D gingival  
tissue model to investigate host-pathogen interactions

**Presenter:** Miryam Adelfio

**Principal Investigator:** N/A

**Author(s):**

Chiara Ghezzi

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 453

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified**

**Abstract Title:** Molecular Studies of Protein-Lipid  
Interaction for Stable Tear Film Lipid Layer (TFLL)

**Presenter:** Ahmed Fuwad

**Principal Investigator:** N/A

**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 454

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular and Cellular  
ImmunoEngineering**

**Abstract Title:** Biomanufacturing of Chimeric  
Antigen Receptor T-Cell Using Two-Step mRNA  
Electroporation

**Presenter:** Dharmakeerthi Nawarathna

**Principal Investigator:** N/A

**Author(s):**  
Alison Greteman  
Sena Dere

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 455

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular and Cellular  
ImmunoEngineering**

**Abstract Title:** Nuclear Transport of STAT6  
Determines the Mechanosensitive M2 Activation of  
Macrophage

**Presenter:** Dong-Hwee Kim

**Principal Investigator:** Dong-Hwee Kim

**Author(s):**  
Jeong-Ki Kim

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 456

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular and Cellular  
ImmunoEngineering**

**Abstract Title:** Regulation of Adiposity through  
Osteocytic Connexin 43

**Presenter:** Francisca Acosta

**Principal Investigator:** N/A

**Author(s):**  
Francisca Acosta  
Jingruo Zhang  
Elizabeth Hernandez  
Eric Brey  
Jean Jiang

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 457

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular and Cellular  
ImmunoEngineering**

**Abstract Title:** Monodisperse Biodegradable  
Polymeric Microparticles as Artificial Antigen  
Presenting Cells

**Presenter:** Hongzhe Yu

**Principal Investigator:** N/A

**Author(s):**

Elana Ben-Akiva

Randall Meyer

Jordan Green

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 458

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular and Cellular  
ImmunoEngineering**

**Abstract Title:** Improvement of islet engrafts via Treg  
induction using artificial Antigen Presenting Cells  
(TolAPCs)

**Presenter:** Joshua Doloff

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 459

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified**

**Abstract Title:** The Role of Collagen in Matrix-  
Bound Nanovesicle Production and Behavior

**Presenter:** Marley Dewey

**Principal Investigator:** N/A

**Author(s):**

George Hussey

Stephen Badylak

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: D, Row: N, Poster  
**Number:** 460

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified**

**Abstract Title:** Differences in the Electrophoretic  
Mobilities of Live and Dead Bovine Chondrocytes

**Presenter:** Nehal Abu-Lail

**Principal Investigator:** Nehal Abu-Lail

**Author(s):**

Lindsey Attebery

Abraham Rodriguez

robert stannert

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 481

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified**

**Abstract Title:** SARS-CoV-2-Induced Platelet  
Activation

**Presenter:** Toni Warnick

**Principal Investigator:** N/A

**Author(s):**

Martine LaBerge

Robert Latour

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 482

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified**

**Abstract Title:** Constructing Synthetic Organelles  
for Mammalian Cellular Engineering

**Presenter:** Wentao Wang

**Principal Investigator:** Matthew C Good

**Author(s):**

Mikael Garabedian

Rachel Welles

Matthew Good

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 484

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Single-Cell Measurements and Models**

**Abstract Title:** Deciphering Subcellular Signaling  
Networks Using Image-based Protein Multiplexing

**Presenter:** Shuangyi Cai

**Principal Investigator:** Ahmet Coskun

**Author(s):**

Thomas Hu

Mythreye Venkatesan

Mayar Allam

Ahmet Coskun

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 485

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Single-Cell Measurements and Models**

**Abstract Title:** High-Throughput Screening for  
Novel Hormone-Responsive Transcription Factors

**Presenter:** Scott Gaines

**Principal Investigator:** N/A

**Author(s):**

Uros Kuzmanovic

James Galagan

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 486

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Cell Migration**

**Abstract Title:** Linking Glucose Metabolism and EMT to the Migratory Phenotype of Breast Cancer Cells

**Presenter:** Jenna Mosier

**Principal Investigator:** Cynthia Reinhart-King

**Author(s):**

Samantha Schwager

Reethi Padmanabhan

Addison White

Qinzhe Xing

Lauren Hapach

Paul Taufalele

Ismael Ortiz

Cynthia Reinhart-King

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 487

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Other / Non-specified**

**Abstract Title:** Material Compatibility Testing for SARS-CoV-2 Loop-Mediated Isothermal Amplification (LAMP)

**Presenter:** Jiyuan Yang

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 488

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Interventional Devices and Robotics  
(Summer Undergraduate)**

**Abstract Title:** Characterization of a Thermochromic Tissue Phantom for Assessment of Microwave Ablation Devices

**Presenter:** Amber Lintz

**Principal Investigator:** Punit Prakash

**Author(s):**

Amber Lintz

Clay Hardin

Anna Bottiglieri

Jan Sebek

Ghina Zia

Punit Prakash

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 489

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Interventional Devices and Robotics  
(Summer Undergraduate)**

**Abstract Title:** Electronics Development for Improving a Portable Suction Unit for Medical First-Responders

**Presenter:** J. Drayton Darby

**Principal Investigator:** R. Lyle Hood

**Author(s):**

Saketh Ram Peri

Robert Brothers

Robert De Lorenzo

Lyle Hood

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 490

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Development of a Programmable  
Ventilator for Negative and Positive Pressure  
Ventilation in Mice

**Presenter:** Johnathan Muhvich

**Principal Investigator:** N/A

**Author(s):**

Linzheng Shi

Rohin Banerji

Gabrielle Grifno

Hadi Nia

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 491

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** A New Device for Haptic-Acoustic  
Feedback

**Presenter:** Karina Atiegha

**Principal Investigator:** George Stetten

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 492

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** An Electronic Device For  
Multiplexed, Electrically-Induced Spheroid  
Disaggregation

**Presenter:** Riley Flores

**Principal Investigator:** Anubhav Tripathi

**Author(s):**

Cel Welch

Anubhav Tripathi

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 494

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Design and Fabrication of an  
Adjustable Tissue Slicer for Ferret Brain

**Presenter:** James Wallace

**Principal Investigator:** N/A

**Author(s):**

Morteza Seidi

Marzieh Hajiaghamemar

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 495

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS  
**Interventional Devices and Robotics**

**Abstract Title:** A Novel Medical Device to Treat and Prevent Stomal Prolapse: NoLapse  
**Presenter:** Hoang Nguyen  
**Principal Investigator:** N/A  
**Author(s):**  
Natali Pan  
Eun Sung Kim  
Jasper Mak  
Olajire Idowu  
Sunghoon Kim  
Ryan Nguyen  
Jimmy Tran  
Caroline Nguyen  
Tina Zhou  
Folarin Erogbogbo

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 496

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS  
**Neural Devices and Electronics**

**Abstract Title:** Fully Injectable Tissue Engineered Bioelectronic Implants for the Brain  
**Presenter:** Alexander Boys  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 497

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS  
**Neural Devices and Electronics**

**Abstract Title:** Development and Characterization of a Bioelectronic Scaffold for 3D Tissue Integration  
**Presenter:** Brian Timko  
**Principal Investigator:** Brian Timko  
**Author(s):**  
Akshita Rao  
Megan Cote

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 498

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS  
**Other / Non-specified**

**Abstract Title:** Temperature Assessment Enabled Simulation Mannequin (TAESM)  
**Presenter:** Amelia Wellmon  
**Principal Investigator:** N/A  
**Author(s):**  
Emily Eisele  
Sean Blade  
Jessica Guarino  
Mason Klaus  
Amelia Wellmon  
Ria Mazumder

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 499

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Other / Non-specified**

**Abstract Title:** Poly (3,4-ethylenedioxythiophene)  
(PEDOT)-Based Sensors for the Uptake and

Detection of Nitrate Ions

**Presenter:** Michael Kohler

**Principal Investigator:** N/A

**Author(s):**

michael kohler

Fang Li

Ziqian (Cecilia) Dong

Reza Khalaj Amineh

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: O, Poster  
**Number:** 500

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Other / Non-specified**

**Abstract Title:** Proteomic Adaptation to Hypoxia  
and Crowding in Drosophila Embryos

**Presenter:** Nolan Frey

**Principal Investigator:** Philip R. LeDuc

**Author(s):**

Utku Sonmez

Philip LEDUC

Jonathan Minden

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster  
**Number:** 521

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Other / Non-specified**

**Abstract Title:** Preventing Surgical Suction Clogging  
and Improving Flow Rates

**Presenter:** Robert Loving

**Principal Investigator:** Justin Bird

**Author(s):**

Caleb Haeussler

Tanner Walker

Michael Moreno

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster  
**Number:** 522

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Other / Non-specified**

**Abstract Title:** Comparison of Two Pipeline Flow  
Diverter Generations

**Presenter:** Roya Kamali

**Principal Investigator:** N/A

**Author(s):**

N/A

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster

**Number:** 523

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS

**Other / Non-specified**

**Abstract Title:** Modular, Automated Micropipette Filling Station for Patch Clamp Electrophysiology

**Presenter:** Timothy West

**Principal Investigator:** Craig Forest

**Author(s):**

Mighten Yip

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster

**Number:** 524

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS

**Other / Non-specified**

**Abstract Title:** Assessment of Surgical Radar Tracking Accuracy Across Different Material Encasings

**Presenter:** Anish Easwaran

**Principal Investigator:** N/A

**Author(s):**

Anish Easwaran

Aaron Henry

Andrew Robbins

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster

**Number:** 525

**Track:** DRUG DELIVERY

**Nucleic Acid Delivery**

**Abstract Title:** In vitro analysis of a novel tandem peptide for siRNA delivery for glioblastoma multiforme treatment

**Presenter:** Jessie Boulos

**Principal Investigator:** Angela Alexander Bryant

**Author(s):**

N/A

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster

**Number:** 526

**Track:** DRUG DELIVERY

**Nucleic Acid Delivery (Summer Undergraduate)**

**Abstract Title:** Disease Progression Effects on In Vivo Lipid Nanoparticle Mediated mRNA Delivery in Wilson's Disease

**Presenter:** Andrea Li

**Principal Investigator:** James Dahlman

**Author(s):**

Andrea Li

Aram Shajii

Hyejin Kim

Ryan Zenhausern

Sebastian Huayamares

Afsaneh Radmand

James Dahlman

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster**Number:** 527**Track:** DRUG DELIVERY**Nucleic Acid Delivery (Summer Undergraduate)****Abstract Title:** Tandem Peptide Mediated Delivery of siRNAs into Epithelial Ovarian Cancer Cells**Presenter:** Carleigh Coffin**Principal Investigator:** Angela Alexander-Bryant, Ph.D.**Author(s):**

Carleigh Coffin

Timothy Samec

Kharimat Alatisé

Angela Alexander-Bryant

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster**Number:** 528**Track:** DRUG DELIVERY**Nucleic Acid Delivery (Summer Undergraduate)****Abstract Title:** Polymersomes Deliver Cas9 Ribonucleoprotein to MCF10A-Clover Cells for Gene Knockdown**Presenter:** Caroline Argenti**Principal Investigator:** Jessica Larsen**Author(s):**

Chlo Forenzo

Danielle LaVigne

Vaishnavi Kanduri

Caroline Argenti

Jessica Larsen

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster**Number:** 529**Track:** DRUG DELIVERY**Nucleic Acid Delivery (Summer Undergraduate)****Abstract Title:** Specific T cell Targeting Approaches for Poly(Beta Amino Ester) (PBAE) mRNA

Nanoparticles

**Presenter:** Jawaun Harris**Principal Investigator:** Jordan Green**Author(s):**

Savannah Est

Sarah Yoseph

Jordan Green

Stephany Tzeng

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster**Number:** 530**Track:** DRUG DELIVERY**Nucleic Acid Delivery (Summer Undergraduate)****Abstract Title:** Bile Acid-Containing Lipid Nanoparticles For mRNA Delivery to the Gastrointestinal Tract**Presenter:** Savan Patel**Principal Investigator:** Michael Mitchell**Author(s):**

Savan Patel

Margaret Billingsley

Hannah Safford

Michael Mitchell

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster

**Number:** 531

**Track:** DRUG DELIVERY

### Nucleic Acid Delivery (Summer Undergraduate)

**Abstract Title:** Characterization of a Novel Tandem Peptide for Glioblastoma Multiforme Drug Delivery

**Presenter:** Tyler Willis

**Principal Investigator:** Angela Alexander-Bryant

**Author(s):**

Jessie Boulos

Jorrian Abadeer

Angela Alexander-Bryant

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster

**Number:** 532

**Track:** DRUG DELIVERY

### Nucleic Acid Delivery (Summer Undergraduate)

**Abstract Title:** Synthesizing Nanoparticles Targeting CD133+ Stem-Like Cells in Glioblastoma

**Presenter:** Valeria Virrueta

**Principal Investigator:** Stephanie Seidlits

**Author(s):**

Alireza Sohrabi

Stephanie Seidlits

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster

**Number:** 533

**Track:** DRUG DELIVERY

**Abstract Title:** Transcranial Blood-brain-tumor barrier modulation for enhancing drug delivery to glioblastoma

**Presenter:** Qi Cai

**Principal Investigator:** N/A

**Author(s):**

Zhenpeng Qin

Hejian Xiong

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster

**Number:** 533

**Track:** DRUG DELIVERY

### Nucleic Acid Delivery

**Abstract Title:** Quantifying the miRNA Loading and Release Behavior of Polycationic Nanoparticles In Vitro

**Presenter:** Deidra Ward

**Principal Investigator:** Nicholas A Peppas

**Author(s):**

Nicholas Peppas

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster

**Number:** 534

**Track:** DRUG DELIVERY

### Nucleic Acid Delivery

**Abstract Title:** Macrophage-specific Nanoparticle Delivery of MicroRNAs to Mitigate Ventilator-Induced Lung Injury

**Presenter:** Qinqin Fei

**Principal Investigator:** N/A

**Author(s):**

Qinqin Fei

Joshua Englert

Samir Ghadiali

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster  
**Number:** 535

**Track:** DRUG DELIVERY  
**Nucleic Acid Delivery**

**Abstract Title:** Ionic Liquid for Enhancing Mitochondria Target Oligonucleotide Delivery  
**Presenter:** Gaya Dasanayake  
**Principal Investigator:** Eden E. L Tanner  
**Author(s):**  
Eden Tanner  
Gagandeep Singh

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster  
**Number:** 536

**Track:** DRUG DELIVERY  
**Nucleic Acid Delivery**

**Abstract Title:** Ligand-Installed Lipidoids for Targeted RNA Delivery to Treat Liver Fibrosis  
**Presenter:** Xuexiang Han  
**Principal Investigator:** N/A  
**Author(s):**  
Michael Mitchell  
Ningqiang Gong  
Lulu Xue  
Margaret Billingsley  
Sarah Shepherd

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster  
**Number:** 537

**Track:** DRUG DELIVERY

**Nucleic Acid Delivery**

**Abstract Title:** Structure-Guided Siloxane Lipid Nanoparticles Mediate Tissue-Specific mRNA Delivery  
**Presenter:** Lulu Xue  
**Principal Investigator:** N/A  
**Author(s):**  
Michael Mitchell

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster  
**Number:** 538

**Track:** DRUG DELIVERY  
**Nucleic Acid Delivery**

**Abstract Title:** Novel lipid nanoparticle provides potent SARS-CoV-2 mRNA vaccine at low dose with high thermostability and limited systemic biodistribution  
**Presenter:** Manuel Carrasco  
**Principal Investigator:** Mohamad-Gabriel Alameh  
**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster  
**Number:** 539

**Track:** DRUG DELIVERY  
**Nucleic Acid Delivery**

**Abstract Title:** Nanoparticles for Protein and Gene Delivery: An Alternative Treatment for Peripheral Arterial Disease  
**Presenter:** Na Nguyen  
**Principal Investigator:** N/A  
**Author(s):**  
Tam Nguyen  
Priyanka Iyer  
Vy Tran  
Kytai Nguyen

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: P, Poster  
**Number:** 540**Track:** DRUG DELIVERY  
**Nucleic Acid Delivery****Abstract Title:** Engineered Myeloid-Derived Suppressor Cells Serve as Vehicles to Deploy Therapeutic Extracellular Vesicles to Various Diseased Tissues**Presenter:** Ana Panic**Principal Investigator:** N/A**Author(s):**

Ana Panic

Silvia Duarte-Sanmiguel

Daniel Dodd

William Lawrence

Natalia Higueta-Castro

Daniel Gallego-Perez

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 561**Track:** DRUG DELIVERY  
**Nucleic Acid Delivery****Abstract Title:** Synthesis and Characterization Cystamine Core PAMAM Derivatives Modified with Nuclear Localization Signal Derived from Lactoferrin as Carriers for Efficient Gene Delivery**Presenter:** Jeil Lee**Principal Investigator:** Kyungjae Jeong**Author(s):**

KyungJae Jeong

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 562**Track:** DRUG DELIVERY  
Nucleic Acid Delivery**Abstract Title:** Mitigating the Immunogenicity of AAV-mediated Gene Therapy by Phosphoserine-containing Zwitterionic Peptides**Presenter:** Ruoxin Li**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 563**Track:** DRUG DELIVERY  
**Nucleic Acid Delivery****Abstract Title:** siRNA Delivery from Extracellular Vesicles for Vascular Elastic Matrix Regenerative Repair**Presenter:** SAJEESH THAMPI**Principal Investigator:** N/A**Author(s):**

Anand Ramamurthi

Andrine Larsen

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 564**Track:** DRUG DELIVERY  
**Nucleic Acid Delivery****Abstract Title:** Anti-ICAM1-EpoR NPs for Targeting Therapy for Peripheral Arterial Disease**Presenter:** Vy Tran**Principal Investigator:** Kytai Nguyen**Author(s):**

Tam Nguyen

Priyanka Iyer

Na Nguyen

Kytai Nguyen

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 565**Track:** GLOBAL HEALTH TECHNOLOGIES  
**Other / Non-specified****Abstract Title:** A Smartphone-based Digital CRISPR Platform and Deep Learning for HIV Viral Load Quantification**Presenter:** Hoan Ngo**Principal Investigator:** Tza-Huei (Jeff) Wang**Author(s):**

Pei-Wei Lee

Joon Soo Park

Kuangwen Hsieh

Tza-Huei Wang

Alexander Trick

Patarajarin Akarapipad

Fan-En Chen

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 566**Track:** GLOBAL HEALTH TECHNOLOGIES  
**Other / Non-specified****Abstract Title:** Correlation between Linguistic Racism and Anxiety using Physiological Data**Presenter:** Susan Pham**Principal Investigator:** Nathalia Peixoto**Author(s):**

Elizabeth Kwari

McKenna Olsen

Pamela Benitez

Nathalia Peixoto

Linghan Zhang

Jung Yeon Park

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 567**Track:** GLOBAL HEALTH TECHNOLOGIES  
**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Responsive Transtibial Ankle Prosthetic Implementing Muscle Wire for Amputees in Developing Countries**Presenter:** Delphine Dean**Principal Investigator:** Isabelle Museck**Author(s):**

Isabelle Museck

Katherine Summers

Kaitlyn Cimney

Joshua Londhe

John DesJardins

Delphine Dean

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster

**Number:** 568

**Track:** GLOBAL HEALTH TECHNOLOGIES

**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** Flow Rate Optimization of Detection Pad for Lateral Flow Immunoassays

**Presenter:** Kaushik Subramanian

**Principal Investigator:** Jacqueline C. Linnes

**Author(s):**

Lucy Tecle

Jacqueline Linnes

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster

**Number:** 569

**Track:** GLOBAL HEALTH TECHNOLOGIES

**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** Factors Explaining Higher Cancer Rates in Veitnamese Immigrants in the United States

**Presenter:** TinTin Nguyen

**Principal Investigator:** Georgia Robins Sadler

**Author(s):**

N/A

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster

**Number:** 570

**Track:** GLOBAL HEALTH TECHNOLOGIES

**Other / Non-specified**

**Abstract Title:** Mask Filter for Car Pollutants

**Presenter:** Emma Harrington

**Principal Investigator:** N/A

**Author(s):**

Joshua Brady

Allison Jacob

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster

**Number:** 571

**Track:** GLOBAL HEALTH TECHNOLOGIES

**Other / Non-specified**

**Abstract Title:** Duplex RT-LAMP Assay for Rapid Detection of SARS-CoV-2 and Internal control in Saliva

**Presenter:** Navaporn Sritong

**Principal Investigator:** N/A

**Author(s):**

Winston Ngo

Marina Sala de Medeiros

Karin Ejendal

Jacqueline Linnes

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 572

**Track:** GLOBAL HEALTH TECHNOLOGIES  
**Other / Non-specified**

**Abstract Title:** In Vivo Evaluation of Safety and Efficacy of Ethyl Cellulose-Ethanol Ablation in Swine Cervix Model

**Presenter:** Tri Quang

**Principal Investigator:** N/A

**Author(s):**

Tri Quang

Jeffrey Yang

michele kaluzienski

Anna Parrish

Asma Farooqui

Jenna Mueller

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 573

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems (Summer Undergraduate)**

**Abstract Title:** Optimizing Triangular and Sinusoidal Surface Textures on a  $\mu$ Tesla Pump

**Presenter:** Zeinab Ajami

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 574

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems (Summer Undergraduate)**

**Abstract Title:** Effect of Obesity on Lymphatic Function in Microphysiological Model

**Presenter:** Zoe Turner

**Principal Investigator:** Evangelia Bellas

**Author(s):**

Evangelia Bellas

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 575

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** Blood-derived endothelial cells: A primary disease and patient-specific cell source for organ-chips

**Presenter:** Abhishek Jain

**Principal Investigator:** N/A

**Author(s):**

Tanmay Mathur

James Tronolone

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster**Number:** 576**Track:** NANO AND MICRO TECHNOLOGIES**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Development of a Microfluidic Organotypic Device as a Model for Anastomotic Leak**Presenter:** Amanda Roley**Principal Investigator:** N/A**Author(s):**

Amanda Roley

Stuart Tobet

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster**Number:** 577**Track:** NANO AND MICRO TECHNOLOGIES**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Griddient: a reconfigurable microfluidic platform for spatial biology.**Presenter:** Cristina Sanchez de Diego**Principal Investigator:** N/A**Author(s):**

Sara Abizanda Campo

Maria Virumbrales-Muñoz

Brock Hermes

Terry Juang

Duane Juang

Jeremiah Riendeau

Emmanuel Contreras Guzman

Melissa Skala

David Beebe

Jose Ayuso

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster**Number:** 578**Track:** NANO AND MICRO TECHNOLOGIES**Micro/Nano Tools for Precision Medicine****Abstract Title:** Novel Clinical Paradigm of Non-Destructive Sample Testing Applied to Dengue NS1 Detection**Presenter:** Anjana Dissanayaka**Principal Investigator:** David R. Myers**Author(s):**

David Myers

Jesse Waggoner

Sara Ping

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster**Number:** 579**Track:** NANO AND MICRO TECHNOLOGIES**Micro/Nano Tools for Precision Medicine****Abstract Title:** Platinum Nanoparticles, Targeted Delivery System for Triple Negative Breast Cancer**Presenter:** Aida Lopez Ruiz**Principal Investigator:** N/A**Author(s):**

Kathleen McEnnis

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: Q, Poster  
**Number:** 580

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Tools for Precision  
Medicine**

**Abstract Title:** Targeted Nanoparticles for Mitigation of Pulmonary Hypertension in Chronic Obstructive Pulmonary Disorder  
**Presenter:** Kalindu Perera  
**Principal Investigator:** N/A  
**Author(s):**  
Maeve DURKIN  
Jyothi Menon

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 601

**Track:** NEURAL ENGINEERING  
**Neurorehabilitation**

**Abstract Title:** The Effect of Spinal Cord Stimulation on Reticulospinal Contributions to Lower Limb Functions in Range of Motion and Precision Control Tasks in Able-Bodied Humans.  
**Presenter:** Rachel Hawthorn  
**Principal Investigator:** N/A  
**Author(s):**  
Rachel Hawthorn  
Jie Fei  
Noah Bryson  
Ismael Seáñez

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 602

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Brain and Spinal  
Cord Stimulation**

**Abstract Title:** Site-specific Therapeutics for Non-genetic Noninvasive Neuromodulation  
**Presenter:** Zhimin Hunag  
**Principal Investigator:** Jerzy O. Szablowski  
**Author(s):**  
Andrei Mitrofan  
Shirin Nouraein  
Manwal Harb  
Jerzy Szablowski

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 603

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Brain and  
Spinal Cord Stimulation (Summer  
Undergraduate)**

**Abstract Title:** Magneto-Electrical Stimulation Of Neurons  
**Presenter:** Ania Dudek  
**Principal Investigator:** Gabriela Romero Uribe  
**Author(s):**  
Amanda Gomez  
Gabriela Romero

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 604**Track:** NEURAL ENGINEERING**Neuromodulation: Brain and Spinal Cord Stimulation (Summer Undergraduate)****Abstract Title:** Comparison of Subthalamic Nucleus Activation Metrics in Deep Brain Stimulation for Parkinson Disease**Presenter:** Matthew Kroen**Principal Investigator:** Matthew Kroen**Author(s):**

Karlo Malaga

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 605**Track:** NEURAL ENGINEERING**Neuromodulation: Brain and Spinal Cord Stimulation (Summer Undergraduate)****Abstract Title:** Spinal Cord Stimulation for Bladder Function Evokes Sporadic Nerve Activity**Presenter:** Savannah Waymer**Principal Investigator:** Robert Gaunt**Author(s):**

Maria Jantz

Chaitanya Gopinath

Robert Gaunt

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 606**Track:** NEURAL ENGINEERING**Neuro-Regenerative Engineering (Summer Undergraduate)****Abstract Title:** Development of a 3D printed shock tube model to under neural damage on a simulated brain phantom model**Presenter:** Amarachukwu Oti**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 607**Track:** NEURAL ENGINEERING**Neuro-Regenerative Engineering (Summer Undergraduate)****Abstract Title:** Quantifying and Classifying the Planarian Response to Light Stimuli**Presenter:** Constantine Kapetanakis**Principal Investigator:** Mary Staehle**Author(s):**

Mary Staehle

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 608

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Brain and Spinal Cord Stimulation (Summer Undergraduate)**

**Abstract Title:** Artificial Memory Reactivation Using a Red-Shifted Opsin  
**Presenter:** Anna Vena  
**Principal Investigator:** N/A  
**Author(s):**  
Jacob Norman  
John White

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 609

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Brain and Spinal Cord Stimulation**

**Abstract Title:** A Miniaturized Coil for Studying Transcranial Magnetic Stimulation in Rodents  
**Presenter:** Wenxuan Jiang  
**Principal Investigator:** N/A  
**Author(s):**  
Robert Isenhardt  
Zhouxiao Lu  
huijing xu  
Darrin Lee  
Charles Liu  
Dong Song

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 610

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Brain and Spinal Cord Stimulation**

**Abstract Title:** Wireless Brain Stimulation Using Magnetolectric Nanoparticles  
**Presenter:** Mostafa Abdel-Mottaleb  
**Principal Investigator:** N/A  
**Author(s):**  
Mostafa Abdel-Mottaleb  
Elric Zhang  
Victoria Andre

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 611

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Brain and Spinal Cord Stimulation**

**Abstract Title:** Theta oscillations propagate by ephaptic coupling in vivo  
**Presenter:** Muthumeenakshi Subramanian  
**Principal Investigator:** N/A  
**Author(s):**  
Dominique Durand  
Muthumeenakshi Subramanian

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 612

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Brain and Spinal  
Cord Stimulation**

**Abstract Title:** Spatially Selective Non-Invasive  
Spinal Cord Stimulation by Multi-Electrode  
Configuration.

**Presenter:** Noah Bryson

**Principal Investigator:** N/A

**Author(s):**

Noah Bryson

John Peiffer

Jie Fei

Rachel Hawthorn

Ismael Seáñez

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 613

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Brain and Spinal  
Cord Stimulation**

**Abstract Title:** Investigating Early Neural Responses  
During Transcranial Magnetic Stimulation in Non-  
human Primates

**Presenter:** Nipun Perera

**Principal Investigator:** Alexander Opitz

**Author(s):**

Sina Shirinpour

Miles Wischnewski

Alexander Opitz

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 614

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Brain and Spinal  
Cord Stimulation**

**Abstract Title:** Structural Connectivity of Motor  
Brain Regions in Essential Tremor Over Time

**Presenter:** Sebastian Tirado-Vélez

**Principal Investigator:** N/A

**Author(s):**

Brandon Parks

Aysegul Gunduz

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 615

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Brain and Spinal  
Cord Stimulation**

**Abstract Title:** Barrel Cortex Stimulation Using  
Magnetolectric Nanoparticles

**Presenter:** Victoria Andre

**Principal Investigator:** N/A

**Author(s):**

Victoria Andre

Mostafa Abdel-Mottaleb

Elric Zhang

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 616

**Track:** NEURAL ENGINEERING  
**Neuro-regenerative Engineering**

**Abstract Title:** The Role of Top2b in the Motility of Transplantable Retinal Progenitor Cells

**Presenter:** Maribel Vazquez

**Principal Investigator:** N/A

**Author(s):**

Brianna Rodriguez

Alexandra Dabrowski

Param Amin

Li Cai

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 617

**Track:** NEURAL ENGINEERING  
**Neuro-regenerative Engineering**

**Abstract Title:** Olfactory Mucosa-derived Mesenchymal Stem Cells Differentiate Towards a Schwann Cell-Like Phenotype for Peripheral Nerve Regeneration

**Presenter:** Katelyn Neuman

**Principal Investigator:** Ryan Koppes

**Author(s):**

Dominic Pizzarella

Abigail Koppes

Ryan Koppes

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 618

**Track:** NEURAL ENGINEERING  
**Neuro-regenerative Engineering**

**Abstract Title:** Wireless Localized Electrical Stimulation of Neurons Using EDOT-Pyrrole Nanoparticles

**Presenter:** Nicolas Muzzio

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: R, Poster  
**Number:** 619

**Track:** NEURAL ENGINEERING  
**Neuro-regenerative Engineering**

**Abstract Title:** Antioxidants to Counteract Ionizing Radiation in the Retina

**Presenter:** Richard Cliver

**Principal Investigator:** N/A

**Author(s):**

Natalia Castro

Maribel Vazquez

## Friday, October 14

9:30 AM - 10:30 AM

Poster Session: C, Section: E, Row: R, Poster  
Number: 620

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Rehabilitation Engineering**

**Abstract Title:** Motion Tracking Glove for Remote  
Monitoring of Forearm-Hand Rehabilitation

**Presenter:** Erfan Jabari

**Principal Investigator:** Paola Pergami

**Author(s):**

Erfan Jabari

Li-Qun Zhang

## Friday, October 14

9:30 AM - 10:30 AM

Poster Session: C, Section: E, Row: S, Poster  
Number: 641

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Rehabilitation Engineering**

**Abstract Title:** Gamification Elements and System  
Features of an Interactive Health Technology in  
Adolescent ACL Reconstruction Rehabilitation

**Presenter:** Michelle Riffitts

**Principal Investigator:** N/A

**Author(s):**

Ethan Ruh

Kevin Bell

Michael McClincy

## Friday, October 14

9:30 AM - 10:30 AM

Poster Session: C, Section: E, Row: S, Poster  
Number: 642

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Rehabilitation Engineering (Summer  
Undergraduate)**

**Abstract Title:** Tools For Self-Care Robots

**Presenter:** Justin Gliha

**Principal Investigator:** Eric Schearer

**Author(s):**

Eric Schearer

John Schultz

Cameron LaMack

## Friday, October 14

9:30 AM - 10:30 AM

Poster Session: C, Section: E, Row: S, Poster  
Number: 643

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Rehabilitation Engineering (Summer  
Undergraduate)**

**Abstract Title:** Robotic Mirror Therapy Exoskeleton

**Presenter:** Nathalia Peixoto Nathalia Peixoto

**Principal Investigator:** N/A

**Author(s):**

Elizabeth Kwari

Omar AlSuhaibani

Justin Matthews

Nathalia Peixoto

## Friday, October 14

9:30 AM - 10:30 AM

Poster Session: C, Section: E, Row: S, Poster  
Number: 644

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Bone**

**Abstract Title:** Microstructural anisotropy in bone  
lamellar like silk-based constructs promotes self-  
mineralization

**Presenter:** Anyelo Diaz

**Principal Investigator:** N/A

**Author(s):**

Chiara Ghezzi

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster  
**Number:** 645**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Bone****Abstract Title:** The Use of Patient Specific 3D  
Printed Anatomical Models in Pre-Operative  
Planning and Patient Engagement to Improve Hip  
Arthroscopy Outcomes**Presenter:** Terryn Witherspoon**Principal Investigator:** John DesJardins**Author(s):**

Terryn Witherspoon

Cynthia Vu

Natalie Osten

Madison Stanley

Zachary Sutton

Jason Folk

John DesJardins

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster  
**Number:** 646**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Rehabilitation Engineering****Abstract Title:** Prosthetic Grip Selection With  
Regenerative Peripheral Nerve Interfaces And  
Intramuscular Electrodes**Presenter:** Christina Lee**Principal Investigator:** N/A**Author(s):**

Christina Lee

Alex Vaskov

Michael Gonzalez

Philip Vu

Deanna Gates

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster  
**Number:** 647**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Rehabilitation Engineering****Abstract Title:** Integration of Soft Optical Sensor  
into Pediatric SCI Rocking Chair Safety Harness**Presenter:** Johnathan George**Principal Investigator:** Thomas Roussel**Author(s):**

Andrea Behrman

Thomas Roussel

Cindy Harnett

Ji-Tzuoh Lin

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster  
**Number:** 648**Track:** TECHNOLOGIES FOR EMERGING  
INFECTIOUS DISEASES  
**Prevention****Abstract Title:** Development of a high-throughput  
screening platform for mosquito repellents**Presenter:** Kevin Janson**Principal Investigator:** Omid Veischi**Author(s):**

Kevin Janson

Brendan Carter

Samuel Jameson

Jane de Verges

Erika Dalliance

Madison Royse

Paul Kim

DAWN WESSON

Omid Veischi

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster

**Number:** 649

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

**Prevention**

**Abstract Title:** Surfaces with Instant and Persistent Antimicrobial Efficacy

**Presenter:** Taylor Repetto

**Principal Investigator:** N/A

**Author(s):**

Geeta Mehta

Catherine Snyder

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster

**Number:** 650

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

**Drug Delivery (Vaccines, Novel ways to deliver antivirals) (Summer Undergraduate)**

**Abstract Title:** Characterization of a Polyanhydride Nanovaccine for the Prevention of Respiratory Syncytial Virus

**Presenter:** Hannah Rudewick

**Principal Investigator:** Balaji Narasimhan

**Author(s):**

Balaji Narasimhan

Jodi McGill

Teresi Maina

Elizabeth Grego

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster

**Number:** 651

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

**Prevention (Summer Undergraduate)**

**Abstract Title:** Mask Efficacy: A Comparative Study of Masks Using Outward Leakage Testing

**Presenter:** Autymn Shreffler

**Principal Investigator:** N/A

**Author(s):**

Autymn Shreffler

Corbin Myers

Carina Pannelle

Jose Cano

Marza Cruz Montes

Chris Geiger

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster

**Number:** 652

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

**Other / Non-specified**

**Abstract Title:** Microfluidic diffusional sizing (MDS) measurements of the neutralizing antibody affinity against SARS-CoV-2 in saliva samples

**Presenter:** Congyue Peng

**Principal Investigator:** Congyue Peng

**Author(s):**

Delphine Dean

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster**Number:** 653**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES**Other / Non-specified****Abstract Title:** Complex Gold-silver Nanostructures for Imaging and Therapeutic Delivery for Infectious Disease Treatment**Presenter:** Maryam Hajfathalian**Principal Investigator:** N/A**Author(s):**

Maryam Hajfathalian

Jessica Hsu

Ahmad Amirshaghghi

Yuxi Dong

David Cormode

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster**Number:** 654**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES**Other / Non-specified****Abstract Title:** Wastewater Surveillance in Remote Areas: Stability of SARS-CoV-2 RNA in the Absence of Cold Chain**Presenter:** Soroosh Torabi**Principal Investigator:** Scott M. Berry**Author(s):**

Soroosh Torabi

Atena Amirsoleimani

Mohammad Dehghan Banadaki

Ann Noble

William Strike

Alexus Rockward

James Keck

Scott Berry

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster**Number:** 655**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES**Technology Advancements (3D Printing, Devices, etc.)****Abstract Title:** Green Pathogen Disinfection using Reactive Oxygen Species generated from Water Microdroplets**Presenter:****Principal Investigator:** Jae Kyoo Lee**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster**Number:** 656**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES**Technology Advancements (3D Printing, Devices, etc.)****Abstract Title:** Automated Extraction of SARS-CoV-2 RNA from Wastewater Samples**Presenter:** Mohammad Dehghan Banadaki**Principal Investigator:** N/A**Author(s):**

Mohammad Dehghan Banadaki

Soroosh Torabi

William Strike

Ann Noble

Alexus Rockward

Scott Berry

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster  
**Number:** 657**Track:** TECHNOLOGIES FOR EMERGING  
INFECTIOUS DISEASES**Technology Advancements (3D Printing,  
Devices, etc.) (Summer Undergraduate)****Abstract Title:** Inflammation and Drug Eluting  
Endotracheal Tubes Impact the Microbiota of the  
Upper Airway in Swine**Presenter:** Emily Mahadevan**Principal Investigator:** N/A**Author(s):**

Gabriela Cervantes-Gonzales

Teja Guda

Solaleh Miar

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster  
**Number:** 658**Track:** TISSUE ENGINEERING**Musculoskeletal Tissue Engineering****Abstract Title:** Development of Tissue Engineered  
Skeletal Muscle Engineered to Overexpress SIRT-1**Presenter:** Bryan Sullivan**Principal Investigator:** Christopher Rathbone**Author(s):**

Settimio Pacelli

Chris Rathbone

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster  
**Number:** 659**Track:** TISSUE ENGINEERING**Musculoskeletal Tissue Engineering****Abstract Title:** Proteomic, Mechanical, and  
Biochemical Development of Tissue-Engineered  
Neocartilage**Presenter:** Benjamin Bielajew**Principal Investigator:** N/A**Author(s):**

Ryan Donahue

Elliott Lamkin

Vincent Hascall

Jerry Hu

Kyriacos Athanasiou

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: S, Poster  
**Number:** 660**Track:** TISSUE ENGINEERING**Organ-on-Chip for Regenerative  
Medicine****Abstract Title:** Single-cell Transcriptomics of  
Caco-2 Intestinal Epithelium that Underwent  
Mechanodynamic Stimulation and 3D  
Morphogenesis in a Human Gut-on-a-chip**Presenter:** Hyun Jung**Principal Investigator:** N/A**Author(s):**

Woojung Shin

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 681

**Track:** TISSUE ENGINEERING  
**Organ-on-Chip for Regenerative  
Medicine**

**Abstract Title:** Engineered tumor tissues induce local and distant vascular inflammation in a multicompartiment microphysiological model of premetastatic niche cultivation

**Presenter:** Caroline Culp

**Principal Investigator:** Mark Mondrinos

**Author(s):**

Gabrielle Fortes

Charles Byrne

Mark Mondrinos

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 682

**Track:** TISSUE ENGINEERING  
**Organ-on-Chip for Regenerative  
Medicine (Summer Undergraduate)**

**Abstract Title:** Extracellular Matrix Degradation of Microvascular Networks

**Presenter:** Jessalyn Arteta

**Principal Investigator:** Kara McCloskey

**Author(s):**

Kara McCloskey

Jose Zamora

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 683

**Track:** TISSUE ENGINEERING  
**Neural and Neurovascular Tissue  
Engineering**

**Abstract Title:** Engineering Choroid Plexus Organoid Derived from Human Pluripotent Stem Cells

**Presenter:** Chang Liu

**Principal Investigator:** N/A

**Author(s):**

Yan Li

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 684

**Track:** TISSUE ENGINEERING

**Abstract Title:** Effect of Hydrogel Matrix Properties and Stiffness on Spheroid Characteristics and Drug Responsiveness

**Presenter:** Shabnam Nejat

**Principal Investigator:** N/A

**Author(s):**

Joseph Bruns

Silviya Zustiak

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 685**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering****Abstract Title:** A bioactive material with dual integrin-targeting ligands regulates endogenous cell adhesion and promotes vascularized bone regeneration in adult and fetal bone defects**Presenter:** Dake Hao**Principal Investigator:** N/A**Author(s):**

Dake Hao

Ruiwu Liu

Tomas Gonzalez Fernandez

Christopher Pivetti

Edwin Kulubya

Alyssa Panitch

Kent Leach

Diana Farmer

Aijun Wang

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 686**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering****Abstract Title:** Increased Feeding Frequency Improves Viability of Engineered Skeletal Muscle Tissue Equivalents**Presenter:** Isabella Bagdasarian**Principal Investigator:** N/A**Author(s):**

Joshua Morgan

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 687**Track:** TISSUE ENGINEERING  
**Neural and Neurovascular Tissue Engineering****Abstract Title:** Astrocyte Extracellular Vesicles Promote Axonal Elongation, Angiogenesis, and Synapse Formation**Presenter:** Nhi Phan**Principal Investigator:** Tatiana Segura**Author(s):**

Shangjing Xin

Lucy Zhang

Tatiana Segura

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 688**Track:** TISSUE ENGINEERING  
**Neural and Neurovascular Tissue Engineering****Abstract Title:** Hydrogel Encapsulated Oligodendrocyte Precursor Cells Response After Blast Induced Traumatic Brain Injury**Presenter:** Ryosuke Yokosawa**Principal Investigator:** Pamela J VandeVord**Author(s):**

Pamela VandeVord

Rachel Mazur

Kyle Lampe

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 689

**Track:** TISSUE ENGINEERING  
**Organ-on-Chip for Regenerative  
Medicine**

**Abstract Title:** Injectable Janus Base Nano-Matrix for  
Cartilage Tissue Chips

**Presenter:** Anne Yau

**Principal Investigator:** Yupeng Chen

**Author(s):**  
N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 690

**Track:** TISSUE ENGINEERING  
**Organ-on-Chip for Regenerative  
Medicine**

**Abstract Title:** Medium-throughput, 3D wound-on-  
a-chip screening platform to assess provisional matrix  
assembly

**Presenter:** Anish Vasani

**Principal Investigator:** N/A

**Author(s):**  
Megan Griebel  
Christopher Chen  
Jeroen Eyckmans

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 691

**Track:** TISSUE ENGINEERING  
**Organ-on-Chip for Regenerative  
Medicine**

**Abstract Title:** Biodegradable membrane-based  
glomerulus-on-a-chip for modeling blood filtration

**Presenter:** Jessica Shah

**Principal Investigator:** N/A

**Author(s):**  
Xingrui Mou  
Jessica Shah  
Samira Musah

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 692

**Track:** TISSUE ENGINEERING  
**Organ-on-Chip for Regenerative  
Medicine**

**Abstract Title:** Microphysiological Model for  
Rheumatoid Arthritis and Atherosclerosis

**Presenter:** Mingzhi Xu

**Principal Investigator:** N/A

**Author(s):**  
Mingzhi Xu  
George Truskey

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 693

**Track:** TISSUE ENGINEERING

**Organ-on-Chip for Regenerative  
Medicine**

**Abstract Title:** A Microphysiological System for Studying Enteric Neuron Modulation of Epithelial Barrier Formation

**Presenter:** Kyla Nichols

**Principal Investigator:** N/A

**Author(s):**

Jessica Thompson

Adam Bindas

Ryan Brady

Ryan Koppes

Abigail Koppes

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 694

**Track:** TISSUE ENGINEERING

**Organ-on-Chip for Regenerative  
Medicine**

**Abstract Title:** Synergistic Pipeline to Proliferate and Redifferentiate Primary Human Hepatocytes in Engineered Platforms

**Presenter:** Vedant Vijay Bodke

**Principal Investigator:** N/A

**Author(s):**

Chase Monckton

Salman Khetani

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 695

**Track:** TISSUE ENGINEERING

**Organ-on-Chip for Regenerative  
Medicine**

**Abstract Title:** Hierarchical Vessel Supported Tumor Model-on-a-Chip Constructed by Induced Anastomosis

**Presenter:** Yuyuan Zhou

**Principal Investigator:** Yaling Liu

**Author(s):**

XIAOCHEN QIN

Yaling Liu

Ratul Paul

Yue Wu

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 696

**Track:** TISSUE ENGINEERING

**Organ-on-Chip for Regenerative  
Medicine**

**Abstract Title:** Microfluidic Arrays of Dermal Spheroids for Screening Active Ingredients of Skincare Products

**Presenter:** Zhengkun Chen

**Principal Investigator:** Eugenia Kumacheva

**Author(s):**

N/A

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 697**Track:** TISSUE ENGINEERING  
**Stem Cells in Tissue Engineering and Disease Modeling****Abstract Title:** Creating A 3D Tissue Engineered Blood Vessel from Co-Seeded hMSCs and Endothelial Cells**Presenter:** William DeMaria**Principal Investigator:** William DeMaria**Author(s):**  
Marsha Rolle**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 698**Track:** WOMEN'S HEALTH  
**Sex-related Differences In chronic Diseases****Abstract Title:** Defining the Effects of Estradiol on Fibroblast Gene Expression Patterns and Vasculogenesis in Biological Sex-Matched Engineered Tissue Models**Presenter:** Ashley Martier**Principal Investigator:** Mark Mondrinos**Author(s):**  
Mark Mondrinos**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 699**Track:** WOMEN'S HEALTH  
**Sex-related Differences In chronic Diseases****Abstract Title:** Sex Differences of Interacting Genetic and Imaging Biomarkers in Progression of Alzheimer's Disease**Presenter:** Jordan Williamson**Principal Investigator:** Yuan Yang**Author(s):**  
Jordan Williamson  
Shirley James  
Andriy Yabluchanskiy  
Peter Mukli  
Dee Wu  
Carrie Ciro  
Yuan Yang**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: T, Poster  
**Number:** 700**Track:** WOMEN'S HEALTH  
**Sex-related Differences In chronic Diseases****Abstract Title:** Inflammatory responses of sex-specific hormones in iPSC-derived male and female macrophages**Presenter:** Maria Samaritano**Principal Investigator:** Gordana Vunjak-Novakovic**Author(s):**  
Maria Samaritano  
Roberta Lock  
Pamela Graney  
Daniel Tavakol  
Gordana Vunjak-Novakovic

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: U, Poster  
**Number:** 721

**Track:** WOMEN'S HEALTH

### **Sex-related Differences In chronic Diseases**

**Abstract Title:** A Computational Model Predicts Mechanisms of Sex Dimorphism in Cardiac Fibroblasts

**Presenter:** Mukti Chowkwale

**Principal Investigator:** Malcolm Fidelis O'Malley, Jeffrey J Saucerman

**Author(s):**

Jeffrey Saucerman

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: U, Poster  
**Number:** 722

**Track:** WOMEN'S HEALTH (Summer REU)

### **Sex-related Differences In chronic Diseases (Summer Undergraduate)**

**Abstract Title:** Lean and obese perivascular adipose tissue did not change endothelial cell eNOS phosphorylation

**Presenter:** Donaysia Torbit

**Principal Investigator:** Alisa Morss Clyne

**Author(s):**

Gurneet Sangha

Ryan Sapp

Alisa Clyne

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: U, Poster  
**Number:** 724

**Track:** WOMEN'S HEALTH

### **Cancers of female organs**

**Abstract Title:** Classification with diffuse optical tomography reconstruction and co-registered Ultrasound image features

**Presenter:** MingHao Xue

**Principal Investigator:** Quing Zhu

**Author(s):**

MengHao Zhang

Shuying Li

Yun Zou

## Friday, October 14

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: U, Poster  
**Number:** 725

**Track:** WOMEN'S HEALTH

### **Cancers of female organs**

**Abstract Title:** Pilot Study of Active Learning Methods for Visually Expressing Expectations of Appearance Outcomes

**Presenter:** Mia Markey

**Principal Investigator:** N/A

**Author(s):**

Haoqi Wang

Seung Choi

Greg Reece

Ashleigh Francis

Mia Markey

**Friday, October 14**

9:30 AM - 10:30 AM

**Poster Session:** C, Section: E, Row: U, Poster  
**Number:** 726

**Track:** WOMEN'S HEALTH  
**Mechanics of Pregnancy and Birth**

**Abstract Title:** The Rat as an Animal Model for Studying the Support Function of the Uterosacral Ligaments

**Presenter:** Kandace Donaldson

**Principal Investigator:** N/A

**Author(s):**  
Raffaella De Vita

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 1

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY  
**Single-Cell Measurements and Models**

**Abstract Title:** Single Cell Analysis of Proinflammatory Gene Expression Reveals Changing Population Dynamics in Trained Immunity

**Presenter:** Aoife O'Farrell

**Principal Investigator:** Arjun Raj

**Author(s):**  
Juan McCook  
Zijian Niu  
Arjun Raj

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 2

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY  
**Single-Cell Measurements and Models**

**Abstract Title:** Exploring small molecule treatment of Ebola virus infection with in silico models

**Presenter:** Xiao Liu

**Principal Investigator:** Elsje Pienaar

**Author(s):**  
N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 3

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY  
**Single-Cell Measurements and Models**

**Abstract Title:** Modeling Simultaneous Two-Wavelength Axial Ratiometry Imaging of Clathrin Mediated-Endocytosis

**Presenter:** Alexa Mattheyses

**Principal Investigator:** Yancey Williams II

**Author(s):**  
N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster

**Number:** 4

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### **Omics Data: Methods, Modeling and Analysis**

**Abstract Title:** Visualizing Cell State and Clonal Dynamics via In-situ Detection of RNA and Heritable Barcode

**Presenter:** Xiangyi Fang

**Principal Investigator:** Arjun Raj

**Author(s):**

Arjun Raj

Ian Dardani

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster

**Number:** 5

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### **Single-Cell Measurements and Models (Summer Undergraduate)**

**Abstract Title:** TriFusion – A Software for the Automated Quantification of Muscle Growth and the Impact of Fluorescence Characteristics on TriFusion

**Presenter:** Miranda Copenhaver

**Principal Investigator:** Andres Ocampo aaocampo@mines.edu co-presenter, Miranda G. Copenhaver, Michael Gower and Homayoun Valafar

**Author(s):**

Andres Ocampo

Candice Cheung

Michael Gower

Miranda Copenhaver

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster

**Number:** 6

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### **Precision and Predictive Medicine**

**Abstract Title:** Computational analysis of oxygen transport through heterogenous microvascular networks: A physiologically-relevant toolbox for quantitating vasculogenesis and angiogenesis

**Presenter:** Abhishek Jain

**Principal Investigator:** N/A

**Author(s):**

Tanmay Mathur

James Tronolone

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster

**Number:** 7

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### **Precision and Predictive Medicine**

**Abstract Title:** Blood Cytokine Levels as a Predictor of Mesh Exposure After Pelvic Organ Prolapse Surgery

**Presenter:** Mihyun Waugh

**Principal Investigator:** N/A

**Author(s):**

Nick Boltin

Lauren Wolf

Jane Goodwin

Patti Parker

Ronnie Horner

Matthew Hermes

Thomas Wheeler

Rich Goodwin

Melissa Moss

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 8

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Precision and Predictive Medicine**

**Abstract Title:** The influence of SNR on parameter estimation in an image-driven mathematical model of glioma growth and angiogenesis

**Presenter:** Megan LaMonica

**Principal Investigator:** N/A

**Author(s):**

David Hormuth

Thomas Yankeelov

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 9

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Precision and Predictive Medicine**

**Abstract Title:** Intermittent Hypoxemia: Risk Factor for Retinopathy of Prematurity in Preterm Infants

**Presenter:** Samaneh Rabienia Haratbar

**Principal Investigator:** N/A

**Author(s):**

Samaneh Rabienia Haratbar

Li Chen

Qiang Cheng

Anchit bhattacharya

Xuhui Liu

Faraneh Fathi

Mehrana Mohtasebi

Dara Singh

henrietta S Bada

Elie Abujawdeh

Guoqiang Yu

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 10

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Precision and Predictive Medicine**

**Abstract Title:** Unobserved Heterogeneity in Circulating Autoantibodies in Clinical Subgroups of Rheumatoid Arthritis

**Presenter:** Jaeyun Sung

**Principal Investigator:** N/A

**Author(s):**

Kevin Cunningham

Benjamin Hur

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 11

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Single-Cell Measurements and Models**

**Abstract Title:** Mechanisms of PARP inhibitor resistance in ovarian cancer

**Presenter:** Adriana Del Pino Herrera

**Principal Investigator:** N/A

**Author(s):**

Meghan Ferrall-Fairbanks

Joon-Hyun Song

Mehdi Damaghi

Snigdha Kanadibhotla

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 12**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Single-Cell Measurements and Models****Abstract Title:** Logarithmic Signaling Regulate MAPK Stress Response and Survival**Presenter:** Hossein Jashnsaz**Principal Investigator:** N/A**Author(s):**

Zachary Fox

Brian Munsky

Gregor Neuert

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 13**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Single-Cell Measurements and Models****Abstract Title:** Elucidating the molecular basis of Atoh1 lineage diversity in the developing hindbrain**Presenter:** Jessica Butts**Principal Investigator:** N/A**Author(s):**

Sih-Rong Wu

Mark Durham

Ryan Dhindsa

Huda Zoghbi

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 14**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Single-Cell Measurements and Models****Abstract Title:** Uncovering the Role of Methylated Nucleic Acids with Spatial Epigenetics in Cancer Cells**Presenter:** Nicholas Zhang**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 15**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Single-Cell Measurements and Models****Abstract Title:** Modeling Simultaneous Two-Wavelength Axial Ratiometry Imaging of Clathrin Mediated-Endocytosis**Presenter:** Yancey Williams**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 16**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Abstract Title:** Identification of Endogenous Ligands for TREM2 through Unbiased Virtual Screening**Presenter:** Rory Greer**Principal Investigator:** N/A**Author(s):**

Hunter Dean

Thomas Brett

Erik Roberson

Yuhua Song

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 17**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Multiscale Computation Modeling (Summer Undergraduate)****Abstract Title:** The Role of miRNAs and Their Target Genes in Differentiation State of Thyroid Carcinomas**Presenter:** Anna Tang**Principal Investigator:** N/A**Author(s):**

Yonatan Degefu

Mohammad Fallahi-Sichani

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 18**Track:** BIOMANUFACTURING**Cryopreservation In Biomanufacturing****Abstract Title:** Effect of Cryopreservation on Hepatic Stellate, Kupffer, and Sinusoidal Endothelial Cell Viability**Presenter:** Bradley Ellis**Principal Investigator:** Basak Uygun**Author(s):**

Huyun Chen

Mohammadreza Mojoudi

Korkut Uygun

Basak Uygun

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 19**Track:** BIOMANUFACTURING**Cryopreservation in Biomanufacturing****Abstract Title:** High-Throughput Methods for Design of Cryopreservation Procedures**Presenter:** Nima Ahmadvani**Principal Investigator:** N/A**Author(s):**

Adam Higgins

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 20

**Track:** BIOMATERIALS  
**Biomaterials Scaffolds (Summer Undergraduate)**

**Abstract Title:** Biomaterials Design for Bioengineered Meat  
**Presenter:** Cara Klinger  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 21

**Track:** BIOMATERIALS  
**Biomaterials for Immunoengineering**

**Abstract Title:** Immune Complexes Reduce Disease Severity in Male and Female Preclinical Multiple Sclerosis Models  
**Presenter:** Marian Ackun-Farmmer  
**Principal Investigator:** Christopher M. Jewell  
**Author(s):**  
Robert Oakes  
Christopher Jewell

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 22

**Track:** BIOMATERIALS  
**Biomaterials for Immunoengineering**

**Abstract Title:** Design of Supramolecular Nanofibers for Gastrointestinal Immunotherapies  
**Presenter:** Mia Woodruff  
**Principal Investigator:** Joel Collier  
**Author(s):**  
Mia Woodruff  
Elizabeth Curvino  
Joel Collier

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 23

**Track:** BIOMATERIALS  
**Biomaterials for Immunoengineering**

**Abstract Title:** Amyloidogenic Potency and Immunogenicity of Cross-Beta-rich Peptide Biomaterial Vaccines  
**Presenter:** Paresh Shrimali  
**Principal Investigator:** Jai S. Rudra  
**Author(s):**  
Sheng Chen  
Meredith Jackrel  
Jai Rudra

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 24

**Track:** BIOMATERIALS  
**Biomaterials for Immunoengineering**

**Abstract Title:** Creation of Antibody Fragment Capable of Binding with Protein A for Convenient Purification  
**Presenter:** Misae Nazuka  
**Principal Investigator:** N/A  
**Author(s):**  
Atsushi Kuwahara  
Koji Sode  
Ryutaro Asano

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 25

**Track:** BIOMATERIALS

**Biomaterials for Immunoengineering**

**Abstract Title:** In Situ Visualization of Organoid-Derived Chemokine Gradients within a 3-Dimensional Extracellular Matrix Hydrogel

**Presenter:** Magdalena Samojlik

**Principal Investigator:** Cherie Stabler

**Author(s):**

Edward Phelps

Cherie Stabler

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 26

**Track:** BIOMATERIALS

**Biomaterials for Immunoengineering  
(Summer Undergraduate)**

**Abstract Title:** DNA-Scaffolded Biomaterials Enable Ratiometric and Density Control of T-cell Stimulation Cues

**Presenter:** Lariana Cline

**Principal Investigator:** Tejal Desai

**Author(s):**

Pierce Hadley

Xiao Huang

Emilie Ronin

Patrick Ho

Qizhi Tang

Tejal Desai

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 27

**Track:** BIOMATERIALS

**Biomaterials for Immunoengineering  
(Summer Undergraduate)**

**Abstract Title:** Time-Dependent Response of Immune Cells to Modified Titanium Surfaces

**Presenter:** Luke Sheakley

**Principal Investigator:** Rene Olivares-Navarrete

**Author(s):**

Rene Olivares-Navarrete

lais carvalho

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster  
**Number:** 28

**Track:** BIOMATERIALS

**Biomaterials for Immunoengineering  
(Summer Undergraduate)**

**Abstract Title:** Optimization of a Hyaluronic Acid-Based Injectable Hydrogel for Macrophage Immunotherapy

**Presenter:** Mulan Tang

**Principal Investigator:** John Clegg

**Author(s):**

John Clegg

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster

**Number:** 29

**Track:** BIOMATERIALS

### Natural and Bioinspired Biomaterials (Summer Undergraduate)

**Abstract Title:** Investigating the Potential of Nacre as a Bone Cement

**Presenter:** JingJing Liang

**Principal Investigator:** Ronke Olabisi

**Author(s):**

Adriana Marble

Ryan Chang

Kristopher White

Ronke Olabisi

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster

**Number:** 30

**Track:** BIOMATERIALS

### Natural and Bioinspired Biomaterials (Summer Undergraduate)

**Abstract Title:** Ultraviolet Light Catalyzed Covalent Crosslinking on Benzophenone-Functionalized Cellulose Nanocrystal-Soy Protein Isolate Nanocomposites Increases Mechanical Properties and Water Resistance

**Presenter:** Kenadie Doty

**Principal Investigator:** Marcus Foston

**Author(s):**

Zhenqin(Jerry) Wang

HUIYONG LI

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster

**Number:** 31

**Track:** BIOMATERIALS

### Biomaterials for Immunoengineering

**Abstract Title:** Influenza antigen stability upon release from nanovaccines

**Presenter:** Alaric Siddoway

**Principal Investigator:** N/A

**Author(s):**

Alaric Siddoway

david verhoeven

Kathleen Ross

Michael Wannemuehler

Surya Mallapragada

Balaji Narasimhan

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster

**Number:** 32

**Track:** BIOMATERIALS

### Biomaterials for Immunoengineering

**Abstract Title:** High-throughput In Vivo Screening of Immunomodulatory Biomaterials Using Cellular Barcoding for Islets Transplantation

**Presenter:** Boram Kim

**Principal Investigator:** N/A

**Author(s):**

Omid Veisheh

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 33**Track:** BIOMATERIALS**Biomaterials for Immunoengineering****Abstract Title:** Multidomain Peptide Hydrogel Adjuvants Elicit Strong Bias Towards Humoral Immunity**Presenter:** Brett Pogostin**Principal Investigator:** Kevin McHugh and Jeffrey Hartgerink**Author(s):**

Brett Pogostin

Marina Yu

Alon Azares

ERIN EULIANO

Cheuk Sun Edwin Lai

Gabriel Saenz

Sarah Melhorn

Tyler Graf

Darren Woodside

Jeffrey Hartgerink

Kevin McHugh

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 34**Track:** BIOMATERIALS**Biomaterials for Immunoengineering****Abstract Title:** Rescuing Macrophage Function to Promote Vascularization in Aged-Populations**Presenter:** Justin Silberman**Principal Investigator:** N/A**Author(s):**

Erika Moore

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 35**Track:** BIOMATERIALS**Biomaterials for Immunoengineering****Abstract Title:** Analyzing Immune Response to Engineered Hydrogels by Hierarchical Clustering of Inflammatory Cell Subsets**Presenter:** Marc Fernandez-Yague**Principal Investigator:** Andres J. Gacia**Author(s):**

Edward Botchwey

Andres Garcia

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 36**Track:** BIOMATERIALS**Biomaterials for Immunoengineering****Abstract Title:** The Development of the Therapeutic mAb Bevacizumab Monitoring System using Anti-idiotypic Aptamer**Presenter:** Madoka Nagata**Principal Investigator:** Koji Sode**Author(s):**

Koji Sode

Kazunori Ikebukuro

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 37**Track:** BIOMATERIALS**Biomaterials for Immunoengineering****Abstract Title:** Augmentation of Oral Immunotherapy with Tolerance-inducing Nanoparticles**Presenter:** Rian Harriman**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 38**Track:** BIOMATERIALS**Biomaterials for Immunoengineering****Abstract Title:** Development of a Tetravalent Antibody-Enzyme Complexes as an Electrochemical Immunosensing Element**Presenter:** Miho Oda Miho Oda**Principal Investigator:** N/A**Author(s):**

Koji Sode

Kazunori Ikebukuro

Ryutaro Asano

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 39**Track:** BIOMATERIALS**Biomaterials for Immunoengineering****Abstract Title:** Development of DNA Aptamers Specifically Recognizing Single-chain Variable Fragments**Presenter:** Mai Hamasaki**Principal Investigator:** Sode Koji**Author(s):**

Ryutaro Asano

Kazunori Ikebukuro

Koji Sode

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: C, Poster**Number:** 40**Track:** BIOMATERIALS**Biomaterials for Immunoengineering****Abstract Title:** N-dihydrogalactochitosan Initiates STING Permeabilization of Lysosomes Causing Type I IFN Production**Presenter:** Sayre Tillery**Principal Investigator:** N/A**Author(s):**

Wei Chen

Sayre Tillery

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 41**Track:** BIOMATERIALS**Biomaterials for Immunoengineering****Abstract Title:** T Cell-Responsive Macroporous Hydrogel for In Situ T Cell Expansion**Presenter:** Yusheng Liu**Principal Investigator:** Hua Wang**Author(s):**

Rimsha Bhatta

Joonsu Han

Hua Wang

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 42**Track:** BIOMATERIALS**Biomaterials for Immunoengineering****Abstract Title:** Dendritic Cell Stimulation and Immune Checkpoint Blockade Using Stimuli Responsive Nanogels**Presenter:** Dennis Huang**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 43**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** DNA Nanotechnology-based Multiplexed Temporal Controlled Release System Within Gelatin Hydrogel**Presenter:** Chih-Hsiang Hu**Principal Investigator:** Remi Veneziano**Author(s):**

Remi Veneziano

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 44**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Silk Fibroin as a Coating to Extend Corneal Tissue Preservation**Presenter:** Devon Hartigan**Principal Investigator:** N/A**Author(s):**

Chiara Ghezzi

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 45**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Structure-Property Relationship of Bottlebrush Polymers in Dilute Solution**Presenter:** Ethan Corey**Principal Investigator:** N/A**Author(s):**

Justin Kennemur

Courtney Leo

Ethan Corey

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 46**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Programmable Polymer-DNA Composite Materials as Synthetic Alternatives to Protein Assemblies**Presenter:** Elena Di Mare**Principal Investigator:** Adam J. Gormley**Author(s):**

Rahul Upadhya

Travis Meyer

Adam Gormley

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 47

**Track:** BIOMATERIALS  
**Natural and Bioinspired Biomaterials**

**Abstract Title:** In Vitro Release of Encapsulated Proteins in Decellularized Cardiac Tissue Derived Hydrogel

**Presenter:** Jiazhu Xu

**Principal Investigator:** N/A

**Author(s):**

Jiazhu Xu

Kytai Nguyen

Jun Liao

Ge Zhang

Yi Hong

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 48

**Track:** BIOMATERIALS  
**Natural and Bioinspired Biomaterials**

**Abstract Title:** Sweet Corn Phytoglycogen as a Protein Stabilizing Excipient

**Presenter:** Junha Park

**Principal Investigator:** Gregory A. Hudalla

**Author(s):**

Junha Park

Renjie Liu

Susan Boehlein

Márcio Resende Jr.

Gregory Hudalla

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 49

**Track:** BIOMATERIALS  
**Natural and Bioinspired Biomaterials**

**Abstract Title:** Hybridgel: Lung ECM Derived Hydrogel with a Cryogel Backbone

**Presenter:** Leigh-Ann Antczak

**Principal Investigator:** N/A

**Author(s):**

Leigh-Ann Antczak

Karah Moore

Rebecca Heise

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 50

**Track:** BIOMATERIALS  
**Natural and Bioinspired Biomaterials**

**Abstract Title:** Carboxymethyl Kappa-Carrageenan Improves Hemocompatibility and Antibacterial Activity of Surfaces

**Presenter:** Matt Kipper

**Principal Investigator:** N/A

**Author(s):**

Liszt Madruga

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 51**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Highly Resilient Silk Fibroin Elastomers via Conformation-driven Strategy**Presenter:** Xuan Mu**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 52**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Development of an Injectable, Supramolecular Hyaluronic Acid Hydrogel for Cell Delivery**Presenter:** Sarea Recalde Phillips**Principal Investigator:** Daniel Alge**Author(s):**

Daniel Alge

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 53**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Antimicrobial Susceptibility Testing Platform Using Chromatic Vesicle Sensors Bearing

Hydrogel

**Presenter:** Seoyoon Song**Principal Investigator:** N/A**Author(s):**

Huisoo Jang

Deborah Lee

Sun Min Kim

Tae-Joon Jeon

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 54**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Lignin Composites with Sustained Oxygenation and Antioxidant Properties Improve Neovascularization and Healing of Diabetic Wounds**Presenter:** Swathi Balaji**Principal Investigator:** Swathi Balaji**Author(s):**

Phillip Kogan

Jangwook Jung

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 55**Track:** BIOMATERIALS**Natural and Bioinspired Biomaterials****Abstract Title:** Disrupted Extracellular Matrix as Cell Culture Substrate to Assess Matrix Regenerative Therapeutics**Presenter:** Taylor Krajewski**Principal Investigator:** N/A**Author(s):**

Taylor Krajewski

Anand Ramamurthi

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster

**Number:** 56

**Track:** BIOMATERIALS

### Natural and Bioinspired Biomaterials

**Abstract Title:** Controlled Actuation of Microactuators Towards Adhesives Inspired by Endoparasites

**Presenter:** Yoo Jin Lee

**Principal Investigator:** N/A

**Author(s):**

Yoo Jin Lee

Mustafa Abdelrahman

Taylor Ware

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster

**Number:** 57

**Track:** BIOMATERIALS

### Natural and Bioinspired Biomaterials

**Abstract Title:** Hierarchically Structured Functional Hydrogel and Microbe-Cell Interaction System for Label-free Analysis

**Presenter:** Yoon Jeong

**Principal Investigator:** N/A

**Author(s):**

N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster

**Number:** 58

**Track:** BIOMATERIALS

### Drug Delivering Biomaterials

**Abstract Title:** Rheological Behavior Of DSPC-, DBPC-, and DPPC-Lipid Oxygen Microbubbles

**Presenter:** Riaz Ur Rehman Mohammed

**Principal Investigator:** Benjamin S. Terry

**Author(s):**

Riaz Ur Rehman Mohammed

Anna Levorson

Alexander Fan

Awaneesh Upadhyay

Kang-Ho Song

Mark Borden

Ben Terry

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster

**Number:** 59

**Track:** BIOMATERIALS

### Drug Delivering Biomaterials

**Abstract Title:** Mechanisms of Nanoparticle Internalization in Chondrocytes for Cartilage-Targeted Delivery

**Presenter:** Arjun Panicker

**Principal Investigator:** N/A

**Author(s):**

Jessica Aldrich

Kyle Allen

Blanka Sharma

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 60

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury**

**Abstract Title:** Pre-Impact Fall Detection Using ConvLSTM and ResNet

**Presenter:** Bummo Koo

**Principal Investigator:** N/A

**Author(s):**

Jongman Kim

Seung Hee Lee

Sumin Yang

Younho Kim

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 61

**Track:** BIOMECHANICS

**Biofluid Mechanics**

**Abstract Title:** Fluid-Structure Interaction Simulation Of Pulmonary Hypertension In Sickle Cell Disease Patients

**Presenter:** Fatemeh Bahmani

**Principal Investigator:** Stephanie M. George

**Author(s):**

Ali Vahdati

Veeranna Maddipati

Stephanie George

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 62

**Track:** BIOMECHANICS

Biomechanics In Cell and Tissue Engineering

**Abstract Title:** Hyperglycemia Alters FAK-associated Protein Mechanosensitivity in Unstimulated Macrophages

**Presenter:** Courtney Johnson

**Principal Investigator:** Helim Aranda - Espinoza, PhD and John P. Fisher, PhD

**Author(s):**

John Fisher

Helim Aranda-Espinoza

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 63

**Track:** BIOMECHANICS

**Cardiovascular Biomechanics**

**Abstract Title:** Aortic Strain as an Early Indicator of Type A Aortic Dissection Risk

**Presenter:** Leslie George

**Principal Investigator:** N/A

**Author(s):**

Ronald Fortunato

David Vorp

Spandan Maiti

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 64

**Track:** BIOMECHANICS

### Cardiovascular Biomechanics

**Abstract Title:** Difference in the Mechanics of Vascular Smooth Muscle Cells from Wild Type and Apolipoprotein-E Knockout Mice

**Presenter:** Nisha Khatiwada

**Principal Investigator:** Zhongkui Hong

**Author(s):**

Alex Rickel

Zhongkui Hong

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 65

**Track:** BIOMECHANICS

### Other / Non-specified

**Abstract Title:** Fluid Flow of Different Viscosity Liquids Through Baby Bottle Nipples

**Presenter:** Amelia Wellmon

**Principal Investigator:** N/A

**Author(s):**

Amelia Wellmon

Mark Nicosia

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 66

**Track:** BIOMECHANICS

### Biomechanics In Cell and Tissue Engineering (Summer Undergraduate)

**Abstract Title:** Collagen Damage Area Fraction, Measured from Second Harmonic Generation Images, Increases Following Tendon Overload in a Rat Model of Synergist Ablation

**Presenter:** Alyssa Giordani

**Principal Investigator:** N/A

**Author(s):**

Lily Lin

Ellen Bloom

Dawn Elliott

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 67

**Track:** BIOMECHANICS

### Biomechanics In Cell and Tissue Engineering (Summer Undergraduate)

**Abstract Title:** A modular and autonomous bioreactor utilizing an electromechanical system for application of continuous mechanical stimuli on tissue-engineered meniscus constructs

**Presenter:** Charlotte Lee

**Principal Investigator:** N/A

**Author(s):**

Lawrence Bonassar

Byumsu Kim

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 68

**Track:** BIOMECHANICS

**Biomechanics In Cell and Tissue Engineering (Summer Undergraduate)**

**Abstract Title:** Myofibroblast Differentiation in Cardiomyocyte-Cardiac Fibroblast Bilayer Tissues on Tunable Synthetic Fibrous Matrices

**Presenter:** Darcy Huang

**Principal Investigator:** Brendon Baker

**Author(s):**

Samuel DePalma

Austin Stis

Robert Kent

Brendon Baker

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 69

**Track:** BIOMECHANICS

**Biomechanics In Cell and Tissue Engineering (Summer Undergraduate)**

**Abstract Title:** Strategies to Improve Osseointegration in a Botox-induced Compromised Bone Model

**Presenter:** Eleanor Sabalewski

**Principal Investigator:** David Cohen

**Author(s):**

Jingyao Deng

David Cohen

Zvi Schwartz

Barbara Boyan

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 70

**Track:** BIOMECHANICS

**Biomechanics In Cell and Tissue Engineering (Summer Undergraduate)**

**Abstract Title:** Glioblastoma Core and Rim Exhibit Distinct Mechanical and Ultrastructural Signatures

**Presenter:** Zachary P. Fowler

**Principal Investigator:** Joseph Chen

**Author(s):**

Zachary Fowler

Bradley Mahaffey

Joseph Chen

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 71

**Track:** BIOMECHANICS

**Cardiovascular Biomechanics (Summer Undergraduate)**

**Abstract Title:** Expanding an Artificial Intelligence Framework to Predict Wall Stresses in Abdominal Aortic Aneurysms

**Presenter:** Christian Hangey

**Principal Investigator:** Timothy K. Chung

**Author(s):**

David Vorp

Timothy Chung

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster

**Number:** 72

**Track:** BIOMECHANICS

### Cardiovascular Biomechanics (Summer Undergraduate)

**Abstract Title:** Optimizing Stereo Digital Image Correlation and 3D Surface Reconstructions in a Bubble Inflation Testing Apparatus

**Presenter:** Pete Gueldner

**Principal Investigator:** N/A

**Author(s):**

David Vorp

Pete Gueldner

Cyrus Darvish

Timothy Chung

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster

**Number:** 73

**Track:** BIOMECHANICS

### Cardiovascular Biomechanics (Summer Undergraduate)

**Abstract Title:** Cardiac Performance and Mortality during Hemorrhagic Shock and REBOA

**Presenter:** Enrique Carrasco Perez

**Principal Investigator:** Elaheh Rahbar

**Author(s):**

Fahim Mobin

Antonio Renaldo

Elaheh Rahbar

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster

**Number:** 74

**Track:** BIOMECHANICS

### Cardiovascular Biomechanics (Summer Undergraduate)

**Abstract Title:** Assessing Density-Driven Rupture of Aortic Aneurysms by Protein Degradation of Porcine Aortic Tissue

**Presenter:** Emma Ahlgren

**Principal Investigator:** David Vorp

**Author(s):**

Pete Gueldner

Isabelle Chickanosky

Cyrus Darvish

Timothy Chung

David Vorp

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster

**Number:** 75

**Track:** BIOMECHANICS

### Cardiovascular Biomechanics (Summer Undergraduate)

**Abstract Title:** Race-Based Differences in Cardiovascular Health with Hypertension: A Pilot Study

**Presenter:** Naomi Chesler

**Principal Investigator:** Aiyanna Adams

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 76

**Track:** BIOMECHANICS  
**Biofluid Mechanics (Summer Undergraduate)**

**Abstract Title:** Integrating Computational Fluid Dynamics and Transcriptomics to Reveal High-Fat Diet-Induced Myofibroblast Differentiation to Increase Differential Arterial Stiffness  
**Presenter:** Mehrdad Roustaei  
**Principal Investigator:** Tzung K Hsiai  
**Author(s):**  
TZUNG KEITH MD, PHD HSIAI  
Jae Min Cho  
Susana Cavallero

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 77

**Track:** BIOMECHANICS  
**Computational and Multiscale Modeling In Biomechanics (Summer Undergraduate)**

**Abstract Title:** Analysis of the Microstructure of Bone Affected by Galactic Cosmic Radiation  
**Presenter:** Nicholas Cavallero  
**Principal Investigator:** Anthony G. Lau  
**Author(s):**  
Catherine Davis  
Anthony Lau

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 78

**Track:** BIOMECHANICS  
**Biomechanics in Cell and Tissue Engineering**

**Abstract Title:** In-Vitro Device Controlling Spatio-temporal Changes for Cardiac Fibroblasts Activation  
**Presenter:** Zheng Cao  
**Principal Investigator:** N/A  
**Author(s):**  
Zheng Cao  
Elise Corbin

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster  
**Number:** 79

**Track:** BIOMECHANICS  
**Biomechanics in Cell and Tissue Engineering**

**Abstract Title:** Effects of Thermoneutral Housing on Trabecular Bone  
**Presenter:** Andrea Jacobson  
**Principal Investigator:** N/A  
**Author(s):**  
Joseph Wallace  
Andrea Jacobson

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: D, Poster**Number:** 80**Track:** BIOMECHANICS**Biomechanics in Cell and Tissue Engineering****Abstract Title:** Degradation of Intervertebral Disc Annulus Material Properties with Repeated Loading**Presenter:** Kirsten Sipek**Principal Investigator:** N/A**Author(s):**

Jack Seifert

Alok Shah

Youjie Zhang

narayan Yoganandan

James Sheehy

Brian Stemper

Timothy Bentley

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 81**Track:** BIOMECHANICS**Biomechanics in Cell and Tissue Engineering****Abstract Title:** A Novel Approach To Measure Stiffness of Tissues: Application To Human Precision Cut Lung Slices**Presenter:** Jae Hun Kim**Principal Investigator:** N/A**Author(s):**

Niccole Schaible

Joseph Hall

Elizabeth Bartolak-Suki

Yuqing Deng

Kenneth Lutchen

Bela Suki

Ramaswamy Krishnan

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 82**Track:** BIOMECHANICS**Biomechanics in Cell and Tissue Engineering****Abstract Title:** Transient nuclear deformation primes epigenetic state and promotes cell reprogramming**Presenter:** Yang Song**Principal Investigator:** Song Li**Author(s):**

Song Li

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 83**Track:** BIOMECHANICS**Cardiovascular Biomechanics****Abstract Title:** Effect of Doxorubicin Cumulative Dose and Administration Method on Cardiotoxicity in Mice**Presenter:** Ashley Herrick**Principal Investigator:** Chiara Bellini**Author(s):**

Mireia Perera Gonzalez

Deanna Moradi

Jacqueline Matz

Chiara Bellini

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 84

**Track:** BIOMECHANICS  
**Cardiovascular Biomechanics**

**Abstract Title:** Reducing Current Risks Of Left Ventricular Assist Device Implants

**Presenter:** Aishwarya Mantagani

**Principal Investigator:** Zachary Lawson

**Author(s):**

Aishwarya Mantagani

anushka bhawsinka

Ankita Rao

Shannon Ingram

Michael Moreno

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 85

**Track:** BIOMECHANICS  
**Cardiovascular Biomechanics**

**Abstract Title:** Pentagalloyl Glucose (PGG) Prevents And Restores Mechanical Changes Caused By Elastic Fiber Fragmentation In The Mouse Ascending Aorta

**Presenter:** Christie Crandall

**Principal Investigator:** N/A

**Author(s):**

BRYANT CABALLERO

Jessica Wagenseil

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 86

**Track:** BIOMECHANICS  
**Cardiovascular Biomechanics**

**Abstract Title:** Effects of Pulmonary Hypertension on Right Ventricular Perfusion: Insights from a Computational Model

**Presenter:** Lei Fan

**Principal Investigator:** N/A

**Author(s):**

Lei Fan

Jenny Choy

Ghassan Kassab

Lik Chuan Lee

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 87

**Track:** BIOMECHANICS  
**Cardiovascular Biomechanics**

**Abstract Title:** Computational simulations of the nonsymmetric fibrous growth and remodeling of arteries under torsion

**Presenter:** Hai-CHao Han

**Principal Investigator:** N/A

**Author(s):**

Qin Liu

Seungik Baek

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster

**Number:** 88

**Track:** BIOMECHANICS

### Cardiovascular Biomechanics

**Abstract Title:** A Novel Image-based Computational Framework to Evaluate In Vivo Material Properties of Arterial Tissue

**Presenter:** Yifan Wang

**Principal Investigator:** Luke Timmins

**Author(s):**

Edward Hsu

Lucas Timmins

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster

**Number:** 89

**Track:** BIOMECHANICS

### Cardiovascular Biomechanics

**Abstract Title:** The Effect of Calcium on Embolus Analog Mechanical Properties

**Presenter:** Jose Monclova

**Principal Investigator:** Keefe B. Manning

**Author(s):**

Priyanka Patki

Francesco Costanzo

Scott Simon

Keefe Manning

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster

**Number:** 90

**Track:** BIOMECHANICS

### Cardiovascular Biomechanics

**Abstract Title:** Extracellular Matrix Regulates Force Transduction At VE-cadherin Adhesions

**Presenter:** Deborah Leckband

**Principal Investigator:** N/A

**Author(s):**

Xinyu Kong

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster

**Number:** 91

**Track:** BIOMECHANICS

### Cardiovascular Biomechanics

**Abstract Title:** Dynamic Viscoelastic Properties of Neonatal and Adult Porcine Heart Muscles

**Presenter:** Jun Liao

**Principal Investigator:** Jun Liao

**Author(s):**

Timothy Eastep

Diana Alatalo

zhi-ping liu

Yi Hong

fatemeh hassanipour

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 92**Track:** BIOMECHANICS**Cardiovascular Biomechanics****Abstract Title:** Strain History Modulates Cytoskeletal Activation in Cyclically Stretched Valve Interstitial Cells**Presenter:** Toni West**Principal Investigator:** N/A**Author(s):**

Toni West

Daniel Howsmon

Miles Massidda

Aaron Baker

Michael Sacks

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 93**Track:** BIOMECHANICS**Cardiovascular Biomechanics****Abstract Title:** Effect of ECM and mechanical strain on vascular cell plasticity**Presenter:** Travis Brady**Principal Investigator:** Sharon Gerecht**Author(s):**

Sharon Gerecht

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 94**Track:** BIOMECHANICS**Cardiovascular Biomechanics (Summer Undergraduate)****Abstract Title:** Validation of Biomechanical Model-based Elasticity Imaging Methodology with Cardiac Catheterization derived Left Ventricle Pressure-Volume Stiffness**Presenter:** Venise Jan Castillon**Principal Investigator:** N/A**Author(s):**

Jared Weis

Caroline Miller

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 95**Track:** BIOMECHANICS**Cardiovascular Biomechanics (Summer Undergraduate)****Abstract Title:** Pressure, Axial Stretch and Viscosity Have No Effect on Hydraulic Conductance in Mouse Ascending Aorta**Presenter:** Melanie Roberts**Principal Investigator:** N/A**Author(s):**

Christie Crandall

Jacob Rother

Jessica Wagenseil

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 96**Track:** BIOMECHANICS**Mechanics of the Respiratory System****Abstract Title:** Collapsible Tubes: A Simple Model of Airflow Limitation in Obstructive Sleep Apnea**Presenter:** Guilherme Garcia**Principal Investigator:** N/A**Author(s):**

GUILHERME GARCIA

Shamudra Dey

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 97**Track:** BIOMECHANICS**Mechanics of the Respiratory System****Abstract Title:** Improved Ventilation Distribution Using Airway Impedance Matching for Mechanical Ventilation**Presenter:** Liran Oren**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 98**Track:** BIOMECHANICS**Mechanics of the Respiratory System****Abstract Title:** Estimating Single Alveolar Septal Wall Stiffness in Human Precision Cut Lung Slices**Presenter:** Joseph Hall**Principal Investigator:** N/A**Author(s):**

Joseph Hall

Jae Hun Kim

Ramaswamy Krishnan

Kenneth Lutchen

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 99**Track:** BIOMECHANICS**Mechanics of the Respiratory System (Summer Undergraduate)****Abstract Title:** A Quantitative Study of Surfactant Delivery in a Bioengineered Neonatal Lung Airway Tree**Presenter:** Beaty Lillian**Principal Investigator:** N/A**Author(s):**

Hannah Combs

Jacob Heiss

Hossein Tavana

Taylor Shark

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster**Number:** 100**Track:** BIOMEDICAL ENGINEERING EDUCATION (BME)**Multidisciplinary and Interdisciplinary Curriculum (Summer Undergraduate)****Abstract Title:** Understanding the Mechanisms of Diabetes-Related Neurodegeneration**Presenter:** David Hernandez-Guzman**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 101

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Multidisciplinary and Interdisciplinary  
Curriculum (Summer Undergraduate)**

**Abstract Title:** Characterization of Bioprinted  
Fibroblasts using Molecular and Cytological  
Techniques

**Presenter:** Kayla Molina

**Principal Investigator:** Thomas Boland

**Author(s):**

PATRICIA ABLANEDO MORALES

April Ruiz

Jonathon Mohl

Thomas Boland

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 102

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Multidisciplinary and Interdisciplinary  
Curriculum (Summer Undergraduate)**

**Abstract Title:** Algorithmic Detection of Pediatric  
Chewing Sequences

**Presenter:** Sarah Sellen

**Principal Investigator:** Edward Sazonov, Memorie  
Gosa

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 103

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Experiential Learning (Curricular and  
Co-Curricular)**

**Abstract Title:** Designing Effective Training  
Programs for Summer Undergraduate Research  
Experiences

**Presenter:** Mark Chapman

**Principal Investigator:** Mark A. Chapman

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 104

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Design and Curriculum**

**Abstract Title:** Student Team Experiences in a  
Clinical Immersion Course

**Presenter:** Ally Bailey

**Principal Investigator:** N/A

**Author(s):**

Alexandra Bailey

henry grady rylander

Mia Markey

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster

**Number:** 105

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Abstract Title:** Using Optical Coherence Tomography to Observe Mechanical Changes of Vessels in a Prefusion Bioreactor

**Presenter:** Reece Fratus

**Principal Investigator:** Bruce Z. Gao

**Author(s):**

Adam Baker

Tong Ye

Bruce Gao

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster

**Number:** 106

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Abstract Title:** In Vitro Utilization of Alpha Technology to Validate Molecular Probes for Diabetic Kidney Disease Detection

**Presenter:** Jordan Womack

**Principal Investigator:** Kennita Johnson

**Author(s):**

Jordan Womack

Rachel Walmer

James Tsuruta

Kennita Johnson

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster

**Number:** 107

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Imaging System Development & Emerging Imaging Technologies**

**Abstract Title:** Three-Dimensional Reconstruction of Microscopic Samples from Scanning Electron Microscopy Via Photogrammetry

**Presenter:** Naman Srivastava

**Principal Investigator:** N/A

**Author(s):**

Terry Nguyen

David Le

Jillian Taylor

Kerem Yildiz

Mariele Ford

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster

**Number:** 108

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Imaging System Development & Emerging Imaging Technologies (Summer Undergraduate)**

**Abstract Title:** Ex Vivo Phantom Studies to Guide DC Tracking Using Magnetic Particle Imaging

**Presenter:** Alexander Armstrong

**Principal Investigator:** Carlos M. Rinaldi-Ramos

**Author(s):**

Bo Yu

Ginger Moore

Duane Mitchell

Carlos Rinaldi-Ramos

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 109**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Imaging System Development & Emerging Imaging Technologies (Summer Undergraduate)****Abstract Title:** Ergonomic External Endoscope Attachment Device For Smaller Hands**Presenter:** Ruth Ochia**Principal Investigator:** Ruth Ochia**Author(s):**Grace Buckwalter  
Carmel Alexander  
Christalle Wilson  
Joshua Pletcher  
Rania Bakhri**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 110**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Imaging System Development & Emerging Imaging Technologies****Abstract Title:** Investigation of quantitative parameters to detect minor changes in tidemark mineralization in adult bovine explants via Scanning Acoustic Microscopy (SAM)**Presenter:****Principal Investigator:** Caroline Hoemann**Author(s):**Parag Chitnis  
Caroline Hoemann  
John Mutersbaugh**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 111**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Imaging System Development & Emerging Imaging Technologies****Abstract Title:** Infrared videography of a subcutaneous tattoo overcomes skin motion artifact in rodent kinematics**Presenter:** Andrew Spence**Principal Investigator:** Andrew J. Spence**Author(s):**George Moukarzel  
Bradley Rauscher  
Chetan Patil  
Andrew Spence**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 112**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Imaging System Development & Emerging Imaging Technologies****Abstract Title:** Deep-learning Aided Endoscopic Optical Coherence Tomography for Veress Needle Guidance**Presenter:** Chen Wang**Principal Investigator:** N/A**Author(s):**Justin Reynolds  
Paul Calle  
Feng Yan  
Yuyang Yan  
Kar-Ming Fung  
Sanjay Patel  
Chongle Pan  
Qinggong Tang

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 113

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Abstract Title:** Size Distribution Effects on Adhesion Efficiency and Specificity of Cloaked-RGD Microbubbles

**Presenter:** Jair Castillo

**Principal Investigator:** N/A

**Author(s):**  
Mark Borden

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 114

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Imaging System Development & Emerging Imaging Technologies**

**Abstract Title:** Determining The Location and Size of Brain Tumor

**Presenter:** Roshan Bhatt

**Principal Investigator:** N/A

**Author(s):**  
Roshan Bhatt  
Prabir Patra

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 115

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Imaging System Development & Emerging Imaging Technologies**

**Abstract Title:** Using BASIN-ML for Cellular Analysis and Data Interpretation

**Presenter:** Sam Haas

**Principal Investigator:** N/A

**Author(s):**  
Tim Hartman

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 116

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Imaging System Development & Emerging Imaging Technologies**

**Abstract Title:** DNA-Caged Polymer Micelles for Erasable, Repeated Cell Labeling

**Presenter:** Silvio Fernandes-Junior

**Principal Investigator:** N/A

**Author(s):**  
Jessica Winter  
Jose Otero  
Elizabeth Jergens

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 117

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Imaging System Development & Emerging Imaging Technologies**

**Abstract Title:** Conventional And Pioneering Technologies In Cardiovascular Imaging

**Presenter:** Quinn Hanses

**Principal Investigator:** N/A

**Author(s):**

Quinn Hanses

Yasser Aboelkassem

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 118

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Imaging System Development & Emerging Imaging Technologies**

**Abstract Title:** Labeling Dendritic Cells with Magnetic Nanoparticles Tailored for Magnetic Particle Imaging

**Presenter:** Bo Yu

**Principal Investigator:** N/A

**Author(s):**

Bo Yu

N'Quel Bonner

Ginger Moore

Sitong Liu

Angelie Rivera-Rodriguez

Duane Mitchell

Carlos Rinaldi-Ramos

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 119

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Abstract Title:** MR Spectroscopy Investigation of Brain Metabolites in High School Football and Soccer Players

**Presenter:** Antonia Susnjar

**Principal Investigator:** N/A

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: E, Poster  
**Number:** 120

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Imaging System Development & Emerging Imaging Technologies**

**Abstract Title:** eeDAP Registration Accuracy for Validation of Whole Slide Imaging Systems

**Presenter:** Katherine Elfer

**Principal Investigator:** N/A

**Author(s):**

Anant Agrawal

Brandon Gallas

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 121

**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy**

**Abstract Title:** Metabolic Imaging of Neuroblastoma  
Cells in Response to Interferon Gamma  
**Presenter:** Cole Weaver  
**Principal Investigator:** N/A  
**Author(s):**  
Cole Weaver  
Dan Pham  
Melissa Skala

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 122

**Track:** CANCER TECHNOLOGIES  
**Cancer Cell Motility and Migration  
(Summer Undergraduate)**

**Abstract Title:** Evaluating the Normal Tissue  
Radiation Response Using Extracellular Matrix  
Hydrogels  
**Presenter:** Anastasia Shostak  
**Principal Investigator:** Marjan Rafat  
**Author(s):**  
Marjan Rafat

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 123

**Track:** CANCER TECHNOLOGIES  
**Cancer Cell Motility and Migration  
(Summer Undergraduate)**

**Abstract Title:** Optimization of cell-mediated gelatin  
hydrogel for efficient migration assays  
**Presenter:** Danna Valentina  
**Principal Investigator:** Sanchez Hernandez  
**Author(s):**  
Amir K. Miri  
Elvan DOGAN KUMTEPE

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 124

**Track:** CANCER TECHNOLOGIES  
**Cancer Cell Motility and Migration  
(Summer Undergraduate)**

**Abstract Title:** Investigating Traction Forces  
of Breast Cancer K14+ Leader Cells in Tumor  
Organoids  
**Presenter:** Ella Ramamurthy  
**Principal Investigator:** Priscilla Hwang  
**Author(s):**  
Jessanne Lichtenberg  
Priscilla Hwang  
Christopher Lemmon

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster**Number:** 125**Track:** CANCER TECHNOLOGIES**Cancer Cell Motility and Migration  
(Summer Undergraduate)****Abstract Title:** Fisetin Inhibition of Invasion of Triple Negative Breast Cancer Cells in a 3D Tumor Model**Presenter:** Nina Treacher**Principal Investigator:** Hossein Tavana**Author(s):**

Jacob Heiss

Astha Lamichhane

Hossein Tavana

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster**Number:** 126**Track:** CANCER TECHNOLOGIES**Cancer Cell Motility and Migration  
(Summer Undergraduate)****Abstract Title:** Mechanisms of Macrophage Recruitment and Infiltration in HER2+ Breast Cancer**Presenter:** Laurel Koehler**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster**Number:** 127**Track:** CANCER TECHNOLOGIES**Cancer Cell Motility and Migration****Abstract Title:** Membrane Cholesterol Depletion Modulates Adhesion of Non-small Cell Lung Cancer Cells on E-selectin**Presenter:** Amina Mohammadalipour**Principal Investigator:** N/A**Author(s):**

Amina Mohammadalipour

Christian Showalter

Amir Farnoud

Monica Burdick

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster**Number:** 128**Track:** CANCER TECHNOLOGIES**Cancer Cell Motility and Migration****Abstract Title:** Studying Glioblastoma Invasion Dynamics with a 3D Spheroid Assay**Presenter:** Bhoomija Hariprasad**Principal Investigator:** N/A**Author(s):**

Bhoomija Hariprasad

Adam Hall

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster**Number:** 129**Track:** CANCER TECHNOLOGIES**Cancer Cell Motility and Migration****Abstract Title:** Cell migration simulator-based biomarkers for glioblastoma**Presenter:** Jay Hou**Principal Investigator:** N/A**Author(s):**

David Odde

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster**Number:** 130**Track:** CANCER TECHNOLOGIES**Cancer Cell Motility and Migration****Abstract Title:** Cancer-secreted aquaporin-containing extracellular vesicles: cancer promoting signals of the tumor microenvironment.**Presenter:** Ian Smith**Principal Investigator:** N/A**Author(s):**

Kimberly Stroka

Steven Jay

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster**Number:** 131**Track:** CANCER TECHNOLOGIES**Cancer Cell Motility and Migration****Abstract Title:** Maternal Obesity Driven Changes in Breast Extracellular Matrix Induces Invasive Cell Phenotype**Presenter:** Jensen Amens**Principal Investigator:** N/A**Author(s):**

Gokhan Bahcecioglu

Kiera Dwyer

Sharon Stack

Tyvette Hilliard

Pinar Zorlutuna

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster**Number:** 132**Track:** CANCER TECHNOLOGIES**Cancer Cell Motility and Migration****Abstract Title:** Modeling Biomechanical Initiating Events in Ovarian Cancer Metastasis to the Peritoneum**Presenter:** Kelly Kyker-Snowman**Principal Investigator:** N/A**Author(s):**

David Shreiber

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster**Number:** 133**Track:** CANCER TECHNOLOGIES**Cancer Cell Motility and Migration****Abstract Title:** Laminin Isoforms Selectivity in the Control of Skeletal Metastasis Migration: a Mechanism Involving Mesenchymal Stem Cells**Presenter:** Rodrigo Somoza**Principal Investigator:** N/A**Author(s):**

Miguel Fuentes

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster**Number:** 135**Track:** CANCER TECHNOLOGIES**Cancer Cell Motility and Migration****Abstract Title:** Migrational Crosstalk in Glioblastoma-Normal Human Astrocyte Co-Cultures in Brain Mimetic Hydrogels**Presenter:** Jessica Winter**Principal Investigator:** N/A**Author(s):**

Yixiao Cui

Paul Lee

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 136

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies (Summer Undergraduate)**

**Abstract Title:** A 3D Microtissue Model for Quantifying Cancer Cell Migration and Directionality

**Presenter:** Mary Kathryn Sewell-Loftin

**Principal Investigator:** M.K. Sewell-Loftin

**Author(s):**

Peyton Clark

Mary Kathryn Sewell-Loftin

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 137

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies (Summer Undergraduate)**

**Abstract Title:** Engineering an Organ Chip Assay for Measuring Cancer-Induced Endothelial Barrier Dysfunction

**Presenter:** Omar Ahmad

**Principal Investigator:** Mark Mondrinos

**Author(s):**

Mark Mondrinos

Ashley Martier

Charles Byrne

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 138

**Track:** CANCER TECHNOLOGIES  
**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** The Effects of Low-Dose Ionizing Radiation on MCF-12 Breast Cells and Free Extracted RNA in Solution

**Presenter:** Delphine Dean

**Principal Investigator:** Maria Dobransky

**Author(s):**

Maria Dobransky

Riya Gupta

Delphine Dean

Congyue Peng

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 139

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies**

**Abstract Title:** Peristalsis Mechanotransduction Drives Colorectal Cancer Invasion via YAP1 Activation

**Presenter:** Abbie Clevenger

**Principal Investigator:** N/A

**Author(s):**

Anirudh Madyastha

Annaliese Fowler

Dillon Noltensmeyer

Shreya Raghavan

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster

**Number:** 140

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** Matrix Stiffness Regulates CD44, HIF1-A, MMP Expressions in 3D Bioprinted Soft Tissue Sarcoma

**Presenter:** Amir K. Miri

**Principal Investigator:** N/A

**Author(s):**

N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster

**Number:** 141

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** Tumor Cells Ablate Lymphatic Endothelium During Vascular Escape of Engineered Breast Microtumors

**Presenter:** Alex Seibel

**Principal Investigator:** N/A

**Author(s):**

N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster

**Number:** 142

**Track:** CANCER TECHNOLOGIES

### Metastasis, Dormancy & Treatment Response

**Abstract Title:** Metastasis of breast cancer patient-derived circulating tumor cells in zebrafish model

**Presenter:** Hyeyeon Gong

**Principal Investigator:** N/A

**Author(s):**

Hyeyeon Gong

Xiaoming He

Kandice Tanner

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster

**Number:** 143

**Track:** CANCER TECHNOLOGIES

### Metastasis, Dormancy & Treatment Response

**Abstract Title:** Piezo1 Mechano-Activation is Augmented by Resveratrol and Differs Between Colorectal Cancer Cells of Primary and Metastatic Origin

**Presenter:** Joshua Greenlee

**Principal Investigator:** N/A

**Author(s):**

Kevin Liu

Maria Lopez Cavestany

Michael King

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 144

**Track:** CANCER TECHNOLOGIES  
**Metastasis, Dormancy & Treatment Response**

**Abstract Title:** Optimizing Impedance-based In Vitro Assays For Characterization Of Breast Cancer Metastatic Potential

**Presenter:** Kyndra Higgins

**Principal Investigator:** N/A

**Author(s):**

Kyndra Higgins

Cheryl Gomillion

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 145

**Track:** CANCER TECHNOLOGIES  
**Metastasis, Dormancy & Treatment Response**

**Abstract Title:** Investigating the Role of Neutrophil-Endothelial Interactions in Triple Negative Breast Cancer Recurrence

**Presenter:** Shannon Martello

**Principal Investigator:** N/A

**Author(s):**

Marjan Rafat

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 146

**Track:** CANCER TECHNOLOGIES  
**Metastasis, Dormancy & Treatment Response**

**Abstract Title:** Macrophage Nano-Immunotherapies Reduce Ovarian Cancer Liver Metastasis in Bioengineered 3D Model

**Presenter:** Sabrina VandenHeuvel

**Principal Investigator:** N/A

**Author(s):**

Dillon Noltensmeyer

Heather Farris

Sanjana Roy

Eric Chau

Alex Walsh

Biana Godin

Shreya Raghavan

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 147

**Track:** CANCER TECHNOLOGIES  
**Metastasis, Dormancy & Treatment Response**

**Abstract Title:** Magnetic Microrobots for Liver Cancer Cell Manipulation and Treatment

**Presenter:** Sudipta Mallick

**Principal Investigator:** N/A

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 148

**Track:** CANCER TECHNOLOGIES  
**Metastasis, Dormancy & Treatment Response**

**Abstract Title:** Engineering a Tapered Vascular Structure for Studying the Extravasation Pattern of Breast Circulating Tumor Microemboli  
**Presenter:** Ting-Yuan Tu  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 149

**Track:** CANCER TECHNOLOGIES  
**Circulating Biomarkers: CTCs, Extracellular Vesicles and DNA (Summer Undergraduate)**

**Abstract Title:** Impact of Focused Ultrasound on Breast Cancer-derived Extracellular Vesicle Release In Vitro  
**Presenter:** Nini Tran  
**Principal Investigator:** N/A  
**Author(s):**  
Nghì Tran  
Natasha Sheybani  
Eric Thim  
Sarah Hernandez

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 150

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment (Summer Undergraduate)**

**Abstract Title:** Determining the role of metabolism and ROS production on heterogeneous breast cancer cell migration  
**Presenter:** Reethi Padmanabhan  
**Principal Investigator:** N/A  
**Author(s):**  
Jenna Mosier  
Samantha Schwager  
Addison White  
Qinzhe Xing  
Andrea Valero  
Lauren Hapach  
Paul Taufalele  
Ismael Ortiz  
Cynthia Reinhart-King

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 151

**Track:** CARDIOVASCULAR ENGINEERING  
**Angiogenesis and Engineered Vascularization**

**Abstract Title:** Prevascularization of Tissue-Engineered Cardiac Patch using Human Induced Pluripotent Stem Cell Derived Endothelial Cells  
**Presenter:** Te-An Chen  
**Principal Investigator:** Feng ZHao  
**Author(s):**  
Te-An Chen  
Sameeksha Sharma  
Xiaojun Lian  
Feng ZHao

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 152

**Track:** CARDIOVASCULAR ENGINEERING  
**Thrombosis and Hemostasis**

**Abstract Title:** Thrombin Initiates Coagulation While Limiting Clot Firmness in the Context of Rotational Thromboelastometry

**Presenter:** Evan Elko

**Principal Investigator:** Keefe B Manning

**Author(s):**

Connor Watson

Keefe Manning

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 153

**Track:** CARDIOVASCULAR ENGINEERING  
**Angiogenesis and Engineered Vascularization (Summer Undergraduate)**

**Abstract Title:** ROCK Regulates TSP-1 and Endothelial Marker Expression in Vasa Vasorum-Derived Pericyte Spheroids

**Presenter:** Dalia Fantini

**Principal Investigator:** Julie Phillippi

**Author(s):**

Julie Phillippi

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 154

**Track:** CARDIOVASCULAR ENGINEERING  
**Thrombosis and Hemostasis (Summer Undergraduate)**

**Abstract Title:** Estimation of Changes in Tissue Oxygen Consumption by the Tissue after Hemorrhagic Shock Resuscitation

**Presenter:** Adam Engler

**Principal Investigator:** Pedro Cabrales

**Author(s):**

Pedro Cabrales

Carlos Munoz

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 155

**Track:** CARDIOVASCULAR ENGINEERING  
**Thrombosis and Hemostasis (Summer Undergraduate)**

**Abstract Title:** Using DNA Origami Nanostructures to Understand the Impact That Clustering of von Willebrand Factor's (VWF) Arginine-Glycine-Aspartate (RGD) Motif has on Platelet Spreading

**Presenter:** Lesley Martinez

**Principal Investigator:** N/A

**Author(s):**

Molly Mollica

Nathan Sniadecki

Wendy Thomas

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 156

**Track:** CARDIOVASCULAR ENGINEERING  
**Thrombosis and Hemostasis (Summer Undergraduate)**

**Abstract Title:** Blood Clot Composition in Mouse Model Deep Vein Thrombosis

**Presenter:** Riley McDonald

**Principal Investigator:** Colleen Crouch

**Author(s):**

Leah Gutzwiller

Anna Crouch

Bryan Good

Rahul Sheth

Ryan Thompson

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 157

**Track:** CARDIOVASCULAR ENGINEERING  
**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** Primary cilia loss renders pyramidal neurons susceptible to perinatal ketamine-induced dendritic degeneration and learning deficits

**Presenter:** Nikita Reddy

**Principal Investigator:** N/A

**Author(s):**

N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 158

**Track:** CARDIOVASCULAR ENGINEERING  
**Angiogenesis and Engineered Vascularization**

**Abstract Title:** Two-dimensional Nanosilicates Stimulate Angiogenesis in Endothelial Cells

**Presenter:** Giriraj Lokhande

**Principal Investigator:** N/A

**Author(s):**

Kanwar Abhay Singh

Anna Kersey

Irtisha Singh

Akhilesh Gaharwar

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: F, Poster  
**Number:** 159

**Track:** CARDIOVASCULAR ENGINEERING  
**Angiogenesis and Engineered Vascularization**

**Abstract Title:** Electromics: Concurrent Electrical Stimulation, TEER Monitoring and Gene Expression

**Presenter:** Anthony Guiseppi-Elie

**Principal Investigator:** N/A

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 161**Track:** CANCER TECHNOLOGIES  
**Cancer Immunoengineering,  
Immunomodulation and  
Immunotherapy****Abstract Title:** The Macrophage-Endothelial  
Interface Mediates CAR T-cell Associated Toxicities  
In Vitro  
**Presenter:** Robert Rosen  
**Principal Investigator:** N/A  
**Author(s):**  
Martin Yarmush**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 162**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Cell Migration****Abstract Title:** Microcontact Printing to Study  
Migration in 2D Confinement  
**Presenter:** Allen Yesin  
**Principal Investigator:** Andrew Holle  
**Author(s):**  
N/A**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 163**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Cell Migration****Abstract Title:** Progerin-induced Changes on  
Endothelial Cell Migration During Wound Healing  
under Shear  
**Presenter:** Julie Ji  
**Principal Investigator:** Julie Y. Ji  
**Author(s):**  
Yizhi Jiang**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 164**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Cell Migration (Summer Undergraduate)****Abstract Title:** PEG Reinforced Gelatin Scaffold  
Promotes Uniform Chondrogenesis of Human MSCs  
**Presenter:** Alyssa Aguglia  
**Principal Investigator:** N/A  
**Author(s):**  
Hang Lin**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 165**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Cell Migration (Summer Undergraduate)****Abstract Title:** Evaluation of Nucleolin as an  
E-Selectin Ligand on Breast Cancer Cell Lines  
**Presenter:** James Smith  
**Principal Investigator:** Monica M. Burdick  
**Author(s):**  
Yinan Huang  
Monica Burdick

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster**Number:** 166**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Cell Migration (Summer Undergraduate)****Abstract Title:** THP-1 Macrophages Influence  
SNAP CAR-T Cell Infiltration in the Tumor  
Microenvironment**Presenter:** Jacob Antonello**Principal Investigator:** Ioannis Zervantonakis**Author(s):**

Ioannis Zervantonakis

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster**Number:** 167**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Cell Migration (Summer Undergraduate)****Abstract Title:** Different Effects of Collagens I and  
IV on Collective Cell Migration**Presenter:** Kenny Nguyen**Principal Investigator:** Amit Pathak**Author(s):**

Christopher Walter

Hannah Zmuda

Amit Pathak

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster**Number:** 168**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Cell Migration (Summer Undergraduate)****Abstract Title:** Investigating Actin and Microtubule  
Crosstalk through Physical Linkage**Presenter:** Lauren Brown**Principal Investigator:** Tatyana Svitkina**Author(s):**

Tatyana Svitkina

Xingyuan Fang

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster**Number:** 169**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Cell Migration (Summer Undergraduate)****Abstract Title:** Analyzing the Molecular Regulation  
of Toroid Development**Presenter:** Savannah Orton**Principal Investigator:** Jay D. Potts**Author(s):**

Mark Uline

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 170**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Cell Migration (Summer Undergraduate)****Abstract Title:** Using an Active-gel Field Theory to Describe the Self-Assembly of Cells into Spheroids and Toroids in Collagen**Presenter:** Sean Folan**Principal Investigator:** N/A**Author(s):**

Sean Folan

Mark Uline

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 171**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Imaging In Live Cells (Summer Undergraduate)****Abstract Title:** FRET Multiplexing Platform to Investigate cAMP/PKA and ERK Signaling Crosstalk**Presenter:** Ananya Bharath**Principal Investigator:** Jin Zhang**Author(s):**

Clara Posner

Jeremiah Keyes

Jin Zhang

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 172**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Imaging In Live Cells (Summer Undergraduate)****Abstract Title:** Force-Induced Accumulation of Tensin and LIM Proteins Along Keratin Fibers**Presenter:** Karen ZHao**Principal Investigator:** Soichiro Yamada**Author(s):**

Joleen Cheah

Soichiro Yamada

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 173**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Imaging in Live Cells****Abstract Title:** A fluorescent sensor for imaging islet amyloid in living cells reveals intracellular amyloid aggregates in human diabetic beta cells**Presenter:** Ivan Arrelola**Principal Investigator:** N/A**Author(s):**

Ivan Arreola

Sun Jiawei

WENJUN TANG

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster

**Number:** 174

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Cell Migration

**Abstract Title:** M2 but not M1 macrophages can be induced to migrate against the direction of shear flow

**Presenter:** Alexander Buffone

**Principal Investigator:** Alexander Buffone

**Author(s):**

N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster

**Number:** 175

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Cell Migration

**Abstract Title:** Fluid Viscosity Enhances Breast Cancer Metastasis Through Coordinated Activity Between Volume-Regulatory And Mechanosensitive Ion Channels

**Presenter:** Alexander Kiepas

**Principal Investigator:** N/A

**Author(s):**

Kaustav Bera

Ines Godet

Selma Serra

ANINDYA Sen

Se Jong Lee

Yuqi Zhang

Daniele Gilkes

Miguel Valverde

Konstantinos Konstantopoulos

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster

**Number:** 176

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Cell Migration

**Abstract Title:** Leader Cells and Vimentin Intermediate Filaments in 3D Collective Migration

**Presenter:** Alex Hruska

**Principal Investigator:** N/A

**Author(s):**

Alex Hruska

Ian Wong

Alejandro Marzoratti

Haiqian Yang

ming guo

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster

**Number:** 177

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### Cell Migration

**Abstract Title:** Examining the Relationship Between P-cadherin and the Hippo Signaling Pathway in Collective Cell Migration

**Presenter:** Amanda Pearson

**Principal Investigator:** Priscilla Hwang

**Author(s):**

Amanda Pearson

Sydney Tran

Priscilla Hwang

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 178

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Cell Migration**

**Abstract Title:** Directional CD4+ T Cells Migration under Flow on ICAM-1 Depends on Microfluidic Channel Width

**Presenter:** Adam Suppes

**Principal Investigator:** N/A

**Author(s):**

Adam Suppes

Daniel Hammer

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 179

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Cell Migration**

**Abstract Title:** Metastasis of Breast Cancer Cells Through the Chorioallantoic Membrane Vascular Network of the Chick Embryo.

**Presenter:** Gilda Castellanos

**Principal Investigator:** Carlos Luna-Lopez

**Author(s):**

Carlos Luna

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 180

**Track:** CELLULAR AND MOLECULAR

BIOENGINEERING

**Cell Migration**

**Abstract Title:** Dynamic changes in the niche and transcription trigger early murine and human pluripotent stem cell-derived liver organogenesis

**Presenter:** Daniel Guiggey

**Principal Investigator:** N/A

**Author(s):**

Daniel Guiggey

Ogechi Ogoke

Natesh Parashurama

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 181

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Cell Migration**

**Abstract Title:** Modulation of Cell Motility via Integrin-mediated Single Molecular Force

**Presenter:** Dong-Hwee Kim

**Principal Investigator:** Dong-Hwee Kim

**Author(s):**

Seong-Beom Han

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 182

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Cell Migration**

**Abstract Title:** Neutrophils: A Journey to the Center of the Swarm

**Presenter:** Jacob Doon-Ralls

**Principal Investigator:** N/A

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 183

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
Cell Migration

**Abstract Title:** A Microfluidic Enrichment of Presenescent Stem Cells Based on Differences in the Migratory Potential  
**Presenter:** Farshad Amiri  
**Principal Investigator:** N/A  
**Author(s):**  
Farshad Amiri  
Farnaz Hemmati  
Panagiotis Mistriotis

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 184

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Cell Migration**

**Abstract Title:** Investigating P-cadherin Mediated Traction Forces in Epithelial Collective Cell Migration  
**Presenter:** Sydnie Tran  
**Principal Investigator:** Priscilla Hwang  
**Author(s):**  
Sydnie Tran  
Santiago Lopez  
Christopher Lemmon  
Daniel Conway  
Priscilla Hwang

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 185

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Molecular Imaging in Live Cells**

**Abstract Title:** Imaging Respiratory Syncytial Virus Infection with High Spatial and Temporal Resolution  
**Presenter:** Margaret Mitrovich  
**Principal Investigator:** N/A  
**Author(s):**  
Michael Vahey

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 186

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Molecular Imaging in Live Cells**

**Abstract Title:** Characterization of Small Cytotoxic Membrane Vesicles Produced by Pseudomonas aeruginosa  
**Presenter:** Qi Xu  
**Principal Investigator:** N/A  
**Author(s):**  
Natalia Kirienko  
Emily Zhou

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster**Number:** 187**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Single-Cell Measurements and Models****Abstract Title:** Persister E. coli Cells Respond to Ampicillin Treatment through Surface Manipulations: AFM Study**Presenter:** Nehal Abu-Lail**Principal Investigator:** Nehal I Abu-Lail**Author(s):**

Samuel Uzoechi

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster**Number:** 188**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Abstract Title:** Untargeted metabolomic and lipidomic profiling for Golgi molecular content via immunoprecipitation (Golgi-IP)**Presenter:** Wentao Dong**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster**Number:** 189**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Biosensors****Abstract Title:** Companion Diagnostics for Treatment of Chronic Kidney Disease**Presenter:** Ali Soleimani**Principal Investigator:** Maral Mousavi**Author(s):**

Farbod Amirghasemi

Maral Mousavi

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster**Number:** 190**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Biosensors****Abstract Title:** Selective Detection of Acetylcholine with a Fluorous-Phase Superhydrophobic Sensing Membrane**Presenter:** Farbod Amirghasemi**Principal Investigator:** Maral Mousavi**Author(s):**

Maral Mousavi

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster**Number:** 191**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Biosensors****Abstract Title:** Using Nanoparticle-Enabled Immunoassay to Detect Extracellular Vesicle Surface Markers in an Electrochemical Microtiter Plate**Presenter:** Seonhwa Lee**Principal Investigator:** Alexander Revzin**Author(s):**

Alan Gonzalez-Suarez

Alexander Revzin

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 192**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Biosensors (Summer Undergraduate)****Abstract Title:** Frequency Analysis of sEMG Data to  
Compare Swallow and Non-Swallow Muscle Activity**Presenter:** Caitlin Greene**Principal Investigator:** Todd Freeborn PhD, and  
Memorie Gosa PhD, CCC-SLP, BCS-S**Author(s):**  
Todd Freeborn**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 193**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Biosensors (Summer Undergraduate)****Abstract Title:** A rapid label-free electrochemical  
urine biosensor for Chronic Kidney Disease  
management**Presenter:** Varun Gunda**Principal Investigator:** Shalini Prasad**Author(s):**  
Varun Gunda  
Antra Ganguly  
Shalini Prasad**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 194**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Biosensors****Abstract Title:** Redox Peak Tracking for Longer-  
Lasting and Reference-Electrode-Free Electrochemical  
Biosensing**Presenter:** Mark Friedel**Principal Investigator:** N/A**Author(s):**  
Adam McHenry  
Mark Friedel  
Jason Heikenfeld**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 195**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Biosensors****Abstract Title:** Automated Hypoxia Chamber  
for Cell Culture with High Accuracy and Mobile  
Visualization**Presenter:** Harish Ramachandramoorthy**Principal Investigator:** Kytai Nguyen**Author(s):**  
Tuan Dang  
Ankitha Srinivasa  
Kytai Nguyen  
VP Nguyen

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 196

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS  
**Biosensors**

**Abstract Title:** Detecting Physiological Concentrations of Alzheimer's Disease Associated Amyloid- $\beta$  Oligomers Using Cell-Based Response and Aggregation-Based Amplification  
**Presenter:** Brittany Watson  
**Principal Investigator:** N/A  
**Author(s):**  
Melissa Moss

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 197

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS  
**Biosensors**

**Abstract Title:** A Split Enzyme-based System for Sensitive Detection of Proteins and Small Molecules at the Point of Care  
**Presenter:** Catherine Majors  
**Principal Investigator:** N/A  
**Author(s):**  
Keith Tyo

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 198

**Track:** DEVICE TECHNOLOGIES AND

BIOMEDICAL ROBOTICS

**Biosensors**

**Abstract Title:** Glucose and Galactose Utilization Determination through Electrochemical Sensors (GUIDES): A Platform to Assess Human Metabolic Responses  
**Presenter:** Cornelia Greyling  
**Principal Investigator:** N/A  
**Author(s):**  
Shalini Prasad

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 199

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS  
**Biosensors**

**Abstract Title:** Induced Charge Electrophoresis of Janus Microparticles for Biosensing  
**Presenter:** Cooper Thome  
**Principal Investigator:** N/A  
**Author(s):**  
Cooper Thome

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: G, Poster  
**Number:** 200

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS  
**Biosensors**

**Abstract Title:** Fabricating Stretchable Paper-Based Substrates with a Core-Sheath Structure for Papertronics  
**Presenter:** Joab Dorsainvil  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 201

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### Biosensors

**Abstract Title:** Novel Material And Method For  
Ocular Disease Prognosis

**Presenter:** Kunal Mitra

**Principal Investigator:** N/A

**Author(s):**

Angelo Karavolos

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 202

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### Biosensors

**Abstract Title:** Close Bipolar Electrode Based  
Sensing System for Chloride and Lactate

**Presenter:** Luke Shehee

**Principal Investigator:** N/A

**Author(s):**

Luke Shehee

David Probst

Koji Sode

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 203

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### Biosensors

**Abstract Title:** Development of Insulin Sensor for in  
vivo Continuous Monitoring System

**Presenter:** Mika Hatada

**Principal Investigator:** N/A

**Author(s):**

Mika Hatada

Mukund Khanwalker

Jeffrey La Belle

Koji Sode

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 204

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### Biosensors

**Abstract Title:** Label-free Basophil Activation  
Monitoring by Impedance Flow Cytometry

**Presenter:** Sungu Kim

**Principal Investigator:** N/A

**Author(s):**

Sungu Kim

Sindy Kam Yan Tang

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 205

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Biosensors**

**Abstract Title:** Development of Disposable POCT  
Type Electrochemical Sensor for C-reactive Protein  
Using Anti-CRP Single Chain Antibody

**Presenter:** Varun Kochar

**Principal Investigator:** N/A

**Author(s):**

Mukund Khanwalker

Koji Sode

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 206

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Biosensors**

**Abstract Title:** Continuous Monitoring of Insulin  
Release In Vivo with a ZIMIR-Functionalized Optical  
Fiber System

**Presenter:** Wen-hong Li

**Principal Investigator:** N/A

**Author(s):**

jian gu

Christian Preihs

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 207

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Biosensors**

**Abstract Title:** Magnetoelastic Sentinels for Real-  
Time Tracking of Cell Growth

**Presenter:** William Skinner

**Principal Investigator:** N/A

**Author(s):**

Sunny Zhang

Robert Guldberg

Keat Ghee Ong

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 208

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION (Late Breaking) >

**Magnetic Resonance Imaging and  
Applications (MRI) (Late Breaking)**

**Abstract Title:** Patterns of Atrophy in Alzheimer's  
Disease Subtypes

**Presenter:** Emily Iannopolo

**Principal Investigator:** N/A

**Author(s):**

Shannon Risacher

Kara Garcia

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 209

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS

### Implantable Sensors and Devices (Summer Undergraduate)

**Abstract Title:** Development of an Implantable Soft Cardiac Temperature Sensor

**Presenter:** Avanti Panajkar

**Principal Investigator:** Lin Zhang

**Author(s):**

N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 210

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS

### Wearable Sensors and Devices (Summer Undergraduate)

**Abstract Title:** Development of a Vibrotactile Stimulating Device

**Presenter:** Nathan Green

**Principal Investigator:** N/A

**Author(s):**

Takafumi Asaki

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 211

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS

## Implantable Sensors and Devices

**Abstract Title:** In Vitro Evaluation of an Insertable Hydrogel Multianalyte Sensor

**Presenter:** Brian Ko

**Principal Investigator:** N/A

**Author(s):**

Michael McShane

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 212

**Track:** BIOMATERIALS

### Other / Non-specified

**Abstract Title:** Synthesis of Various Size bioactive 2D Nanosilicates by Hydrothermal Reaction

**Presenter:** Anna Keller

**Principal Investigator:** N/A

**Author(s):**

Kanwar Abhay Singh

John Soukar

Sarah Hargett

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 213

**Track:** DRUG DELIVERY

### Other / Non-specified

**Abstract Title:** siRNA Delivery from Extracellular Vesicles for Vascular Elastic Matrix Regenerative Repair

**Presenter:** Andrine larsen

**Principal Investigator:** N/A

**Author(s):**

SAJEESH THAMPI

Anand Ramamurthi

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 214

**Track:** DRUG DELIVERY  
**Other / Non-specified**

**Abstract Title:** Characterization of dextran-coated magnetic nanoparticles (Fe<sub>3</sub>O<sub>4</sub>) conjugated with monoclonal antibodies through magnet and centrifugation based buffer separation processes  
**Presenter:** Mahbub Hasan  
**Principal Investigator:** Sang-Suk Lee  
**Author(s):**  
Jong-Gu Choi  
Hafeza Akter  
Sang-Suk Lee

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 215

**Track:** DRUG DELIVERY  
**Other / Non-specified**

**Abstract Title:** Blood-Brain Barrier Opening using Acoustic Droplet Vaporization and Electric Cell-Substrate Impedance Sensing  
**Presenter:** Marie Aimee Kayitesi  
**Principal Investigator:** Joseph L. Bull  
**Author(s):**  
Eiichiro Yamaguchi  
Jonah Harmon  
Natalie Schwartz  
Donald Gaver  
Joseph Bull

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 216

**Track:** DRUG DELIVERY  
**Other / Non-specified**

**Abstract Title:** Transcutaneous Refill of Solid Therapeutics to Extend Drug Release from Implantable Devices  
**Presenter:** Nicola Di Trani  
**Principal Investigator:** Alessandro Grattoni  
**Author(s):**  
Fernanda Pons-Faudoa  
Alessandro Grattoni

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 217

**Track:** DRUG DELIVERY  
**Other / Non-specified**

**Abstract Title:** Investigating the Therapeutic Potential of Iron Scavenging Protein Cocktail for Burn Injury Treatment  
**Presenter:** Swathi Vijayakumar Reddy  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 218**Track:** DRUG DELIVERY  
**Other / Non-specified****Abstract Title:** Thermally Induced Ocular Drug  
Delivery Enhancement: Experiments on a Partially  
Liquefied Eye Model**Presenter:** Stephanie O'Gara**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 219**Track:** DRUG DELIVERY  
**Other / Non-specified****Abstract Title:** Rapid Release of Voriconazole from  
Mesoporous Silica Chitosan Composite for Ocular  
Drug Delivery**Presenter:** Xin Fu**Principal Investigator:** Albert F. Yee**Author(s):**

Kara Metzger

Brian Trewyn

Albert Yee

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 220**Track:** DRUG DELIVERY  
**Other / Non-specified (Summer  
Undergraduate)****Abstract Title:** Developing a Fibrin Based Drug  
Delivery System for Treatment of Staphylococcus  
Aureus Biofilms**Presenter:** Adrian Aligwekwe**Principal Investigator:** Ashley Carson Brown**Author(s):**

Adrian Aligwekwe

Grant Scull

Alejandro Valdes

Drew Koch

Lauren Schnabel

Joshua Pierce

Ashley Brown

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 221**Track:** DRUG DELIVERY  
**Other / Non-specified (Summer  
Undergraduate)****Abstract Title:** Delivery Of Lipids Beyond The  
Blood-Brain-Barrier (Bbb) Via Self-Assembling  
Pamam-Lipid Nanoaggregates**Presenter:** Briana Simms**Principal Investigator:** Tatiana Segura**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 222**Track:** DRUG DELIVERY  
**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Testing Lipid Nanoparticle Formulations for Targeted Delivery to Lymphatic Endothelial Cells in vitro.  
**Presenter:** Enrique Rodriguez  
**Principal Investigator:** J Brandon Dixon  
**Author(s):**  
Yarelis Gonzalez-Vargas  
Brandon Dixon  
Eleftheria Michalaki**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 223**Track:** DRUG DELIVERY  
**Other / Non-specified (Summer Undergraduate)****Abstract Title:** A Microfluidic Model of Mannitol-Induced Blood-Brain Barrier Disruption  
**Presenter:** Grace Qian  
**Principal Investigator:** N/A  
**Author(s):**  
Marie Aimee Kayitesi  
Ashley Martier  
Elisabet Olsen  
Jeannette Nyiramana  
Wills Kpeli  
Mark Mondrinos  
Joseph Bull**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 224**Track:** DRUG DELIVERY  
**Cancer Drug Delivery****Abstract Title:** Nanomedicine Drug Combinations for the Treatment of Tumor-Induced Bone Disease  
**Presenter:** Kristopher Castillo  
**Principal Investigator:** N/A  
**Author(s):**  
Richard d'Arcy  
Craig Duvall**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 225**Track:** DRUG DELIVERY  
**Other / Non-specified****Abstract Title:** Iontophoretic Ocular Delivery of Latanoprost-loaded PLGA Nanoparticles for Glaucoma Treatment  
**Presenter:** Chang Hee Min  
**Principal Investigator:** N/A  
**Author(s):**  
Chang Hee Min  
Se Na Kim  
Han Bi Ji  
Cho Rim Kim  
Jae Hoon Han  
Min Ji Kim  
Young Bin Choy

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 226

**Track:** DRUG DELIVERY

**Other / Non-specified**

**Abstract Title:** Optical Neuropeptide Uncaging From Photosensitive Nanovesicles

**Presenter:** Davis John

**Principal Investigator:** N/A

**Author(s):**

Hejian Xiong

Davis John

Zhenpeng Qin

Paul Slesinger

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 227

**Track:** DRUG DELIVERY

**Other / Non-specified**

**Abstract Title:** Microchannel-embedded implantable device with fibrosis suppression for controlled drug delivery

**Presenter:** Han Bi Ji

**Principal Investigator:** N/A

**Author(s):**

Han Bi Ji

Cho Rim Kim

Chang Hee Min

Jae Hoon Han

Min Ji Kim

Young Bin Choy

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 228

**Track:** DRUG DELIVERY

**Other / Non-specified**

**Abstract Title:** Design and Characterization of Automated Pressure Monitoring and Insertion Systems for a multipoint cannula for convection enhanced delivery

**Presenter:** Jakob Michiels

**Principal Investigator:** Flavia Vitale

**Author(s):**

N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 229

**Track:** DRUG DELIVERY

**Other / Non-specified**

**Abstract Title:** Simultaneous Delivery of Multiple Antimicrobial Agents by Janus-type Dressings for Combating Wound Biofilms

**Presenter:** Jingwei Xie

**Principal Investigator:** N/A

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 230

**Track:** DRUG DELIVERY  
**Other / Non-specified**

**Abstract Title:** Polymer Nanoparticles for the Delivery of Pro-angiogenic Factors for Vascular Applications

**Presenter:** Jordyn Wyse

**Principal Investigator:** N/A

**Author(s):**

Jordyn Wyse

Marisa Esparza

Dimitrios Miserlis

Panagiotis Koutakis

Marissa Wechsler

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 231

**Track:** DRUG DELIVERY  
**Other / Non-specified**

**Abstract Title:** Zero-order release of PrEP therapeutics from Methacrylated Poly(Glycerol-Sebacate) Microparticles

**Presenter:** Mei-Li Laracuenta

**Principal Investigator:** N/A

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 232

**Track:** DRUG DELIVERY  
**Other / Non-specified**

**Abstract Title:** Phase Separation Influences Ligand-Receptor Interactions on Lipid Vesicles

**Presenter:** Lucas Sant'Anna

**Principal Investigator:** N/A

**Author(s):**

Timothy Vu

Neha Kamat

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 233

**Track:** DRUG DELIVERY  
**Other / Non-specified**

**Abstract Title:** Understanding the Effect of Nanoparticles Physicochemical Properties on Ocular Uptake and Transport

**Presenter:** Marjan Azadi

**Principal Investigator:** N/A

**Author(s):**

Marjan Azadi

Allan David

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 234

**Track:** DRUG DELIVERY

**Other / Non-specified**

**Abstract Title:** Uptake and Transport of Layer-by-Layer Assembled Nanoparticles in Blood Brain Barrier Models

**Presenter:** Nicholas Lamson

**Principal Investigator:** Paula Hammond

**Author(s):**

Paula Hammond

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 235

**Track:** DRUG DELIVERY

**Other / Non-specified**

**Abstract Title:** The Effect Of Anesthesia On Nanoparticle Fate

**Presenter:** Oluwatobi Babayemi

**Principal Investigator:** N/A

**Author(s):**

N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 236

**Track:** DRUG DELIVERY

**Other / Non-specified**

**Abstract Title:** Supramolecular Heparin-peptide Materials as Injectable Anticoagulant Depots

**Presenter:** Sopida Pimcharoen

**Principal Investigator:** N/A

**Author(s):**

Sopida Pimcharoen

Atip Lawanprasert

Scott Medina

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 237

**Track:** DRUG DELIVERY

**Other / Non-specified**

**Abstract Title:** Physically Crosslinked Thermoresponsive Polymer Hydrogels for Cooling-Triggered Drug Release

**Presenter:** Romario Lobban

**Principal Investigator:** N/A

**Author(s):**

Leon Bellan

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster

**Number:** 238

**Track:** DRUG DELIVERY

**Other / Non-specified**

**Abstract Title:** Towards Reversible Acquiescence of Resting and Activating Platelets Using Cargo-loaded Ligand Grafted Liposome for Targeted Nitric Oxide Delivery

**Presenter:** Kagya Amoako

**Principal Investigator:** N/A

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 239

**Track:** DRUG DELIVERY  
**Cancer Drug Delivery (Summer Undergraduate)**

**Abstract Title:** Lipid nanoparticle-mediated delivery of RAS protease to inhibit cancer cell growth

**Presenter:** Ella Atsavaprane

**Principal Investigator:** Michael Mitchell

**Author(s):**

Rebecca Haley

Margaret Billingsley

Michael Mitchell

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: C, Row: H, Poster  
**Number:** 240

**Track:** BIOMATERIALS  
**Natural and Bioinspired Biomaterials (Summer Undergraduate)**

**Abstract Title:** Evaluation of Cell Migration on Plant-Based Scaffolds for Tissue Engineered Skin

**Presenter:** Andriana Patmanidis

**Principal Investigator:** N/A

**Author(s):**

Luke Perreault

Glenn Gaudette

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 242

**Track:** GLOBAL HEALTH TECHNOLOGIES  
**International collaborations on infectious Disease**

**Abstract Title:** Altered Expression of HIV Linked Proteins in BCG-Infected Macrophages

**Presenter:** Cameron Celeste

**Principal Investigator:** Ivana Parker

**Author(s):**

Katherine Webb

John Iradukunda

Ivana Parker

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 243

**Track:** GLOBAL HEALTH TECHNOLOGIES  
**International collaborations on chronic Disease (Summer Undergraduate)**

**Abstract Title:** Point-of-Care Creatinine, Albumin, and E. coli Detection for Chronic Kidney Disease

**Presenter:** Maria Lindsey

**Principal Investigator:** N/A

**Author(s):**

Maria Lindsey

Juan Boza

David coming with 2 kids Erickson

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster

**Number:** 244

**Track:** GLOBAL HEALTH TECHNOLOGIES

### **International collaborations on infectious Disease (Summer Undergraduate)**

**Abstract Title:** Optimization of iso-IMRS assays for Malaria, Gonorrhea, and Chlamydia Diagnosis in Urine

**Presenter:** Yifei Liu

**Principal Investigator:** Josh Dupaty

**Author(s):**

N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster

**Number:** 245

**Track:** GLOBAL HEALTH TECHNOLOGIES

### **Nanotechnologies for Global Health Technologies and Systems**

**Abstract Title:** Tuberculosis PCR Detection by Amplicon Reconstruction of Urinary DNA Fragments

**Presenter:** Emily Kight

**Principal Investigator:** Frederick Haselton

**Author(s):**

Frederick Haselton

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster

**Number:** 246

**Track:** NANO AND MICRO TECHNOLOGIES

**Abstract Title:** Preservation of DNA for information storage in biomimetic mineralization of calcium phosphate crystals

**Presenter:** Bennet Devasier

**Principal Investigator:** N/A

**Author(s):**

Frederic Zenhausern

Tuan Vo-Dinh

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster

**Number:** 247

**Track:** NANO AND MICRO TECHNOLOGIES

### **Molecular Sensors and Nanodevices for Diagnostics and Biomedical Imaging**

**Abstract Title:** Development of a Point-of-Care Vertical Flow Immunoassay for Detection of Biodosimetry Biomarkers

**Presenter:** Alex Summers

**Principal Investigator:** N/A

**Author(s):**

Alex Summers

Jerome Lacombe

Jasmine Devadhasan

Frederic Zenhausern

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster**Number:** 248**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for  
Diagnostics and Biomedical Imaging****Abstract Title:** On Chip Point-of-Care Detection of  
Zika Virus in whole blood using Spatial RT-LAMP**Presenter:** Aaron Jankelow**Principal Investigator:** Rashid Bashir**Author(s):**

Han Keun Lee

Weijing Wang

Trung-Hieu Hoang

Victoria Kindratenko

Katherine Koprowski

Enrique Valera

Minh Do

Brian Cunningham

Rashid Bashir

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster**Number:** 249**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for  
Diagnostics and Biomedical Imaging****Abstract Title:** Integrated Electrowetting and  
Dielectrophoretic Approach for Automated Nucleic  
Acid Biomarker Detection at Point-of-care**Presenter:** Dharmakeerthi Nawarathna**Principal Investigator:** N/A**Author(s):**

Kishor Kaphle

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster**Number:** 250**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for  
Diagnostics and Biomedical Imaging****Abstract Title:** Autoencoder-enabled quantification  
of extracellular vesicle mixtures using nanoplasmonic  
sensors**Presenter:** Colin Hisey**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster**Number:** 251**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for  
Diagnostics and Biomedical Imaging****Abstract Title:** Inverse Emulsion Polymerization for  
the Synthesis of Polymer-Coated Gold Nanoshells  
Used as Biosensors**Presenter:** J Jesus Rodriguez Cruz**Principal Investigator:** N/A**Author(s):**

J Jesus Rodriguez Cruz

Andrew Murphy

Nicholas Peppas

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster

**Number:** 252

**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for  
Diagnostics and Biomedical Imaging**

**Abstract Title:** Enhanced Sensing of Biomagnetic  
Fields Via Cell-Sized Nanofabricated Inductors

**Presenter:** Jack Phillips

**Principal Investigator:** N/A

**Author(s):**

Jack Phillips

Mitchell Glodowski

Yash Gokhale

Matt Dwyer

Alireza Ashtiani

Aviad Hai

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster

**Number:** 253

**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for  
Diagnostics and Biomedical Imaging**

**Abstract Title:** Monitoring Eryptosis using  
Dielectrophoretic Characterization

**Presenter:** Sydney Joseph

**Principal Investigator:** N/A

**Author(s):**

Erin Henslee

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster

**Number:** 254

**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for  
Diagnostics and Biomedical Imaging**

**Abstract Title:** Real-Time Image Analysis for  
Isothermal Amplification of Zika and SARS-CoV-2  
Viruses in a Point of Care Device

**Presenter:** Victoria Kindratenko

**Principal Investigator:** N/A

**Author(s):**

Enrique Valera

Aaron Jankelow

Jongwon Lim

Rashid Bashir

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster

**Number:** 255

**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for  
Diagnostics and Biomedical Imaging**

**Abstract Title:** Gold Nanoaggregates Designed  
via Template-mediated Growth for Longitudinal  
Photoacoustic Imaging

**Presenter:** Myeongsoo Kim

**Principal Investigator:** N/A

**Author(s):**

Jinhwan Kim

Donald VanderLaan

Kelsey Kubelick

Anamik Jhunjhunwala

Ayoung Choe

Stanislav Emelianov

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster**Number:** 256**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for Diagnostics and Biomedical Imaging****Abstract Title:** Development of point-of-care device via surface-enhanced Raman scattering for preeclampsia**Presenter:** KA WAI NG**Principal Investigator:** N/A**Author(s):**

Nandita Chaturvedi

Samuel Mabbott

mahua choudhury

Gerard Cote

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster**Number:** 257**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for Diagnostics and Biomedical Imaging****Abstract Title:** Effect of Oxidative Stress on Electrophysiologic Parameters In Human Red Blood Cells**Presenter:** Ronald Blum**Principal Investigator:** N/A**Author(s):**

Erin Henslee

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster**Number:** 258**Track:** NANO AND MICRO TECHNOLOGIES

Molecular Sensors and Nanodevices for Diagnostics and Biomedical Imaging

**Abstract Title: Comprehensive Evaluation of Molecular Specificity of ICGJ-encapsulating Agents for Clinically Translatable Molecular Photoacoustic Imaging****Presenter:** Sangheon Han**Principal Investigator:** N/A**Author(s):**

Konstantin Sokolov

Richard Bouchard

Cayla Wood

Mohammed Kawelah

Jason Cook

Keith Johnston

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster**Number:** 259**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for Diagnostics and Biomedical Imaging****Abstract Title:** Digestion-And-Turn-On Probes That Change Fluorescence Upon Digestion**Presenter:** Soonwoo Hong**Principal Investigator:** N/A**Author(s):**

Jada Walker

Jonathan Mathews

Yu-An Kuo

Yuan-I Chen

Trung Nguyen

Limin Chen

Jennifer Brodbelt

Tim Yeh

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 260

**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for  
Diagnostics and Biomedical Imaging**

**Abstract Title:** Ultrasensitive Sessile Droplet Sensor  
Array for Profiling of Extracellular Vesicles Immuno-  
Subtypes

**Presenter:** Suyeon Shin

**Principal Investigator:** N/A

**Author(s):**

Suyeon Shin

Sungyoung Choi

Heesik Shin

JUNSEOK HWANG

Eunjeong Lee

YUN HYOGEUN

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 261

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Technologies in Molecular  
and Cellular Bioengineering, Medicine  
and Biology**

**Abstract Title:** Effect of Impaired Ubiquitination  
in Ovarian Cell Culture upon Magnetic Fluid  
Hyperthermia

**Presenter:** Tania Ramos-Santiago

**Principal Investigator:** N/A

**Author(s):**

Madeline Torres-Lugo

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 262

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-  
on-Chip and Organ-on-Chip Systems  
(Summer Undergraduate)**

**Abstract Title:** Rapid Prototyping and Fabrication  
of Perfusable Connected Neural Organoid Culture  
Devices

**Presenter:** James Eichenbaum

**Principal Investigator:** N/A

**Author(s):**

Megan McCain

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 263

**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury: Modeling  
and Therapeutics**

**Abstract Title:** Electric Field Modeling of  
Simultaneous Anodal and Cathodal Targeted High-  
Definition Transcranial Direct Current Stimulation  
for Stroke Rehabilitation

**Presenter:** Jordan Williamson

**Principal Investigator:** Yuan Yang

**Author(s):**

Justin Brixey

Jordan Williamson

Shirley James

Yuan Yang

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 264

**Track:** NEURAL ENGINEERING  
**Neuroimaging**

**Abstract Title:** Deep Learning Based Segmentation Of Fascicles in MicroCT Images of The Vagus Nerve

**Presenter:** Andrew Shoffstall

**Principal Investigator:** Ozge Buyukcelik

**Author(s):**

Ozge Buyukcelik  
Aniruddha Upadhye  
Chaitanya Kolluru  
Ken Gustafson

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 265

**Track:** NEURAL ENGINEERING  
**Neuroimaging**

**Abstract Title:** Imaging Vagus Nerve Micro-Anatomy using MicroCT

**Presenter:** Aniruddha Upadhye

**Principal Investigator:** Andrew Shoffstall

**Author(s):**

Justin Chin  
Ozge Buyukcelik  
Chaitanya Kolluru  
Andrew Crofton  
Rebecca Enterline  
Ken Gustafson  
Kip Ludwig  
Warren Grill  
Nicole (Nikki) Pelot  
Andrew Shoffstall

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 266

**Track:** NEURAL ENGINEERING  
**Neuroimaging**

**Abstract Title:** Designing A Neurovascular Coupling Test for Patients with Epilepsy

**Presenter:** Intouch Limvaree

**Principal Investigator:** N/A

**Author(s):**

Han Yuan

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 267

**Track:** NEURAL ENGINEERING  
**Neuroimaging**

**Abstract Title:** Characterizing Cerebral Blood Transit Times in Moyamoya Disease: A Comparison of 3 Analysis Methods

**Presenter:** Joshua Dean

**Principal Investigator:** Molly Bright

**Author(s):**

Kristina Zvolanek  
Rebecca Clements  
Molly Bright

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 268

**Track:** NEURAL ENGINEERING  
**Neuroimaging (Summer Undergraduate)**

**Abstract Title:** Synapse Formation During Early Brain Development

**Presenter:** Sarah Schellhase

**Principal Investigator:** N/A

**Author(s):**

George Spirou

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 269

**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury: Modeling and Therapeutics (Summer Undergraduate)**

**Abstract Title:** Stability Assessment And Validation Of Thalamic Segmentation Using Alternative Numbers Of Clusters

**Presenter:** Rebecca Stinson

**Principal Investigator:** N/A

**Author(s):**

Karlo Malaga

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 270

**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury: Modeling and Therapeutics (Summer Undergraduate)**

**Abstract Title:** Tissue Activation Modeling in Deep Brain Stimulation for Parkinson Disease and Essential Tremor

**Presenter:** Jacqueline Zak

**Principal Investigator:** Karlo Malaga

**Author(s):**

Karlo Malaga

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 271

**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury: Modeling and Therapeutics (Summer Undergraduate)**

**Abstract Title:** Tissue Composition of Activation Volumes in Thalamic Deep Brain Stimulation for Essential Tremor

**Presenter:** Keeler Thomas

**Principal Investigator:** Karlo Malaga

**Author(s):**

Karlo Malaga

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 272**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury:  
Modeling and Therapeutics (Summer  
Undergraduate)****Abstract Title:** Towards the Development of a Self-Organizing Neural Unit to Model an Ischemic Stroke and other Neuropathology**Presenter:** Lidadi Agbomi**Principal Investigator:** Bruce Gao**Author(s):**Bruce Gao  
Adam Baker  
Reece Fratus  
Thomas Fair  
Lidadi Agbomi**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 273**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury:  
Modeling and Therapeutics (Summer  
Undergraduate)****Abstract Title:** Deep Brain Stimulation of the Subthalamic Nucleus and its Effect on Verbal Fluency**Presenter:** Mary Robinson**Principal Investigator:** N/A**Author(s):**

Karlo Malaga

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 274**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury:  
Modeling and Therapeutics (Summer  
Undergraduate)****Abstract Title:** Alteration of GABAA receptor subunit composition is implicated in network changes in organotypic hippocampal slice cultures following blast-induced traumatic brain injury**Presenter:** Nicolas Amelinez-Robles**Principal Investigator:** Barclay Morrison III**Author(s):**Barclay Morrison III  
Nevin Varghese**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 275**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury:  
Modeling and Therapeutics (Summer  
Undergraduate)****Abstract Title:** Unsupervised Classification of iEEG Activity as Physiological or Pathological in Epilepsy Patients**Presenter:** Soulimane Bentaleb**Principal Investigator:** Wentai Liu**Author(s):**Xu Han  
Wentai Liu

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 276

**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury:  
Modeling and Therapeutics (Summer  
Undergraduate)**

**Abstract Title:** Identifying Early Developmental Neurotoxicity Modeled in a Cerebral Organoid System  
**Presenter:** Trey Theobald  
**Principal Investigator:** Ethan Lippmann, Andrew Kjar  
**Author(s):**  
Trey Theobald  
Andrew Kjar  
Ethan Lippmann

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 277

**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury:  
Modeling and Therapeutics (Summer  
Undergraduate)**

**Abstract Title:** Effect of Subthalamic Nucleus Deep Brain Stimulation on Levodopa and Dyskinesia in Parkinson Disease  
**Presenter:** Victoria Hall  
**Principal Investigator:** N/A  
**Author(s):**  
Karlo Malaga

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 278

**Track:** NEURAL ENGINEERING  
**Neuroimaging (Summer  
Undergraduate)**

**Abstract Title:** Emotional Vocalizations and Speech Modulate the Processing of Facial Attractiveness  
**Presenter:** Isaiah Martinez  
**Principal Investigator:** N/A  
**Author(s):**  
Kathrin Rothermich  
Marc Pell

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 279

**Track:** NEURAL ENGINEERING  
**Neuroimaging (Summer  
Undergraduate)**

**Abstract Title:** Electroencephalography (EEG) Connectivity Analysis of Exercisers Versus Nonexercisers  
**Presenter:** Lauren Philip  
**Principal Investigator:** J.C. (Chris) Mizelle  
**Author(s):**  
J.C. Mizelle  
Paige Boone

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: I, Poster  
**Number:** 280

**Track:** NEURAL ENGINEERING  
**Neuroimaging (Summer Undergraduate)**

**Abstract Title:** Cortical Hemodynamic Response Based on Varying Oculomotor Stimulus: an fNIRS Study  
**Presenter:** Sandrena Nalls  
**Principal Investigator:** Nicholas P Murray  
**Author(s):**  
Maanav Desai  
Nicholas Murray

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 241

**Track:** CELLULAR AND MOLECULAR BIOENGINEERING  
**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** F8 Gene Restoration in Hemophilia A Patient Stem Cells Using CRISPR Editing  
**Presenter:** Michael Haugh  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 281

**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury: Modeling and Therapeutics**

**Abstract Title:** Real-Time Detection of Nerve Damage Using Electrophysiological Properties  
**Presenter:** Colin McNabb  
**Principal Investigator:** N/A  
**Author(s):**  
John Mize  
David Hilgart  
David Warren

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 282

**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury: Modeling and Therapeutics**

**Abstract Title:** Differential Expression of Transcripts in Spinal Cord Injury for Development of a Biomimetic Testbed  
**Presenter:** Emily Pallack  
**Principal Investigator:** N/A  
**Author(s):**  
Eleana Manousiouthakis  
Elisa Gonzalez-Rothi  
VIJAYENDRAN CHANDRAN  
Gordon Mitchell  
Christine Schmidt

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster**Number:** 283**Track:** NEURAL ENGINEERING**Neural Disease and Injury: Modeling and Therapeutics****Abstract Title:** Bioengineered glioblastoma organoids to maintain patient tumor responses and genomic parity**Presenter:** Salem Muthu Sugavanam Sivakuma**Principal Investigator:** N/A**Author(s):**

Aleksander Skardal

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster**Number:** 284**Track:** NEURAL ENGINEERING**Neural Disease and Injury: Modeling and Therapeutics****Abstract Title:** Assessing Therapeutic Effects of Adipose-derived Stem Cells in Nerve-mimetic Composite Hydrogels**Presenter:** Inha Baek**Principal Investigator:** N/A**Author(s):**

Young Hye Song

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster**Number:** 285**Track:** NEURAL ENGINEERING**Neural Disease and Injury: Modeling and Therapeutics****Abstract Title:** Portable Smart Pump for Ocular Fluid Dynamics Monitoring and Drug Delivery in Conscious Rats**Presenter:** Chris Passaglia**Principal Investigator:** N/A**Author(s):**

Youssef Mohamed

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster**Number:** 286**Track:** NEURAL ENGINEERING**Neural Disease and Injury: Modeling and Therapeutics****Abstract Title:** Astrocyte Encapsulation for Cell-Based Immunomodulation in Neurotrauma**Presenter:** Samira Aghlara Fotovat**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster**Number:** 287**Track:** NEURAL ENGINEERING**Neural Disease and Injury: Modeling and Therapeutics****Abstract Title:** Inhibition Of Intracellular Cholesterol Transport In Brain Endothelial Cells Decreases Barrier Integrity Without Altering ZO-1 Morphology**Presenter:** Tristan Pepper**Principal Investigator:** N/A**Author(s):**

Bilal Moiz

Alisa Clyne

Tristan Pepper

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 288

**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury: Modeling and Therapeutics**

**Abstract Title:** Cerebral Vascular Resistance is Dysregulated Following Resuscitation from Cardiac Arrest

**Presenter:** Yuhang Fu

**Principal Investigator:** N/A

**Author(s):**

Yu Guo

Yucheng Shen

Arvind Pathak

Nitish Thakor

Danapala Senarathna

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 289

**Track:** NEURAL ENGINEERING  
**Neuroimaging**

**Abstract Title:** Deep Learning Based Estimation of Transcranial Magnetic Stimulation Electric Fields

**Presenter:** Taylor Berger

**Principal Investigator:** Alexander Opitz

**Author(s):**

Alexander Opitz

Nipun Perera

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 290

**Track:** NEURAL ENGINEERING

**Neural Disease and Injury: Modeling and Therapeutics**

**Abstract Title:** Surface Seeding of Astrocytes During Manufacturing of Hollow Microstructures

**Presenter:** Nicole Hashemi

**Principal Investigator:** N/A

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 291

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Peripheral Nerve Stimulation**

**Abstract Title:** A Modular Brace for Measuring Stimulation-Evoked Plantar-Flexion in Swine

**Presenter:** Anna Lauricella

**Principal Investigator:** N/A

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 292

**Track:** NEURAL ENGINEERING  
**Neuromodulation: Brain and Spinal Cord Stimulation**

**Abstract Title:** Effect of Magnetothermal Stimulation on Microglia-mediated Clearance of Beta-Amyloid Plaques

**Presenter:** Min-Ho Kim

**Principal Investigator:** N/A

**Author(s):**

Eric Dync

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 293

**Track:** NEURAL ENGINEERING  
**Neural Disease and Injury: Modeling and Therapeutics**

**Abstract Title:** Detection of Early-stage Alzheimer's Disease using Kinect v.2 Camera and Machine Learning

**Presenter:** Behnaz Ghoraani

**Principal Investigator:** N/A

**Author(s):**  
Mahmoud Seifallahi  
James Galvin  
Behnaz Ghoraani

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 294

**Track:** ORTHOPAEDIC AND REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**

**Abstract Title:** Modification of a 3D Plastic Printer to Allow for Syringe Pump Extrusion of Nanofibers

**Presenter:** Alyssa Salazar

**Principal Investigator:** Justin Brown

**Author(s):**  
Justin Brown

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 295

**Track:** ORTHOPAEDIC AND REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**

**Abstract Title:** Connexin-43 (CX43) Knockout Decreases Mitochondrial Transfer Between Mesenchymal Stromal Cells and Articular Chondrocytes

**Presenter:** Rebecca Irwin

**Principal Investigator:** Michelle L. Delco

**Author(s):**  
Matthew Thomas  
Megan Fahey  
Michelle Delco

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 296

**Track:** ORTHOPAEDIC AND REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints (Summer Undergraduate)**

**Abstract Title:** Sex and Osteoarthritis Post-Bilateral ACL Injury in Mice

**Presenter:** Anna Hazelwood

**Principal Investigator:** Whasil Lee

**Author(s):**  
Hana Kalco  
Whasil Lee

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 297

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**  
**(Summer Undergraduate)**

**Abstract Title:** Integrating Elastic Foundation  
Ankle Joint Contact in Musculoskeletal Dynamics  
Simulation  
**Presenter:** Kathryn Strand  
**Principal Investigator:** Donald D. Anderson  
**Author(s):**  
Amir Esrafilian  
Lucinda Williamson  
Don Anderson

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 298

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**  
**(Summer Undergraduate)**

**Abstract Title:** PIEZO1 & TRPV4 -mediated  
Mechanical Susceptibility of Chondrocytes in Situ  
**Presenter:** Seif Awad  
**Principal Investigator:** Whasil Lee  
**Author(s):**  
Whasil Lee  
Johann Kintzel  
Emanuelle Chrysilla

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 299

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**  
**(Summer Undergraduate)**

**Abstract Title:** Effects of Collagen Crosslinking on  
Articulation-Mediated Cartilage Lubrication  
**Presenter:** Uriel Gonzalez Christopher Price  
**Principal Investigator:** N/A  
**Author(s):**  
Uriel Gonzalez  
Meghan Kupratis  
Atia Rahman  
David Burris  
Elise Corbin  
Christopher Price

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 300

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**  
**(Summer Undergraduate)**

**Abstract Title:** Piezo1-dependent Cellular  
Heterogeneity in Articular Cartilage in situ  
**Presenter:** Xiang Tang  
**Principal Investigator:** Whasil Lee  
**Author(s):**  
Whasil Lee  
Johann Kintzel

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 301

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**

**Abstract Title:** A Novel Channel-laden  
Decellularized Meniscus Scaffold for Meniscus Tissue  
Engineering  
**Presenter:** Alexandra Dumas  
**Principal Investigator:** N/A  
**Author(s):**  
Alexandra Dumas  
Paul Gehret  
Riccardo Gottardi

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 302

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**

**Abstract Title:** Comparing different regions of  
the glenoid labrum for their healing potential and  
regenerative properties  
**Presenter:** Bhavya Vaish  
**Principal Investigator:** N/A  
**Author(s):**  
Cynthia Co  
Samira Izuagbe  
Le Hoang  
Liping Tang

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 303

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**

**Abstract Title:** Bioengineered Lubricin Lubricates  
Articular Cartilage In a Dose Dependent Manner  
**Presenter:** Karan Vishwanath  
**Principal Investigator:** N/A  
**Author(s):**  
Marshall Colville  
Matthew Paszek  
Heidi Reesink  
Lawrence Bonassar

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 304

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**

**Abstract Title:** The Effect of Tendon Overload In  
Rat Synergistic Ablation Model On Activity And  
Structural Degeneration  
**Presenter:** Lily Lin  
**Principal Investigator:** N/A  
**Author(s):**  
Ellen Bloom  
Ryan Locke  
Justin Parreno  
Karin Gravare Silbernagel  
Dawn Elliott

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 305

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**

**Abstract Title:** Donor Age-dependent Effects of  
Meniscus Extracellular Matrix on Meniscus Cell  
Phenotype

**Presenter:** Se-Hwan Lee

**Principal Investigator:** N/A

**Author(s):**

ZizHao Li

Yujia Zhang

Shreya Mondal

Dong Hwa Kim

Su-Jin Heo

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 306

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**

**Abstract Title:** Investigating Bio-Nano Interactions  
of PEGylated Cationic Polyamidoamine Dendrimers  
within Cartilage

**Presenter:** Simone Douglas-Green

**Principal Investigator:** Paula Hammond

**Author(s):**

Brandon Johnston

Juan Aleman

Paula Hammond

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 307

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**

**Abstract Title:** Investigating the Mechanical  
Properties of Bovine Articular Cartilage Degraded  
with Collagenase and Gelatinase via Unconfined  
Compression

**Presenter:** Tanvir Faisal

**Principal Investigator:** N/A

**Author(s):**

Isabel Hebert

Tanvir Faisal

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 308

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Other / Non-specified**

**Abstract Title:** Pressure Distribution Under a  
Combat Tourniquet During Clinical Application on  
the Extremities

**Presenter:** James Cox

**Principal Investigator:** N/A

**Author(s):**

John DesJardins

James Cox

Whitney Schroeder

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 309

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Other / Non-specified**

**Abstract Title:** The Role of Glutamine  
Supplementation in Protein Synthesis of Murine  
Tendon Explants

**Presenter:** Felicia Pinto

**Principal Investigator:** N/A

**Author(s):**

Felicia Pinto

Anthony Aggouras

Brianne Connizzo

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 310

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Other / Non-specified**

**Abstract Title:** Tissue Strain and Substrate Stiffness  
Influence Macrophage Phenotype and Function

**Presenter:** Maria Isabel Franco Rico

**Principal Investigator:** N/A

**Author(s):**

Maria Isabel Franco Rico

Matthew Patrick

Ramkumar T. Annamalai

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 311

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Other / Non-specified**

**Abstract Title:** Predicting Pulmonary Function  
from Thoracospinal Deformity Parameters in Pre-  
Operative EOS Patients

**Presenter:** Mattan Orbach

**Principal Investigator:** N/A

**Author(s):**

Mattan Orbach

A. Noelle Larson

Oscar Mayer

Ron El-Hawary

Patrick Cahill

Sriram Balasubramanian

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 312

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Articular Cartilage, Meniscus and Joints**

**Abstract Title:** An Indirect Assessment of the  
Inflammatory Milieu of Lower Body Joints  
Undergoing Acute Off Axis Mechanical Loading

**Presenter:** Conner Hutcherson

**Principal Investigator:** N/A

**Author(s):**

Bhaskar Thakur

Michelle Mao

Yasin Dhaher

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 313

**Track:** TISSUE ENGINEERING  
**Developmental Biology and  
Morphogenesis of Engineered Tissues**

**Abstract Title:** Directed Vascularization by  
Regulating Ca<sup>2+</sup> Signaling and Morphogenesis of  
Human Endothelial Colony-Forming Cells

**Presenter:** Chenguan Zhang  
**Principal Investigator:** N/A

**Author(s):**  
Chenguang Zhang  
Eva Hall  
Donghyun Jeong  
Satyajyoti Senapati  
Donny Hanjaya-Putra  
Hsueh-Chia Chang

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 314

**Track:** TECHNOLOGIES FOR EMERGING  
INFECTIOUS DISEASES  
**Sterilization**

**Abstract Title:** Rapid, long-lasting, and light-  
activated surface disinfection by a conjugated  
electrolyte

**Presenter:** Fahimeh Maghsoodi  
**Principal Investigator:** Eva Y. Chi

**Author(s):**  
Eva Chi

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 315

**Track:** TECHNOLOGIES FOR EMERGING  
INFECTIOUS DISEASES  
**Sterilization (Summer Undergraduate)**

**Abstract Title:** Heavy Metal-Containing  
Antimicrobial Materials Are Robust to Changes in  
Humidity and Salts

**Presenter:** John Chen  
**Principal Investigator:** Erica Marie Hartmann

**Author(s):**  
Olivia Barber  
Erica Hartmann

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 316

**Track:** TECHNOLOGIES FOR EMERGING  
INFECTIOUS DISEASES  
**Systems Biology of Infectious Disease**

**Abstract Title:** Understanding the Link Between  
COVID-19 and Cardiovascular Disease by Text  
Mining Biomedical Literature

**Presenter:** Janhvi Dubey  
**Principal Investigator:** Cassie Mitchell

**Author(s):**  
Kevin McCoy  
Janhvi Dubey  
Dongyu Zhang  
Cassie Mitchell

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 317

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES  
**Systems Biology of Infectious Disease**

**Abstract Title:** Predicting Human Vaccine Response from Preclinical Animal Models

**Presenter:** Krista Pullen

**Principal Investigator:** N/A

**Author(s):**

Douglas Lauffenburger

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 318

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES (Late Breaking) > - Rapid Detection (Late Breaking)  
**Rapid Detection**

**Abstract Title:** Passive Sampling for SARS-CoV-2 Detection in Wastewater

**Presenter:** Alexis Rockward

**Principal Investigator:** N/A

**Author(s):**

William Strike

James Keck

Scott Berry

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 319

**Track:** TISSUE ENGINEERING  
**Multi-Cellular Engineered Living Systems**

**Abstract Title:** Confirmation of Proposed Xenohormetic Protection by Phytochemicals in Human Microphysiological Models of Tissue Vasculogenesis and Cancer-Induced Angiogenesis

**Presenter:** Wills Kpeli

**Principal Investigator:** Mark Mondrinos

**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: J, Poster  
**Number:** 320

**Track:** TISSUE ENGINEERING  
**Multi-Cellular Engineered Living Systems**

**Abstract Title:** Evaluating Innate Immune Response and Patency of Engineered Perfusable Tissue Constructs

**Presenter:** Archita Sharma

**Principal Investigator:** Feng ZHao

**Author(s):**

dhavan sharma

Archita Sharma

Feng ZHao

Alex Walsh

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 321

**Track:** TISSUE ENGINEERING  
**3D Bioprinting and Patterning of Tissues**

**Abstract Title:** Engineering an Ultra Low-Cost Open-Source 3D Bioprinter from a Creality Ender 3 FDM 3D Printer

**Presenter:** Cody Crosby

**Principal Investigator:** Domenic Cordova

**Author(s):**  
Angel Rodriguez  
Cody Crosby

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 322

**Track:** TISSUE ENGINEERING  
**3D Bioprinting and Patterning of Tissues**

**Abstract Title:** 3D Printed Vascularizing Hydrogel for Pancreatic Islet Transplantation

**Presenter:** Martha Fowler

**Principal Investigator:** N/A

**Author(s):**  
Boram Kim  
Omid Veischi

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 323

**Track:** TISSUE ENGINEERING  
**3D Bioprinting and Patterning of Tissues**

**Abstract Title:** An Engineered Multi-well Platform to Regulate Oxygen Tension in Micropatterned Co-cultures In Vitro

**Presenter:** Lesly Villarreal

**Principal Investigator:** N/A

**Author(s):**  
Regeant Panday  
Salman Khetani

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 324

**Track:** TISSUE ENGINEERING  
**Gene and Drug Delivery to Engineered Tissues (Summer Undergraduate)**

**Abstract Title:** Interactions of Fibroblasts and Macrophages in an in Vitro Model of Scar Formation and Wound Healing

**Presenter:** Savana Huskins

**Principal Investigator:** Kellen Chen

**Author(s):**  
Savana Huskins  
Sydney Steele  
Melissa Leolou  
Kellen Chen

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 325

**Track:** TISSUE ENGINEERING

### Multi-Cellular Engineered Living Systems (Summer Undergraduate)

**Abstract Title:** LPS as a Surrogate Model to Study Host-Pathogen Interactions in an in vitro Gingival Tissue Model

**Presenter:** Grace Callen

**Principal Investigator:** Chiara Ghezzi

**Author(s):**

Chiara Ghezzi

Miryam Adelfio

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 326

**Track:** TISSUE ENGINEERING

### Multi-Cellular Engineered Living Systems (Summer Undergraduate)

**Abstract Title:** Developing a miniature joint model to study the biochemical correlations between osteoarthritis and obesity

**Presenter:** Katelyn Lipa

**Principal Investigator:** Hang Lin

**Author(s):**

Hang Lin

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 327

**Track:** TISSUE ENGINEERING

### D Bioprinting and Patterning of Tissues (Summer Undergraduate)

**Abstract Title:** Quantification and Minimization of Error of Biofabrication of Human Lamina Cribrosa

**Presenter:** Brock Pemberton

**Principal Investigator:** Jonathan Vande Geest

**Author(s):**

Remi Shittu

Jonathan Vande Geest

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 328

**Track:** TISSUE ENGINEERING

### 3D Bioprinting and Patterning of Tissues (Summer Undergraduate)

**Abstract Title:** Development of A Low-cost Alginate 3-D Bioprinter

**Presenter:** Eric Brown

**Principal Investigator:** Derek Lura

**Author(s):**

N/A

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 329

**Track:** TISSUE ENGINEERING

### 3D Bioprinting and Patterning of Tissues (Summer Undergraduate)

**Abstract Title:** Engineering Morphogenesis in Complex Glandular Structures with 3D Bioprinting

**Presenter:** Alessandra Martinez

**Principal Investigator:** N/A

**Author(s):**

Vignesh Subramaniam

Thomas Angelini

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 330

**Track:** TISSUE ENGINEERING  
**3D Bioprinting and Patterning of Tissues  
(Summer Undergraduate)**

**Abstract Title:** Development of Stratified Epidermis in a Bioprinted Full Thickness Skin Model In Vitro  
**Presenter:** Grayson Wagner  
**Principal Investigator:** Anthony Atala  
**Author(s):**  
Anastasiya Gorkun  
Naresh Mahajan  
Kelsey Willson  
Varun Kasula  
Anthony Atala  
Shay Soker

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 331

**Track:** TISSUE ENGINEERING  
**3D Bioprinting and Patterning of Tissues  
(Summer Undergraduate)**

**Abstract Title:** Characterization of the Uniformity of Material Properties of Bioprinted Scaffolds  
**Presenter:** Hovig Margosian  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 332

**Track:** TISSUE ENGINEERING  
**3D Bioprinting and Patterning of Tissues**

**Abstract Title:** Real-Time Measurement of Cell Concentration in Seeded Bioinks Using Dielectric Impedance Spectroscopy via a Smart Syringe  
**Presenter:** Alicia Matavosian  
**Principal Investigator:** N/A  
**Author(s):**  
Lawrence Bonassar

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 333

**Track:** TISSUE ENGINEERING  
**3D Bioprinting and Patterning of Tissues**

**Abstract Title:** Enhanced Printability and Lymphatic Morphogenesis Within Granular Gels Derived from Supramolecular Hyaluronic Acid Hydrogels  
**Presenter:** Daniel Montes Pinzon  
**Principal Investigator:** N/A  
**Author(s):**  
Daniel Montes Pinzon  
Matthew Webber  
Donny Hanjaya-Putra

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 334

**Track:** TISSUE ENGINEERING

### 3D Bioprinting and Patterning of Tissues

**Abstract Title:** Optimization of In Vivo Bioprinting Using a Portable Robotic Arm for Recreating Tissue Defects

**Presenter:** Evelyn Mollocana Lara

**Principal Investigator:** N/A

**Author(s):**

Evelyn Mollocana Lara

Jacob Quint

Ali Tamayol

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 335

**Track:** TISSUE ENGINEERING

### 3D Bioprinting and Patterning of Tissues

**Abstract Title:** Multicompartmental Bioprinting for Fabrication of Multiscale Hierarchical Tissue Constructs

**Presenter:** Farnoosh Saeedinejad

**Principal Investigator:** N/A

**Author(s):**

Ali Tamayol

Mohamadmahdi Samandari

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 336

**Track:** TISSUE ENGINEERING

### 3D Bioprinting and Patterning of Tissues

**Abstract Title:** FRESH 3D Bioprinting Organoids with Perfusable Vasculature Resilient to Cell-driven Compaction

**Presenter:** Katelyn Dockery

**Principal Investigator:** N/A

**Author(s):**

Sogu Sohn

Janet Zoldan

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 337

**Track:** TISSUE ENGINEERING

### 3D Bioprinting and Patterning of Tissues

**Abstract Title:** Fabrication of Human Liver Tissues for Regenerative Medicine Using Droplet Microfluidics and 3D Bioprinting

**Presenter:** Kerry Rogy

**Principal Investigator:** N/A

**Author(s):**

Regeant Panday

Xin Li

Ramille Shah

Salman Khetani

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 338**Track:** TISSUE ENGINEERING  
**3D Bioprinting and Patterning of Tissues****Abstract Title:** Whipped Cream Inspired Colloidal Foam to Improve Chronic Wound Healing**Presenter:** Pejman Ghelich**Principal Investigator:** Ali Tamayol**Author(s):**

Mohamadmahdi Samandari

Alireza Hassani Najafabadi

Jacob Quint

Adam Tanguay

Paige Woods

Delaram Ghanbariamin

Nikhil Menon

Steven Toro

Tannin Schmidt

Ali Tamayol

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 339**Track:** TISSUE ENGINEERING  
**3D Bioprinting and Patterning of Tissues****Abstract Title:** User-controlled 4D biomaterial degradation with substrate-selective sortases for single-cell biology**Presenter:** Ross Bretherton**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 340**Track:** TISSUE ENGINEERING  
**3D Bioprinting and Patterning of Tissues****Abstract Title:** Engineering Spheroid Compaction Using Multimaterial FRESH 3D Bioprinting**Presenter:** Samuel Moss**Principal Investigator:** N/A**Author(s):**

Brian Coffin

Adam Feinberg

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 341**Track:** TISSUE ENGINEERING  
**3D Bioprinting and Patterning of Tissues****Abstract Title:** Modulation of Neurogenic Growth and Differentiation of Neural Stem Cells on 3D Electrospin-printed (3D ESP) serum methacrylate (SerMA)-based fibrous scaffolds**Presenter:** Timothy Esworthy**Principal Investigator:** N/A**Author(s):**

Sung Yun Hann

Haitao Cui

Lijie Grace Zhang

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 342**Track:** TISSUE ENGINEERING

**3D Bioprinting and Patterning of Tissues**

**Abstract Title:** Biofabrication of a Perfusable 3D Construct of the Blood Brain Barrier to Study Traumatic Brain Injury (TBI) and Neuroinflammation.

**Presenter:** Dona Galpayage

**Principal Investigator:** N/A

**Author(s):**

Allison Andrews

Kalpani Nisansala Udeni Galpayage Dona

Servio Ramirez

**Saturday, October 15**

**9:30 AM - 10:30 AM**

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 343

**Track:** TISSUE ENGINEERING

**3D Bioprinting and Patterning of Tissues**

**Abstract Title:** Fabricating Cerebral Organoids in Shapes Using Magnetic Assembly

**Presenter:** Yu Huang

**Principal Investigator:** N/A

**Author(s):**

N/A

**Saturday, October 15**

**9:30 AM - 10:30 AM**

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 344

**Track:** TISSUE ENGINEERING

**Gene and Drug Delivery to Engineered Tissues**

**Abstract Title:** Ultrasound-Responsive Biomaterial Platform for Gene Delivery to Tissue-Engineered Tumor Models

**Presenter:** Katherine Huynh

**Principal Investigator:** N/A

**Author(s):**

Katherine Huynh

Mary Lowrey

Sara Evans-Dutson

Kevin Schilling

Danielle Brasino

Mithila Handu

Sean Speese

Carolyn Schutt Ibsen

**Saturday, October 15**

**9:30 AM - 10:30 AM**

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 345

**Track:** TISSUE ENGINEERING

**Gene and Drug Delivery to Engineered Tissues**

**Abstract Title:** Extracellular Vesicle Filtering by an In Vitro Blood-Brain Barrier Model's Basement Membrane

**Presenter:** Louis Widom

**Principal Investigator:** N/A

**Author(s):**

Thomas Gaborski

**Saturday, October 15**

**9:30 AM - 10:30 AM**

**Poster Session:** E, Section: D, Row: K, Poster

**Number:** 346

**Track:** TISSUE ENGINEERING

**Multi-Cellular Engineered Living Systems**

**Abstract Title:** Microfluidic 3D patterning of extracellular matrix zones and stromal cell populations along a single perfusable epithelial tube

**Presenter:** Bryan Ferrick

**Principal Investigator:** N/A

**Author(s):**

Bryan Ferrick

Jason Gleghorn

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 347

**Track:** TISSUE ENGINEERING  
**Multi-Cellular Engineered Living Systems**

**Abstract Title:** Fibroblast-Adipocyte Lineage Cell Interactions Result in Differential Production of Extracellular Matrix Proteins in an In Vitro Wound Mimic

**Presenter:** Edward Sander  
**Principal Investigator:** Edward Sander  
**Author(s):**  
Mariam El-Hattab  
Kathryn Jacobson  
Aloysius Klingelutz  
James Ankrum  
Sarah Calve

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 348

**Track:** TISSUE ENGINEERING  
**Multi-Cellular Engineered Living Systems**

**Abstract Title:** Directing Multicellular Organization by Varying the Aspect Ratio of Soft Hydrogel Microwells

**Presenter:** Gayatri Pahapale  
**Principal Investigator:** N/A  
**Author(s):**  
Gayatri Pahapale  
Jiaxiang Tao  
Milos Nikolic  
Sammy Gao  
Giuliano Scarcelli  
Sean Sun  
Lewis Romer  
David Gracias

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 349

**Track:** TISSUE ENGINEERING  
**Multi-Cellular Engineered Living Systems**

**Abstract Title:** Development and Characterization of a Subcutaneous Porcine Ex-Vivo Tissue Culture Model

**Presenter:** Jordanna Payne  
**Principal Investigator:** Luis Solorio  
**Author(s):**  
Jordanna Payne  
Eden Schipper  
Kevin Buno  
Luis Solorio

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 350

**Track:** TISSUE ENGINEERING  
**Multi-Cellular Engineered Living Systems**

**Abstract Title:** Engineered Platform to Decouple the Effects of Oxygen Tensions on Zonation in Human Hepatocytes

**Presenter:** Regeant Panday  
**Principal Investigator:** N/A  
**Author(s):**  
Regeant Panday  
Salman Khetani

**Saturday, October 15**

9:30 AM - 10:30 AM

Poster Session: E, Section: D, Row: K, Poster

Number: 351

Track: TISSUE ENGINEERING

**Multi-Cellular Engineered Living Systems**

**Abstract Title:** Breast Cancer Microfluidic Model Reveals Effects Of Fibroblast- ECM Interplay In Tumor Progression

**Presenter:** Maria Virumbrales-Muñoz**Principal Investigator:** N/A**Author(s):**

Jack Loken

Karina Lugo-Cintrón

Brian Burkel

Jose Ayuso

David Beebe

Suzanne Ponik

**Saturday, October 15**

9:30 AM - 10:30 AM

Poster Session: E, Section: D, Row: K, Poster

Number: 352

Track: TISSUE ENGINEERING

**Organ-on-Chip for Regenerative Medicine**

**Abstract Title:** 3D Microfluidic Skin-On-A-Chip with an Open Air-Liquid Interface for Drug and Skin Cosmetics Testing

**Presenter:** Stephen Rhee**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

Poster Session: E, Section: D, Row: K, Poster

Number: 353

Track: TISSUE ENGINEERING

**Organ-on-Chip for Regenerative Medicine**

**Abstract Title:** Human Choroid Plexus-on-a-chip with In Vivo-like Cerebrospinal Fluid Dynamics

**Presenter:** JUNGEUN LIM**Principal Investigator:** N/A**Author(s):**

N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

Poster Session: E, Section: D, Row: K, Poster

Number: 354

Track: TISSUE ENGINEERING

**Musculoskeletal Tissue Engineering**

**Abstract Title:** Albumin-coated PCL-dECM Scaffold for Bone Regeneration

**Presenter:** Xiaojun Yu**Principal Investigator:** N/A**Author(s):**

Radoslaw Junka

Weiwei Wang

Xiaojun yu

**Saturday, October 15**

9:30 AM - 10:30 AM

Poster Session: E, Section: D, Row: K, Poster

Number: 355

Track: TISSUE ENGINEERING

**3D Bioprinting and Patterning of Tissues**

**Abstract Title:** Functional Medial Layer of Smooth Muscle Cells within Engineered Microvasculature

**Presenter:** Victoria Vest**Principal Investigator:** N/A**Author(s):**

Leon Bellan

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 355

**Track:** TISSUE ENGINEERING

**Abstract Title:** Forming a Functional Medial Layer of Smooth Muscle Cells within Engineered Microvasculature entered as Functional Medial Layer of Smooth Muscle Cells within Engineered Microvasculature

**Presenter:** Victoria Vest

**Principal Investigator:** N/A

**Author(s):**  
N/A

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 356

**Track:** WOMEN'S HEALTH  
**Mechanics of Pregnancy and Birth**

**Abstract Title:** Tensile Evaluation of the Vaginal Canal in Swine for Vaginoplasty

**Presenter:** Angel Collins

**Principal Investigator:** Raffaella De Vita

**Author(s):**  
Morgan Atkinson  
Cecile Ferrando  
Raffaella De Vita

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 357

**Track:** WOMEN'S HEALTH  
**Mechanics of Pregnancy and Birth**

**Abstract Title:** Stenosis Location Impacts Renal Weight in Murine Pregnancy

**Presenter:** Jennifer Anderson

**Principal Investigator:** Craig J. Goergen

**Author(s):**  
Paula Torres Loza  
Riley Holloway  
David Undergradateter  
Craig Goergen

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 358

**Track:** WOMEN'S HEALTH  
**Mechanics of Pregnancy and Birth**  
**(Summer Undergraduate)**

**Abstract Title:** Machine Learning for Vaginal Tissue Trauma Estimation

**Presenter:** Alex Santiago-Anaya

**Principal Investigator:** Raffaella De Vita

**Author(s):**  
William Snyder  
Justin Krometis  
Traian Iliescu  
Raffaella De Vita

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 359

**Track:** WOMEN'S HEALTH  
**Mechanics of Pregnancy and Birth  
(Summer Undergraduate)**

**Abstract Title:** Development of a Biomimetic Decidua for Investigation of Blastocyst Implantation in the Uterus  
**Presenter:** Kayla Brown  
**Principal Investigator:** Michelle Oyen  
**Author(s):**  
Michelle Oyen

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: K, Poster  
**Number:** 360

**Track:** WOMEN'S HEALTH  
**Mechanics of Pregnancy and Birth**

**Abstract Title:** Assessment of Mechanical Properties of Human Fetal Membranes with Optical Coherence Tomography  
**Presenter:** Kayvan Samimi  
**Principal Investigator:** Melissa C. Skala  
**Author(s):**  
Emmanuel Contreras Guzman  
May WU  
Lindsey Carlson  
Helen Feltovich  
Timothy Hall  
Kristin Myers  
Melissa Skala

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: L, Poster  
**Number:** 362

**Track:** WOMEN'S HEALTH  
**Mechanics of Pregnancy and Birth**

**Abstract Title:** A Computational Model of the Fetal Membrane Bilayer  
**Presenter:** Kristin Myers  
**Principal Investigator:** N/A  
**Author(s):**  
Daniel Fidalgo  
Kayvan Samimi  
Emmanuel Contreras Guzman  
Michelle Oyen  
Helen Feltovich  
Timothy Hall  
Melissa Skala  
Dulce Oliveira  
Kristin Myers

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: L, Poster  
**Number:** 363

**Track:** WOMEN'S HEALTH  
**Mechanics of Pregnancy and Birth**

**Abstract Title:** Novel Uterine Compression Suture Technique for the Treatment of Postpartum Hemorrhage  
**Presenter:** Neha Muvvala  
**Principal Investigator:** N/A  
**Author(s):**  
Neha Muvvala  
Varu Vummidi  
Ida Pirzadeh  
Wendy Pham  
Christopher Tran

**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: L, Poster  
**Number:** 364**Track:** WOMEN'S HEALTH  
**Mechanics of Pregnancy and Birth****Abstract Title:** Controlled Weakening of Fetal Membranes by Enzymatic Degradation**Presenter:** Michelle Oyen**Principal Investigator:** N/A**Author(s):**  
Mackenzie Wheeler**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: L, Poster  
**Number:** 365**Track:** BIOINFORMATICS,  
**Novel Methods for Systems Biology  
(Summer Undergraduate)****Abstract Title:** Muscular Regeneration Analysis of Volumetric Muscle Loss Injuries Using Hydrogel Therapy**Presenter:** Ells Mine Saint Paul**Principal Investigator:** N/A**Author(s):**  
N/A**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: L, Poster  
**Number:** 366**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION  
**Imaging Tissue, Organs, and Physiological Systems****Abstract Title:** A Patient-Specific Multi-Scale, Multi-Physics Simulation of Human Uterine Peristalsis During Menstrual Cycle**Presenter:** Yiqi Lin**Principal Investigator:** N/A**Author(s):**  
Jazmin Sierra  
Sicheng Wang  
Constantine Butakoff  
Zhexian Sun  
Wenjie Wu  
XINYU ZHANG  
Mariano Vazquez  
Yong Wang**Saturday, October 15**

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: L, Poster  
**Number:** 367**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION  
**Imaging Tissue, Organs, and Physiological Systems****Abstract Title:** Three-Dimensional Visualization and Analysis of Mouse and Human Liver Bud Morphogenesis**Presenter:** NATESH PARASHURAMA**Principal Investigator:** N/A**Author(s):**  
Daniel Guiggey  
Ogechi Ogoke  
TALA MON  
Natesh Parashurama

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: L, Poster

**Number:** 368

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Omics Data: Methods, Modeling and Analysis**

**Abstract Title:** Bioinformatic Analysis of the Mouse Liver Diverticulum

**Presenter:** Natesh Parashurama

**Principal Investigator:** N/A

**Author(s):**

Daniel Guiggey

Ogechi Ogoke

Natesh Parashurama

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: L, Poster

**Number:** 369

**Track:** CARDIOVASCULAR ENGINEERING

**Cardiovascular Devices (Summer Undergraduate)**

**Abstract Title:** Non-invasive Surgical Approach to Tricuspid Annular Dilatation and Regurgitation

**Presenter:** Patricia Valdes De la Garza,

**Principal Investigator:** N/A

**Author(s):**

Manuel Rausch

## Saturday, October 15

9:30 AM - 10:30 AM

**Poster Session:** E, Section: D, Row: L, Poster

**Number:** 370

**Track:** CELLULAR AND MOLECULAR BIOENGINEERING (Late Breaking) > - Single-

Cell Measurements and Models (Late Breaking)

**Single-Cell Measurements and Models**

**Abstract Title:** Personalized Ovarian Cancer Tumors for Studying Clinical Outcomes

**Presenter:** Kathleen Burkhard

**Principal Investigator:** N/A

**Author(s):**

Michael Bregenzer

Geeta Mehta

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster

**Number:** 21

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Omics Data: Methods, Modeling and Analysis**

**Abstract Title:** Long Read Analysis Pipeline Predicts RBPs with Isoform-specific Functions

**Presenter:** Stella Park

**Principal Investigator:** David Knowles

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster

**Number:** 23

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Omics Data: Methods, Modeling and Analysis**

**Abstract Title:** Spatial Proteomic Investigation on Normal/ALL Human Bone Marrow Niche

**Presenter:** Xiaoyu Qin

**Principal Investigator:** Rong Fan

**Author(s):**

Rong Fan

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 24

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Omics Data: Methods, Modeling and Analysis (Summer Undergraduate)**

**Abstract Title:** In silico cytometry of Crohn's disease transcriptomics reveals novel cell-type-specific disease biology

**Presenter:** Alexander Bergendorf

**Principal Investigator:** Douglas K. Brubaker

**Author(s):**

Javier Munoz

Mahmoud Rahal

Matthew Bohm

Douglas Brubaker

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 25

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Omics Data: Methods, Modeling and Analysis (Summer Undergraduate)**

**Abstract Title:** FOXA2 as a Potential Master Transcriptional Regulator of Neuroendocrine Prostate Cancer

**Presenter:** Irina Cheng

**Principal Investigator:** Jindan Yu

**Author(s):**

xiaodong lu

Viriya Keo

changsheng zHao

Jindan Yu

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 26

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Omics Data: Methods, Modeling and Analysis (Summer Undergraduate)**

**Abstract Title:** Genetic and Geospatial Shared Environment Associations with Individual-Level Exposures Expand Understanding of Cardiometabolic Health Etiology

**Presenter:** Nuno Ramos Grangeia Carvalho

**Principal Investigator:** Chirag J Patel

**Author(s):**

Chirag Patel

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 27

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Omics Data: Methods, Modeling and Analysis (Summer Undergraduate)**

**Abstract Title:** Identifying Treatment Candidates for Lung Adenocarcinoma with Drug Repositioning

**Presenter:** Occam Kelly Graves

**Principal Investigator:** Adil Mardinoglu

**Author(s):**

Woonghee Kim

Xiangyu Li

Meng Yuan

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster

**Number:** 28

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Omics Data: Methods, Modeling and Analysis (Summer Undergraduate)**

**Abstract Title:** Radial Separation of Master Regulators of Blood Cell Differentiation

**Presenter:** Claire LeBlanc Magda Bienko

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster

**Number:** 29

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Omics Data: Methods, Modeling and Analysis (Summer Undergraduate)**

**Abstract Title:** Comparative Proteomics of Skeletal Muscle Reveals Preventative Medicine Capabilities of Endurance Exercise

**Presenter:** Sean Perez

**Principal Investigator:** Carl Johan Sundberg

**Author(s):**

Muhammad Arif  
Eric Emanuelsson  
Mark Chapman

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster

**Number:** 30

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Omics Data: Methods, Modeling and Analysis (Summer Undergraduate)**

**Abstract Title:** Comparative Genomic Profiling Identifies Targetable Brain Metastasis Drivers in Non-Small Cell Lung Cancer

**Presenter:** Trenton Wesley

**Principal Investigator:** Nicola Crosetto

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster

**Number:** 31

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Omics Data: Methods, Modeling and Analysis (Summer Undergraduate)**

**Abstract Title:** Bioinformatic data integration for mining and translational drug discovery

**Presenter:** Lance Novak

**Principal Investigator:** N/A

**Author(s):**

Christopher Bristow

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 32

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Single-Cell Measurements and Models (Summer Undergraduate)**

**Abstract Title:** Integrating Chromatin Loop Extrusion-Mediated Transcription into a Chromosome Copolymer Model

**Presenter:** Lucas Sant'Anna

**Principal Investigator:** Vivek Shenoy

**Author(s):**

Vinayak Vinayak

Aayush Kant

Vivek Shenoy

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 33

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Novel Methods for Systems Biology**

**Abstract Title:** Identifying Key Pathway Genes for Improving Network-Based Side-Effect Prediction

**Presenter:** Mohammadali Alidoost

**Principal Investigator:** Jennifer L Wilson

**Author(s):**

Jennifer Wilson

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 34

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Novel Methods for Systems Biology**

**Abstract Title:** Association Between Frailty and Dynamic Interconnection of Cardiac Autonomic and Motor Systems

**Presenter:** Patricio Arrué

**Principal Investigator:** Patricio Arrué Cornejo

**Author(s):**

Kaveh Laksari

Nima Toosizadeh

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 35

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Novel Methods for Systems Biology**

**Abstract Title:** Sjogren's Syndrome is associated with a unique humoral fingerprint that links Fc Receptor-mediated phagocytosis to disease severity

**Presenter:** Suzanne Shoffner

**Principal Investigator:** N/A

**Author(s):**

Suzanne Shoffner

Martin KILLIAN

Stéphane Paul

Amy Chung

Kelly Arnold

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 36

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### **Novel Methods for Systems Biology**

**Abstract Title:** Spatially resolved transcriptomes in human hippocampus

**Presenter:** yang xiao

**Principal Investigator:** N/A

**Author(s):**

Zhiliang Bai

Rong Fan

Kam Leong

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 37

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### **Omics Data: Methods, Modeling and Analysis**

**Abstract Title:** Hutchinson-Gilford Progeria Syndrome Impairs the Endothelium's Genetic Response to Flow

**Presenter:** Crystal Kennedy

**Principal Investigator:** N/A

**Author(s):**

George Truskey

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 38

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### **Omics Data: Methods, Modeling and Analysis**

**Abstract Title:** Single Cell Analysis of Peripheral Immune Environments of Autoimmune Diseases

**Presenter:** Julianne Jorgensen

**Principal Investigator:** N/A

**Author(s):**

Julianne Jorgensen

Kai Huang

Catherine Wang

Patricia Finn

David Perkins

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster  
**Number:** 39

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

### **Omics Data: Methods, Modeling and Analysis**

**Abstract Title:** Sparse Representation Learning Derives Biological Features with Explicit Gene Weights from the Allen Mouse Brain Atlas

**Presenter:** Mohammad Abbasi

**Principal Investigator:** Benjamin Bartelle

**Author(s):**

Connor Sanderford

Narendiran Raghu

Mirjeta Pasha

Benjamin Bartelle

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: C, Poster**Number:** 40**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Omics Data: Methods, Modeling and Analysis****Abstract Title:** Graph-based Spatially Variant Immune Infiltration Scores in Lung Cancer Tissues**Presenter:** Mayar Allam**Principal Investigator:** N/A**Author(s):**

Mayar Allam

Thomas Hu

Shuangyi Cai

Ahmet Coskun

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster**Number:** 61**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Omics Data: Methods, Modeling and Analysis****Abstract Title:** Bringing Therapeutic Context into Preclinical Development of Engineered Microbial Therapeutics: Engineered Bacteria Secreting IL-22 Protects Against Intestinal Inflammation in a Germ-Free Gut Model**Presenter:** Javier Munoz**Principal Investigator:** N/A**Author(s):**

Smrutiti Jena

Liana Merk

Leopold Green

Douglas Brubaker

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster**Number:** 62**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Omics Data: Methods, Modeling and Analysis****Abstract Title:** Proteomic and In Silico Modeling of Mouse Endothelial Cell Dysfunction during Inflammation**Presenter:** Jordan Langston**Principal Investigator:** N/A**Author(s):**

Mohammad Kiani

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster**Number:** 63**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Omics Data: Methods, Modeling and Analysis****Abstract Title:** Subcellular Gene Spatial Regulatory Network of Mesenchymal Stem Cells**Presenter:** Zhou Fang**Principal Investigator:** N/A**Author(s):**

Zhou Fang

Thomas Hu

Mayar Allam

Nicholas Zhang

Ahmet Coskun

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster**Number:** 64**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Single-Cell Measurements and Models****Abstract Title:** Predicting cancer cell migration in various environments with a Cell Migration Simulator**Presenter:** Jay Hou**Principal Investigator:** N/A**Author(s):**

David Odde

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster**Number:** 65**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Precision and Predictive Medicine****Abstract Title:** Correlational Study between Modality of Treatment and Cytokine Levels**Presenter:** Andrew Finkel**Principal Investigator:** Walter O'Dell**Author(s):**

Shruti Siva Kumar

Walter O'Dell

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster**Number:** 66**Track:** BIOMANUFACTURING**Other / Non-specified****Abstract Title:** Facile and Cleanroom-Free Fabrication of Hollow Microneedles Supporting Multimodal Drug Delivery**Presenter:** Delaram Ghanbari Amin**Principal Investigator:** N/A**Author(s):**

Mohamadmahdi Samandari

Ali Tamayol

Yupeng Chen

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster**Number:** 67**Track:** BIOMANUFACTURING**Other / Non-specified****Abstract Title:** Predicting Cell Yield in Vertical Wheel Bioreactors Using Machine Learning**Presenter:** Nicolas Cabrera**Principal Investigator:** N/A**Author(s):**

Nicolas Cabrera

Berkley White

José Mora

Roland Kaunas

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster**Number:** 68**Track:** BIOMATERIALS**Biomaterials Scaffolds****Abstract Title:** Biocompatibility of Large 3D Cellulose Nano-Fibril Constructs**Presenter:** Arihant Tallapureddy**Principal Investigator:** Karissa Tilbury**Author(s):**

Jordan Miner

Karissa Tilbury

Michael Mason

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster  
**Number:** 69

**Track:** BIOMATERIALS  
**Biomaterials Scaffolds**

**Abstract Title:** Tunable Gelatin Methacrylate Polyethylene Glycol Diacrylate Hydrogels for Cell Mechanosensing Applications  
**Presenter:** Eya Ferchichi  
**Principal Investigator:** Silviya Petrova Zustiak  
**Author(s):**  
N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster  
**Number:** 70

**Track:** BIOMATERIALS  
**Biomaterials Scaffolds**

**Abstract Title:** Modulation and Characterization of 3D-Printed Scaffold Geometry for Islet Transplantation  
**Presenter:** Justin Walsh  
**Principal Investigator:** Cherie Stabler  
**Author(s):**  
Taylor Lansberry  
Cherie Stabler  
Robert Accolla  
Jiapu Liang

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster  
**Number:** 71

**Track:** BIOMATERIALS  
**Biomaterials Scaffolds**

**Abstract Title:** Investigating the Relationship Between Glycosaminoglycan Immobilization Approach and Bioactivity  
**Presenter:** Nicholas Cornell  
**Principal Investigator:** Donald Griffin  
**Author(s):**  
Lauren Pruett  
Donald Griffin

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster  
**Number:** 72

**Track:** BIOMATERIALS  
**Biomaterials Scaffolds (Summer Undergraduate)**

**Abstract Title:** Modulating the Differentiation of Human Neural Stem Cells in 3D Contexts by Varying Hyaluronic Acid Chain Length  
**Presenter:** Anna Gonzalez  
**Principal Investigator:** Dany Munoz-Pinto  
**Author(s):**  
Dany Munoz Pinto  
Andrea Jimenez-Vergara

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster  
**Number:** 73

**Track:** BIOMATERIALS  
**Biomaterials Scaffolds (Summer Undergraduate)**

**Abstract Title:** Engineering Hierarchical Structure into Artificial Extracellular Matrices  
**Presenter:** Adrienne Rosales  
**Principal Investigator:** Adrienne Rosales  
**Author(s):**  
Aarav Kumar  
David Castilla Casadiego

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster

**Number:** 74

**Track:** BIOMATERIALS

### **Biomaterials Scaffolds (Summer Undergraduate)**

**Abstract Title:** A Bone Marrow Mimetic Culture Platform for Evaluating Stiffness Effects on Breast Cancer Metastasis

**Presenter:** Alyssa Questell

**Principal Investigator:** Marjan Rafat

**Author(s):**

Logan Northcutt

Marjan Rafat

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster

**Number:** 75

**Track:** BIOMATERIALS

### **Biomaterials Scaffolds (Summer Undergraduate)**

**Abstract Title:** Bio Fabrication and Characterization of Controlled Anisotropy

**Presenter:** Grace Melloy

**Principal Investigator:** Jonathan Vande Geest

**Author(s):**

Jonathan Vande Geest

Katarina Martinet

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster

**Number:** 76

**Track:** BIOMATERIALS

### **Biomaterials Scaffolds (Summer Undergraduate)**

**Abstract Title:** Investigating Variables in Solution Blow Spinning for Nanofiber Scaffolds

**Presenter:** Justin Piedra

**Principal Investigator:** Jiehong Liao

**Author(s):**

James Bell

Jiehong Liao

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster

**Number:** 77

**Track:** BIOMATERIALS

### **Biomaterials Scaffolds (Summer Undergraduate)**

**Abstract Title:** PCL/Alginate/Bioglass Composite Scaffold Promotes Calcium and GAGs Synthesis and Deposition

**Presenter:** Kevin Smith

**Principal Investigator:** Derrick Dean

**Author(s):**

Joseph Ayariga

Derrick Dean

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster

**Number:** 78

**Track:** BIOMATERIALS

### **Biomaterials Scaffolds (Summer Undergraduate)**

**Abstract Title:** Characterization of Human Lung Cryogels

**Presenter:** Karah Moore

**Principal Investigator:** Rebecca Heise

**Author(s):**

Leigh-Ann Antczak

Rebecca Heise

Taylor Hendrick

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster  
**Number:** 79

**Track:** BIOMATERIALS  
**Biomaterials Scaffolds (Summer Undergraduate)**

**Abstract Title:** Quantifying the Temporal Degradation of the Structural Properties of TissueMend

**Presenter:** Mark Nemcek

**Principal Investigator:** Colleen Witzenburg

**Author(s):**

Daniel Pearce

Catherine Eberman

Colleen Witzenburg

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: D, Poster  
**Number:** 80

**Track:** BIOMATERIALS  
**Biomaterials Scaffolds (Summer Undergraduate)**

**Abstract Title:** Calculating Gel Stoichiometry Via Flory Branching Ratio Improves Hydrogel Stiffness Reproducibility

**Presenter:** Christina Kim

**Principal Investigator:** Linda G. Griffith

**Author(s):**

Christina Kim

Sofia Mrowka

Samantha Holt

Linda Griffith

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster  
**Number:** 101

**Track:** BIOMATERIALS  
**Advances in Biomaterials Integration with Chips and Devices**

**Abstract Title:** Biomimetic polypyrrole/hyaluronic acid electrodes integrated with hyaluronidase inhibitors offer persistent electroactivity and resistance to cell binding

**Presenter:** Jongdarm Yi

**Principal Investigator:** N/A

**Author(s):**

Sanghun Lee

Jae Young Lee

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster  
**Number:** 102

**Track:** BIOMATERIALS  
**Advances in Biomaterials Integration with Chips and Devices**

**Abstract Title:** Preventing PDMS Drug Absorption through PDMS-PEG Additive and Drug Pretreatment

**Presenter:** Jeffrey Chen

**Principal Investigator:** N/A

**Author(s):**

Devin Mair

Marcus Williams

Nathan Sniadecki

Deok-Ho Kim

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster

**Number:** 103

**Track:** BIOMATERIALS

### Advances in Biomaterials Integration with Chips and Devices

**Abstract Title:** Wearable Non-enzymatic Microneedle Sensor for Glucose Monitoring

**Presenter:** Jae Hoon Han

**Principal Investigator:** N/A

**Author(s):**

Jae Hoon Han

Cho Rim Kim

Han Bi Ji

Chang Hee Min

Min Ji Kim

Young Bin Choy

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster

**Number:** 104

**Track:** BIOMATERIALS

### 3D Printing and Advanced Biomaterial Manufacturing

**Abstract Title:** Hydrogel-Based Diffractive Optical Elements using advanced light processing methods

**Presenter:** Arun Poudel

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster

**Number:** 105

**Track:** BIOMATERIALS

### 3D Printing and Advanced Biomaterial Manufacturing

**Abstract Title:** Flexible 96-Well Plate Using Hydrostatic Pressure and 3D Printed Devices for Cell Culture Applications

**Presenter:** Rana Abbed

**Principal Investigator:** N/A

**Author(s):**

Adam Szmelter

David Eddington

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster

**Number:** 106

**Track:** BIOMATERIALS

### 3D Printing and Advanced Biomaterial Manufacturing

**Abstract Title:** In vitro and in vivo effects of degradation on multimodal 3D printed shape memory elastomer for soft tissue repair

**Presenter:** Ryan Akman

**Principal Investigator:** N/A

**Author(s):**

N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster**Number:** 107**Track:** BIOMATERIALS**3D Printing and Advanced Biomaterial Manufacturing****Abstract Title:** 3D Printed Photocurable and Nanocomposite scaffold in Biomedical Applications**Presenter:** Subha Parvathi Madamuthu**Principal Investigator:** N/A**Author(s):**

Roshan Bhatt

Prabir Patra

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster**Number:** 108**Track:** BIOMATERIALS**Biomaterials Scaffolds****Abstract Title:** Analysis of Model Features Required to Capture Cell-Fiber Interactions on Biological Scaffolds**Presenter:** Bethany Luke**Principal Investigator:** N/A**Author(s):**

N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster**Number:** 109**Track:** BIOMATERIALS**Biomaterials Scaffolds****Abstract Title:** Structural Design and Mechanical Properties of a Radial Bone Scaffold**Presenter:** Maggie Gottschall**Principal Investigator:** N/A**Author(s):**

Marlee Kopetsky

Maggie Gottschall

Cara McMahon

Sally Shady

Christian Buckley

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster**Number:** 110**Track:** BIOMATERIALS**Biomaterials Scaffolds****Abstract Title:** Influencing Biological Responses to Stretched-and-Folded, Cell-scale fibers: Effects of Chemical Treatments**Presenter:** Mahsa Karimi**Principal Investigator:** Li-Hsin Han**Author(s):**

Fereshteh Ahadi

Li-Hsin Han

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster**Number:** 111**Track:** BIOMATERIALS**Biomaterials Scaffolds****Abstract Title:** Modeling Prostate Cancer Metastasis using Bioorthogonally Integrated Hydrogel Platform**Presenter:** Mugdha Pol**Principal Investigator:** N/A**Author(s):**

Hanyuan Gao

He Zhang

Olivia George

Joseph Fox

Xinqiao Jia

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster

**Number:** 112

**Track:** BIOMATERIALS

### **Biomaterials Scaffolds**

**Abstract Title:** Dry Macroporous Alginate (Drydux) Scaffolds for Viral Transduction of T Cells

**Presenter:** Madelyn VanBlunk

**Principal Investigator:** Yevgeny Brudno

**Author(s):**

Madelyn VanBlunk

Pritha Agarwalla

Sharda Pandit

Yevgeny Brudno

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster

**Number:** 113

**Track:** BIOMATERIALS

### **Biomaterials Scaffolds**

**Abstract Title:** Oxidized Hyaluronic Acid Based Cryogels with Controlled Degradation for Tissue Engineering

**Presenter:** Alexandra Nukovic

**Principal Investigator:** N/A

**Author(s):**

Alexandra Nukovic

Thibault Colombani

Sidi Bencherif

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster

**Number:** 114

**Track:** BIOMATERIALS

### **Biomaterials Scaffolds**

**Abstract Title:** Nanotexturing of PEEK to Improve Bone Osseointegration Properties

**Presenter:** Rupak Dua

**Principal Investigator:** N/A

**Author(s):**

Joi Terry

Vadivel Jagasivamani

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster

**Number:** 115

**Track:** BIOMATERIALS

### **Biomaterials Scaffolds**

**Abstract Title:** Mechanical and Shape Memory Properties of Electrospun Polyurethane with Thiol-ene Crosslinking

**Presenter:** Rachel Gruenbaum

**Principal Investigator:** N/A

**Author(s):**

Rachel Gruenbaum

Samuel Briggs

Grace Fletcher Hicks

Duncan Maitland

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster**Number:** 116**Track:** BIOMATERIALS**Biomaterials Scaffolds****Abstract Title:** Effects of Leukocyte-Platelet Rich Fibrin and Nanoporous Scaffolds in Cell Proliferation and Cell Migration**Presenter:** Andres Alcivar**Principal Investigator:** N/A**Author(s):**

Andres Alcivar

Ballaz santiago

Ziyad Haidar

Prabir Patra

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster**Number:** 117**Track:** BIOMATERIALS**Biomaterials Scaffolds****Abstract Title:** Viability of INS-1E Cells in Synthetic PEG Hydrogels Suitable to Injection Molding Biofabrication**Presenter:** Simone Gohsman**Principal Investigator:** Jessica Weaver**Author(s):**

Jessica Weaver

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster**Number:** 118**Track:** BIOMATERIALS**Biomaterials Scaffolds****Abstract Title:** Synthetic Coating Materials to Preserve the Phenotypes of Lymphatic Endothelial Cells**Presenter:** Sanjoy Saha**Principal Investigator:** Donny Hanjaya- Putra**Author(s):**

Fei Fan

Donny Hanjaya-Putra

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster**Number:** 119**Track:** BIOMATERIALS**Biomaterials Scaffolds****Abstract Title:** Investigating The Effects of Hyaluronic Acid on 3D Migration and Function of Natural Killer Cells**Presenter:** Suzanne Lightsey**Principal Investigator:** Blanka Sharma**Author(s):**

Blanka Sharma

Madison Temples

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: E, Poster**Number:** 120**Track:** BIOMATERIALS**Biomaterials Scaffolds****Abstract Title:** Visualization of Microstructures in Decellularized Livers Using Fluorescent Markers of Different Sizes**Presenter:** Naoya Takahashi**Principal Investigator:** N/A**Author(s):**

Ryo Sudo

Tadahiro Yamashita

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster

**Number:** 141

**Track:** BIOMATERIALS

### Biomaterials Scaffolds

**Abstract Title:** Touch –Spun nanofibers Applications in biomedical and food industries

**Presenter:** VIJAY MOHAKAR

**Principal Investigator:** Vladimir Reukov

**Author(s):**

Vladimir Undergraduatekov

Anton Sorokin

VIJAY MOHAKAR

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster

**Number:** 142

**Track:** BIOMATERIALS

### Biomaterials Scaffolds

**Abstract Title:** Xeno-Free Biomimetic Brain ECM Model for Investigation of Matrix Stiffness on Astrocyte Cell Response

**Presenter:** Vipuil Kishore

**Principal Investigator:** N/A

**Author(s):**

Bayan Saleh

Ayda pourmostafa

Nashaita Patrawalla

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster

**Number:** 143

**Track:** BIOMATERIALS

### Biomaterials Scaffolds

**Abstract Title:** Electrospun Poly( $\epsilon$ -caprolactone)-Silk Fibroin Scaffold for Vascular Tissue Engineering

**Presenter:** Zhongkui Hong

**Principal Investigator:** N/A

**Author(s):**

Alex Rickel

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster

**Number:** 144

**Track:** BIOMECHANICS

### Cellular and Molecular Biomechanics: Mechanobiology

**Abstract Title:** A Structural Bio-Chemo-Mechanical Model for Microbiaxial Stretching of Vascular Smooth Muscle Cells

**Presenter:** Shannon Flanary

**Principal Investigator:** Victor H. Barocas

**Author(s):**

Victor Barocas

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster

**Number:** 145

**Track:** BIOMECHANICS

### Cellular and Molecular Biomechanics: Mechanobiology

**Abstract Title:** Sexually dimorphic response of vascular endothelial cells to complex environmental stimuli

**Presenter:** Josephine Allen

**Principal Investigator:** Josephine Allen

**Author(s):**

Bryan James

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster**Number:** 146**Track:** BIOMECHANICS**Cellular and Molecular Biomechanics:  
Mechanobiology****Abstract Title:** Multiscale Mapping of Elasticity in Biological Tissues in 3-D at Optical Resolution**Presenter:** Kathryn Regan**Principal Investigator:** Hadi T. Nia**Author(s):**

Robert LeBourdais

Sue Zhang

Siyi Zheng

Hadi Nia

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster**Number:** 147**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Correlation Between Wearable Strain Gauges and Physical Function in Chronic Lower Back Pain Subjects**Presenter:** Anton Bowden**Principal Investigator:** N/A**Author(s):**

Kelsey Clark

Tyler Hutchinson

Spencer Baker

Andrew Gibbons

Ulrike Mitchell

David Fullwood

Anton Bowden

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster**Number:** 148**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** A Novel Simulation-Based Approach for the Development of Vehicle Blast Protection Countermeasures**Presenter:** Anindya Deb**Principal Investigator:** Sanketh Ramachandra**Author(s):**

Sanketh Ramachandra

Ananya Barui

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster**Number:** 149**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Evaluation of Skull Surface Pressures in a Surrogate Human Head Model during Blast Exposure**Presenter:** Allison Nelson**Principal Investigator:** Pamela VandeVord**Author(s):**

Pamela VandeVord

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster  
**Number:** 150

**Track:** BIOMECHANICS  
**Other / Non-specified**

**Abstract Title:** Quasi-Static Biomechanical Evaluation of Cutting Efficiency in Canine Cementless Total Hip Replacement Broaches

**Presenter:** Zachary Lawson

**Principal Investigator:** N/A

**Author(s):**

Zachary Lawson

Andrew Robbins

Michael Moreno

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster  
**Number:** 151

**Track:** BIOMECHANICS  
**Biomechanics of Rehabilitation/Injury**

**Abstract Title:** Football Game Players Experience More HIE in Practices Leading Up to Games than Bench Players

**Presenter:** Brian Stemper

**Principal Investigator:** Brian Stemper

**Author(s):**

Rachel Cutlan

Alok Shah

Steven Rowson

Stefan Duma

Brian Stemper

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster  
**Number:** 152

**Track:** BIOMECHANICS  
**Biomechanics of Rehabilitation/Injury**

**Abstract Title:** Initial investigation into the effect of element elimination techniques in pedestrian impact simulations

**Presenter:** Costin Untaroiu

**Principal Investigator:** N/A

**Author(s):**

Daniel Grindle

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster  
**Number:** 153

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics: Mechanobiology**

**Abstract Title:** Mapping Internal and External Stresses of Multicellular Spheroids in 3D Matrix

**Presenter:** Alejandro Marzoratti

**Principal Investigator:** N/A

**Author(s):**

Alejandro Marzoratti

Alex Hruska

Ryan Dubay

Eric Darling

Ian Wong

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster  
**Number:** 154

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** 3D Computational Model of Aortic Valve Interstitial Cell Stress Fiber Contractile Behavior  
**Presenter:** Alex Khang  
**Principal Investigator:** N/A  
**Author(s):**  
Alex Khang  
Robin Tuscher  
Xinzeng Feng  
Michael Sacks

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster  
**Number:** 155

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** Reduced Cell Spreading and Force on Talin with Arp2/3 Inhibition Does Not Prevent YAP Activation  
**Presenter:** Amirmasoud Sadeghifar  
**Principal Investigator:** N/A  
**Author(s):**  
Tristan Driscoll

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster  
**Number:** 156

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** Tuning Polypeptide Linker Stiffness for Enhanced Molecular Tension Sensing  
**Presenter:** Aaron Blanchard  
**Principal Investigator:** N/A  
**Author(s):**  
Meghan Reynolds  
Brenton Hoffman

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster  
**Number:** 157

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** Short-term and Long-term Effects of Hypoxic Conditions on the Urothelium  
**Presenter:** Britney Hudson  
**Principal Investigator:** Jiro Nagatomi  
**Author(s):**  
Jiro Nagatomi

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster

**Number:** 158

**Track:** BIOMECHANICS

### **Cellular and Molecular Biomechanics: Mechanobiology**

**Abstract Title:** The Effect of Substrate Topography on Cell Mechanical State

**Presenter:** Elizabeth Byers

**Principal Investigator:** N/A

**Author(s):**

Justin Brown

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster

**Number:** 159

**Track:** BIOMECHANICS

### **Cellular and Molecular Biomechanics: Mechanobiology**

**Abstract Title:** Oxidative Stress Differentially Modulates Cell Injury During Airway Reopening by Altering Cytoskeletal and Tight Junction Structure

**Presenter:** Basia Gabela-Zuniga

**Principal Investigator:** N/A

**Author(s):**

Basia Gabela-Zuniga

Vasudha Shukla

Joshua Englert

Samir Ghadiali

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: F, Poster

**Number:** 160

**Track:** BIOMECHANICS

### **Cellular and Molecular Biomechanics: Mechanobiology**

**Abstract Title:** Morphogenetic Adaptation of Gut-Forming Endoderm in Response to Tissue-Scale Mechanical Forces

**Presenter:** Helena Cirne

**Principal Investigator:** N/A

**Author(s):**

Panagiotis Oikonomou

Nandan Nerurkar

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster

**Number:** 181

**Track:** BIOMECHANICS

### **Cellular and Molecular Biomechanics: Mechanobiology**

**Abstract Title:** Small Fat Droplets Are Sufficiently Rigid To Indent A Nucleus, Dilute The Lamina, And Cause Rupture

**Presenter:** Irena Ivanovska

**Principal Investigator:** Irena Ivanovska-Surtcheva

**Author(s):**

Michael Tobin

Lawrence Dooling

Dennis Discher

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster  
**Number:** 182

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** A Hyper Spectral Data Analysis Method For Non-invasive Measurement Prediction of Cell Matrix Stiffness  
**Presenter:** Jeanette Hariharan  
**Principal Investigator:** N/A  
**Author(s):**  
QUYNH HOANG  
James Bell

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster  
**Number:** 183

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** tRNA Epitranscriptomic Modifications in Vascular Endothelial Cells Exposed to Different Flows  
**Presenter:** Julia Pietromicca  
**Principal Investigator:** N/A  
**Author(s):**  
Thomas Begley  
J. Andres Melendez  
B. Rita Alevriadou

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster  
**Number:** 184

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** Tissue stiffness scaling with fibrillar collagen results from strain-suppressed fibril proteolysis  
**Presenter:** Karanvir Saini  
**Principal Investigator:** Dennis E. Discher  
**Author(s):**  
N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster  
**Number:** 185

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** An Improved Method for Pattern Generation for Micropattern Traction Microscopy  
**Presenter:** Katie Bunde  
**Principal Investigator:** N/A  
**Author(s):**  
Katie Bunde  
Dimitrije Stamenovic  
Michael Smith

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster

**Number:** 187

**Track:** BIOMECHANICS

### **Cellular and Molecular Biomechanics: Mechanobiology**

**Abstract Title:** The Mitochondrial Ca<sup>2+</sup> Uniporter Channel Synergizes with Shear Stress to Induce [Ca<sup>2+</sup>]<sub>m</sub> Oscillations

**Presenter:** Akshar Patel

**Principal Investigator:** B. Rita Alevriadou

**Author(s):**

Akshar Patel

Matthew Simkulet

Anastasios Matzavinou

Madesh Muniswamy

B. Rita Alevriadou

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster

**Number:** 188

**Track:** BIOMECHANICS

### **Cellular and Molecular Biomechanics: Mechanobiology**

**Abstract Title:** In vitro model to study confined osteocyte networks exposed to flow-induced mechanical stimuli

**Presenter:** Pranav Soman

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster

**Number:** 189

**Track:** BIOMECHANICS

### **Cellular and Molecular Biomechanics: Mechanobiology**

**Abstract Title:** Induction of Murine Lens Stretching through Hydrogel Compression

**Presenter:** Wade Rich

**Principal Investigator:** Matthew A Reilly

**Author(s):**

Matthew Reilly

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster

**Number:** 190

**Track:** BIOMECHANICS

### **Cellular and Molecular Biomechanics: Mechanobiology**

**Abstract Title:** Human Valve Interstitial Cell 3D Contractile Behaviors in the Normal and Diseased States

**Presenter:** Robin Tuscher

**Principal Investigator:** N/A

**Author(s):**

Robin Tuscher

Alex Khang

Toni West

Michael Sacks

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster  
**Number:** 191

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** Stimulation Via Cone-and-Plate Flow Device Activates DC2.4 Cells  
**Presenter:** Schyler Rowland  
**Principal Investigator:** Michael King  
**Author(s):**  
Schyler Rowland  
Jenna Dombroski  
Jacob Hope  
Michael King

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster  
**Number:** 192

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** Shear-induced Detachment Behaviors of Endothelial Cells in Controlled Biophysical Microenvironment  
**Presenter:** Ham Seok Hoon  
**Principal Investigator:** N/A  
**Author(s):**  
Tae Yoon Kwon  
Eunyoung Park  
Minwoo Kang  
Jennifer Shin

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster  
**Number:** 193

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** Isolation and Culture of Astrocytes without Activation by Modifying Wettability of Culture Plate Surface  
**Presenter:** Uk Jegal  
**Principal Investigator:** N/A  
**Author(s):**  
Uk Jegal  
Eunyoung Park  
Eunmin Ko  
Wongi Choi  
Jennifer Shin

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster  
**Number:** 194

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics:  
Mechanobiology**

**Abstract Title:** Membrane bending activated sulfatide dependent hypoxic adhesion of sickle mature erythrocytes  
**Presenter:** Utku Goreke  
**Principal Investigator:** N/A  
**Author(s):**  
Umut Gurkan  
Jane Little  
Ran An

**Thursday, October 13**

2:30 PM - 3:30 PM

Poster Session: B, Section: C, Row: G, Poster

Number: 195

Track: BIOMECHANICS

**Cellular and Molecular Biomechanics:  
Mechanobiology**

Abstract Title: Vinculin is Required for High Force Transmission at Cell-ECM and Cell-Cell Contacts

Presenter: Venkat Maruthamuthu

Principal Investigator: N/A

Author(s):

Mazen Mezher

Daniel Conway

**Thursday, October 13**

2:30 PM - 3:30 PM

Poster Session: B, Section: C, Row: G, Poster

Number: 196

Track: BIOMECHANICS

**Cellular and Molecular Biomechanics:  
Mechanobiology**

Abstract Title: Force Imaging Shows That Podosome Formation Requires No Integrin Tensions

Presenter: Xuefeng Wang

Principal Investigator: N/A

Author(s):

N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

Poster Session: B, Section: C, Row: G, Poster

Number: 197

Track: BIOMECHANICS

**Cellular and Molecular Biomechanics:  
Mechanobiology**

Abstract Title: Time-Dependent Responses of hiPSC-Derived Cardiomyocytes to a Dynamic Topographic Surface

Presenter: Zhen Ma

Principal Investigator: N/A

Author(s):

N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

Poster Session: B, Section: C, Row: G, Poster

Number: 198

Track: BIOMECHANICS

**Matrix Effects in Mechanobiology**

Abstract Title: In Vitro Hydrogel Modeling For Studying Environmental Factors On Human Pulmonary Fibroblasts

Presenter: Darren Loh

Principal Investigator: N/A

Author(s):

Adrienne Rosales

**Thursday, October 13**

2:30 PM - 3:30 PM

Poster Session: B, Section: C, Row: G, Poster

Number: 199

Track: BIOMECHANICS

**Matrix Effects in Mechanobiology**Abstract Title: Mechanical Regulation of Histone Modifications During TGF $\beta$ 1-Induced Epithelial-to-Mesenchymal Transition

Presenter: Jessica Sacco

Principal Investigator: Esther Gomez

Author(s):

Jessica Sacco

Elix Sumner

Ava Self

Zachary Vaneman

Chinmay Sankhe

Esther Gomez

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: G, Poster  
**Number:** 200

**Track:** BIOMECHANICS  
**Matrix Effects in Mechanobiology**

**Abstract Title:** Harnessing Microenvironment Regulation of Human Mesenchymal Stem Cells (hMSCs) Differentiation in Simulated Microgravity  
**Presenter:** Kiarra Richardson  
**Principal Investigator:** N/A  
**Author(s):**  
Yuwen ZHao  
Shue Wang

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 221

**Track:** BIOMECHANICS  
**Matrix Effects in Mechanobiology**

**Abstract Title:** Modeling Mechano-biological and Bio-mechanical Pathways in Cutaneous Wound Healing  
**Presenter:** Marco Pensalfini  
**Principal Investigator:** Adrian Buganza Tepole  
**Author(s):**  
Adrian Buganza Tepole

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 222

**Track:** BIOMECHANICS  
**Matrix Effects in Mechanobiology**

**Abstract Title:** Regulation of Cartilage Remodeling and Chondrocyte Mechanotransduction by Decorin during Aging  
**Presenter:** Mingyue Fan  
**Principal Investigator:** N/A  
**Author(s):**  
Biao Han  
Bryan Kwok  
Thomas Li  
CHao Wang  
Elizabeth Kahle  
Robert Mauck  
Lin Han

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 223

**Track:** BIOMECHANICS  
**Matrix Effects in Mechanobiology**

**Abstract Title:** Correlating the Regional Microstructure of Decellularized Porcine Myocardium to Shear Mechanics  
**Presenter:** Stacey Cahoon  
**Principal Investigator:** N/A  
**Author(s):**  
Stacey Cahoon  
Colin Harris  
Tyler Washington  
Nicolas Gallo  
Marcella Vaicik  
John Georgiadis

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster

**Number:** 224

**Track:** BIOMECHANICS

### Neuromuscular and Brain Biomechanics

**Abstract Title:** Evaluating Potential Axonal Tract Injury from Head Impacts using Finite Element Models of the Brain

**Presenter:** Luke Patterson

**Principal Investigator:** N/A

**Author(s):**

Luke Patterson

Emilie Potts

Yanir Levy

Haojie Mao

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster

**Number:** 225

**Track:** BIOMECHANICS

### Neuromuscular and Brain Biomechanics

**Abstract Title:** The Effect Of Minocycline On Blast-Induced Microglial Activation In The Cerebellum

**Presenter:** Pranav Rajaram

**Principal Investigator:** N/A

**Author(s):**

Pranav Rajaram

Jay Venkatraman

Pamela VandeVord

Cynthia Bir

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster

**Number:** 226

**Track:** BIOMECHANICS

### Neuromuscular and Brain Biomechanics

**Abstract Title:** Exploring the Effects of Microgravity on the Thoracolumbar Spine Musculature with Long-Duration International Space Station Missions

**Presenter:** Luis Poveda

**Principal Investigator:** N/A

**Author(s):**

Diana Madrid

Ashley Weaver

Siddharth Dash

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster

**Number:** 227

**Track:** BIOMECHANICS

### Neuromuscular and Brain Biomechanics

**Abstract Title:** Alternatives to Br-FPL Tendon Transfer Surgeries following Tetraplegia: A Simulation Study

**Presenter:** Joseph Towles

**Principal Investigator:** N/A

**Author(s):**

Joseph Towles

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 228

**Track:** BIOMECHANICS  
**Neuromuscular and Brain Biomechanics  
(Summer Undergraduate)**

**Abstract Title:** Investigating the Effect of Cerebral Atrophy on Brain Deformation Using Subject-Specific Models

**Presenter:** Allen Hong

**Principal Investigator:** N/A

**Author(s):**

Aaron Carass

Ahmed Alshareef

Jerry Prince

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 229

**Track:** BIOMECHANICS  
**Biomechanics In Cell and Tissue  
Engineering**

**Abstract Title:** Magnetically actuated fibrin platform that enables investigating the role mechanically-mediated biochemical signaling plays in the assembly, maturation, and repair of skeletal muscle

**Presenter:** Angel Bu

**Principal Investigator:** Ritu Raman

**Author(s):**

Ritu Raman

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 230

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)  
**Design and Curriculum**

**Abstract Title:** Developing an Open-source Bioinstrumentation for Graduate-Level Microfluidic Education to Enhance Students' Creativity and Learning motivation

**Presenter:** Hsu-chan KUO

**Principal Investigator:** Hsu-Chan KUO

**Author(s):**

Hsu-chan KUO

Ting-Yuan Tu

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 231

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)  
**Design and Curriculum**

**Abstract Title:** The Polycarbonate Lung: An Engineering Design Exercise in Negative Pressure Ventilation

**Presenter:** Andrew Darling

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 232

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

### Design and Curriculum

**Abstract Title:** A Novel Course for Mentored  
Research Project with Remote Facilitation:  
Independent Study at Johns Hopkins University's  
Applied Biomedical Engineering (JHU-ABE)

**Presenter:** Anil Maybhate

**Principal Investigator:** N/A

**Author(s):**

Brock Wester

Eileen Haase

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 233

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

### Design and Curriculum

**Abstract Title:** Guiding A Curriculum Redesign  
Using A Teleological Approach: Application of  
Kotter's Change Model

**Presenter:** Charles Patrick

**Principal Investigator:** N/A

**Author(s):**

Daniel Alge

Isaac Adjei

Hatice Ceylan Koydemir

Mary McDougall

Michael McShane

Alex Walsh

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 234

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

### Other/Non-Specified

**Abstract Title:** Lessons and Future Directions in  
Open Access, Twitch-Based Science Communication

**Presenter:** Michael Blatchley

**Principal Investigator:** N/A

**Author(s):**

Bria Macklin

Franklyn Hall

Quinton Smith

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 235

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

### Design and Curriculum

**Abstract Title:** A Case-Based Approach in  
Bioinstrumentation for the Master of Engineering  
Program

**Presenter:** Olivia Coiado

**Principal Investigator:** N/A

**Author(s):**

Olivia Coiado

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 236

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)  
**Design and Curriculum**

**Abstract Title:** Developing Design Thinking in  
Senior Capstone Bioengineering Student

**Presenter:** Ruth Ochia

**Principal Investigator:** N/A

**Author(s):**

MICHAEL PHELAN

Aratrik Guha

Brandon Harrison

Vahid Alizadeh

Yah-el Har-el

Ruth Ochia

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 237

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)  
**K-12 Outreach**

**Abstract Title:** Teaching the Engineering Design  
Process using LEGO Prosthetic Limbs and Robotic  
Dogs

**Presenter:** Anne-Marie Ginn-Hedman

**Principal Investigator:** N/A

**Author(s):**

Abbie Clevenger

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 238

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)  
**K-12 Outreach**

**Abstract Title:** Lessons Learned: Exposing High  
School Students to Biomedical Engineering Through  
Interactive Workshops

**Presenter:** Anna Lei

**Principal Investigator:** N/A

**Author(s):**

Anna Lei

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 239

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Abstract Title:** Imaging of Protein Trafficking/  
Phagocytosis with Chemical Protein

**Presenter:** Victor Nguyen

**Principal Investigator:** Kazuya Kikuchi

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: C, Row: H, Poster  
**Number:** 240

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Abstract Title:** Recovery of Markers through  
Insonation : An Alternative to Monitoring Gene  
Expression in Deep Tissues  
**Presenter:** Joon Pyung Seo  
**Principal Investigator:** Jerzy Szablowski  
**Author(s):**  
James Trippett  
Jerzy Szablowski

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster  
**Number:** 261

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Abstract Title:** Pupil As An Indication For  
Neuropathic Pain  
**Presenter:** Venkat Kalyan Reddy Yasa  
**Principal Investigator:** Nathalia Peixoto  
**Author(s):**  
Nathalia Peixoto  
Justin Matthews

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster  
**Number:** 262

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Abstract Title:** Design of a Lightweight Mobile  
Stroke Unit CT Scanner  
**Presenter:** Kate Fox  
**Principal Investigator:** Kate Fox  
**Author(s):**  
Kern Cowell  
Toh Yen Pang  
Jun Sheng Kwok

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster  
**Number:** 263

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Abstract Title:** Construction of an Optical CT  
Scanner for Differentiation Between Susceptibility  
Effects in MRI  
**Presenter:** Madison White  
**Principal Investigator:** N/A  
**Author(s):**  
Edith Valle  
Jacob Degitz  
Mary McDougall

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster  
**Number:** 264

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION (Summer REU)  
**Imaging Cells, Molecules, and Genome (Summer Undergraduate)**

**Abstract Title:** Embedded Microstructures Arrays for Single-Cell Sorting and Collecting of Lymphocytes Following HIV Latency Reactivation  
**Presenter:** Belen Cortes Llanos Nancy Allbritton  
**Principal Investigator:** N/A  
**Author(s):**  
Vaibhav Jain  
Edward Browne  
David Murdoch  
Nancy Allbritton

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster  
**Number:** 265

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION (Summer REU)  
**Imaging Cells, Molecules, and Genome (Summer Undergraduate)**

**Abstract Title:** Under Oil Culture System Simulates Hypoxic Microenvironment and Alters Optical Redox Ratio  
**Presenter:** Jaleisha Joan Vélez Velázquez  
**Principal Investigator:** N/A  
**Author(s):**  
Melissa Skala  
Amani Gillette

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster  
**Number:** 266

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION (Summer REU)  
**Imaging Cells, Molecules, and Genome (Summer Undergraduate)**

**Abstract Title:** Investigating the Preparation Methods for Super-Resolution Imaging of Tunneling Nanotubes  
**Presenter:** Joseph Porter  
**Principal Investigator:** Melike Lakadamyali  
**Author(s):**  
N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster  
**Number:** 267

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION (Summer REU)  
**Imaging Cells, Molecules, and Genome (Summer Undergraduate)**

**Abstract Title:** Quantitative Analysis of Rapamycin on Optical Redox Ratios of NIH 3T3 Cells  
**Presenter:** Kyle Quinn  
**Principal Investigator:** Benjamin Michael Butter  
**Author(s):**  
Benjamin Butter  
Olivia Kolenc  
Mamello Mohale  
Kyle Quinn

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster**Number:** 268**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION (Summer REU)**Other / Non-specified (Undergraduate)****Abstract Title:** Effect of Frequency of Phonation on Laryngeal Ultrasound Vocal Fold Visualization**Presenter:** Alexandra Chertok**Principal Investigator:** Todd Freeborn**Author(s):**

Todd Freeborn

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster**Number:** 269**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION (Summer REU)**Other / Non-specified (Undergraduate)****Abstract Title:** Cortical Mechanisms of Pain in the Adult Somatosensory Cortex: A Pilot EEG Study**Presenter:** William Andrew Sikora**Principal Investigator:** William Andrew Sikora**Author(s):**

Desiree Azizoddin

Louis Lepak

Faiz Safdar

Ashton Baltazar

Yuan Yang

Carolyn Cheema

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster**Number:** 270**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION (Summer REU)**Other / Non-specified (Undergraduate)****Abstract Title:** Simulated Performance Analysis of a Low-Cost Circuit for Electroglottography Measurements**Presenter:** Elijah Trutt**Principal Investigator:** N/A**Author(s):**

Todd Freeborn

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster**Number:** 271**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION (Summer REU)**Other / Non-specified (Undergraduate)****Abstract Title:** Thyroid Cartilage Effects on The Simulated Bioimpedance of Localized Neck Tissues**Presenter:** Emma Milianta**Principal Investigator:** N/A**Author(s):**

Todd Freeborn

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster**Number:** 272**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION (Summer REU)**Other / Non-specified (Undergraduate)****Abstract Title:** Comparison of Metrics for Activity Differentiation Within Oral-Facial sEMG Datasets**Presenter:** Megan Summitt**Principal Investigator:** N/A**Author(s):**

Todd Freeborn

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster  
**Number:** 273**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION (Summer REU)  
**Other / Non-specified (Undergraduate)****Abstract Title:** Testing the Reliability of an E4 Watch  
for In-The-Field Experiments**Presenter:** Susan Pham**Principal Investigator:** Nathalia Peixoto**Author(s):**

Pamela Benitez

Nathalia Peixoto

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster  
**Number:** 274**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION (Summer REU)  
**X-ray and Computed Tomographic  
Imaging (CT) (Summer Undergraduate)****Abstract Title:** Deep Learning Image Generation for  
Pulmonary Artifact Correction in 4DCT**Presenter:** Dallin Fairbourn**Principal Investigator:** Joseph M. Reinhardt**Author(s):**

Joshua Carrizales

Joseph Reinhardt

Gary Christensen

Mattison Flakus

John Bayouth

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster  
**Number:** 275**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION (Summer REU)  
**X-ray and Computed Tomographic  
Imaging (CT) (Summer Undergraduate)****Abstract Title:** Contrast-Enhancing Method to  
Visualize Tendon in 3D Using Micro-CT**Presenter:** Destinee Ditton**Principal Investigator:** Nathan R Schiele**Author(s):**

Nathan Schiele

Colin Marchus

Michele Brumley

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster  
**Number:** 276**Track: BIOMEDICAL IMAGING  
AND INSTRUMENTATION (Summer REU)**  
X-ray and Computed Tomographic Imaging (CT)  
(Summer Undergraduate)**Abstract Title:** An Antioxidant Countermeasure  
Protects Joint Health during Spaceflight**Presenter:** Sabrina Vander Wiele**Principal Investigator:** Jeffery Willey**Author(s):**

Chirayu Patel

Jeffrey Willey

Xiao W Mao

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster**Number:** 277**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Imaging Cells, Molecules, and Genome****Abstract Title:** Activatable Nanoprobes that Measure Macrophage Phenotypic States Associated with Disease Progression**Presenter:** Anujan Ramesh**Principal Investigator:** N/A**Author(s):**

Nilesh Deshpande

Anh Nguyen

Anthony Brouillard

Vaishali Malik

Ashish Kulkarni

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster**Number:** 278**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Imaging Cells, Molecules, and Genome****Abstract Title:** In vivo and ex vivo imaging of NAD(P)H changes in lung fibrosis**Presenter:** Patrick Link**Principal Investigator:** Daniel Tschumperlin**Author(s):**

Jeffrey Meridew

Kyoung Choi

Daniel Tschumperlin

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster**Number:** 279**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Imaging Cells, Molecules, and Genome****Abstract Title:** Engineering a Live Cell 3D Imaging Assay to Assess Mitochondrial Changes in Estrogen Receptive Cells**Presenter:** Meredith Adams**Principal Investigator:** Brian Johnson**Author(s):**

Brian Johnson

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: I, Poster**Number:** 280**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Imaging Cells, Molecules, and Genome****Abstract Title:** Quantifying Macrophage Phagocytic Activity Using A Fluorescence Microscopy-Based Screening Assay**Presenter:** Matthew Igoe**Principal Investigator:** N/A**Author(s):**

Shelby Bess

Timothy Muldoon

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 301

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION  
**Imaging Cells, Molecules, and Genome**

**Abstract Title:** 3D Holotomographic Imaging of Live Cells to Characterize Endothelialization

**Presenter:** Patrick Journey

**Principal Investigator:** N/A

**Author(s):**

Christian Leycam

Gabriela Acevedo Munares

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 302

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION  
**Imaging Cells, Molecules, and Genome**

**Abstract Title:** Imaging Flow Cytometry to Characterize the Mitochondrial Content of Extracellular Microparticles

**Presenter:** Zahid Manzar

**Principal Investigator:** Barbara Alevriadou

**Author(s):**

Hazel Szeto

hans minderman

B. Rita Alevriadou

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 303

**Track:** BIOMEDICAL ENGINEERING EDUCATION (BME) > Diversity, Equity, and Inclusion  
**Diversity, Equity, and Inclusion**

**Abstract Title:** Virtual Programming for Dissemination of Stem Cell and Tissue Engineering Research

**Presenter:** Daniel Tavakol

**Principal Investigator:** N/A

**Author(s):**

Gordana Vunjak-Novakovic

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 304

**Track:** BIOMEDICAL ENGINEERING EDUCATION (BME) > Diversity, Equity, and Inclusion  
**Diversity, Equity, and Inclusion**

**Abstract Title:** Offering Multiple Media Options for BME Students to Express What They Know About Biostatistics

**Presenter:** Mia Markey

**Principal Investigator:** N/A

**Author(s):**

N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 305**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME) > Diversity, Equity, and  
Inclusion**Diversity, Equity, and Inclusion****Abstract Title:** Exploring Classroom Use of ASL  
Aspire: A STEM Vocabulary Platform for Deaf  
Students**Presenter:** Amy Lee**Principal Investigator:** Luisa Rosu**Author(s):**

Amy Lee

Aminah Hussain

Mona Jawad

Ethan Gaughan

Ryan Martin

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 306**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME) > Diversity, Equity, and  
Inclusion**Diversity, Equity, and Inclusion****Abstract Title:** Introducing Healthcare Disparities  
into Graduate Biomedical Engineering Education**Presenter:** Mykel Green**Principal Investigator:** N/A**Author(s):**

Olivia Lanier

Elizabeth Cosgriff-Hernandez

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 307**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION > X-ray and Computed  
Tomographic Imaging (CT)**X-ray and Computed Tomographic  
Imaging (CT)****Abstract Title:** Impact of CT Resolution on  
Accuracy of Patient-Specific Models for Cranio-Facial  
Reconstruction**Presenter:** Maari Ahmed**Principal Investigator:** Kyle K VanKoevinger,  
Edward Herderick**Author(s):**

Natalia von Windheim

Kyle VanKoevinger

Ed Herderick

Luigi Melaragno

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 308**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION > X-ray and Computed  
Tomographic Imaging (CT)**X-ray and Computed Tomographic  
Imaging (CT)****Abstract Title:** Deep Learning 2D U-net CNN for  
Pulmonary Artifact Detection in Four-Dimensional  
Computed Tomography**Presenter:** Joshua Carrizales**Principal Investigator:** N/A**Author(s):**

Joshua Carrizales

Wei SHao

Mattison Flakus

John Bayouth

Gary Christensen

Joseph Reinhardt

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 309**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION > X-ray and Computed Tomographic Imaging (CT)  
**X-ray and Computed Tomographic Imaging (CT)****Abstract Title:** Effects of Low-Dose X-Ray Radiation at Varying Dose Rates on Aortic Smooth Muscle Cells In Vitro**Presenter:** Charles Winchester**Principal Investigator:** N/A**Author(s):**

Charles Winchester

Arianna Csiszer

Almog Gur

Regan Frye

Andrew Rifkin

Zion Lesesne

Natalie Anderson

Endre Takacs

Delphine Dean

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 310**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION > X-ray and Computed Tomographic Imaging (CT)  
**X-ray and Computed Tomographic Imaging (CT)****Abstract Title:** The UF-MSK Library of Pediatric Computational Phantoms for Radiation Dosimetry**Presenter:** Laura Dinwiddie**Principal Investigator:** Wesley Bolch**Author(s):**

Laura Dinwiddie

Robert Dawson  
Jared Baggett  
Yitian Wang  
Wyatt Smither  
Cameron Kofler  
Lukas Carter  
Adam Kesner  
Wesley Bolch**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 311**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION > X-ray and Computed Tomographic Imaging (CT)  
**X-ray and Computed Tomographic Imaging (CT)****Abstract Title:** Three-Dimensional Morphology of the Diaphragm In Normative Pediatric Subjects**Presenter:** Marc Mounzer**Principal Investigator:** N/A**Author(s):**

Sriram Balasubramanian

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 312**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies****Abstract Title:** A Microengineered Model of Vascularized Solid Tumors for The Study of CAR T Immunotherapy**Presenter:** Haijiao Liu**Principal Investigator:** Dan Donggeun Huh**Author(s):**

Haijiao Liu

Ju Young Park

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster

**Number:** 313

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** Modeling breast cancer metastatic colonization within an engineered bone marrow model

**Presenter:** Ilaria Baldassarri

**Principal Investigator:** Gordana Vunjak-Novakovic

**Author(s):**

Daniel Tavakol

Gordana Vunjak-Novakovic

Pamela Graney

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster

**Number:** 314

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** Toward Engineering Models of Dormancy and Aggressive Recurrence Associated with Drug Resistance Following Platinum-based Cytotoxic Therapies

**Presenter:** Omar Ahmad

**Principal Investigator:** Mark Mondrinos

**Author(s):**

Elisabet Olsen

Mark Mondrinos

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster

**Number:** 315

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies (Summer Undergraduate)

**Abstract Title:** 3D Bioprinting Of Pancreatic Tumor Spheroids

**Presenter:** Ailene Edwards

**Principal Investigator:** Matthew Lazzara

**Author(s):**

Matthew Lazzara

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster

**Number:** 316

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies (Summer Undergraduate)

**Abstract Title:** Investigating Ovarian Cancer Spheroids as Improved in vitro Models of Inherent Chemoresistance

**Presenter:** Amanda Murray

**Principal Investigator:** Angela Alexander-Bryant

**Author(s):**

Kharimat Alatise

Angela Alexander-Bryant

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster

**Number:** 317

**Track:** CANCER TECHNOLOGIES

### Cancer Cell Motility and Migration

**Abstract Title:** Evaluation of Breast Tumor K14 Leader Cells Polarization in 3D Aligned Collagen Fibers

**Presenter:** Jessanne Lichtenberg

**Principal Investigator:** N/A

**Author(s):**

Priscilla Hwang

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: J, Poster  
**Number:** 318

**Track:** CANCER TECHNOLOGIES  
**Cancer Cell Motility and Migration**

**Abstract Title:** Under Pressure: How Confinement Drives Mechanical Memory in Migratory Breast Cancer Cells

**Presenter:** Jenna Mosier

**Principal Investigator:** N/A

**Author(s):**

Catherine Ludolph

Addison White

Matthew Zanotelli

Cynthia Reinhart-King

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 342

**Track:** CANCER TECHNOLOGIES  
**Computational Modeling of Cancer (Summer Undergraduate)**

**Abstract Title:** Image-Based Biophysical Modeling and Radiomics to Predict Breast Cancer NAT Response

**Presenter:** Amy Prendergast

**Principal Investigator:** Jared A. Weis

**Author(s):**

Haley Johnson Bowers

Jared Weis

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 342

**Track:** CANCER TECHNOLOGIES  
**Cancer Cell Motility and Migration**

**Abstract Title:** Mechanical Memory Acquisition of Oral Squamous Cell Carcinoma (OSCC) and Biological Pathways Involved in the Process

**Presenter:** So Youn Moon

**Principal Investigator:** N/A

**Author(s):**

Jesse Placone

Marcelo Lamers

Adam Engler

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 343

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies**

**Abstract Title:** Integrating Microribbon-based 3D Osteosarcoma Model with Patient-derived Xenograft Cell Lines and High-dimensional Sequencing for Drug Discovery

**Presenter:** Callan Monette

**Principal Investigator:** N/A

**Author(s):**

Eva Gonzalez Diaz

Fan Yang

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster

**Number:** 344

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** Impact of Culture Proximity in Paracrine Hedgehog Signaling in Triple Negative Breast Cancer

**Presenter:** Heizel Rosado

**Principal Investigator:** N/A

**Author(s):**

Ana Reyes Ramos

Natalia Ramos

Wandaliz Torres-Garcia

Maribella Domenech

Michelle Martinez

Miosotis Acevedo

Gabriela Ortiz-Soto

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster

**Number:** 345

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** Regulation of Ovarian Cancer Invasiveness by Mechanical Memory

**Presenter:** Jiwon Kim

**Principal Investigator:** N/A

**Author(s):**

Hyuntae Jeong

Chanhong Min

Jennifer Shin

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster

**Number:** 346

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** MCF-7 Breast Cancer Cells and MC3T3-E1 Preosteoblasts Communicate Through Extra-Long “Intercellular Highways”: A Pilot Study

**Presenter:** Karen Burg

**Principal Investigator:** Karen J.L. Burg

**Author(s):**

Weitong Chen

Didier Dréau

Timothy Burg

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster

**Number:** 347

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** A Three-Dimensional Neuroblastoma-Immune Co-culture Model Using Lyophilized Silk Fibroin Scaffolds

**Presenter:** Katelyn Mistretta

**Principal Investigator:** Jeannine M. Coburn

**Author(s):**

Katelyn Mistretta

Jeannine Coburn

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 348

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies**

**Abstract Title:** Macrophages Cooperatively Phagocytose Tumor Cell Targets in Engineered Immuno-Tumoroids

**Presenter:** Lawrence Dooling

**Principal Investigator:** N/A

**Author(s):**

Lawrence Dooling  
Jason Andrechak  
Brandon Hayes  
Dennis Discher

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 349

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies**

**Abstract Title:** Vectorized Photodynamic Therapy In Increasing Complexity Bladder Cancer Models

**Presenter:** Maxime LABROY

**Principal Investigator:** Maxime LABROY

**Author(s):**

Laure Gibot  
Stephane Chabaud  
Francois Bordeleau  
Sara Gouarderes  
Stephane Bolduc

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 350

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies**

**Abstract Title:** Production of a Tunable CTC Cluster in vitro Model via a Superhydrophobic Microwell Array Device

**Presenter:** Olivia Wright

**Principal Investigator:** N/A

**Author(s):**

Maria Lopez Cavestany  
Kalana Jayawardana  
Noah Reckhorn  
Deyu Li  
Michael King

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 351

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies**

**Abstract Title:** Engineering Physiologically Relevant Hypoxia-induced ECM remodeling in Ovarian Cancer

**Presenter:** Pilar de la Puente

**Principal Investigator:** N/A

**Author(s):**

Kristin Calar  
Simona Plesselova  
Pilar de la Puente

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster

**Number:** 352

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** A Gravity-Driven Organs-on-Chip Device to Study Tissue Responses to Cancer Therapeutics

**Presenter:** Pouria Rafsanjani Nejad

**Principal Investigator:** N/A

**Author(s):**

Hossein Tavana

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster

**Number:** 353

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** Microfluidic Harvesting of Spheroid-Derived Extracellular Vesicles from Immobilized Microgels

**Presenter:** Xilal Rima

**Principal Investigator:** N/A

**Author(s):**

Eduardo Reategui

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster

**Number:** 354

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** Electrical stimulation of head and neck cancer cells using a piezoelectric nanofiber interface

**Presenter:** Maulee Sheth

**Principal Investigator:** Leyla Esfandiari

**Author(s):**

Maulee Sheth

Maksym Krutko

Maria Lehn

Andrew Bryan

Greg Harris

Trisha Wise-Draper

Leyla Esfandiari

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster

**Number:** 355

**Track:** CANCER TECHNOLOGIES

### Engineered Cancer Models for In Vitro Studies

**Abstract Title:** Glioblastoma Spheroid Growth and Chemotherapeutic Responses in Single and Dual-Stiffness Hydrogels

**Presenter:** Silviya Zustiak

**Principal Investigator:** N/A

**Author(s):**

Joseph Bruns

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 356

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies**

**Abstract Title:** Cancer-Associated Fibroblasts Produce a Pro-Angiogenic Environment in Microvasculature-on-a-Chip  
**Presenter:** Sarah Shelton  
**Principal Investigator:** N/A  
**Author(s):**  
Sarah Shelton  
David Barbie  
Roger Kamm

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 357

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies**

**Abstract Title:** A 3D Microfluidic Platform to Quantify Neutrophil-Tumor Spheroid Interactions  
**Presenter:** Shuai SHao  
**Principal Investigator:** N/A  
**Author(s):**  
Shuai SHao  
Caroline Jones

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 358

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies**

**Abstract Title:** An Engineered 3D Microfluidic Model To Assess How Adipocyte Hypertrophy Alters Breast Cancer Escape  
**Presenter:** Yoseph Dance  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 359

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro Studies**

**Abstract Title:** Production of Breast Cancer Hydrogel Microspheres for Drug Screening  
**Presenter:** Yuan Tian  
**Principal Investigator:** Elizabeth Lipke  
**Author(s):**  
Yuan Tian  
Wen Secto  
Shantanu Pradhan  
Dmitriy Minond  
Elizabeth Lipke

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: K, Poster  
**Number:** 360

**Track:** CARDIOVASCULAR ENGINEERING  
**Heart Valve Structure, Function, and Disease**

**Abstract Title:** Ventricular Hemodynamic Energetics as Novel Indicator to Assess Prosthetic Heart Valve Performance  
**Presenter:** Brandon Eberl  
**Principal Investigator:** Olga Pierrakos  
**Author(s):**  
Olga Pierrakos  
Brandon Eberl

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 381

**Track:** CARDIOVASCULAR ENGINEERING  
**Heart Valve Structure, Function, and Disease**

**Abstract Title:** MODELING AORTIC VALVE HEMODYNAMICS USING A NOVEL IMMERSSED BOUNDARY METHOD  
**Presenter:** Hamid Sadat  
**Principal Investigator:** Hamid Sadat  
**Author(s):**  
Mishal Raza  
Kamau Kingora

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 382

**Track:** CARDIOVASCULAR ENGINEERING  
**Heart Valve Structure, Function, and Disease**

**Abstract Title:** A Case Study on Decreased Coronary Flow after Transcatheter Aortic Valve Replacement  
**Presenter:** Brennan Vogl  
**Principal Investigator:** N/A  
**Author(s):**  
Brennan Vogl  
Hoda Hatoum

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 383

**Track:** CARDIOVASCULAR ENGINEERING  
**Heart Valve Structure, Function, and Disease**

**Abstract Title:** Association Of Aortic Valve Calcium Score And Chronic Kidney Disease In Patients With Aortic Stenosis  
**Presenter:** Muhammad Uqaily  
**Principal Investigator:** N/A  
**Author(s):**  
Muhammad Uqaily  
Irfan Zeb

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 384

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics**

**Abstract Title:** Characterizing Macrophage Behavior Under Pathological Shear Stress in Discrete Subaortic Stenosis

**Presenter:** Elysa Jui

**Principal Investigator:** N/A

**Author(s):**

Griffin Kingsley  
Jennifer Connell  
Jane Grande-Allen

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 385

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics**

**Abstract Title:** Simulating the Acute Hemodynamic Changes during Partial vs. Full Aortic Occlusion during Hemorrhage

**Presenter:** Fahim Mobin

**Principal Investigator:** N/A

**Author(s):**

Fahim Mobin  
Antonio Renaldo  
Christopher Tossas-Betancourt  
Timothy Williams  
Lucas Neff  
Jim Jordan  
C. Alberto Figueroa  
Elahesh Rahbar

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 386

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics**

**Abstract Title:** Biomechanical and Microstructural Characterizations of Human Healthy and Hypertrophic Septal Tissues

**Presenter:** Jun Liao

**Principal Investigator:** N/A

**Author(s):**

Katherine Copeland  
Uday Chintapula  
Alan Taylor  
Yi Hong  
Kytai Nguyen

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 387

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics**

**Abstract Title:** 3D Effect of Biophysical Cues on Cardiac Fibroblast Contractility and Extracellular Matrix Secretion

**Presenter:** Kathleen Halwachs

**Principal Investigator:** N/A

**Author(s):**

Kathleen Halwachs  
Alex Hillsley  
Alex Khang  
Logan Morton  
Michael Sacks  
Adrienne Rosales

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 388

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics**

**Abstract Title:** Spatiotemporal statistical shape analysis of aortic growth in uncomplicated type B aortic dissection

**Presenter:** Minliang Liu

**Principal Investigator:** N/A

**Author(s):**

Minliang Liu

Hai Dong

Bradley Leshnowar

Rudolph Gleason

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 389

**Track:** CARDIOVASCULAR ENGINEERING  
Cardiovascular Biomechanics

**Abstract Title:** Association of RV hemodynamics with RVFW stiffening in pulmonary hypertension

**Presenter:** Sunder Neelakantan

**Principal Investigator:** N/A

**Author(s):**

Sunder Neelakantan

Preston Nicely

Gaurav Choudhary

Reza Avaz

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 390

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics**

**Abstract Title:** Effects of Passive Remodeling on Relaxation in Left Ventricular Diastolic Dysfunction

**Presenter:** Tanmay Mukherjee

**Principal Investigator:** Reza Avazmohammadi

**Author(s):**

Tanmay Mukherjee

Sunder Neelakantan

Sakthivel Sadayappan

Reza Avaz

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 391

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics**

**Abstract Title:** Comparing In Vivo Green Strains of Normal Human Myocardium with Porcine Myocardium via DENSE

**Presenter:** Tawfik Hussein

**Principal Investigator:** N/A

**Author(s):**

John Oshinski

Muralidhar Padala

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 392

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics**

**Abstract Title:** SARS-CoV-2 Impact on Endothelial Activation and Barrier Function

**Presenter:** Xaymara Rivera Gonzalez

**Principal Investigator:** N/A

**Author(s):**

Sajedehalsadat Yazdanparast

Xaymara Rivera Gonzalez

Xiaohui (Frank) Zhang

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 393

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Devices**

**Abstract Title:** Material Thickness Impacted by the Incorporation of Serum Proteins: Implication for Valve Implants

**Presenter:** Mar Martinez Mas

**Principal Investigator:** N/A

**Author(s):**

Yingfei Xue

Alexey Abramov

Giovanni Ferrari

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 394

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Gene Delivery and Genome  
Bioengineering**

**Abstract Title:** Multiplex CRISPR/Cas9

Knockout Utilizing Serial Delivery via Microfluidics Transfection System

**Presenter:** Melis Keceli

**Principal Investigator:** Ian Sicher

**Author(s):**

Ailin Goff

Jocelyn Loo

Ockchul Kim

Alla Zamarayeva

Sewoon Han

Ian Sicher

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 395

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING  
**Gene Delivery and Genome  
Bioengineering**

**Abstract Title:** In Vivo Enhancement of AAV Vector Transduction of Murine Hepatocytes Via Electric Pulse Exposure

**Presenter:** Yizhou Yao

**Principal Investigator:** John Booske and Susan Hagness

**Author(s):**

John Booske

Susan Hagness

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 396

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### **Molecular and Cellular Immunoengineering**

**Abstract Title:** Characterization of PD-L1  
Conjugated Liposomes for Modulation of Effector T  
Cells in Type 1 Diabetes

**Presenter:** Maryum Salim

**Principal Investigator:** Edward A. Phelps

**Author(s):**

Edward Phelps

Matthew Becker

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 397

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING (Late Breaking) > - Molecular  
and Cellular Immunoengineering (Late Breaking)

### **Molecular and Cellular Immunoengineering**

**Abstract Title:** Tolerogenic Dendritic Cells are  
Recruited to Trauma Sites Through the CD103-  
XCR1 Axis

**Presenter:** Minhaj Bhuiyan

**Principal Investigator:** Bhuiyan

**Author(s):**

Kaitlyn Sadtler

Parinaz Fathi

Tran Ngo

Sabrina DeStefano

Mondreakest Faust

Kenneth Adusei

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 398

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### **Gene Delivery and Genome Bioengineering (Summer Undergraduate)**

**Abstract Title:** immortalization of Bovine Satellite  
Cells through Ectopic TERT and CDK4 Expression

**Presenter:** Miles Arnett David Kaplan

**Principal Investigator:** N/A

**Author(s):**

Addison Mirliani

Tina Guo

Andrew Stout

David Kaplan

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 399

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### **Gene Delivery and Genome Bioengineering (Summer Undergraduate)**

**Abstract Title:** Optimizing Carriers for Non-Invasive  
CRISPR-Based Gene Editing

**Presenter:** Hannah Yamagata

**Principal Investigator:** Kam Leong

**Author(s):**

Huiyi Liang

Kam Leong

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: L, Poster  
**Number:** 400**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Gene Delivery and Genome  
Bioengineering (Summer  
Undergraduate)****Abstract Title:** Gsx1 Reduces Glial Scar Formation at  
Chronic Stage of Spinal Cord Injury**Presenter:** Juan Gutierrez**Principal Investigator:** N/A**Author(s):**

Li Cai

Zachary Finkel

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 421**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular and Cellular  
Immunoengineering (Summer  
Undergraduate)****Abstract Title:** Roles of M-CSF and Focal Adhesion  
Kinase in Macrophage Response to Stiffness**Presenter:** Andrea Sedano**Principal Investigator:** René Olivares-Navarrete**Author(s):**

Rene Olivares-Navarrete

lais carvalho

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 422**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular and Cellular  
Immunoengineering (Summer  
Undergraduate)****Abstract Title:** Comparison of a Surgically Induced  
and Chemically Induced Dry Eye Model in Rabbits**Presenter:** Cambell France**Principal Investigator:** Bryan N. Brown**Author(s):**

Bryan Brown

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 423**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular and Cellular  
Immunoengineering (Summer  
Undergraduate)****Abstract Title:** Using Artificial Antigen-Presenting  
Cells to Generate Cytotoxic CD4+ T Cells In Vitro**Presenter:** Gohta Aihara**Principal Investigator:** Jonathan Schneck**Author(s):**

Ariel Isser

Joseph Choy

Mara Lanis

Jonathan Schneck

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 424

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### **Molecular and Cellular Immunoengineering (Summer Undergraduate)**

**Abstract Title:** Developing an Aptamer-mediated  
CRISPR interference System in Primary Human T  
cells

**Presenter:** Jeffrey Perera

**Principal Investigator:** Alexander Marson

**Author(s):**

Jeffrey Perera

Zachary Steinhart

Cody Mowery

Alexander Marson

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 425

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### **Molecular and Cellular Immunoengineering (Summer Undergraduate)**

**Abstract Title:** Inflammatory Cytokine Modulation  
of Amyloid-B Aggregation

**Presenter:** Shannon DePratter

**Principal Investigator:** N/A

**Author(s):**

Brittany Watson

Mihyun Waugh

Melissa Moss

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 426

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### **Molecular and Cellular Immunoengineering (Summer Undergraduate)**

**Abstract Title:** Generating PD-L1 Expressing  
Stem Cells for Immunoprotection in Regenerative  
Medicine

**Presenter:** Shea Kreinbrink

**Principal Investigator:** Joseph W. Freeman

**Author(s):**

Shea Kreinbrink

Rick Cohen

Joseph Freeman

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 427

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

### **Molecular and Cellular Immunoengineering (Summer Undergraduate)**

**Abstract Title:** Macrophage/Colorectal Cancer  
Cell Ratio in Engineered 3D Models Demonstrates  
Immune Editing

**Presenter:** Vibha Sheshadri

**Principal Investigator:** Shreya Raghavan

**Author(s):**

Anirudh Madyastha

Abbie Clevenger

Shreya Raghavan

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 428**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Gene Delivery and Genome  
Bioengineering****Abstract Title:** Cell Models and a High-Throughput  
Assay for Discovering Novel Therapeutics to Cure  
Cystic Fibrosis**Presenter:** Aidi Liu**Principal Investigator:** Gang Bao**Author(s):**

Aidi Liu

Mithil Chokshi

Gang Bao

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 429**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Gene Delivery and Genome  
Bioengineering****Abstract Title:** Methionine adenosyltransferase2A  
inhibition restores the strength of aged skeletal muscle**Presenter:** Izuagie Ikhapoh**Principal Investigator:** N/A**Author(s):**

Izuagie Ikhapoh

Nika Rajabian

Debanik Choudhury

Shahryar Shahini

Ramkumar Thiyagarajan

Kenneth Seldeen

Bruce Troen

Mohamed Mohamed

Kirkwood Personius

Stelios Andreadis

Aref Shahini

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 430**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Gene Delivery and Genome  
Bioengineering****Abstract Title:** Development of Model Cell Lines for  
Myotonia Congenita Using Gene-Editing**Presenter:** Daniel Prasca-Chamorro**Principal Investigator:** N/A**Author(s):**

Daniel Prasca-Chamorro

Mithil Chokshi

Gang Bao

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 431**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Gene Delivery and Genome  
Bioengineering****Abstract Title:** Programmable Exon Skipping by  
Simultaneous Base Editing of Splice Donors and  
Acceptors**Presenter:** Gianna Elias**Principal Investigator:** Pablo Perez-Pinera**Author(s):**

Gianna Elias

Angelo Miskalis

Shraddha Shirguppe

Pablo Perez-Pinera

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 432

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Gene Delivery and Genome  
Bioengineering**

**Abstract Title:** Targeting Lung Stem Cells for In  
Vivo Gene Editing to Cure Cystic Fibrosis

**Presenter:** Ishika KhonDaker

**Principal Investigator:** Gang Bao

**Author(s):**

Ishika KhonDaker

Mithil Chokshi

Gang Bao

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 433

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Gene Delivery and Genome  
Bioengineering**

**Abstract Title:** DNA-Inspired Nanopieces for  
mRNA Delivery and Gene Editing

**Presenter:** Jinhyung Lee

**Principal Investigator:** Yupeng Chen

**Author(s):**

N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 434

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Gene Delivery and Genome  
Bioengineering**

**Abstract Title:** Gene Circuits Delivered by a  
Baculovirus Vector Enable Complex Regulation of  
Cas9 Gene Editing in vivo

**Presenter:** Lucas Brown

**Principal Investigator:** Gang Bao

**Author(s):**

Lucas Brown

Caleb Bashor

Gang Bao

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 435

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Gene Delivery and Genome  
Bioengineering**

**Abstract Title:** Developing CRISPR-mediated Prime  
Editors for Exon Skipping in Duchenne Muscular  
Dystrophy

**Presenter:** Mary Jia

**Principal Investigator:** Christopher Nelson

**Author(s):**

Christopher Nelson

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 436

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Gene Delivery and Genome  
Bioengineering**

**Abstract Title:** Cfr Mutation Induced Macrophage  
Dysfunction in Cystic Fibrosis

**Presenter:** Mithil Chokshi

**Principal Investigator:** N/A

**Author(s):**  
N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 437

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Gene Delivery and Genome  
Bioengineering**

**Abstract Title:** Optimizing Adeno-Associated Viral  
Vectors to Up- and Downregulate Multiple Genes

**Presenter:** Pichayathida Luanpaisanon

**Principal Investigator:** N/A

**Author(s):**  
Brent French  
Nyota Patel

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 438

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Gene Delivery and Genome  
Bioengineering**

**Abstract Title:** Genetic correction of Huntington's  
disease by in vivo base editing

**Presenter:** Shraddha Shirguppe

**Principal Investigator:** Pablo Perez Pinera

**Author(s):**  
N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 439

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Gene Delivery and Genome  
Bioengineering**

**Abstract Title:** Programming Off-the-Shelf Human  
iPSCs using 100+ kilobase Genome Writing

**Presenter:** David Truong

**Principal Investigator:** N/A

**Author(s):**  
N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: M, Poster  
**Number:** 440**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular and Cellular  
ImmunoEngineering****Abstract Title:** Human pluripotent stem cells as  
a potent source for engineered macrophage cancer  
immunotherapies**Presenter:** Andrew Khalil**Principal Investigator:** N/A**Author(s):**

Kipp Weiskopf

Tenzin Lungjangwa

Kyle Vaccaro

Juliet Allen

Rudolf Jaenisch

David Mooney

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 461**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular and Cellular  
ImmunoEngineering****Abstract Title:** Alveolar Macrophages Drive Lung  
Fibroblast Contraction and Changes in Gene  
Expression**Presenter:** Caymen Novak**Principal Investigator:** Megan Ballinger**Author(s):**

Samir Ghadiali

Megan Ballinger

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 462**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular and Cellular  
ImmunoEngineering****Abstract Title:** mRNA Based CAR T cell  
Engineering and Study the Cytotoxicity Against  
Acute Lymphoblastic Leukemia**Presenter:** Dharmakeerthi Nawarathna**Principal Investigator:** Nawarathna Dharmakeerthi**Author(s):**

Sena Dere

Alison Greteman

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 463**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Abstract Title:** BCG-Mediated Histone Post-  
Translational Modifications in Macrophages**Presenter:** Zoe Schaefer**Principal Investigator:** N/A**Author(s):**

Zoe Schaefer

Ivana Parker

Evelyn Ngwa

Lumngwena

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 464

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified**

**Abstract Title:** Mechanosensitive Piezo1 Stimulation  
Increases Red Blood Cell and Endothelial Cell Nitric  
Oxide Through Different Pathways

**Presenter:** Gurneet Sangha

**Principal Investigator:** Alisa Morss Clyne

**Author(s):**

Ryan Sapp

Alisa Clyne

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 465

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified**

**Abstract Title:** Stochastic Pluripotent Gene  
Expression Control through Cell Cycle Arrest

**Presenter:** Jason Wang

**Principal Investigator:** N/A

**Author(s):**

jason wang

Shreyaa Khanna

Blashko Milenkovski

Roy Dar

Hyunjoon Kong

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 466

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified**

**Abstract Title:** Cell-Free Recombinase Genetic  
Circuit for Biological Memory Storage

**Presenter:** Jingyao Chen

**Principal Investigator:** N/A

**Author(s):**

Wilson Wong

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 467

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified**

**Abstract Title:** PCSK9 Inhibitors Decrease  
Inflammatory Response and Foam Cell Formation in  
iPSC-derived Vascular SMCs

**Presenter:** Kevin Shores

**Principal Investigator:** George Truskey

**Author(s):**

Benjamin Evison

Charles Gersbach

George Truskey

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 468

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified**

**Abstract Title:** Transport Mechanisms of Therapeutic  
Poloxamer P188

**Presenter:** Michael Cho

**Principal Investigator:** N/A

**Author(s):**

Rafiq Shihab

Anne Alsup

Jacob Lubert

Michael Cho

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 469

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular and Cellular  
ImmunoEngineering**

**Abstract Title:** Fractionation and Characterization  
of Immune Cell Organelles for Synthetic Cellular  
Biology

**Presenter:** Joshua Devier

**Principal Investigator:** Joshua Doloff

**Author(s):**

Jody Mou

Sixiang Wang

Joshua Doloff

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 470

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular and Cellular  
ImmunoEngineering**

**Abstract Title:** Human SUMOylation Pathway Is  
Critical for Influenza B Virus

**Presenter:** Jiayu Liao

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 471

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Cell Migration**

**Abstract Title:** High Glucose Concentration  
Contributes to Fluid Shear-Induced Breast Cancer  
Cell Migration

**Presenter:** Jung Yul Lim

**Principal Investigator:** N/A

**Author(s):**

Eunju Kim

Jung Yul Lim

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 472**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Cell Migration****Abstract Title:** Investigation of Chemotaxis in  
Neutrophil-Like HL-60 Cells in a 3D Collagen  
Matrix**Presenter:** Pouye Sedighian**Principal Investigator:** N/A**Author(s):**

Pouye Sedighian

Daniel Bursch

Perla Ayala

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 473**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Cell Migration****Abstract Title:** Examining the Role of P-cadherin in  
Epithelial Collective Cell Migration**Presenter:** Sydnie Tran**Principal Investigator:** Priscilla Hwang**Author(s):**

Santiago Lopez

Sydnie Tran

Daniel Conway

Priscilla Hwang

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 474**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Computational predictions &  
Xenopus screening identifies drugs that slow  
metabolism in porcine limbs**Presenter:** Megan Sperry**Principal Investigator:** Donald Ingber**Author(s):**

Megan Sperry

Berenice Charrez

Haleh Fotowat

Erica Gardner

Zohreh Izadifar

Shruti Kaushal

Abigail Kuelker

Michael Lewandowski

Tiffany Lin

Manuel Martinez

Kanoelani Pilobello

Takako Takeda

Rafael Veraza

Erik Weitzel

LEONID BUNEGIN

Adama Sesay

Michael Levin

Michael Super

Richard Novak

Donald Ingber

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 475

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Food System Monitoring: Towards  
a Field-Deployable Swine 3-plex PCR Assay for  
Differentiation of Foot and Mouth Disease Virus  
from Senecavirus A

**Presenter:** Emma Wheat

**Principal Investigator:** N/A

**Author(s):**

Emma Wheat

Frederick Haselton

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 476

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Wearable Sensors and Devices**

**Abstract Title:** Pressure Sore Detection in Lower  
Limb Casts for Children with Cerebral Palsy

**Presenter:** Ashutosh Khandha

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 477

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Wearable Sensors and Devices**

**Abstract Title:** Wearable Device for Simultaneous  
Pulse Pressure Waveform Analysis at Carotid Arteries

**Presenter:** Alessio Tamborini

**Principal Investigator:** Mory Gharib

**Author(s):**

Alessio tamborini

Morteza Gharib

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 478

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Wearable Sensors and Devices**

**Abstract Title:** Wearable System for Estimating  
Energy Expenditure in Individuals with a Lower-Limb  
Amputation

**Presenter:** James Baker

**Principal Investigator:** N/A

**Author(s):**

Madelyn Person

Hamid Charkhkar

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 479

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Wearable Sensors and Devices**

**Abstract Title:** Smart Prosthesis Liner for  
Monitoring Residual Limb Health and Wound  
Prevention

**Presenter:** Madelyn Person

**Principal Investigator:** Hamid Charkhkar

**Author(s):**  
Hamid Charkhkar

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: D, Row: N, Poster  
**Number:** 480

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Wearable Sensors and Devices**

**Abstract Title:** A Comparison of  
Photoplethysmography and Near Infrared  
Spectroscopy Measurements on Four Body Sites

**Presenter:** Mahsa Khalili

**Principal Investigator:** Calvin Kuo

**Author(s):**  
Mahsa Khalili  
Saud Lingawi  
Brian Grunau  
Calvin Kuo

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 501

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Wearable Sensors and Devices**

**Abstract Title:** A Point-of-Use Device for Lithium  
Screening Bipolar Disorder Management

**Presenter:** Ruitong Chen

**Principal Investigator:** Maral Mousavi

**Author(s):**  
Farbod Amirghasemi  
Maral Mousavi

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 502

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Wearable Sensors and Devices**

**Abstract Title:** Development of a Wearable Device to  
Treat Upper Extremity Lymphedema

**Presenter:** Seth Jarvis

**Principal Investigator:** N/A

**Author(s):**  
Seth Jarvis  
Leah Thomas  
Andre Muelenaer  
Christopher Arena  
Tara Newberry

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 503

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### **Wearable Sensors and Devices**

**Abstract Title:** A Wireless Surveillance System of  
Blood Flow for a Textile Based Vascular Graft

**Presenter:** Xiaoqi Tang

**Principal Investigator:** N/A

**Author(s):**

Martin King

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 504

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### **Wearable Sensors and Devices**

**Abstract Title:** 3D Printing-based Microfluidic  
Devices in Fabric

**Presenter:** Ander Switalla

**Principal Investigator:** N/A

**Author(s):**

Lael Wentland

Elain Fu

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 505

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### **Wearable Sensors and Devices (Summer Undergraduate)**

**Abstract Title:** Optimization of Circuitry and  
Electrode Arrangement for a Biostimulation Device  
with EMG Monitoring

**Presenter:** Catherine Lacey

**Principal Investigator:** Michael Cullinan

**Author(s):**

Barbara Groh

Michael Cullinan

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 506

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

### **Wearable Sensors and Devices (Summer Undergraduate)**

**Abstract Title:** Soft Robotic Wearable Technologies  
for Use in Pressure Measurement and Relief for  
Wheelchair Users

**Presenter:** Jason Robinson

**Principal Investigator:** N/A

**Author(s):**

Isaiah Rigo

Holly Golecki

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 507**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Wearable Sensors and Devices (Summer  
Undergraduate)****Abstract Title:** Effects of Sensor-to-Skin Contact  
Pressures on Photoplethysmography and Near-  
Infrared Spectroscopy**Presenter:** Saud Lingawi**Principal Investigator:** N/A**Author(s):**

Mahsa Khalili

Brian Grunau

Calvin Kuo

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 508**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Wearable Sensors and Devices (Summer  
Undergraduate)****Abstract Title:** Developing a Wearable Early-Warning  
System for Vaso-occlusive Pain Crisis in Sickle Cell  
Disease**Presenter:** Sabrina Sy**Principal Investigator:** N/A**Author(s):**

Saranya Veluswamy

Payal Shah

Mingjing Chen

Thomas Coates

Michael Khoo

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 509**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Wearable Sensors and Devices****Abstract Title:** Real-Time Sweat Monitoring of  
Lactate and Nicotine Using a Low-Cost Wearable  
Electrochemical Device**Presenter:** Abdurrahman Addokhi**Principal Investigator:** N/A**Author(s):**

Abdurrahman Addokhi

Uros Kuzmanovic

Mark Grinstaff

James Galagan

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 511**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Wearable Sensors and Devices****Abstract Title:** Ex-vivo, Aptamer Sensors for  
Continuous Monitoring of Interstitial Fluid via a  
Microneedle Coupling**Presenter:** Mark Friedel**Principal Investigator:** N/A**Author(s):**

Kevin Plaxco

Jason Heikenfeld

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 512**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Other / Non-specified****Abstract Title:** Superficial Temporal Artery  
Tonometry Based Non-invasive Continuous Blood  
Pressure Monitoring**Presenter:** Ge Zhu**Principal Investigator:** N/A**Author(s):**

Yihao Zheng

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 513**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Wearable Sensors and Devices****Abstract Title:** Using Electromyography (EMG)  
Signal to Detect Muscle Tremors**Presenter:** Isabela Zimmermann Rollin**Principal Investigator:** N/A**Author(s):**

Isabela Zimmermann Rollin

Divya Sheth

Natalia Chavez

Farah Al-Takrouri

Daniel Mackoon

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 514**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Wearable Sensors and Devices****Abstract Title:** The Validation of Postures in JACK  
Simulation via Analyzing the Lifting Effort**Presenter:** Xiaoxu Ji**Principal Investigator:** N/A**Author(s):**

Maria Arenas

Ranuki Hettiarachchige

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 515**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Wearable Sensors and Devices****Abstract Title:** A Dual-Bioimpedance Wearable  
For Pulse Transit Time Estimation of Cuffless Blood  
Pressure**Presenter:** Lauren Yamthe**Principal Investigator:** N/A**Author(s):**

Lauren Yamthe

Gerard Cote

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 516

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Wearable Sensors and Devices**

**Abstract Title:** Accessible, Game-based, Touch-sensing Devices for Rotator Cuff and Fine Motor Assessment and Therapy

**Presenter:** Nicole Urban

**Principal Investigator:** N/A

**Author(s):**

Nicole Urban

Adam Hartman

Jeffrey Tagen

Koryn Russell

Abigail Medeiros

Jacob Martin

Mike Dattolo

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 517

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Wearable Sensors and Devices**

**Abstract Title:** Measurement of Human-PPE Interaction of the Face in Healthcare Workers

**Presenter:** Niraliben Patel

**Principal Investigator:** Stephanie Carey

**Author(s):**

Stephanie Carey

Valeria Carrasquillo

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 518

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Wearable Sensors and Devices**

**Abstract Title:** Comparing Eccentric Rotating Mass Vibration Motors' Response Profiles Used for Sensory Augmentation

**Presenter:** Rachel Mazorow

**Principal Investigator:** N/A

**Author(s):**

Rachel Mazorow

Robert Scheidt

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster  
**Number:** 519

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Wearable Sensors and Devices**

**Abstract Title:** Polymeric Membranes for Enhanced Analyte Detection in Wearables

**Presenter:** Roberto Delgado Rivera

**Principal Investigator:** N/A

**Author(s):**

Maribella Domenech

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: O, Poster

**Number:** 520

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS

### Wearable Sensors and Devices

**Abstract Title:** Real-Time Continuous Reporting of IBD Biomarkers in Sweat

**Presenter:** Sarah Shahub

**Principal Investigator:** N/A

**Author(s):**

Shalini Prasad

Badrinath Jagannath

Kai-Chun Lin

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster

**Number:** 541

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS

### Wearable Sensors and Devices

**Abstract Title:** Thermally reliable NFC based patch-type tissue oximeter with radiative coolers

**Presenter:** Young Min Song

**Principal Investigator:** Young Min Song

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster

**Number:** 542

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS

### Wearable Sensors and Devices

**Abstract Title:** Development of a Skin-Wearable Wireless Sweat Monitoring System for pH and Sodium

**Presenter:** Yongkuk Lee

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster

**Number:** 543

**Track:** DRUG DELIVERY

### Drug Delivery for Immunomodulation and Immunotherapy

**Abstract Title:** Targeting CD44 Receptors in the Lungs by Liposomes Enhances Host Immunity Against Tuberculosis

**Presenter:** Eric Chau

**Principal Investigator:** Biana Godin

**Author(s):**

Abhishek Mishra

Karem Pinto

Biana Godin

Chinnaswamy Jagannath

Alexandro DeAnda

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster

**Number:** 544

**Track:** DRUG DELIVERY

### Drug Delivery for Immunomodulation and Immunotherapy

**Abstract Title:** Evaluation of Synthetic Nanogels for Myeloid Cell-Targeted Immunotherapy

**Presenter:** Rana Ajeeb

**Principal Investigator:** John R. Clegg

**Author(s):**

John Clegg

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 545

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy**

**Abstract Title:** Lymphatic endothelial cell-targeting nanocarriers for modulating vaccine-induced immunity

**Presenter:** Trevor Ung

**Principal Investigator:** Melody Swartz

**Author(s):**

Jorge Gomez Medellin

Aaron Esser-Kahn

Melody Swartz

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 546

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy (Summer Undergraduate)**

**Abstract Title:** Viral and Virus-like Particle Vaccine Candidates Exhibit Long-term Immunogenicity Against SARS CoV-2

**Presenter:** Adam Engler

**Principal Investigator:** Kathleen E. Villasenor,  
Nicole Steinmetz

**Author(s):**

Nicole Steinmetz

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 547

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy (Summer Undergraduate)**

**Abstract Title:** Intracellular Localization of Self-Assembling Peptidic Nanofibers

**Presenter:** Kadin Kristjansson

**Principal Investigator:** Jai S Rudra

**Author(s):**

Jai Rudra

Paresh Shrimali

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 548

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy (Summer Undergraduate)**

**Abstract Title:** Allergen-Encapsulating Nanoparticles Reduce Human Mast Cell Survival and Degranulation in Food Allergy

**Presenter:** Amogh Angadi

**Principal Investigator:** N/A

**Author(s):**

Michael Saunders

Lonnie Shea

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 549

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy**

**Abstract Title:** Clinically Translatable Cytokine Factories for Eradication of Peritoneal Tumors in Mice

**Presenter:** Amanda Nash

**Principal Investigator:** Omid Veisheh

**Author(s):**

Amanda Nash

Omid Veisheh

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 550

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy**

**Abstract Title:** Nanoparticle-pretreatment to regulate pulmonary macrophage transplant survival and in situ phenotype

**Presenter:** Catherine Fromen

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 551

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy**

**Abstract Title:** Ionizable Lipid Nanoparticles for mRNA Delivery to Trophoblasts for Local Immunomodulation

**Presenter:** Samuel Hofbauer

**Principal Investigator:** Rachel Riley

**Author(s):**

Rachel Young

Rachel Riley

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 552

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy**

**Abstract Title:** E-Selectin Antibody-Conjugated Rapamycin-Loaded NPs (E-RNPs) for the Treatment of Age-Related Cardiovascular Diseases.

**Presenter:** Ingrid Guerrero Rodriguez

**Principal Investigator:** N/A

**Author(s):**

Uday Chintapula

Amie Kieu

Kytai Nguyen

Daniel Trott

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster**Number:** 553**Track:** DRUG DELIVERY**Drug Delivery for Immunomodulation and Immunotherapy****Abstract Title:** Tumor Nano-Lysate Breast Cancer Vaccine Evokes Preventative Dendritic Cell-Based Response**Presenter:** Jenna Dombroski**Principal Investigator:** N/A**Author(s):**

Jenna Dombroski

Nidhi Jyotsana

Zhenjiang Zhang

Michael King

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster**Number:** 554**Track:** DRUG DELIVERY**Drug Delivery for Immunomodulation and Immunotherapy****Abstract Title:** Peptoids as Potential Modulators to Reduce S100B-Induced RAGE Activation in Alzheimer's Disease**Presenter:** Mihyun Waugh**Principal Investigator:** N/A**Author(s):**

Shannon Servoss

Melissa Moss

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster**Number:** 555**Track:** DRUG DELIVERY**Drug Delivery for Immunomodulation and Immunotherapy****Abstract Title:** Dual Functional Nanoparticle STING Agonist for Cancer Immunotherapy**Presenter:** Maggie Wang**Principal Investigator:** N/A**Author(s):**

Maggie Wang

Jinming Gao

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster**Number:** 556**Track:** DRUG DELIVERY**Drug Delivery for Immunomodulation and Immunotherapy****Abstract Title:** Engineered Vaccine Booster for Long-term Immunity in Elderly and Immunocompromised Population**Presenter:** Mohammad Mahdi Hasani-Sadrabadi**Principal Investigator:** N/A**Author(s):**

Mohammad Mahdi Hasani-Sadrabadi

Song Li

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 557

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy**

**Abstract Title:** Submicron Ultrasound Contrast Agents as Therapeutic Delivery Vehicles in Type 1 Diabetes

**Presenter:** Mark Ciccaglione

**Principal Investigator:** N/A

**Author(s):**

Richard Benninger

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 558

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy**

**Abstract Title:** Tissue-Adhesive Hydrogel for Transdermal Immune Cell Activation

**Presenter:** Nicole Day

**Principal Investigator:** N/A

**Author(s):**

N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 559

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy**

**Abstract Title:** Heat-Confined Tumor-Docking Reversible Thermogel Potentiates Systemic Antitumor Immune Response During Near-Infrared Photothermal Ablation in Triple-Negative Breast Cancer

**Presenter:** In-Kyu Park

**Principal Investigator:** N/A

**Author(s):**

Yong Kyu Lee

Jae Young Lee

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: P, Poster  
**Number:** 560

**Track:** DRUG DELIVERY  
**Drug Delivery for Immunomodulation and Immunotherapy**

**Abstract Title:** Injectable Polymer-Nanoparticle Hydrogels Enable Small Molecule Drug Delivery For Local Immunotherapy

**Presenter:** Shreya Soni

**Principal Investigator:** N/A

**Author(s):**

Arielle D'Elia

Sylvia Cho

Christopher Rodell

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 581

**Track:** DRUG DELIVERY

**Drug Delivery for Immunomodulation and Immunotherapy**

**Abstract Title:** Using “Clickable” Commensals to Improve the Gut Specificity and Retention of Oral Corticosteroids

**Presenter:** Tsvetelina Baryakova

**Principal Investigator:** N/A

**Author(s):**

Tsvetelina Baryakova

Laura Segatori

Kevin McHugh

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 582

**Track:** DRUG DELIVERY

**Drug Delivery for Immunomodulation and Immunotherapy**

**Abstract Title:** Diversity-Directed STING Agonism for Cancer Immunotherapy

**Presenter:** Zachary Bennett

**Principal Investigator:** Jinming Gao

**Author(s):**

Jinming Gao

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 583

**Track:** GLOBAL HEALTH TECHNOLOGIES

**Automated Technologies for use In developing countries**

**Abstract Title:** A Comprehensive Point-of-Care Platform for Blood Testing in Global Health Disparity Populations

**Presenter:** Arwa Fraiwan

**Principal Investigator:** N/A

**Author(s):**

Ran An

Zoe Sekyonda

Umut Gurkan

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 584

**Track:** GLOBAL HEALTH TECHNOLOGIES

**Automated Technologies for use In developing countries (Summer Undergraduate)**

**Abstract Title:** Comparison of Pipe Configurations for Ideal Flow Rates in a Hydroponic Growing System

**Presenter:** Corbin Myers

**Principal Investigator:** N/A

**Author(s):**

Corbin Myers

Derek Lura

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 585

**Track:** GLOBAL HEALTH TECHNOLOGIES  
**Automated Technologies for use  
In developing countries (Summer  
Undergraduate)**

**Abstract Title:** Optimization of Non-Enzymatic  
Dumbbell DNA-based Assay Decreases Processing  
Time for Schistosomiasis Diagnosis  
**Presenter:** Hannah Stepp  
**Principal Investigator:** Frederick R. Haselton  
**Author(s):**  
Frederick Haselton

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 586

**Track:** GLOBAL HEALTH TECHNOLOGIES  
**Automated technologies for use in  
developing countries**

**Abstract Title:** Towards Sample-to-Answer hrHPV  
mRNA Detection for Early Cervical Cancer  
Prevention  
**Presenter:** Emilie Novak  
**Principal Investigator:** N/A  
**Author(s):**  
Megan Chang  
Kathryn Kundrod  
Kathleen Schmeler  
Rebecca Richards-Kortum

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 587

**Track:** GLOBAL HEALTH TECHNOLOGIES  
**Automated technologies for use in  
developing countries**

**Abstract Title:** The Development of a Quick  
Response (QR) Code System to Expedite the Check-  
in Process at an Outpatient Clinic in Nigeria  
**Presenter:** Padraic Casserly  
**Principal Investigator:** N/A  
**Author(s):**  
Akinwale Coker

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 588

**Track:** NANO AND MICRO TECHNOLOGIES  
**Bioinspired/Biomimetic Micro/  
Nano Devices and Systems (Summer  
Undergraduate)**

**Abstract Title:** PEGylation of SWNT Sensors  
for Enhanced Quantification of Extracellular NO  
Concentration  
**Presenter:** Aiden Atkins  
**Principal Investigator:** Nicole Iverson  
**Author(s):**  
Omer Sadak  
Nicole Iverson

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 589

**Track:** NANO AND MICRO TECHNOLOGIES  
**Bioinspired/Biomimetic Micro/  
Nano Devices and Systems (Summer  
Undergraduate)**

**Abstract Title:** Engineering Enhanced Liposomal  
Sensing with Bacterial Two-Component Systems

**Presenter:** Nina Galvez

**Principal Investigator:** Neha Kamat

**Author(s):**

Nina Galvez

Justin Peruzzi

Neha Kamat

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 590

**Track:** NANO AND MICRO TECHNOLOGIES  
**Biomaterials Integration with Micro/  
Nano Chips and Devices (Summer  
Undergraduate)**

**Abstract Title:** Optimizing nanomagnetic force field  
patterns for cellular growth and signaling assays

**Presenter:** Hannah Kempfert

**Principal Investigator:** N/A

**Author(s):**

Hannah Kempfert

Mackenna Landis

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 591

**Track:** NANO AND MICRO TECHNOLOGIES  
**Biomaterials Integration with Micro/  
Nano Chips and Devices (Summer  
Undergraduate)**

**Abstract Title:** Engineering DNA Monolayers for  
Controlled Chemotherapeutic Release from Gold  
Nanocarriers

**Presenter:** Ashleigh Jankowski

**Principal Investigator:** Mark E. Byrne

**Author(s):**

Ashleigh Jankowski

Mark Byrne

Robert Mosley

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 592

**Track:** NANO AND MICRO TECHNOLOGIES  
**Bioinspired/Biomimetic Micro/Nano  
Devices and Systems**

**Abstract Title:** Prospecting Intratumoral Gold  
Nanoparticle Biomineralization for Cancer Therapy

**Presenter:** Aaron Schwartz-Duval

**Principal Investigator:** N/A

**Author(s):**

Aaron Schwartz-Duval

Yuri Mackeyev

Sunil Krishnan

Konstantin Sokolov

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster

**Number:** 593

**Track:** NANO AND MICRO TECHNOLOGIES  
**Bioinspired/Biomimetic Micro/Nano  
Devices and Systems**

**Abstract Title:** Fibrous Substrates for Soft  
Bioelectronics

**Presenter:** Maya McDonald

**Principal Investigator:** N/A

**Author(s):**

Matthew Brown

Ahyeon Koh

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster

**Number:** 594

**Track:** NANO AND MICRO TECHNOLOGIES  
**Bioinspired/Biomimetic Micro/Nano  
Devices and Systems**

**Abstract Title:** Choline carboxylic ionic liquid-based  
gold nanoparticles for biomedical applications

**Presenter:** Priyavrat Vashisth

**Principal Investigator:** N/A

**Author(s):**

Eden Tanner

Gagandeep Singh

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster

**Number:** 595

**Track:** NANO AND MICRO TECHNOLOGIES  
**Bioinspired/Biomimetic Micro/Nano  
Devices and Systems**

**Abstract Title:** Evaluating the effectiveness of the  
interactions of Ionic liquids with polymer-based  
nanoparticles

**Presenter:** Sara Edgecomb

**Principal Investigator:** N/A

**Author(s):**

Ember Suh

Angela Roberts

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster

**Number:** 596

**Track:** NANO AND MICRO TECHNOLOGIES  
**Bioinspired/Biomimetic Micro/Nano  
Devices and Systems**

**Abstract Title:** RV-like Poly( $\beta$ -amino Ester)  
Nanoparticles for the Delivery of ASCL1-gRNA  
Across the Blood Brain Barrier

**Presenter:** Tina Rodgers

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster

**Number:** 597

**Track:** NANO AND MICRO TECHNOLOGIES  
**Biomaterials Integration with Micro/  
Nano Chips and Devices**

**Abstract Title:** Microfluidic Flow Chamber for  
Independent Control of Substratum Stiffness and  
Fluid Shear Stress

**Presenter:** Bryan Ferrick

**Principal Investigator:** N/A

**Author(s):**

Jason Gleghorn

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 598

**Track:** NANO AND MICRO TECHNOLOGIES  
**Biomaterials Integration with Micro/  
Nano Chips and Devices**

**Abstract Title:** Accelerated Testing of Thin-film Dielectric Encapsulation for Bioelectrical Interfaces

**Presenter:** Christopher Nguyen

**Principal Investigator:** N/A

**Author(s):**

Negar Geramifard

Yupeng Wu

Stuart Cogan

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: Q, Poster  
**Number:** 600

**Track:** NANO AND MICRO TECHNOLOGIES  
**Biomaterials Integration with Micro/  
Nano Chips and Devices**

**Abstract Title:** Stability of a pH Sensing Iridium Oxide Film based on Porous Polypropylene Fiber Substrates

**Presenter:** J.C. Chiao

**Principal Investigator:** N/A

**Author(s):**

Khengdauliu Chawang

Shih-Cheng Chou

Sen Bing

Pu-Wei Wu

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 621

**Track:** NANO AND MICRO TECHNOLOGIES  
**Biomaterials Integration with Micro/  
Nano Chips and Devices**

**Abstract Title:** Endothelial Barrier Function Enhanced and Sustained by Defined Nanofibrous Membrane

**Presenter:** Jiafeng Liu

**Principal Investigator:** N/A

**Author(s):**

Yong Yang

kun man

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 622

**Track:** NANO AND MICRO TECHNOLOGIES  
**Biomaterials Integration with Micro/  
Nano Chips and Devices**

**Abstract Title:** Control of Ultra-Thick SU8 Photolithography Structures for Production of Tumor Spheroids

**Presenter:** Noah Reckhorn

**Principal Investigator:** N/A

**Author(s):**

Maria Lopez Cavestany

Olivia Wright

Kalana Jayawardana

Deyu Li

Michael King

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 623

**Track:** NANO AND MICRO TECHNOLOGIES  
**Biomaterials Integration with Micro/  
Nano Chips and Devices**

**Abstract Title:** Rapid and Frugal Prototyping of  
Millifluidic Droplet Generators

**Presenter:** siavash ahrar

**Principal Investigator:** N/A

**Author(s):**

Chung Thai

Perla Ayala

siavash ahrar

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 624

**Track:** NANO AND MICRO TECHNOLOGIES  
**Biomaterials Integration with Micro/  
Nano Chips and Devices**

**Abstract Title:** A Carbon Nanotube Platform for  
Rapid Virus Sample Enrichment

**Presenter:** Yin-Ting Yeh

**Principal Investigator:** N/A

**Author(s):**

N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 625

**Track:** NEURAL ENGINEERING  
**Glial Cell Engineering (Summer  
Undergraduate)**

**Abstract Title:** Regulating Myofibroblast-Like  
Phenotypes in Neural Progenitor Cells under High  
Serum Exposure

**Presenter:** Gabriela Berniac

**Principal Investigator:** Timothy O'Shea

**Author(s):**

Honour Adewumi

Timothy O'Shea

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 626

**Track:** NEURAL ENGINEERING  
**Neural Decoding and Control (Summer  
Undergraduate)**

**Abstract Title:** Neural Correlates of Stabilization  
During Brain-Computer Interface Control of a  
Robotic Arm

**Presenter:** Sophia Shan

**Principal Investigator:** Jennifer Collinger

**Author(s):**

Brian Dekleva

Jen Collinger

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 627**Track:** NEURAL ENGINEERING  
**Neurorehabilitation (Summer Undergraduate)****Abstract Title:** Characterization of Natural Void Events Features for Bladder Control Via Spinal Cord Stimulation**Presenter:** Andres Leon-Vargas**Principal Investigator:** Robert A. Gaunt**Author(s):**

Maria Jantz

Alaina McCumber

Chaitanya Gopinath

Robert Gaunt

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 628**Track:** NEURAL ENGINEERING  
**Glial Cell Engineering****Abstract Title:** Fluid shear stress stimulates an inflammatory astrocyte phenotype involving sphingosine-1-phosphate**Presenter:** Robert Cornelison**Principal Investigator:** Chase Cornelison**Author(s):**

Brycen Burke

Robert Cornelison

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 629**Track:** NEURAL ENGINEERING  
**Glial Cell Engineering****Abstract Title:** Deriving Immature Astroglia by Hysteretic Conditioning of Neural Progenitor Cells for CNS Injuries**Presenter:** Timothy O'Shea**Principal Investigator:** Timothy Mark O'Shea**Author(s):**

Honour Adewumi

Gabriela Berniac

Timothy O'Shea

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 630**Track:** NEURAL ENGINEERING  
**Neural Decoding and Control****Abstract Title:** Detection of Imagined Speech from Intracranial Recordings**Presenter:** Dean Krusienski**Principal Investigator:** Dean J. Krusienski**Author(s):**

pedram zanganeh soroush

Christian Herff

Stephanie Ries

Jerry Shih

Tanja Schultz

Dean Krusienski

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 631

**Track:** NEURAL ENGINEERING  
**Neural Decoding and Control**

**Abstract Title:** Within and across day estimates of human spinal motoneuron excitability

**Presenter:** Edmee Brown-Egue

**Principal Investigator:** N/A

**Author(s):**

Chris Thompson

Martin Zaback

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 632

**Track:** NEURAL ENGINEERING  
**Neurorehabilitation**

**Abstract Title:** Comparing Effects of Body Weight Supported Treadmill Training on Bone Restoration Following Incomplete Spinal Cord Injury

**Presenter:** Anita Singh

**Principal Investigator:** N/A

**Author(s):**

Lindsay Stoy

Sriram Balasubramanian

Anita Singh

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 633

**Track:** NEURAL ENGINEERING  
**Neurorehabilitation**

**Abstract Title:** A Body-machine Interface and Non-invasive Spinal Cord Stimulation for People with Spinal Cord Injury

**Presenter:** Jie Fei

**Principal Investigator:** N/A

**Author(s):**

Andrew Whitaker

John Peiffer

Noah Bryson

Rachel Hawthorn

Ismael Seáñez

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 634

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Orthopedic: Mechanobiology and  
Mechanotransduction**

**Abstract Title:** Cx43 Deficiency Differentially Modulates OCY454 Osteocyte Behavior in 2D and 3D Culture.

**Presenter:** Joseph Denisco

**Principal Investigator:** Henry Donahue

**Author(s):**

Evan Buettmann

Gabriel Hoppock

Yue Zhang

Henry Donahue

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 635

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Orthopedic: Mechanobiology and  
Mechanotransduction (Summer  
Undergraduate)**

**Abstract Title:** Spatial Expression of Putative YAP  
Target Genes in the Early Stages of Fracture Repair  
**Presenter:** Gabrielle Tanner  
**Principal Investigator:** Joel D Boerckel  
**Author(s):**  
Madhura Nijsure  
Annemarie Lang  
Joel Boerckel

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 636

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Orthopedic: Mechanobiology and  
Mechanotransduction (Summer  
Undergraduate)**

**Abstract Title:** Exploring Crosstalk Between RhoA  
Signaling and YAP in Multiple Cell Types  
**Presenter:** Milan Patel  
**Principal Investigator:** Joel D. Boerckel  
**Author(s):**  
Joel Boerckel  
Annapurna Pranatharthi Haran

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 637

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Orthopedic: Mechanobiology and  
Mechanotransduction**

**Abstract Title:** Slow Growth Elongation Drive  
Collagen Fiber Formation in a Dose and Organization  
Dependent Fashion  
**Presenter:** Kelly Ott  
**Principal Investigator:** N/A  
**Author(s):**  
Kelly Ott  
Jennifer Puetzer

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 638

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Orthopedic: Mechanobiology and  
Mechanotransduction**

**Abstract Title:** Meniscus Zone-Dependent  
Epigenetic Mechanisms of Meniscus Cell Migration  
**Presenter:** Yize Zhang  
**Principal Investigator:** Su-Jin Heo  
**Author(s):**  
Su-Jin Heo  
Yujia Zhang  
Se-Hwan Lee  
ZizHao Li

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: R, Poster  
**Number:** 639

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Orthopedic: Mechanobiology and  
Mechanotransduction**

**Abstract Title:** Effects of Ex Vivo Focused  
Ultrasound Treatment on Murine Achilles Tendons  
**Presenter:** Chitra Meduri  
**Principal Investigator:** N/A  
**Author(s):**  
Eli Vlasisavljevich  
Vincent Wang

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 662

**Track:** TECHNOLOGIES FOR EMERGING  
INFECTIOUS DISEASES  
**Rapid Detection (Summer  
Undergraduate)**

**Abstract Title:** Triplex Sample Preparation and RNA  
Amplification Handheld Device for Simultaneous  
Detection of Respiratory Viruses at the Point-of-Care  
**Presenter:** Elizabeth Lee  
**Principal Investigator:** Hugh Fan  
**Author(s):**  
N/A

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 663

**Track:** TECHNOLOGIES FOR EMERGING  
INFECTIOUS DISEASES  
**Rapid Detection (Summer  
Undergraduate)**

**Abstract Title:** Swellable Microneedles for Capture  
and Detection of Lyme Disease Spirochete from Tick  
Bites  
**Presenter:** Rosana Alfaro  
**Principal Investigator:** Frederick Haselton  
**Author(s):**  
Emily Kight  
Frederick Haselton

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 664

**Track:** TECHNOLOGIES FOR EMERGING  
INFECTIOUS DISEASES  
**Rapid Detection**

**Abstract Title:** Identifying SARS-CoV-2 Variants  
of Concern through Saliva-Based RT-qPCR by  
Targeting Recurrent Mutation Sites  
**Presenter:** Austin Smothers  
**Principal Investigator:** N/A  
**Author(s):**  
Austin Smothers  
Rachel Ham  
Keegan Sell  
Congyue Peng  
Delphine Dean

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 665

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

**Rapid Detection**

**Abstract Title:** Ligation-based Assay for SARS-CoV-2 Variant Screening

**Presenter:** Dalton Nelson

**Principal Investigator:** N/A

**Author(s):**

Frederick Haselton

Nicole Malofsky

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 666

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

**Rapid Detection**

**Abstract Title:** Convenient, rapid, and frequent COVID-19 screening with low-cost, flexible electrodes

**Presenter:** Farbod Amirghasemi

**Principal Investigator:** N/A

**Author(s):**

Victor Ong

Maral Mousavi

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 667

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

**Rapid Detection**

**Abstract Title:** VeriFAST Multiplex Biothreat Agent Diagnostics for Mobile Applications

**Presenter:** Jasmine Devadhasan

**Principal Investigator:** Frederic Zenhausern

**Author(s):**

Jian Gu

Frederic Zenhausern

Alex Summers

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 668

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

**Rapid Detection**

**Abstract Title:** Ultrasensitive Magnetic Biosensor for Rapid Detection and Real-time Monitoring of COVID-19

**Presenter:** Kevin Nguyen

**Principal Investigator:** N/A

**Author(s):**

Manh-Huong Phan

Kee Young Hwang

Yasif Rahman

Vinh Bui

Chau Nguyen

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster

**Number:** 669

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

### Rapid Detection

**Abstract Title:** SARS-CoV-2 Detection from Saline Gargle Samples via Flow Profile Analysis on Paper Microfluidic Chip

**Presenter:** Kattika Kaarj

**Principal Investigator:** N/A

**Author(s):**

Patarajarin Akarapipad

Kattika Kaarj

Lane Breshears

Katelyn Sosnowski

Brandon Nguyen

Ciara Eades

Grace Quirk

Michael Worobey

Jeong-Yeol Yoon

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster

**Number:** 670

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

### Rapid Detection

**Abstract Title:** SHEAR Saliva Collection Device for a Simple, Point-of-Care Mechanical Sample Homogenization.

**Presenter:** Shang Wei Song

**Principal Investigator:** N/A

**Author(s):**

Shang Wei Song

Rashi Gupta

Jothilingam Niharika

xinlei qian

Yue Gu

V Vien Lee

Yoann Sapanel

David Allen

Dean Ho

Agata Blasiak

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster

**Number:** 671

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

### Rapid Detection

**Abstract Title:** Beyond RT-PCR: Advanced Endpoints for SARS-CoV-2 Analysis in Environmental Samples

**Presenter:** William Strike

**Principal Investigator:** N/A

**Author(s):**

Ann Noble

Soroosh Torabi

Jennifer Moylan

James Keck

Scott Berry

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster

**Number:** 672

**Track:** TECHNOLOGIES FOR EMERGING INFECTIOUS DISEASES

### Rapid Detection

**Abstract Title:** Metabolic Labeling of Infected Host Cells in vivo for Detection and Intracellular Bacteria Clearance

**Presenter:** Yang Bo

**Principal Investigator:** Hua Wang & Jianjun Cheng

**Author(s):**

Hua Wang

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 673

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering**

**Abstract Title:** Self-assembled Neotendons for Evaluating Cell-Cell Junctions Involved in Initial Tissue Formation

**Presenter:** Colin Marchus

**Principal Investigator:** Nathan R. Schiele

**Author(s):**  
Nathan Schiele  
Destinee Ditton

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 674

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering  
(Summer Undergraduate)**

**Abstract Title:** TGF $\beta$  inhibition engenders pro-regenerative immune and stem cell localization after volumetric muscle loss

**Presenter:** Emily Wallace

**Principal Investigator:** Carlos Aguilar

**Author(s):**  
Bonnie Spence  
Jacqueline Larouche  
Carlos Aguilar

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 675

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering  
(Summer Undergraduate)**

**Abstract Title:** Immunomodulation of Macrophage Response by Oxygen-Delivering Scaffolds for Bone Regeneration

**Presenter:** Emma Whitehead

**Principal Investigator:** Warren L. Grayson

**Author(s):**  
SRUJAN SINGH  
Warren Grayson

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 676

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering  
(Summer Undergraduate)**

**Abstract Title:** Exploring TGF $\beta$ s as Regulators of Collagen Crosslinking Enzymes for Tendon Tissue Engineering

**Presenter:** Hailey Faith

**Principal Investigator:** Nathan Schiele

**Author(s):**  
Nathan Schiele

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 677

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering  
(Summer Undergraduate)**

**Abstract Title:** Snail Regulates N-cadherin, but Other Mechanisms May be Involved During

Tenogenesis

**Presenter:** Alyssa Hansten

**Principal Investigator:** Nathan R. Schiele

**Author(s):**

Nicholas Pancheri

Nathan Schiele

Allison Ellingson

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 678

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering  
(Summer Undergraduate)**

**Abstract Title:** Engineered Muscle Contracts to Elucidate the Effects of Inflammation on Muscle Atrophy

**Presenter:** Katherine Reardon

**Principal Investigator:** Ramkumar T. Annamalai

**Author(s):**

Harshini Sureshkumar

Mark McHargue

Ramkumar T. Annamalai

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 679

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering  
(Summer Undergraduate)**

**Abstract Title:** Bioprinting of Piezoelectric Composite Scaffolds for Treatment of Skeletal Muscle Defects

**Presenter:** Maya Evohr

**Principal Investigator:** Prahaba Sikder

**Author(s):**

Prabaha Sikder

## Thursday, October 13

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: S, Poster  
**Number:** 680

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering**

**Abstract Title:** Novel Mouse Tibia Model of Composite Bone-Muscle Injury

**Presenter:** Cynthia Alcazar

**Principal Investigator:** N/A

**Author(s):**

Cynthia Alcazar

Krista Habing

Karina Nakayama

Anthony Tahayeri

Zachary Working

LUIZ BERTASSONI

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster  
**Number:** 701

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering**

**Abstract Title:** Methodology to Quantify Collagen Subtypes and Crosslinks: Application in Minipig Cartilages

**Presenter:** Benjamin Bielajew

**Principal Investigator:** N/A

**Author(s):**

Jerry Hu

Kyriacos Athanasiou

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster  
**Number:** 702

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering**

**Abstract Title:** Developing a combinational stem cell-based tissue engineering approach to treat spina bifida before birth

**Presenter:** Dake Hao

**Principal Investigator:** N/A

**Author(s):**

Su Yeon Lee

Christopner Pivetti

Adb-elrhaman Hassan

Priyadarsini Kumar

Edwin Kulubya

Kent Leach

Diana Farmer

Aijun Wang

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster  
**Number:** 703

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering**

**Abstract Title:** Determining the Role of Fibrinolysis and Contraction on Marrow-Mediated Cartilage Repair

**Presenter:** Jay Patel

**Principal Investigator:** Jay M Patel

**Author(s):**

Lorenzo Fernandes

Hanna Solomon

David Myers

Jay Patel

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster  
**Number:** 704

**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering**

**Abstract Title:** Age-associated Senescent-T Cell Signaling Promotes Type 3 Immunity that Inhibits Regenerative Response

**Presenter:** Jin Han

**Principal Investigator:** N/A

**Author(s):**

Christopher Cherry

Joscelyn Mejias

Anna Ruta

David Maestas

Alexis Peña

Helen Nguyen

Franck Housseau

Sudipto Ganguly

Erika Moore

Jennifer Elisseeff

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster  
**Number:** 705**Track:** TISSUE ENGINEERING  
Musculoskeletal Tissue Engineering**Abstract Title:** MRL/MpJ Tendon Provisional Extracellular Matrix- and Secretome-Derived Recombinant Protein Therapeutic Promotes Regenerative Cell Behavior Across Species**Presenter:** Jason Marvin**Principal Investigator:** N/A**Author(s):**

Ethan Liu

Nelly Andarawis-Puri

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster  
**Number:** 706**Track:** TISSUE ENGINEERING**Abstract Title:** Building Organ-on-a-Chip Technology to Study the Gut Microbiome and Distal Tumors**Presenter:** Danielle Brasino**Principal Investigator:** N/A**Author(s):**

Sean Speece

Kevin Schiling

Katherine Huynh

Carolyn Lbsen

Beverly Emerson

Michelle Barton

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster  
**Number:** 707**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering****Abstract Title:** Engineering 3D Skeletal Muscle Constructs To Model Age-related Regenerative Defects And Responses To Intervention**Presenter:** Kai Wang**Principal Investigator:** N/A**Author(s):**

Stephen Smith

Sanjeev Shroff

Fabrisia Ambrosio

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster  
**Number:** 708**Track:** TISSUE ENGINEERING  
**Musculoskeletal Tissue Engineering****Abstract Title:** Mechanobioreactor Producing Tensile Elongation Enhances Growth and Maturation of Pre-Innervated Tissue Engineered Muscle**Presenter:** Melanie Hilman**Principal Investigator:** N/A**Author(s):**

Suradip Das

D. Kacy Cullen

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster**Number:** 709**Track:** TISSUE ENGINEERING**Musculoskeletal Tissue Engineering****Abstract Title:** Assessing the Effects of Chronic Passive Heat Therapy on Vascular Growth**Presenter:** Samuel Lester**Principal Investigator:** N/A**Author(s):**

Genevieve Romanowicz

Angela Lin

Robert Guldberg

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster**Number:** 710**Track:** TISSUE ENGINEERING**Musculoskeletal Tissue Engineering****Abstract Title:** In Vivo Evaluation of a Spheroid-based Approach for Osteochondral Tissue Engineering**Presenter:** Syam Nukavarapu**Principal Investigator:** Syam Nukavarapu**Author(s):**

Hyun Sung Kim

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster**Number:** 711**Track:** TISSUE ENGINEERING**Musculoskeletal Tissue Engineering****Abstract Title:** Topography and Stiffness of Collagen

Scaffolds Guide Myogenesis and Inflammation

**Presenter:** Yong How Tan**Principal Investigator:** Karina Nakayama**Author(s):**

Karina Nakayama

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster**Number:** 712**Track:** TISSUE ENGINEERING**Musculoskeletal Tissue Engineering****Abstract Title:** Co-delivery of engineered cell membrane protein and mesenchymal stem cells to promote vascularization and muscle repair in the ischemic hindlimb of diabetic mice**Presenter:** Ting Zhong**Principal Investigator:** Jianjun Guan**Author(s):**

Ting Zhong

Xiaolei Nie

Ning Gao

Zhongting Liu

Jingyao Li

Fuzhong Zhang

Jianjun Guan

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster**Number:** 713**Track:** TISSUE ENGINEERING**Neural and Neurovascular Tissue Engineering****Abstract Title:** Engineering Extracellular Matrix-bound Nanovesicles Secreted by Human Stem Cells**Presenter:** Chang Liu**Principal Investigator:** N/A**Author(s):**

Yan Li

**Thursday, October 13**

2:30 PM - 3:30 PM

Poster Session: B, Section: E, Row: T, Poster  
Number: 714

Track: TISSUE ENGINEERING  
**Neural and Neurovascular Tissue Engineering**

Abstract Title: Temporal Modulation of Brain Glycan Signature Post-Stroke to Identify Key Glycan Players in Brain Repair  
Presenter: Juhi Samal  
Principal Investigator: Tatiana Segura  
Author(s):  
Juhi Samal  
Tatiana Segura

**Thursday, October 13**

2:30 PM - 3:30 PM

Poster Session: B, Section: E, Row: T, Poster  
Number: 715

Track: TISSUE ENGINEERING  
**Neural and Neurovascular Tissue Engineering**

Abstract Title: Nanotransfection-Driven Neurogenic Reprogramming in Skeletal Muscle Plays a Protective Role Following Denervation  
Presenter: Jordan Moore  
Principal Investigator: Daniel Gallego Perez  
Author(s):  
Daniel Gallego-Perez

**Thursday, October 13**

2:30 PM - 3:30 PM

Poster Session: B, Section: E, Row: T, Poster  
Number: 716

Track: TISSUE ENGINEERING  
**Neural and Neurovascular Tissue Engineering (Summer Undergraduate)**

Abstract Title: Diffusion of Nanoparticles through an Ultrathin Porous Membrane  
Presenter: Jessica Ritz  
Principal Investigator: N/A  
Author(s):  
Louis Widom  
Thomas Gaborski

**Thursday, October 13**

2:30 PM - 3:30 PM

Poster Session: B, Section: E, Row: T, Poster  
Number: 716

Track: TISSUE ENGINEERING

Abstract Title: The Diffusion of Nanoparticles through an Ultrathin Porous Membrane  
Presenter: Jessica Ritz  
Principal Investigator: N/A  
Author(s):  
N/A

**Thursday, October 13**

2:30 PM - 3:30 PM

Poster Session: B, Section: E, Row: T, Poster  
Number: 717

Track: WOMEN'S HEALTH  
**Reproductive Health Technologies (Summer Undergraduate)**

Abstract Title: Pediatric Instructional Pelvic Exam Resource to Improve Training for Sexual Assault Nurse Examiners  
Presenter: Ashley Taylor  
Principal Investigator: Shannon McGill  
Author(s):  
Shivani Kulkarni  
Shannon McGill  
Elise Erickson  
Alex Natelson  
Grant Belton  
Nancy Harris

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster  
**Number:** 718

**Track:** WOMEN'S HEALTH  
**Reproductive Health Technologies**

**Abstract Title:** Maternal aRMOR: Early detection of postpartum hemorrhage with a wearable optical device

**Presenter:** Christine O'Brien

**Principal Investigator:** N/A

**Author(s):**

Francesca Bonetta-Misteli

Toi Collins

Todd Pavek

Antonina Frolova

Leonid Shmuylovich

Christine O'Brien

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster  
**Number:** 719

**Track:** WOMEN'S HEALTH  
**Reproductive Health Technologies**

**Abstract Title:** Development of Uterine Peristalsis Imaging (UPI) in Normal Menstrual Cycle

**Presenter:** Sicheng Wang

**Principal Investigator:** Yong Wang

**Author(s):**

Haonan Xu

ZicHao Wen

Yiqi Lin

Zhexian Sun

Nga Yue Josephine Lau

Yuan Nan

Yong Wang

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: T, Poster  
**Number:** 720

**Track:** WOMEN'S HEALTH  
**Reproductive Health Technologies**

**Abstract Title:** Engineering Lipid Nanoparticles for mRNA Delivery to the Placenta

**Presenter:** Rachel Young

**Principal Investigator:** N/A

**Author(s):**

Katherine Nelson

Samuel Hofbauer

Jason Gleghorn

Rachel Riley

**Thursday, October 13**

2:30 PM - 3:30 PM

**Poster Session:** B, Section: E, Row: U, Poster  
**Number:** 741

**Track:** CARDIOVASCULAR ENGINEERING  
**Thrombosis and Hemostasis**

**Abstract Title:** Thrombosis Modeling In Bifurcated Capillaries

**Presenter:** Kunal Mitra

**Principal Investigator:** N/A

**Author(s):**

Arindam Bit

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 21**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Other / Non-specified****Abstract Title:** Hybrid Power Spectral and Wavelet Image Roughness Analysis**Presenter:** Basel White**Principal Investigator:** Andre Khalil**Author(s):**

Andre Khalil

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 22**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Models of Metabolism (Summer Undergraduate)****Abstract Title:** Computational Optimization of System-Wide Metabolic Activity to Improve iPSC-CM Differentiation**Presenter:** Riya Sen**Principal Investigator:** Melissa Kemp**Author(s):**

Dennis Norfleet

Melissa Kemp

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 23**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Exploring White Matter Differences in Bipolar Disorder Utilizing Diffusion Tensor Imaging**Presenter:** Allie Smith**Principal Investigator:** Vincent Magnotta**Author(s):**

Allie Smith

Gail Harmata

Lucas Casten

Merry Mani

Gary Christensen

Ercole Barsotti

Jenny Gringer Richards

Jake Michaelson

Jess Fiedorowicz

Joseph Shaffer

John Wemmie

Vincent Magnotta

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 24**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Other / Non-specified (Summer Undergraduate)****Abstract Title:** The Role of Hyperglycemia in Smooth Muscle Cell Phenotypic Plasticity**Presenter:** Aili Fisher**Principal Investigator:** Mete Civelek**Author(s):**

Robert Perry

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 25**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Structurally and Functionally Similar p53 Homologs in Chlamydomonas reinhardtii**Presenter:** Arnav Goel**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 26**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Analysis of Occlusion on Six-Channel Light Sensor in Southwest Florida**Presenter:** Steven Edwards**Principal Investigator:** Steven Edwards**Author(s):**

Derek Lura

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 27**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Analysis of Multi-Cellular Systems****Abstract Title:** Computational Modeling To Characterizing The Role Of The Astrocytic Calcium Activity In The Neurovascular Coupling**Presenter:** Alejandro Suarez**Principal Investigator:** N/A**Author(s):**

Lazaro Fernandez

Jorge Riera

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 28**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Analysis of Multi-Cellular Systems****Abstract Title:** Confocal Microscopy Pipeline for Discretizing and Quantifying Pattern Formation in Cell Culture**Presenter:** Jack Toppen**Principal Investigator:** N/A**Author(s):**

Iryna Hartsock

Melissa Kemp

Daniel Cruz

Elena Dimitrova

Eunbi Park

Peter Bubenik

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster  
**Number:** 29

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Analysis of Multi-Cellular Systems**

**Abstract Title:** The Entropy of Cancer Cell Migration: Bioenergetics and Cell Proliferation Support 3D Invasive Migration

**Presenter:** Jian Zhang

**Principal Investigator:** Jian Zhang

**Author(s):**

Jian Zhang

Jenna Mosier

Yusheng Wu

Paul Taufalele

Wenjun Wang

Heng Sun

Cynthia Reinhart-King

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster  
**Number:** 30

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Analysis of Multi-Cellular Systems**

**Abstract Title:** Development of an agent-based model to investigate cellular mechanisms of vasculogenesis

**Presenter:** Lance Munn

**Principal Investigator:** N/A

**Author(s):**

Mohammadreza Nikmaneshi

Hamed Mohammadi

Lance Munn

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster  
**Number:** 31

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Analysis of Multi-Cellular Systems**

**Abstract Title:** Computational Study on the Modifying CAR T Cell Granzyme A Secretion Rate to Improve Follicular Lymphoma Outcomes

**Presenter:** Tanvi Gorre

**Principal Investigator:** Tanvi Reddy Gorre

**Author(s):**

Bhushan Dharmadhikari

Prabir Patra

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster  
**Number:** 32

**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY

**Analysis of Multi-Cellular Systems**

**Abstract Title:** Functional Physiomics of Engineered Cardiac Organoids Enabled by Exploratory Data Analytics

**Presenter:** Zhen Ma

**Principal Investigator:** Zhen Ma

**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 33**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Analysis of Multi-Cellular Systems  
(Summer Undergraduate)****Abstract Title:** Understanding the Cellular Landscape of Preclinical Models of Colorectal Cancer**Presenter:** Carli Newman Shikhar Uttam**Principal Investigator:** N/A**Author(s):**

Shikhar Uttam

Bogdan Kochetov

Lin Zhang

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 34**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Models of Metabolism****Abstract Title:** Cellular Metabolism Modeling Using Fluorescence Lifetime Imaging Microscopy**Presenter:** Jing Li**Principal Investigator:** N/A**Author(s):**

Kurt Zhang

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 35**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Models of Metabolism****Abstract Title:** Optimizing Cellular Metabolism to Improve Chronic Skin Wound Healing**Presenter:** Luis Ramirez**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 36**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Models of Metabolism****Abstract Title:** Characterizing Substrate-Dependent Differential Regulation of Mitochondrial Bioenergetics in the Heart and Kidney Cortex and Outer Medulla Using a Novel Computational Model**Presenter:** Shima Sadri**Principal Investigator:** N/A**Author(s):**

shima sadri

Devanshi Dave

Ranjan Dash

Said Audi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 37**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Theory and Practice of Synthetic Biology****Abstract Title:** Mitigating Optogenetic Crosstalk via Light-Controlled Protein Degradation**Presenter:** Cristian Coriano**Principal Investigator:** N/A**Author(s):**

Nathan Tague

Mary Dunlop

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 38**Track:** BIOINFORMATICS, COMPUTATIONAL AND SYSTEMS BIOLOGY**Theory and Practice of Synthetic Biology****Abstract Title:** MicroRNA-Based Long-Term Cell State Sensing Mediated by Endoribonucleases**Presenter:** Lei Wang**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 39**Track:** BIOMATERIALS**Drug Delivering Biomaterials****Abstract Title:** The Effect of Primary Sequence and Formation Method on Self-Assembling Peptide Structures**Presenter:** Megan Pitz**Principal Investigator:** Angela Alexander-Bryant**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: C, Poster**Number:** 40**Track:** BIOMATERIALS**3D Printing and Advanced Biomaterial Manufacturing****Abstract Title:** Modeling Microfluidic Mixers for Extrusion-based Bioprintin**Presenter:** Clayson Briggs**Principal Investigator:** Steven Santana**Author(s):**

Clayson Briggs

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster**Number:** 61**Track:** BIOMATERIALS**3D Printing and Advanced Biomaterial Manufacturing****Abstract Title:** Digital Light Processing 3D Printing of PEGNB via Thiol-Norbornene Click Chemistry**Presenter:** Min Hee Kim**Principal Investigator:** N/A**Author(s):**

Chien-Chi Lin

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 62

**Track:** BIOMATERIALS

**Drug Delivering Biomaterials (Summer Undergraduate)**

**Abstract Title:** Electrospun Chitosan Membranes Loaded with Raspberry Ketone and Simvastatin to Stimulate Osteogenic Differentiation for Guided Bone Regeneration

**Presenter:** Haley Pruitt

**Principal Investigator:** Joel D. Bumgardner

**Author(s):**

Matthew Atwill

Joel Bumgardner

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 63

**Track:** BIOMATERIALS

**Drug Delivering Biomaterials (Summer Undergraduate)**

**Abstract Title:** Solution Polycondensation Synthesis of Polyanhydrides Using Tosyl Chloride for Controlled Drug Delivery

**Presenter:** Patricia Poley

**Principal Investigator:** Brandon Vogel

**Author(s):**

Brandon Vogel

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 64

**Track:** BIOMATERIALS

**Drug Delivering Biomaterials (Summer Undergraduate)**

**Abstract Title:** Light-Activated Crystal Violet for Enhanced Antimicrobial Efficacy of Nitric Oxide-Releasing Polymer

**Presenter:** Shruti Bhagat

**Principal Investigator:** Elizabeth Brisbois

**Author(s):**

Lauren Griffin

Ekrem Ozkan

Lori Estes

Shruti Bhagat

Sarah Wilson

Elizabeth Brisbois

Hitesh Handa

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 65

**Track:** BIOMATERIALS

**3D Printing and Advanced Biomaterial Manufacturing (Summer Undergraduate)**

**Abstract Title:** Cyanobacterial Strain Development in Alginate Hydrogel Matrices

**Presenter:** Azeh Ndifor

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 66

**Track:** BIOMATERIALS

**3D Printing and Advanced Biomaterial Manufacturing**

**Abstract Title:** Development of a Flexible and Resorbable Support Material for Tissue Engineered Intervertebral Discs  
**Presenter:** Alikhan Fidai  
**Principal Investigator:** Lawrence Bonassar  
**Author(s):**  
 N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 67

**Track:** BIOMATERIALS

**3D Printing and Advanced Biomaterial Manufacturing**

**Abstract Title:** Machine Learning on X-ray Scattering Data to Aid High-Throughput Protein-Polymer Hybrid Synthesis  
**Presenter:** Cesar Ramirez  
**Principal Investigator:** N/A  
**Author(s):**  
 N. Sanjeeva Murthy  
 Adam Gormley

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 68

**Track:** BIOMATERIALS

**3D Printing and Advanced Biomaterial Manufacturing**

**Abstract Title:** Improved Electrospun Fiber Patterning for Microneedle Fabrication  
**Presenter:** Carmen Ioana Tobos  
**Principal Investigator:** Kim Woodrow  
**Author(s):**  
 Kim Woodrow

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 69

**Track:** BIOMATERIALS

**3D Printing and Advanced Biomaterial Manufacturing**

**Abstract Title:** The Modification of a Filament Printer to Create 3D Printed, Ionic Crosslinked Hydrogels  
**Presenter:** Danielle McTigue  
**Principal Investigator:** N/A  
**Author(s):**  
 Danielle McTigue  
 Natalie Roush  
 Eileen Robertson  
 Scott Sell

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 70

**Track:** BIOMATERIALS

**3D Printing and Advanced Biomaterial Manufacturing**

**Abstract Title:** Conductive Hyaluronic Acid Biomaterial for Extrusion 3D Bioprinting

**Presenter:** Eleana Manousiouthakis

**Principal Investigator:** N/A

**Author(s):**

Sarah Danis

Ashley Evering

Emily Pallack

Lauren Repmann

Natalie Ordonez

Christine Schmidt

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 71

**Track:** BIOMATERIALS

**3D Printing and Advanced Biomaterial Manufacturing**

**Abstract Title:** Wrinkling Patterns on 4D Printed Substrates and their Effect on Contact Guidance

**Presenter:** Johnson Agyapong

**Principal Investigator:** N/A

**Author(s):**

Johnson Agyapong

James Henderson

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 72

**Track:** BIOMATERIALS

**3D Printing and Advanced Biomaterial Manufacturing**

**Abstract Title:** Bioprinting using Chondrogenic Janus Base Nano-Matrix for Improved Cartilage

Tissue Engineering

**Presenter:** Leah Faber

**Principal Investigator:** Yupeng Chen

**Author(s):**

Anne Yau

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 73

**Track:** BIOMATERIALS

**3D Printing and Advanced Biomaterial Manufacturing**

**Abstract Title:** Bioprinted Pericytes Respond to VEGF Gradient

**Presenter:** Maria Mendoza

**Principal Investigator:** N/A

**Author(s):**

N/A

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster

**Number:** 74

**Track:** BIOMATERIALS

### 3D Printing and Advanced Biomaterial Manufacturing

**Abstract Title:** Hybrid laser platform (HLP) for Printing 3D Multiscale Multi-material Hydrogel Structures

**Presenter:** Arun Poudel

**Principal Investigator:** Pranav Soman

**Author(s):**

N/A

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster

**Number:** 75

**Track:** BIOMATERIALS

Biomaterials Scaffolds

**Abstract Title:** Computational Study of Parameter Variability in Biological Scaffolding

**Presenter:** Bethany Luke

**Principal Investigator:** N/A

**Author(s):**

Rio Parsons

Lauren Kadlec

Bethany Luke

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster

**Number:** 76

**Track:** BIOMATERIALS

**Biomaterials Scaffolds**

**Abstract Title:** Pediatric Midshaft Clavicle Tissue Repair

**Presenter:** Dianna Persaud

**Principal Investigator:** N/A

**Author(s):**

Dianna Persaud

Zachary Marvin

DANIELLE CORNETTA

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster

**Number:** 77

**Track:** BIOMATERIALS

**Biomaterials**

**Abstract Title:** Conductive Polymer-Collagen Composites Influence Cellular Processes Depending on PEDOT Form

**Presenter:** Rebecca Keate

**Principal Investigator:** N/A

**Author(s):**

Rebecca Keate

Joshua Tropp

Guillermo Ameer

Jonathan Rivnay

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster

**Number:** 78

**Track:** BIOMATERIALS

**Biomaterials Scaffolds**

**Abstract Title:** Impact of Sterilization on Thiol-ene Based Polymer Scaffolds

**Presenter:** Madeleine Horelica

**Principal Investigator:** N/A

**Author(s):**

Rachel Gruenbaum

Tyler Touchet

Duncan Maitland

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 79

**Track:** BIOMATERIALS  
**Biomaterials Scaffolds**

**Abstract Title:** Iron-Chelated Silk Microfibers as a Novel Magneto-Responsive Scaffold Architecture

**Presenter:** Melissa Wojnowski

**Principal Investigator:** Jeannine M Coburn

**Author(s):**

Melissa Wojnowski

Jeannine Coburn

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: D, Poster  
**Number:** 80

**Track:** BIOMATERIALS  
**Drug Delivering Biomaterials**

**Abstract Title:** Comparing the Effectiveness of DSPC-, DBPC-, and DPPC-Lipid Shell Oxygen Microbubbles to Improve Survival in an LPS-Induced ARDS Rat Model

**Presenter:** Anna Levorson

**Principal Investigator:** Benjamin Terry

**Author(s):**

Riaz Ur Rehman Mohammed

Ben Terry

Alexander Fan

Awaneesh Upadhyay

Mark Borden

Kang-Ho Song

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster  
**Number:** 101

**Track:** BIOMATERIALS  
**Drug Delivering Biomaterials**

**Abstract Title:** Treatment of Peripheral Artery Disease via IGF-mimicking Peptide Hydrogel

**Presenter:** Abhishek Roy

**Principal Investigator:** N/A

**Author(s):**

Abhishek Roy

Zain Siddiqui

Joseph Dodd-o

Paolo Elguera

Vivek Kumar

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster  
**Number:** 102

**Track:** BIOMATERIALS  
**Drug Delivering Biomaterials**

**Abstract Title:** Studying Interactions Between Polyplexes and Surface Coatings for Localized Nucleic Acid Delivery

**Presenter:** Christina Holmes

**Principal Investigator:** N/A

**Author(s):**

Sydney Hall

Sailesti Joshi

Christina Holmes

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster**Number:** 103**Track:** BIOMATERIALS**Drug Delivering Biomaterials****Abstract Title:** Diatoms decorated with gold nanoparticles by In-situ and Ex-situ methods for in vitro gentamicin release**Presenter:** Eva Chavez**Principal Investigator:** N/A**Author(s):**

Eva Chavez

Sarah Briceno

Gema Gonzalez

Prabir Patra

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster**Number:** 104**Track:** BIOMATERIALS**Drug Delivering Biomaterials****Abstract Title:** Nanoformulation & Bio-Functionalization of Linear-Dendritic Block Copolymers with Ionic Liquids**Presenter:** Christine Hamadani**Principal Investigator:** N/A**Author(s):**

Gaya Dasanayake

Eden Tanner

Timothy Lodge

Lucy Liberman

Thomas Werfel

Mehjabeen Hossain

Davita Watkins

Mahesh Loku Yaddehige

Iyanuoluwani Owolabi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster**Number:** 105**Track:** BIOMATERIALS**Drug Delivering Biomaterials****Abstract Title:** Gellan Gum And Trilysine Hydrogels With Tunable Mechanical Properties For Drug Delivery**Presenter:** Carolina Villarreal**Principal Investigator:** N/A**Author(s):**

Jeannine Coburn

Carolina Villarreal

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster**Number:** 106**Track:** BIOMATERIALS**Drug Delivering Biomaterials****Abstract Title:** A Clickable, Free Radical-Initiated Delivery System for Capture-and-Release of Payloads**Presenter:** Emily DiMartini**Principal Investigator:** N/A**Author(s):**

David Shreiber

Kelly Kyker-Snowman

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster  
**Number:** 107

**Track:** BIOMATERIALS  
**Drug Delivering Biomaterials**

**Abstract Title:** A Multi-targeting Bionanomatrix Coating to Reduce Capsular Contracture Development on Silicone Implants

**Presenter:** Jennifer Sherwood

**Principal Investigator:** N/A

**Author(s):**

Krishna Josyula

Benjamin Estep

Patrick Hwang

Brigitta Brott

Dong Woon Kim

Ho-Wook Jun

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster  
**Number:** 108

**Track:** BIOMATERIALS  
**Drug Delivering Biomaterials**

**Abstract Title:** Hydrogel Dressing with Catalase-like Activity for Chronic Wound Healing

**Presenter:** Min Ji Kim

**Principal Investigator:** N/A

**Author(s):**

Min Ji Kim

Han Bi Ji

Cho Rim Kim

Chang Hee Min

Jae Hoon Han

Young Bin Choy

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster  
**Number:** 109

**Track:** BIOMATERIALS  
**Drug Delivering Biomaterials**

**Abstract Title:** Biomatrix coated flow diverter to improve healing and endothelialization for brain aneurysm occlusion

**Presenter:** Patrick Hwang

**Principal Investigator:** N/A

**Author(s):**

Jennifer Sherwood

Benjamin Estep

Brigitta Brott

Ram Kadirvel

David Kallmes

Ho-Wook Jun

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster  
**Number:** 110

**Track:** BIOMATERIALS  
**Drug Delivering Biomaterials**

**Abstract Title:** Therapeutic Delivery from Tunable Hydrogels for Ocular Injuries

**Presenter:** Katelyn Swindle-Reilly

**Principal Investigator:** N/A

**Author(s):**

Courtney Maxwell

Elle Hellwarth

Andrew Soltisz

Wade Rich

heather chandler

Matthew Reilly

## Friday, October 14

2:30 PM - 3:30 PM

Poster Session: D, Section: C, Row: E, Poster

Number: 111

Track: BIOMATERIALS

### Drug Delivering Biomaterials

**Abstract Title:** Synthesis of Stimuli Responsive Drug Conjugated Poly(2-vinyl-4,4-dimethyl azlactone)

Scaffolds for Therapeutic Applications

**Presenter:** Arif Mohammad

**Principal Investigator:** N/A

**Author(s):**

N/A

## Friday, October 14

2:30 PM - 3:30 PM

Poster Session: D, Section: C, Row: E, Poster

Number: 112

Track: BIOMATERIALS

### Drug Delivering Biomaterials

**Abstract Title:** Mucin Hydrogels for Antimicrobial Peptide Delivery

**Presenter:** Sydney Yang

**Principal Investigator:** N/A

**Author(s):**

Gregg Duncan

## Friday, October 14

2:30 PM - 3:30 PM

Poster Session: D, Section: C, Row: E, Poster

Number: 113

Track: BIOMATERIALS

### Drug Delivering Biomaterials

**Abstract Title:** Engineered Mucin Hydrogel for Local Delivery of Monoclonal Antibodies in

Inflammatory Bowel Disease

**Presenter:** Taj Yeruva

**Principal Investigator:** Gregg Duncan

**Author(s):**

Gregg Duncan

## Friday, October 14

2:30 PM - 3:30 PM

Poster Session: D, Section: C, Row: E, Poster

Number: 114

Track: BIOMATERIALS

### Drug Delivering Biomaterials

**Abstract Title:** Controlled Release of Antibodies Using Hydrolytically Degradable Microgels

**Presenter:** Zakir Ahmedin

**Principal Investigator:** N/A

**Author(s):**

Zakir Ahmedin

Andres Garcia

## Friday, October 14

2:30 PM - 3:30 PM

Poster Session: D, Section: C, Row: E, Poster

Number: 115

Track: BIOMECHANICS

### Biomechanics of Rehabilitation/Injury

**Abstract Title:** Effect of Exoskeleton Control for Individual Assistance on Biological Hip Torque Generated by Subjects

**Presenter:** Ben Perrin

**Principal Investigator:** He Huang

**Author(s):**

Qiang Zhang

He Huang

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster  
**Number:** 116

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury**

**Abstract Title:** Effect of a Polyester-Based Tendon on Muscle Architecture

**Presenter:** Fisher Adkisson

**Principal Investigator:** N/A

**Author(s):**

Dustin Crouch

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster  
**Number:** 117

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury**

**Abstract Title:** Validation of a Novel Tool to Quantify Spasticity After Stroke

**Presenter:** Maria Gamez

**Principal Investigator:** William Zev Rymer

**Author(s):**

Maria Gamez

william rymer

Leah Oshea

Max Farley

Alexander Barry

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster  
**Number:** 118

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury**

**Abstract Title:** Assessing Proprioception as a Direct Metric of Athletic Performance

**Presenter:** Steven Evangelos

**Principal Investigator:** Yanfen Li

**Author(s):**

Yanfen Li

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster  
**Number:** 119

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury (Summer Undergraduate)**

**Abstract Title:** Development and Assessment of Engineered Wood Fiber (EWF) Playground Surfacing Maintenance Guidelines from Impact Attenuation Testing

**Presenter:** Brooke Ewer

**Principal Investigator:** N/A

**Author(s):**

Caitlin Colicchio

Eric Kennedy

Heather Olsen

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: E, Poster

**Number:** 120

**Track:** BIOMECHANICS

### **Biomechanics of Rehabilitation/Injury (Summer Undergraduate)**

**Abstract Title:** Evaluation of Alternative Methodologies for Assessing Playground Surfacing Impact Attenuation Performance

**Presenter:** Caitlin Colicchio

**Principal Investigator:** Eric Kennedy

**Author(s):**

Brooke Ewer

Eric Kennedy

Heather Olsen

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster

**Number:** 141

**Track:** BIOMECHANICS

### **Biomechanics of Rehabilitation/Injury (Summer Undergraduate)**

**Abstract Title:** Is an Artificial Tendon Better than No Tendon? Vertical Ground Contact Forces in a Rabbit Model of Tibialis Cranialis Tendon Resection

**Presenter:** Carter Hatch

**Principal Investigator:** Dustin L. Crouch

**Author(s):**

Carter Hatch

Katrina Easton

Ivy Milligan

Caroline Billings

Kristin Bowers

Dustin Crouch

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster

**Number:** 142

**Track:** BIOMECHANICS

### **Biomechanics of Rehabilitation/Injury (Summer Undergraduate)**

**Abstract Title:** Method to Study the Influence of Passive Upper-Extremity Exoskeleton Systems and Posture on Human Exposure to Tool-Induced Vibrations

**Presenter:** Parisa Torkinejad Ziarati Parisa Torkinejad Ziarati

**Principal Investigator:** Donald R. Peterson

**Author(s):**

PARISA TORKINEJAD ZIARATI

Simon Kudernatsch

Ting Xia

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster

**Number:** 143

**Track:** BIOMECHANICS

### **Biomechanics of Rehabilitation/Injury (Summer Undergraduate)**

**Abstract Title:** Braking Effectiveness from Post-Surgical Femur Fracture Patients Using Brake Force Simulator

**Presenter:** Eric Kennedy

**Principal Investigator:** Joseph Carey

**Author(s):**

Joseph Carey

Zane Patterson

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster  
**Number:** 144

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury  
 (Summer Undergraduate)**

**Abstract Title:** Assessing Vertebral Cortical Thickness from L3-Spinal Imaging in Older Adults with Obesity

**Presenter:** Gnaneswar Chundi

**Principal Investigator:** Ashley A. Weaver

**Author(s):**

Joshua Stapleton

Delanie Lynch

Denise Houston

Ashley Weaver

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster  
**Number:** 145

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury  
 (Summer Undergraduate)**

**Abstract Title:** Development and Preliminary Testing of a Walk-Assist Device With Dynamic Support

**Presenter:** Gita Regmi Hanz Richter

**Principal Investigator:** N/A

**Author(s):**

Simon Detmer

Hanz Richter

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster  
**Number:** 146

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury  
 (Summer Undergraduate)**

**Abstract Title:** Phantomless Computed Tomography Measurement of Pelvic Bone Mineral Density and Correlation to Pelvic Fracture in Motor Vehicle Collisions

**Presenter:** Isaac Ronning

**Principal Investigator:** Ashley Weaver

**Author(s):**

Ashley Weaver

William Armstrong - 1

Joel Stitzel

Anna Miller

Robert Martin

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster  
**Number:** 147

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury  
 (Summer Undergraduate)**

**Abstract Title:** Finite Element Analysis of Femoral Bone Strain at Mid-stance Using Model Morphing

**Presenter:** Jack Felipe

**Principal Investigator:** Ashley Weaver

**Author(s):**

Karan Devane

Delanie Lynch

Kristen Beavers

Katherine Hsieh

Ashley Weaver

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster**Number:** 148**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury  
(Summer Undergraduate)****Abstract Title:** Influence of Collision Speed and Distance on Head Kinematics in Youth Football Athletes**Presenter:** Jarel Marcellin**Principal Investigator:** Jillian Urban**Author(s):**

Jillian Urban

Joel Stitzel

Logan Miller

Madison Marks

Ty Holcomb

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster**Number:** 149**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury  
(Summer Undergraduate)****Abstract Title:** The Effects of Various Powered Prosthesis Knee Kinematics on Neurocognitive Performance and Temporal Gait Behavior**Presenter:** Kaitlynn Whimpenny Abbas Alili, Helen Huang**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster**Number:** 150**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury  
(Summer Undergraduate)****Abstract Title:** Analyzing the Effectiveness of Updated Roof Crush Resistance Standard in FMVSS 216a**Presenter:** Lauren Douglas**Principal Investigator:** Haojie Mao**Author(s):**

Kalish Gunasekaran

Haojie Mao

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster**Number:** 151**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury  
(Summer Undergraduate)****Abstract Title:** Workflow to Estimate Metatarsal Stress during Running in Females at Risk for Bone Stress Injury**Presenter:** Landon Begin**Principal Investigator:** Chris Venters**Author(s):**

John Willson

Stacey Meardon

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster  
**Number:** 152

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury  
(Summer Undergraduate)**

**Abstract Title:** Change in Thumb CMC Joint Space  
During Pinching via Ultrasonography

**Presenter:** Zong-Ming Li

**Principal Investigator:** Sohail Daulat

**Author(s):**

Sohail Daulat

David Jordan

Kent Kwoh

Zong-Ming Li

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster  
**Number:** 153

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury  
(Summer Undergraduate)**

**Abstract Title:** Shearing Tenocytes on Direct-write  
Near-field Electrospun Gelatin Fibers: Towards a  
Tendon-on-chip

**Presenter:** Muskan Aslam

**Principal Investigator:** Matthew B. Fisher

**Author(s):**

Muskan Aslam

Zachary Davis

Halston Deal

Drew Koch

Lauren Schnabel

Michael Daniele

Ashley Brown

Matthew Fisher

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster  
**Number:** 154

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury  
(Summer Undergraduate)**

**Abstract Title:** Modeling the Effects of Femoral  
Anteversion and Miserable Malalignment on Hip  
Joint Loads

**Presenter:** Marianne J. Voigt Benjamin B. Wheatley

**Principal Investigator:** N/A

**Author(s):**

nathan chaclas

Mark Seeley

Benjamin Wheatley

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster  
**Number:** 155

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury  
(Summer Undergraduate)**

**Abstract Title:** Variance of 50th Percentile Female  
Ribs and Corresponding Responses Under Lateral  
Loading

**Presenter:** Rick Nott

**Principal Investigator:** F. Scott Gayzik

**Author(s):**

Andrea Robinson

Francis Gayzik

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster

**Number:** 156

**Track:** BIOMECHANICS

### **Biomechanics of Rehabilitation/Injury (Summer Undergraduate)**

**Abstract Title:** Linking Biomechanical Changes to Grip Strength Deficits Following Surgical Wrist Redesign

**Presenter:** Orion Jusuf

**Principal Investigator:** Wendy Murray

**Author(s):**

Orion Jusuf

Daniel McFarland

Wendy Murray

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster

**Number:** 157

**Track:** BIOMECHANICS

### **Biomechanics of Rehabilitation/Injury (Summer Undergraduate)**

**Abstract Title:** Differential Effects of Immobilization by Casting and Hindlimb Suspension on Muscle Loss from Unloading in C57BL/6J Mice

**Presenter:** Brooks Pollard

**Principal Investigator:** Micheal A. Friedman

**Author(s):**

Michael Friedman

Yue Zhang

Henry Donahue

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster

**Number:** 158

**Track:** BIOMECHANICS

Biomechanics of Rehabilitation/Injury (Summer Undergraduate)

**Abstract Title:** Gender and Age Specific Mathematical Model for Predicting Trunk Flexion Strength

**Presenter:** Sean Shimada

**Principal Investigator:** Kai Frudden

**Author(s):**

Rachel Tanczos

Kai Frudden

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster

**Number:** 159

**Track:** BIOMECHANICS

### **Biomechanics of Rehabilitation/Injury (Summer Undergraduate)**

**Abstract Title:** Crash Test Exoskeleton For Assessing Potential Fall Injury

**Presenter:** Sydney Mountcastle

**Principal Investigator:** Sandra Hnat

**Author(s):**

Ronald Triolo

Sandra Hnat

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: F, Poster**Number:** 160**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury  
(Summer Undergraduate)****Abstract Title:** Follistatin is Required for Mass Maintenance but Not Partial Force Recovery

Following Muscle Injury

**Presenter:** Siena Smith**Principal Investigator:** Gretchen A. Meyer**Author(s):**

Jacob Parson

Gretchen Meyer

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 181**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury  
(Summer Undergraduate)****Abstract Title:** Stability Fluctuations during Locomotion with Perturbations**Presenter:** Kumarakuru Visvanathan**Principal Investigator:** Ryan Wedge**Author(s):**

Ryan Wedge

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 182**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury  
(Summer Undergraduate)****Abstract Title:** Creating Kinetic and Kinematic Models to Predict Inclines Using a Modified Kalman Filter for Robotic Prostheses**Presenter:** Isaias Trevino**Principal Investigator:** N/A**Author(s):**

Thomas Best

Robert Gregg

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 183**Track:** BIOMECHANICS**Matrix Effects In Mechanobiology****Abstract Title:** Matrix stiffness mediates DNA methylation in endothelial cells.**Presenter:** Paul Taufalele**Principal Investigator:** Cynthia A. Reinhart-King**Author(s):**

Cynthia Reinhart-King

Hannah Kirkham

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 184**Track:** BIOMECHANICS**Cellular and Molecular Biomechanics:  
Mechanobiology (Summer  
Undergraduate)****Abstract Title:** DOPA-Based Polymers Are Non-toxic and Can Improve Severe Wound Healing**Presenter:** Erica Taylor**Principal Investigator:** James Wang**Author(s):**

Michael Copeland

Jianying Zhang

James Wang

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster  
**Number:** 185

**Track:** BIOMECHANICS  
**Human Performance/Sports Biomechanics**

**Abstract Title:** A Flexible Sensor System for Lower Body Locomotion Estimation

**Presenter:** Wenwen Zhang

**Principal Investigator:** Wenwen Zhang

**Author(s):**

Arvin Tashakori

Zenan Jiang

Amir Servati

Calvin Kuo

Peyman Servati

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster  
**Number:** 186

**Track:** BIOMECHANICS  
**Cellular and Molecular Biomechanics: Mechanobiology (Summer Undergraduate)**

**Abstract Title:** Determining the Viscous and Elastic Components of E-cadherin Adhesion Force Response

**Presenter:** Venkat Maruthamuthu

**Principal Investigator:** Declan Butler

**Author(s):**

Declan Butler

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster  
**Number:** 187

**Track:** BIOMECHANICS  
**Matrix Effects In Mechanobiology (Summer Undergraduate)**

**Abstract Title:** Mechanically Tunable Methacrylated Gelatin Hydrogels for Glycocalyx-Expressing Endothelium

**Presenter:** Ke Wen

**Principal Investigator:** Sidi Bencherif, Eno Ebong

**Author(s):**

Mohammad Hamrangsekachae

Eno Ebong

Sidi Bencherif

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster  
**Number:** 188

**Track:** BIOMECHANICS  
**Matrix Effects In Mechanobiology (Summer Undergraduate)**

**Abstract Title:** Substrate-Stiffness Affects Protein Expression of Brain Endothelial Cells and Astrocytes in an In-Vitro Model

**Presenter:** Adam Engler

**Principal Investigator:** Itzel L. Hernandez, Ester Kwon

**Author(s):**

Ester Kwon

Marianne Madias

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 189**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** A Comparative Study of Pediatric Human and Pig Nerve Biomechanical Properties**Presenter:** Anita Singh**Principal Investigator:** N/A**Author(s):**

Anita Singh

scott kozin

Adarsh Abbagani

Sriram Balasubramanian

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 190**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Influence of Pre-Crash Vehicle Maneuvers on Occupant Safety Performance Response**Presenter:** Akshay Dahiya**Principal Investigator:** N/A**Author(s):**

Costin Untaroiu

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 191**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Development of Mathematical Model for Vibration Accelerated Wound Healing**Presenter:** Devin Needs**Principal Investigator:** N/A**Author(s):**

Devin Needs

Jonathan Blotter

John Dallon

J Feland

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 192**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Depth-Dependent Shear Modulus of TMJ Cartilage relate to Microscale Structure and Composition**Presenter:** Dong Hwan Yoon**Principal Investigator:** N/A**Author(s):**

Lawrence Bonassar

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 193**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Longitudinal Assessment of Patella Knee Injury using Ultrasonography**Presenter:** Erica King**Principal Investigator:** Parag V. Chitnis**Author(s):**

Brian Guthrie

Shriniwas Patwardhan

Siddhartha Sikdar

Margaret Jones

Qi Wei

Parag Chitnis

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 194**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Functional Resistance Training with Viscous and Elastic Devices: Do Resistance Types Alter Training?**Presenter:** Edward Washabaugh**Principal Investigator:** N/A**Author(s):**

Thomas Augenstein

Mary Kojé

Chandramouli Krishnan

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 195**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Biomechanics of Tool Use to Aid in Worker Training and Injury Prevention**Presenter:** Sandra Faragalla**Principal Investigator:** Stephanie Carey**Author(s):**

Stephanie Carey

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 196**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Short-Term Changes in Interleukin-6 Expression Following Repetitive Mild TBI**Presenter:** Jasmine Smith**Principal Investigator:** N/A**Author(s):**

Lakiesha Williams

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 197**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Mathematical Dynamic Modeling (MADYMO) of the Maternal Pelvis and Neonate for Simulating Shoulder Dystocia and Delivery Maneuvers**Presenter:** Joy Iaconianni**Principal Investigator:** N/A**Author(s):**

Joy Iaconianni

Bernard Gonik

Michele Grimm

Sriram Balasubramanian

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 198**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Design and Development of Multi-axial Hand-Arm Force Measurement Handle**Presenter:** Joseph Stevenson**Principal Investigator:** N/A**Author(s):**

Mary Arico

Takafumi Asaki

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 199**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Characterization of Mid-Shaft Femoral Fractures Utilizing Three-Point Bending in Porcine Bone**Presenter:** Kha Minh Nguyen**Principal Investigator:** N/A**Author(s):**

Dennis Pham

Ha Vo

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: G, Poster**Number:** 200**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Relative Motion of Body Segments in Pre and Post Training in Older Survivors of Stroke**Presenter:** Roni Romero Melendez**Principal Investigator:** N/A**Author(s):**

Ji Chen

Lara Thompson

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster**Number:** 221**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** DEVELOPMENT OF MODELS RELATING IMUS TO GROUND REACTION FORCE**Presenter:** Mirel Ajdaroski**Principal Investigator:** N/A**Author(s):**

Amanda Esquivel

So Young Baek

James Ashton-Miller

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster**Number:** 222**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Ultrasound Shear Wave Metric for Assessing Flexor Tendon Healing: A Preliminary Cadaver Study**Presenter:** Michael Richards**Principal Investigator:** N/A**Author(s):**

Michael Schrader

Gilbert Smolyak

Alayna Loiselle

Constantinos Ketonis

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster**Number:** 223**Track:** BIOMECHANICS**Biomechanics of Rehabilitation/Injury****Abstract Title:** Rank Ordered Activation of the Abductor Hallucis Muscle For Commonly Utilized Rehabilitation and Strengthening Exercises**Presenter:** Michael Torry**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

Poster Session: D, Section: C, Row: H, Poster

Number: 224

Track: BIOMECHANICS

**Biomechanics of Rehabilitation/Injury**

Abstract Title: Human Head Friction Coefficients by Biological Sex

Presenter: Nicole Stark

Principal Investigator: Steve Rowson

Author(s):

Nicole Stark

Steven Rowson

**Friday, October 14**

2:30 PM - 3:30 PM

Poster Session: D, Section: C, Row: H, Poster

Number: 225

Track: BIOMECHANICS

**Biomechanics of Rehabilitation/Injury**

Abstract Title: Laboratory Reconstruction of Head Injury Scenarios From Long-term Care Residents

Presenter: Ryan Exell

Principal Investigator: N/A

Author(s):

Zoie Mink

Amanda Esquivel

**Friday, October 14**

2:30 PM - 3:30 PM

Poster Session: D, Section: C, Row: H, Poster

Number: 226

Track: BIOMECHANICS

**Biomechanics of Rehabilitation/Injury**

Abstract Title: Validation of a Fiber Optic-based

Curvature Sensor in Upper Limb Joint Motion Monitoring

Presenter: Sara Elnahas

Principal Investigator: Robin Queen

Author(s):

Sara Elnahas

Guannan Shi

Jacob Black

Yizheng Zhu

Sara Arena

Robin Queen

**Friday, October 14**

2:30 PM - 3:30 PM

Poster Session: D, Section: C, Row: H, Poster

Number: 227

Track: BIOMECHANICS

**Biomechanics of Rehabilitation/Injury**

Abstract Title: Effect of Obstacle Avoidance with Different Heights on Friction Demand

Presenter: Seong Hyun Moon

Principal Investigator: Thurmon Lockhart

Author(s):

Christopher Frames

Thurmon Lockhart

Raagi Panchal

William Sweeten

**Friday, October 14**

2:30 PM - 3:30 PM

Poster Session: D, Section: C, Row: H, Poster

Number: 228

Track: BIOMECHANICS

**Biomechanics of Rehabilitation/Injury**

Abstract Title: Analysis of Femoral Shaft Fracture Angle at Various Loading Rates

Presenter: Jania Williams

Principal Investigator: N/A

Author(s):

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 229

**Track:** BIOMECHANICS

**Biomechanics of Rehabilitation/Injury**

**Abstract Title:** Biomechanical Evaluation of a Novel Collagen Based Ligament Repair Technique in an Ovine Model

**Presenter:** Kaitlyn White

**Principal Investigator:** Zachary Lawson

**Author(s):**

Kaitlyn White

Zachary Lawson

Michael Moreno

Andrew Robbins

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 230

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Industry and Biomedical Engineering**

**Abstract Title:** The Influence of Aging on the Inflammatory Response of Mice In Experimental Lung Injury

**Presenter:** Shane Albin

**Principal Investigator:** Rebecca Heise

**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 231

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Industry and Biomedical Engineering**

**Abstract Title:** Comprehensive Antibody Profiling Predicts Graft Rejection in Kidney Transplant Recipients

**Presenter:** Anushka Saha

**Principal Investigator:** Aniruddh Sarkar

**Author(s):**

Aniruddh Sarkar

Jishnu Das

Trirupa Chakraborty

Anushka Saha

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 232

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)  
Industry and Biomedical Engineering

**Abstract Title:** A Stakeholder-informed Curriculum in Medical Product Development for Biomedical Engineers

**Presenter:** Jan Stegemann

**Principal Investigator:** N/A

**Author(s):**

Cameron Louttit

Elizabeth Mays

Rachael Schmedlen

Melissa Wrobel

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 233

**Track:** BIOMEDICAL ENGINEERING  
EDUCATION (BME)

**Industry and Biomedical Engineering**

**Abstract Title:** Validating a Biomechanical  
Preclinical Animal Model for the Human Wrist

**Presenter:** Madison Altieri

**Principal Investigator:** Joseph Crisco

**Author(s):**

Joseph Crisco

Rohit Badida

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 234

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Abstract Title:** Cavitation Characterization of Size-  
Isolated Microbubbles in a Vessel Phantom using  
Focused Ultrasound

**Presenter:** Payton Martinez

**Principal Investigator:** Mark Borden

**Author(s):**

Mark Broden

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 235

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Abstract Title:** Bedside monitoring of spatially  
distributed cerebral oxygenation saturation with high-  
density diffused optical tomography

**Presenter:** Caroline Carter

**Principal Investigator:** Adam Eggebrecht

**Author(s):**

Adam Eggebrecht

Tessa George

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 236

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

**Abstract Title:** DO-SRS and 2PEF Imaging of  
Metabolic Dynamics under Excess L-Methionine  
Regulation in Amyotrophic Lateral Sclerosis

**Presenter:** Khang Hoang

**Principal Investigator:** Lingyan Shi

**Author(s):**

Khang Hoang

Chan-yu Kuo

Hongje Jang

Sirasit Prayotamornkul

Hetvi Trivedi

Pegah Bagheri

Lingyan Shi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 237**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Abstract Title:** Improved Photoacoustic Signal  
Stability in Melanin Phantom with NIR-II  
Wavelengths**Presenter:** Swathi Katakam**Principal Investigator:** Carolyn Bayer**Author(s):**

Swathi katakam

Vinoin Vincely

Carolyn Bayer

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 238**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Contrast-Enhanced Ultrasound and  
Therapeutic Ultrasound (US) (Summer  
Undergraduate)****Abstract Title:** Ultrasound Neuromodulation in an  
Earthworm**Presenter:** Nicole Turpin**Principal Investigator:** Takashi Buma**Author(s):**

Takashi Buma

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 239**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Optical and Spectroscopic Imaging,  
Microscopy, and Spectroscopy (Optics)  
(Summer Undergraduate)****Abstract Title:** Effect of Concurrent Visual and  
Auditory Attention Tasks on Brain Activity During  
Postural Control**Presenter:** Ava Taylor**Principal Investigator:** Chia-Cheng Lin**Author(s):**

Ava Taylor

Peter Ogrinc

Brian Sycott

Rui Wu

Shanyue Guan

Chia-Cheng Lin

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: C, Row: H, Poster  
**Number:** 240**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Optical and Spectroscopic Imaging,  
Microscopy, and Spectroscopy (Optics)  
(Summer Undergraduate)****Abstract Title:** Novel Tool for Quantitative  
Morphometry of Extracellular Matrix in Pulmonary  
Fibrosis**Presenter:** Brendan Cox**Principal Investigator:** Jeffrey Sturek**Author(s):**

Riley Hannan

Jeffrey Sturek

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 261

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics) (Summer Undergraduate)**

**Abstract Title:** Characterization of Drosophila Heartbeat Parameters Using a High-Speed Microscopic Imaging System

**Presenter:** Danielle Flores

**Principal Investigator:** Yang Liu

**Author(s):**

Yang Liu

Alexander Murashov

Elena Pak

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 262

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics) (Summer Undergraduate)**

**Abstract Title:** Small separation speckle contrast optical spectroscopy for intraoperative assessment of parathyroid glands viability

**Presenter:** Connor Berger

**Principal Investigator:** N/A

**Author(s):**

Jacob Womack

Seung Yup Lee

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 263

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics) (Summer Undergraduate)**

**Abstract Title:** Hand-held wireless optical device for intraoperative assessment of parathyroid gland perfusion

**Presenter:** Jacob Womack

**Principal Investigator:** N/A

**Author(s):**

Connor Berger

Seung Yup Lee

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 264

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Abstract Title:** Non-Invasive Analysis of Bone Sample Using Terahertz Waves

**Presenter:** Nicole Allen

**Principal Investigator:** N/A

**Author(s):**

Khang Hoang

Chan-yu kuo

Hongje Jang

Sirasit Prayotamornkul

Hetvi Trivedi

Pegah Bagheri

Lingyan Shi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 265**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics) (Summer Undergraduate)****Abstract Title:** Exploring Light Scattering Spectroscopy for In-Vivo Biopsy of Cardiac Tissues**Presenter:** Sarthak Tiwari**Principal Investigator:** Sarthak Tiwari**Author(s):**

Brian Cottle

Eugene Kwan

Derek Dossdall

Robert Hitchcock

Frank Sachse

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 266**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics) (Summer Undergraduate)****Abstract Title:** Fluorophore Quantification in 3D Engineered Brain Tissues Using Spectral/FLIM Analysis**Presenter:** Varshini Ramanathan**Principal Investigator:** Irene Georgakoudi**Author(s):**

Yang Zhang

Maria Savvidou

Irene Georgakoudi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 267**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics) (Summer Undergraduate)****Abstract Title:** Development of a Polarization Control Module in a Second Harmonic Generation Microscope**Presenter:** Zoe Vittum**Principal Investigator:** Karissa Tilbury**Author(s):**

Karissa Tilbury

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 268**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)****Abstract Title:** Fast Label-free Image Acquisition to Evaluate Changes in Neural Metabolic Activity**Presenter:** Anna Theodossiou**Principal Investigator:** N/A**Author(s):**

Anna Theodossiou

Alex Walsh

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 269

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

### **Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)**

**Abstract Title:** Development of a Mechano-  
Chemical Flow Cytometer to Resolve Cancer Cell  
Biophysical Heterogeneity

**Presenter:** Christian Jennings

**Principal Investigator:** N/A

**Author(s):**

Christian Jennings

Sapun Parekh

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 270

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

### **Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)**

**Abstract Title:** A Low-Cost Non-Invasive Optical  
Technique to Assess Presence or Absence of Vascular  
Calcification Via Peripheral Tail Imaging in Mice

**Presenter:** Daniela Leizaola

**Principal Investigator:** N/A

**Author(s):**

Valentina Dargam

Kevin Leiva

Faiza Nazir

Joshua Hutcheson

Anuradha Godavarty

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 271

**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION

### **Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)**

**Abstract Title:** Coaxial Laser Speckle Contrast  
Imaging of Cerebral Blood Flow with Picosecond  
Pulsed Laser Illumination

**Presenter:** Faraneh Fathi

**Principal Investigator:** N/A

**Author(s):**

Faraneh Fathi

Siavash Mazdeyasna

Mehrana Mohtasebi

Dara Singh

Xuhui Liu

Samaneh Rabiencia Haratbar

Chong Huang

Lei Chen

Guoqiang Yu

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 272

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)**

**Abstract Title:** Near-infrared Fluorescence Guided Protoporphyrin IX Imaging and Photodynamic Therapy for the Treatment of Glioblastoma

**Presenter:** George Zhang

**Principal Investigator:** N/A

**Author(s):**

Christine O'Brien

Xiao Xu

Suman Mondal

Matt Mixdorf

Dorota Grabowska

Gail Sudlow

Brad Manion

kexian liang

Rui Tang

Samuel Achilefu

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 273

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)**

**Abstract Title:** Real-time Multiscale Optical Imaging and Risk Map Projection for Oral Cancer Biopsy Guidance

**Presenter:** Jackson Coole

**Principal Investigator:** N/A

**Author(s):**

Jackson Coole  
David Brenes  
Ruchika Mitbander  
Imran Vohra  
Huayu Hou  
Alex Kortum  
Yubo Tang  
Yajur Maker  
Richard Schwarz  
Jennifer Carns  
Nadarajah Vigneswaran  
Rebecca Richards-Kortum

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 274

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)**

**Abstract Title:** Vision Transformers And Differentiable Rendering For Non-Contact Keratography and Tonometry

**Presenter:** Jonathan Lin

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 275**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)****Abstract Title:** Visualization of a Limonene Synthesis Metabolon inside Living Bacteria by Hyperspectral SRS Microscopy**Presenter:** Jing Zhang**Principal Investigator:** N/A**Author(s):**

jonghyeon shin

Nathan Tague

Haonan Lin

MENG ZHANG

Xiaowei Ge

Wilson Wong

Mary Dunlop

Ji-Xin Cheng

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 276**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)****Abstract Title:** Investigation of NADH Lifetime Changes During Tetanus via Time-Correlated Single Photon Counting**Presenter:** Katy Priest**Principal Investigator:** Timothy J Muldoon**Author(s):**

Katy Priest

Jacob Schluns

Jeff Wolchok

Timothy Muldoon

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 277**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)

**Abstract Title:** Light Sheet Light to Reveal the Structure of Embryonic and Neonatal Mouse Heart**Presenter:** Milad Almasian**Principal Investigator:** N/A**Author(s):**

Yichen Ding

Xinyuan Zhang

Milad Almasian

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 278**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)****Abstract Title:** 2D Mapping of Blood Flow Distributions with Speckle Contrast Diffuse Correlation Tomography**Presenter:** Mehrana Mohtasebi**Principal Investigator:** N/A**Author(s):**

Mehrana Mohtasebi

Xuhui Liu

Faraneh Fathi

Dara Singh

Chong Huang

Samaneh Rabiencia Haratbar

Lei Chen

Guoqiang Yu

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 279

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)**

**Abstract Title:** Fast 4D Light-Sheet Imaging of Cardiac Activities using Parallel Computing

**Presenter:** Xinyuan Zhang

**Principal Investigator:** N/A

**Author(s):**

Xinyuan Zhang

Milad Almasian

Yichen Ding

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: I, Poster  
**Number:** 280

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)**

**Abstract Title:** A Wearable Fiber-Free Optical Sensor for Noninvasive and Simultaneous Measurements of Cerebral Blood Flow and Oxygenation in Preterm Infants

**Presenter:** Xuhui Liu

**Principal Investigator:** N/A

**Author(s):**

Xuhui Liu

Mehrana Mohtasebi

Samaneh Rabiencia Haratbar

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 301

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Optical and Spectroscopic Imaging, Microscopy, and Spectroscopy (Optics)**

**Abstract Title:** Effortless Imaging and Quantification of Bioparticles Harnessing Gires-Tournois Immunoassay Platform

**Presenter:** Young Min Song

**Principal Investigator:** Young Min Song

**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 302

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION

**Abstract Title:** Determining Metabolism Shift of Mitochondria Transfer using Phasor Approach Fluorescence Lifetime Imaging Microscopy

**Presenter:** Yukai Huang

**Principal Investigator:** N/A

**Author(s):**

Michelle Digman

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 303**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Endoscopy and Optical Coherence  
Tomography (OCT)****Abstract Title:** Optical Coherence Tomography  
Probe for Percutaneous Nephrostomy Guidance**Presenter:** Chen Wang**Principal Investigator:** N/A**Author(s):**

Paul Calle

Feng Yan

Nathan Bradley

Kar-Ming Fung

Chongle Pan

Qinggong Tang

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 304**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Endoscopy and Optical Coherence  
Tomography (OCT)****Abstract Title:** Optical Coherence Elastography with  
Phase-Changing Perfluorocarbon Nanodroplets**Presenter:** Dmitry Nevozhay**Principal Investigator:** N/A**Author(s):**

Dmitry Nevozhay

Paul Boerner

Maryam Hatamimoslehabadi

Harshdeep Singh Chawla

Fernando Zvietcovich

Salavat Aglyamov

Kirill Larin

Konstantin Sokolov

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 305**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Endoscopy and Optical Coherence  
Tomography (OCT)****Abstract Title:** Optical Coherence Tomography  
Characterizes Inhibitory Performances of Different  
Drugs to Multicellular Ovarian Tumor Spheroid**Presenter:** Feng Yan**Principal Investigator:** N/A**Author(s):**

Ji Hee Ha

Yuyang Yan

Chen Wang

Danny Dhanasekaran

Qinggong Tang

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 306**Track:** BIOMEDICAL IMAGING AND  
INSTRUMENTATION**Endoscopy and Optical Coherence  
Tomography (OCT)****Abstract Title:** Next-generation Endoscopic Tattoo  
Inks for Multimodal Imaging**Presenter:** Jordan Yaron**Principal Investigator:** Kaushal Rege**Author(s):**

Subhadeep Dutta

MALLIKARJUN GOSANGI

Rahul Pannala

Kaushal Rege

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 307

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION  
**Endoscopy and Optical Coherence Tomography (OCT)**

**Abstract Title:** Supercontinuum-Based Near-Infrared Optical Coherence Tomography for Ovarian Follicle Detection

**Presenter:** Koichiro Ito

**Principal Investigator:** N/A

**Author(s):**

Masaki Hosoda  
SEIDO TAKAE  
Nao Suzuki  
Kosuke Tsukada

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 308

**Track:** BIOMEDICAL IMAGING AND INSTRUMENTATION  
**Endoscopy and Optical Coherence Tomography (OCT)**

**Abstract Title:** Automated Instrument-Tracking For Oct Imaging Of Surgical Dynamics

**Presenter:** Yuankai Tao

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 309

**Track:** CANCER TECHNOLOGIES  
**Circulating Biomarkers: CTCs, Extracellular Vesicles and DNA**

**Abstract Title:** Greatly Enhanced CTC Culture Enabled by Capturing CTC Heterogeneity Using a PEGylated PDMS-Titanium-Gold Electromicrofluidic Device with Glutathione-Controlled Gentle Cell Release

**Presenter:** Elyahb Kwizera

**Principal Investigator:** Xiaoming He

**Author(s):**

Xiaoming He

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 310

**Track:** CANCER TECHNOLOGIES  
**Circulating Biomarkers: CTCs, Extracellular Vesicles and DNA**

**Abstract Title:** Determining the Impact of Pancreatic Tumor-Derived Extracellular Vesicles on Schwann Cell Activation

**Presenter:** Isabel Powers

**Principal Investigator:** Young Hye Song

**Author(s):**

Isabel Powers  
Emory Gregory  
Young Hye Song

## Friday, October 14

2:30 PM - 3:30 PM

Poster Session: D, Section: D, Row: J, Poster

Number: 311

**Track:** CANCER TECHNOLOGIES  
**Circulating Biomarkers: CTCs,  
Extracellular Vesicles and DNA**

**Abstract Title:** Detection of DNA Methylation on  
Cancer Genes Using Digital Droplets PCR

**Presenter:** Hanran Lei

**Principal Investigator:** Tza-Huei Wang

**Author(s):**

Tza-Huei Wang

Chrissy O'Keefe

## Friday, October 14

2:30 PM - 3:30 PM

Poster Session: D, Section: D, Row: J, Poster

Number: 312

**Track:** CANCER TECHNOLOGIES  
**Other / Non-specified**

**Abstract Title:** Defective Homologous  
Recombination in Aged Mice

**Presenter:** Vindhya Kilaru

**Principal Investigator:** Francesca Cole Bergemann

**Author(s):**

Lakshmi Paniker

Francesca Cole

## Friday, October 14

2:30 PM - 3:30 PM

Poster Session: D, Section: D, Row: J, Poster

Number: 313

**Track:** CANCER TECHNOLOGIES  
**Engineered Cancer Models for In Vitro  
Studies**

**Abstract Title:** Platelet extravasation & angiogenic  
activity modeled in a vascularized tumor  
microenvironment-chip

**Presenter:** Lopamudra Das Ghosh

**Principal Investigator:** N/A

**Author(s):**

Lopamudra Das Ghosh

## Friday, October 14

2:30 PM - 3:30 PM

Poster Session: D, Section: D, Row: J, Poster

Number: 314

**Track:** CANCER TECHNOLOGIES  
**Circulating Biomarkers: CTCs,  
Extracellular Vesicles and DNA**

**Abstract Title:** Developing a Novel Genetically  
Encoded Platform for Extracellular Vesicle Production

**Presenter:** Erik Chow

**Principal Investigator:** N/A

**Author(s):**

Erik Chow

LaDeidra Roberts

MATTHEW PASZEK

## Friday, October 14

2:30 PM - 3:30 PM

Poster Session: D, Section: D, Row: J, Poster

Number: 315

**Track:** CANCER TECHNOLOGIES  
**Circulating Biomarkers: CTCs,  
Extracellular Vesicles and DNA**

**Abstract Title:** A Liquid Biopsy Contrast Agent

**Presenter:** Maria Carmen

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 316

**Track:** CANCER TECHNOLOGIES  
**Circulating Biomarkers: CTCs,  
Extracellular Vesicles and DNA**

**Abstract Title:** Isolation and Identification of Subpopulations of Circulating Tumor Cells Using a Microchip with Bio-Inspired Patterns  
**Presenter:** Wei Li  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 317

**Track:** CANCER TECHNOLOGIES  
**Circulating Biomarkers: CTCs,  
Extracellular Vesicles and DNA**

**Abstract Title:** Heterogeneity of Breast Cancer Exosomes and the Expression of E-selectin Ligand Activity  
**Presenter:** Yinan Huang  
**Principal Investigator:** N/A  
**Author(s):**  
Monica Burdick

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 318

**Track:** CANCER TECHNOLOGIES  
**Circulating Biomarkers: CTCs,  
Extracellular Vesicles and DNA**

**Abstract Title:** Simultaneous Detection of Tumor Derived Exosomal Protein-MicroRNA Pairs with an Exo-PROS Assay for Cancer Diagnosis  
**Presenter:** Yun Wu  
**Principal Investigator:** N/A  
**Author(s):**  
CHANGCHIEH HSU

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 319

**Track:** CANCER TECHNOLOGIES  
**Tumor Microenvironment (Summer Undergraduate)**

**Abstract Title:** Expression of CD44 and SRC through Hyaluronan and Mechanical Stimuli  
**Presenter:** Mary Kathryn Sewell-Loftin  
**Principal Investigator:** Allyson Criswell  
**Author(s):**  
Allyson Criswell  
Sophie Sitafalwalla  
Maranda Tidwell

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: J, Poster  
**Number:** 320

**Track:** CANCER TECHNOLOGIES  
**Molecular Profiling in Cancer**

**Abstract Title:** Metabolomic Analysis of Plasma from Metastatic Castration-Resistant Prostate Cancer Patients  
**Presenter:** Ege Onal  
**Principal Investigator:** N/A  
**Author(s):**  
Ege Onal  
Muhammad Fayyaz  
Siva Nalla  
Manish Kohli

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster**Number:** 341**Track:** CANCER TECHNOLOGIES**Molecular Profiling in Cancer****Abstract Title:** A Molecular Nanobiosensor for Sensing Long Noncoding RNA Dynamics During Collective Cancer Invasion**Presenter:** NingHao Zhu**Principal Investigator:** N/A**Author(s):**

Pak Kin Wong

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster**Number:** 342**Track:** CANCER TECHNOLOGIES**Other / Non-specified****Abstract Title:** Sensitization of Glioblastoma Cells to Temozolomide by Cancer Cell Membrane Camouflaged Nanoceria**Presenter:** Jun Ma**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster**Number:** 343**Track:** CANCER TECHNOLOGIES**Other / Non-specified****Abstract Title:** Association of Hypertension and Organ-Specific Cancer: A Meta-Analysis**Presenter:** Morgan Connaughton**Principal Investigator:** N/A**Author(s):**

Mahsa Dabagh

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster**Number:** 344**Track:** CANCER TECHNOLOGIES**Other / Non-specified****Abstract Title:** Effects of Contact Exposure to Soil-Arsenic**Presenter:** Madeline English**Principal Investigator:** Smitha Rao Hatti**Author(s):**

Smitha Rao

Rupali Datta

Manas Warke

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster**Number:** 345**Track:** CARDIOVASCULAR ENGINEERING**Hemodynamics and Vascular Mechanics****Abstract Title:** The Effect of Beta Blocker Therapy on The Hemodynamics of Coronary Artery Aneurysms**Presenter:** Hoda Hatoum**Principal Investigator:** Hoda Hatoum**Author(s):**

Alireza Asadbeygi

Hoda Hatoum

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster**Number:** 346**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics****Abstract Title:** Mechanical Characterization of Aortic Tissue from a Clinically-Representative Range of Coarctation**Presenter:** Jamasp Azarnoosh**Principal Investigator:** N/A**Author(s):**

John LaDisa

Arash Ghorbannia

Sarah Gorzek

Aloma BLANCH GRANADA

Witor Eng

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster**Number:** 347**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics****Abstract Title:** Development of an Ex Vivo Bioreactor System to Model Arteriovenous Fistula Hemodynamics**Presenter:** Linda Liu**Principal Investigator:** N/A**Author(s):**

Saami Yazdani

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster**Number:** 348**Track:** CARDIOVASCULAR ENGINEERING  
**Hemodynamics and Vascular Mechanics****Abstract Title:** Computational Characterization of Blood Rheology and Carotid Hemodynamic Alterations in Microgravity**Presenter:** Philippe Sucosky**Principal Investigator:** N/A**Author(s):**

Graham Quasebarth

Varun Vinayak Kalaiarasan

Jason Shar

Philippe Sucosky

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster**Number:** 349**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Tissue Engineering (Summer Undergraduate)****Abstract Title:** Pore Size and Mechanical Strength of Silk Fibroin-Based Tissue Engineered Vascular Grafts**Presenter:** Connor LaMarca David Vorp**Principal Investigator:** N/A**Author(s):**

Isabelle Chikanosky

Justin Weinbaum

David Vorp

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster  
**Number:** 350

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Tissue Engineering  
(Summer Undergraduate)**

**Abstract Title:** Engineering Living Anisotropic Heart Valve Tissue Sheets for Preclinical Testing in a Porcine Model

**Presenter:** Neda Latifi Craig A. Simmons

**Principal Investigator:** N/A

**Author(s):**

Monica Lecce

Bahram Mirani

Tina Sokhanvar

Zahra Mirzaei

Yizhou Chen

Nataly Siqueira

Maris Bartkevics

Jason Maynes

J. Santerre

Craig Simmons

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster  
**Number:** 351

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Tissue Engineering  
(Summer Undergraduate)**

**Abstract Title:** Designing Three-Dimensional Cardiovascular Tissue Models

**Presenter:** Renita Horton

**Principal Investigator:** Ximena Medina Romero

**Author(s):**

Ximena Medina Romero

Jing Ming Lim

omar harb

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster  
**Number:** 352

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Tissue Engineering  
(Summer Undergraduate)**

**Abstract Title:** Decellularization of Porcine Vascular Tissue

**Presenter:** Taylor Seawell

**Principal Investigator:** N/A

**Author(s):**

Taylor Seawell

Thomas Fair

Reece Fratus

Adam Baker

Bruce Gao

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster  
**Number:** 353

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiac Electrophysiology (Summer Undergraduate)**

**Abstract Title:** Automated Electrophysiology to Determine the Differential Dose Response of Mexiletine Based on Genetic Background of Arrhythmic Patients

**Presenter:** Katie Barcak

**Principal Investigator:** Jonathan Silva

**Author(s):**

Martina Marras

Druv Bhagavan

Jonathan Silva

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster  
**Number:** 354

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiac Electrophysiology**

**Abstract Title:** Initial evidence of TREK-1 functional transition during pressure overload-induced heart failure

**Presenter:** Cemantha Lane

**Principal Investigator:** N/A

**Author(s):**  
N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster  
**Number:** 355

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiac Electrophysiology**

**Abstract Title:** Cardiotoxic Effects of Acute Methamphetamine Exposure Associated with Electrophysiological and Cardiac Index in Larval Zebrafish

**Presenter:** Ramses Trigo Torres

**Principal Investigator:** N/A

**Author(s):**  
Jimmy Zhang

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster  
**Number:** 356

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Tissue Engineering**

**Abstract Title:** Age and Sex-Dependencies in Cardiac Matrix-Bound Exosomes Modulate Fibrosis through Synergistic miRNA Effects

**Presenter:** George Ronan

**Principal Investigator:** N/A

**Author(s):**  
Gokhan Bahcecioglu  
Pinar Zorlutuna

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: K, Poster  
**Number:** 357

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Tissue Engineering**

**Abstract Title:** Engineering Microfluidic Devices from 3-D Printed Templates to Elucidate Oxygen-Dependent Phenotypes in Human Cardiac Fibroblasts

**Presenter:** Natalie Khalil

**Principal Investigator:** N/A

**Author(s):**  
Natalie Khalil  
Megan Rexius-Hall  
Kaelyn Takamoto  
Austin Kellogg  
Megan McCain

**Friday, October 14****2:30 PM - 3:30 PM****Poster Session:** D, Section: D, Row: K, Poster**Number:** 358**Track:** CARDIOVASCULAR ENGINEERING**Cardiovascular Tissue Engineering****Abstract Title:** An Approach to Treat Post Angioplasty-Induced Restenosis Using Targeted Cell Delivery**Presenter:** Luis Soto-Garcia**Principal Investigator:** Kytai Nguyen**Author(s):**

Tam Nguyen

Cynthia Co

Vy Tran

Enrique Villafuerte

Kytai Nguyen

Liping Tang

**Friday, October 14****2:30 PM - 3:30 PM****Poster Session:** D, Section: D, Row: K, Poster**Number:** 359**Track:** CARDIOVASCULAR ENGINEERING**Cardiovascular Tissue Engineering****Abstract Title:** T-tubule Formation and Calcium Transient Maturation on Human iPSC-derived Cardiac Microfibers**Presenter:** Nicholas Rogozinski**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14****2:30 PM - 3:30 PM****Poster Session:** D, Section: D, Row: K, Poster**Number:** 360**Track:** CARDIOVASCULAR ENGINEERING**Cardiovascular Tissue Engineering****Abstract Title:** Enhancement of Cardiomyocyte Maturation by Through-Thickness Electrical Stimulation and The Effect of Substrates**Presenter:** Roya Bagheri**Principal Investigator:** N/A**Author(s):**

Anthony Guiseppi-Elie

Parisa Pour Shahid Saeed Abadi

Sara Abasi

**Friday, October 14****2:30 PM - 3:30 PM****Poster Session:** D, Section: D, Row: L, Poster**Number:** 381**Track:** CARDIOVASCULAR ENGINEERING**Cardiovascular Tissue Engineering****Abstract Title:** EGFR Pathway Inhibition for Augmented Elastic Matrix Regenerative Repair in Aortic Aneurysms**Presenter:** Simran Dayal**Principal Investigator:** N/A**Author(s):**

Simran Dayal

Anand Ramamurthi

**Friday, October 14****2:30 PM - 3:30 PM****Poster Session:** D, Section: D, Row: L, Poster**Number:** 382**Track:** CARDIOVASCULAR ENGINEERING**Cardiovascular Tissue Engineering****Abstract Title:** Cardiac-Specific ECM Scaffold for Tissue-Engineered Cardiac Patch using Human Pluripotent Stem Cell Derived Cardiac Fibroblasts**Presenter:** Te-An Chen**Principal Investigator:** N/A**Author(s):**

Te-An Chen

Feng ZHao

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster**Number:** 383**Track:** CARDIOVASCULAR ENGINEERING**Thrombosis and Hemostasis****Abstract Title:** Hyperfibrinolysis Drives Instabilities in Trauma Induced Coagulopathy**Presenter:** Andrew Gosselin**Principal Investigator:** Valerie Tutwiler**Author(s):**

Andrew Gosselin

Valerie Tutwiler

Nathan White

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster**Number:** 384**Track:** CARDIOVASCULAR ENGINEERING**Thrombosis and Hemostasis****Abstract Title:** Hematocrit is a Potent Driver of Platelet Adhesion at Supraphysiological Shear Rates**Presenter:** Connor Watson**Principal Investigator:** N/A**Author(s):**

Keefe Manning

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster**Number:** 385**Track:** CARDIOVASCULAR ENGINEERING**Thrombosis and Hemostasis****Abstract Title:** Arduino-Based

Photoplethysmography Device To Detect Deep Vein Thrombosis

**Presenter:** Luke Hsing**Principal Investigator:** N/A**Author(s):**

Jenna Huseby

Luke Hsing

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster**Number:** 386**Track:** CARDIOVASCULAR ENGINEERING**Thrombosis and Hemostasis****Abstract Title:** Ex Vivo Cultured Blood Clots Develop a Polymorphonuclear-Myeloid Derived Suppressor Cell (PMN-MDSC) Signature and Release Soluble Lectin-like Oxidized Low-Density Lipoprotein Receptor-1 (sLox-1)**Presenter:** Julia Leonard**Principal Investigator:** N/A**Author(s):**

David Kepplinger

Virginia Espina

Patrick Gillevet

Caroline Hoemann

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster**Number:** 387**Track:** CARDIOVASCULAR ENGINEERING**Thrombosis and Hemostasis****Abstract Title:** Enzymatic activity of bound thrombin within fibrin fibers**Presenter:** Jennifer Crossen**Principal Investigator:** Scott L. Diamond**Author(s):**

Scott Diamond

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster  
**Number:** 388

**Track:** CARDIOVASCULAR ENGINEERING  
**Thrombosis and Hemostasis**

**Abstract Title:** Antiplatelet effects of inhibiting coagulation factor XI in a non-human primate model of atherosclerosis

**Presenter:** Tia Kohs

**Principal Investigator:** N/A

**Author(s):**

Ivan Parra Izquierdo

Helen Vu

Monica Hinds

Owen McCarty

Joseph Shatzel

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster  
**Number:** 389

**Track:** CARDIOVASCULAR ENGINEERING  
**Cardiovascular Biomechanics (Summer Undergraduate)**

**Abstract Title:** Preservation of Cardiomyocyte Lamin Reduces Age Dependent Decline of Cardiac Function

**Presenter:** Adam Engler

**Principal Investigator:** Scott Skalak

**Author(s):**

Natalie Kirkland

Adam Engler

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster  
**Number:** 390

**Track:** CARDIOVASCULAR ENGINEERING  
**Thrombosis and Hemostasis**

**Abstract Title:** Characterization of B-knob Platelet-like Particles in Adult and Neonatal Plasma

**Presenter:** Manasi Krishnakumar

**Principal Investigator:** Ashley Brown

**Author(s):**

Ashley Brown

Kimberly Nellenbach

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster  
**Number:** 391

**Track:** CARDIOVASCULAR ENGINEERING  
**Thrombosis and Hemostasis**

**Abstract Title:** Differential Regulation of Blood Clot Structure on Internal vs External Lysis

**Presenter:** Rebecca Risman

**Principal Investigator:** N/A

**Author(s):**

John Weisel

Brittany Bannish

Valerie Tutwiler

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster**Number:** 392**Track:** CARDIOVASCULAR ENGINEERING**Thrombosis and Hemostasis****Abstract Title:** Mechanical and Hemostatic Assessment of Shape-Memory Hemostat Fabrication Ratios**Presenter:** Sarah Hargett**Principal Investigator:** N/A**Author(s):**

Sarah Hargett

Giriraj Lokhande

Duncan Maitland

Akhilesh Gaharwar

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster**Number:** 393**Track:** CARDIOVASCULAR ENGINEERING**Thrombosis and Hemostasis (Summer Undergraduate)****Abstract Title:** The Effect of PAI-1 on Clot Structure and Fibrinolysis**Presenter:** Hajer Ali**Principal Investigator:** Hajer Ali**Author(s):**

Hajer Ali

Rebecca Risman

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster**Number:** 394**Track:** CELLULAR AND MOLECULAR BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Combining Organ-On-Chip Platform With Cell Culture Assays To Understand The Metabolic Response Of A "Biostasis" Repurposed Drug**Presenter:** Berenice Charrez**Principal Investigator:** Donald Ingber**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster**Number:** 395**Track:** CELLULAR AND MOLECULAR BIOENGINEERING**Molecular Bioengineering****Abstract Title:** How The NlpE Protein Transmits Signals in The Cell Envelope of E. coli**Presenter:** Christina Bae**Principal Investigator:** Marcin Grabowicz**Author(s):**

Julianna Marotta

Marcin Grabowicz

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster**Number:** 396**Track:** CELLULAR AND MOLECULAR BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Engineering of a Novel in vitro Bistable Switch via Protein Signaling Network Design**Presenter:** Catherine Majors**Principal Investigator:** Keith Tyo**Author(s):**

Keith Tyo

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster  
**Number:** 397**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Cell-Free Expressed SapABCDF  
Transporter Folding and Function in Unsaturated  
Lipid Bilayers**Presenter:** Citlayi Villasenor**Principal Investigator:** Neha Kamat**Author(s):**

Valentina Dimitrova

Alexandra Karagiari

Kristen Rivera

Heather Pinkett

Neha Kamat

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster  
**Number:** 398**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Phenotypic Selection and Organ-  
Specific Responses of Primary Human Lung and  
Dermal Fibroblasts in Quiescence-Inducing Cultures**Presenter:** Elisabet Olsen**Principal Investigator:** Mark Mondrinos**Author(s):**

Bradley Sweeney

Ashley Martier

Mark Mondrinos

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster  
**Number:** 399**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Protease circuits for intercellular  
signalling**Presenter:** Alexander Elias Vlahos**Principal Investigator:** Xiaojing J. Gao**Author(s):**

Xiaojing Gao

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: L, Poster  
**Number:** 400**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering (Summer  
Undergraduate)****Abstract Title:** Engineering of Light Based  
Promoters with PACE and eVOLVER Continuous  
Culture Hardware**Presenter:** Ashley Tse**Principal Investigator:** Benjamin Bartelle**Author(s):**

Gabriella Cerna

Jennifer Brodsky

Benjamin Bartelle

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 421

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular Bioengineering (Summer  
Undergraduate)**

**Abstract Title:** Engineering a Rapamycin-Inducible  
ERK2 Variant to Study MAPK-Dependent Signaling  
Pathways

**Presenter:** Madison Briggs

**Principal Investigator:** N/A

**Author(s):**

Robert Newman

Hayden Patterson

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 422

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Evaluating the Anti-inflammatory  
Effects of Fish Oil Supplements and Bone Marrow  
Mononuclear Stem Cells on Pediatric Traumatic  
Brain Injury.

**Presenter:** Dev Patel

**Principal Investigator:** Elaheh Rahbar

**Author(s):**

Lindsey Kirk

Hannah LaMond

Elaheh Rahbar

Susan Sergeant

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 423

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** U6 Promoter Driven DNA  
for Delivery of CRISPR Machinery in Lipid  
Nanoparticles

**Presenter:** Elizabeth Schmitzer

**Principal Investigator:** Niren Murthy

**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 424

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** Metabolic activity and YAP  
localization in Spiny mouse (*Acomys*) fibroblasts  
under serum-starved conditions

**Presenter:** Eva Gbur

**Principal Investigator:** Chelsey Simmons

**Author(s):**

Michele Dill

Janny Pineiro

Chelsey Simmons

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster

**Number:** 425

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Other / Non-specified (Summer  
Undergraduate)**

**Abstract Title:** The Effect of Varying Glucose Levels  
on Fibroblasts, Macrophages, and Adipose Stem Cells

**Presenter:** Delphine Dean

**Principal Investigator:** Lily Zarrouf

**Author(s):**

Lily Zarrouf

Jacob Carpenter

Jeremiah Carpenter

Delphine Dean

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster

**Number:** 426

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular Bioengineering (Summer  
Undergraduate)**

**Abstract Title:** Specific Modified mRNA  
Translational System (SMRTs) for Exclusive Protein  
Expression in Cardiomyocytes of Small and Large  
Animals

**Presenter:** Rachel Matthews

**Principal Investigator:** Jianyi Zhang

**Author(s):**

Jiacheng Sun

Lu Wang

Jianyi Zhang

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster

**Number:** 427

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular Bioengineering (Summer  
Undergraduate)**

**Abstract Title:** In Vitro Analysis of Oxidative Stress-  
Mediated Blood-Brain Barrier Permeability

**Presenter:** Paige Schiebel

**Principal Investigator:** Forrest Kievit

**Author(s):**

Paige Schiebel

Brittany Schweiger

Forrest Kievit

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster

**Number:** 428

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular Bioengineering (Summer  
Undergraduate)**

**Abstract Title:** Protein Engineering of Non-Heme  
Iron(II)-Containing Enzymes for Non-Natural  
Reactions

**Presenter:** Rani Kumar

**Principal Investigator:** Takashi Hayashi

**Author(s):**

Shunsuke Kato

Takashi Hayashi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 429

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular Bioengineering (Summer Undergraduate)**

**Abstract Title:** Ligand-Induced Nuclear Localization of Synthetic Transcription Factors in *Saccharomyces cerevisiae*

**Presenter:** Sandra Temgoua

**Principal Investigator:** Farren Isaacs

**Author(s):**

Peter Ciaccia

Farren Isaacs

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 430

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular Bioengineering (Summer Undergraduate)**

**Abstract Title:** Comparison of Fibroblast Versus Macrophage Specific Mechanotransduction Knockout in a Wound Healing Model

**Presenter:** Sydney Steele

**Principal Investigator:** Geoffery Gurtner, Kellen Chen

**Author(s):**

Savana Huskins

Melissa Leeolou

Dharshan Sivaraj

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 431

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Cell Migration (Summer Undergraduate)**

**Abstract Title:** Imprinting Gradients into Alginate Gels to Control Directed Cell Migration

**Presenter:** Lily Mesyk

**Principal Investigator:** Ian Schneider

**Author(s):**

Ian Schneider

Azarnoosh Foroozandehfar

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 432

**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING

**Molecular Bioengineering**

**Abstract Title:** Design of a Plasmid for Expression of Stable Coiled-Coil Fragments

**Presenter:** Alla Kostyukova

**Principal Investigator:** N/A

**Author(s):**

Dmitri Tolkachev

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 433**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** SUN1-dependent Alteration of  
Nuclear Tension Regulates Progerin-induced Nuclear  
Deformation**Presenter:** Dong-Hwee Kim**Principal Investigator:** N/A**Author(s):**

Juhyeon Jo

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 434**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Positive Feedback Drives a Secondary  
Nonlinear Product Burst During Biphasic DNA  
Amplification**Presenter:** Esther Stopps**Principal Investigator:** Stephanie E McCalla**Author(s):**

Burcu Ozay

Shannon Murphy

Tomas Gedeon

Stephanie McCalla

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 435**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** High-Fidelity Tracking of Dynamic  
Microtubule Filaments in Time-Lapse Imaging Data**Presenter:** Wonmuk Hwang**Principal Investigator:** N/A**Author(s):**

Saptarshi Chatterjee

Marija Zanic

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster  
**Number:** 436**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Developing Aptamers Against  
Fibrillar Extracellular Matrix Proteins for Targeting  
and Sensing**Presenter:** Abigail Koep**Principal Investigator:** Ian Schneider**Author(s):**

Abigail Koep

Azarnoosh Foroozandehfar

Ian Schneider

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster**Number:** 437**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** A Light-Inducible EGFR Kinase for  
Network Signaling**Presenter:** Joshua Reynolds**Principal Investigator:** N/A**Author(s):**

Justin Pritchard

Scott Leighow

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster**Number:** 438**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Dissecting Human and Influenza  
Virus Interaction with qFRET Technology**Presenter:** Jiayu Liao**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster**Number:** 439**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Mechanical Stretch Loading  
Regulates Adipocyte Insulin Signaling**Presenter:** Jung Yul Lim**Principal Investigator:** N/A**Author(s):**

Eunju Kim

Jung Yul Lim

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: M, Poster**Number:** 440**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Point-of-care Multiplex Diagnostic  
Platform for the Detection of Various Viruses and  
Differentiation of Early Strains and B.1.1.7 Variants  
of SARS-CoV-2**Presenter:** Jongwon Lim**Principal Investigator:** N/A**Author(s):**

Rashid Bashir

Enrique Valera

Victoria Kindratenko

Janice Baek

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster**Number:** 461**Track:** CELLULAR AND MOLECULAR  
BIOENGINEERING**Molecular Bioengineering****Abstract Title:** Supercoiling-mediated feedback  
rapidly couples and tunes transcription**Presenter:** Kate Galloway**Principal Investigator:** N/A**Author(s):**

Christopher Johnstone

Kate Galloway

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 462

**Track:** CELLULAR AND MOLECULAR  
 BIOENGINEERING

**Molecular Bioengineering**

**Abstract Title:** FRET-Seq: Integration of FRET and Sequencing to Engineer Biosensors from Mammalian Cell Libraries

**Presenter:** Longwei Liu

**Principal Investigator:** N/A

**Author(s):**

Longwei Liu

Yingxiao Wang

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 463

**Track:** CELLULAR AND MOLECULAR  
 BIOENGINEERING

**Molecular Bioengineering**

**Abstract Title:** Engineered Commensal Bacteria As Diagnostic Probes For The Lungs

**Presenter:** Michael Brasino

**Principal Investigator:** Michael David Konetski  
 Brasino

**Author(s):**

Michael Brasino

Eli Wagnell

Elise Manalo-Hall

Justin Merritt

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 464

**Track:** CELLULAR AND MOLECULAR  
 BIOENGINEERING

**Molecular Bioengineering**

**Abstract Title:** CSF1R Agonists Elicit Distinct ERK Activation and Heterogeneity Profiles in Homeostatic and Diseased Microglia

**Presenter:** Sara Bitarafan

**Principal Investigator:** Levi B. Wood

**Author(s):**

Sara Bitarafan

Benjamin Ahn

Brandon Sherrard

Srikant Rangaraju

Levi Wood

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 465

**Track:** CELLULAR AND MOLECULAR  
 BIOENGINEERING

**Molecular Bioengineering**

**Abstract Title:** Connexin 43 in Osteocytes Regulates Gene Expression Via WNT Signaling

**Presenter:** Yue Zhang

**Principal Investigator:** Henry J Donahue

**Author(s):**

Michael Friedman

Henry Donahue

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 466

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Point of Care / Mobile Devices**

**Abstract Title:** A Lab-on-Chip Technology for  
Real-Time Detection of Tumour Acidification by the  
Warburg Effect

**Presenter:** Melina Beykou

**Principal Investigator:** Pantelis Georgiou, Chris  
Bakal, Nicolas Moser

**Author(s):**  
Nicolas Moser  
Chris Bakal  
Pantelis Georgiou

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 467

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Point of Care / Mobile Devices (Summer  
Undergraduate)**

**Abstract Title:** Field-Use Electrochemical Sensor for  
Detection of Carbamazepine in Water

**Presenter:** Jade Minzloff

**Principal Investigator:** N/A

**Author(s):**  
Lael Wentland  
Elain Fu

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 468

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Musculoskeletal Robotics and  
Biomechatronics In Rehabilitation  
(Summer Undergraduate)**

**Abstract Title:** Development and Validation of the  
MR-StretchFingers Device

**Presenter:** Manju Sivasankar

**Principal Investigator:** Fabrizio Sergi

**Author(s):**  
Rebecca Nikonowicz  
Fabrizio Sergi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 469

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Point of Care / Mobile Devices (Summer  
Undergraduate)**

**Abstract Title:** Time Management Device For People  
With Independent Living Disabilities

**Presenter:** Giuditta Monti

**Principal Investigator:** David O'Neill

**Author(s):**  
Ryan Abbott  
Aurora Lee Jean Greane  
Keri Han  
Giuditta Monti  
David O'Neill

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 470

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS  
**Point of Care / Mobile Devices (Summer Undergraduate)**

**Abstract Title:** Gold Leaf Electrochemical Biosensors for Detection of Infectious Diseases  
**Presenter:** Joshua Chaj Ulloa  
**Principal Investigator:** Ariel Furst  
**Author(s):**  
Xingcheng Zhou  
Ariel Furst

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 471

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS  
Surgical Robotics (Summer Undergraduate)

**Abstract Title:** Adaptation of Robotic Minimally Invasive Surgery for In Situ 3D Printing  
**Presenter:** Gisella B Guerrero Sanchez  
**Principal Investigator:** Philip Brown  
**Author(s):**  
Mulham Soudan  
Philip Brown

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 472

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS  
**Point of Care / Mobile Devices**

**Abstract Title:** Battlefield Ready Innovative Suction Kit (BRISK) for Pre-Hospital Emergency Situations  
**Presenter:** Alejandro Medina  
**Principal Investigator:** N/A  
**Author(s):**  
Saketh Ram Peri  
Robert De Lorenzo  
Lyle Hood

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 473

**Track:** DEVICE TECHNOLOGIES AND BIOMEDICAL ROBOTICS  
**Point of Care / Mobile Devices**

**Abstract Title:** An Innovative Organ Preservation System for Extending Kidney Transplantation Timeframes  
**Presenter:** Anis Khalil  
**Principal Investigator:** N/A  
**Author(s):**  
Sophia Salazar  
Mariana Garcia  
Jose Gonzalez  
Daniel Portillo  
Jessica Oseghale  
David Di Rocco  
Lyle Hood

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 474

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Point of Care / Mobile Devices**

**Abstract Title:** Portable Low-Cost Electronic  
Devices For High-Throughput Electrical Recovery of  
Single Cells From Tissues

**Presenter:** Cel Welch

**Principal Investigator:** N/A

**Author(s):**

Anubhav Tripathi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 475

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Point of Care / Mobile Devices**

**Abstract Title:** A Handheld Acoustofluidic Pipette  
for Simple, Rapid, and Sensitive Biosensing

**Presenter:** Cooper Thome

**Principal Investigator:** N/A

**Author(s):**

Cooper Thome

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 476

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Point of Care / Mobile Devices**

**Abstract Title:** Frequency Optimization of a Novel  
Skin Blood Flow Transducer

**Presenter:** Georgia Robles

**Principal Investigator:** N/A

**Author(s):**

David Nelson

Georgia Robles

Saeed Latif

Michael Francis

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 477

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Point of Care / Mobile Devices**

**Abstract Title:** Smartphone Enabled Nanoliter Flow  
Measurement in Microfluidic Channels

**Presenter:** Hatice Ceylan Koydemir

**Principal Investigator:** N/A

**Author(s):**

Weiming Xu

Hatice Ceylan Koydemir

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 478

**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS

**Point of Care / Mobile Devices**

**Abstract Title:** Detection of Cobalt Ions in Urine for  
Improving Outcomes of Implant Patients

**Presenter:** Jeremiah Carpenter

**Principal Investigator:** Delphine Dean

**Author(s):**

Jeremiah Carpenter

Diego Nigoa

Delphine Dean

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 479**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Point of Care / Mobile Devices****Abstract Title:** Cyclic Olefin Polymer as a Vessel for  
Fluorescence-based Point-of-Care Diagnostics**Presenter:** Julio Rivera-De Jesus**Principal Investigator:** N/A**Author(s):**

Melinda Lake

Jacqueline Linnes

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: D, Row: N, Poster  
**Number:** 480**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Point of Care / Mobile Devices****Abstract Title:** Minimally Invasive Detection of  
Alzheimer's Disease Biomarker at the Point-of-care**Presenter:** Sina Khazaei Nejad**Principal Investigator:** N/A**Author(s):**

Farbod Amirghasemi

Shahd Bawarith

Maral Mousavi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 501**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Point of Care / Mobile Devices****Abstract Title:** Smartphone-Read Phage Lateral Flow  
Assay for Point-of-Care Detection of SARS-CoV-2  
Infection**Presenter:** Maede Chabi**Principal Investigator:** N/A**Author(s):**

Maede Chabi

Binh Vu

Kristen Brosamer

Dimple Chavan

Jacinta Conrad

Richard Willson

Katerina Kourentzi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 502**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS**Point of Care / Mobile Devices****Abstract Title:** Influence Of Air Flowrate Standards  
On Portable Suction Devices**Presenter:** Saketh Ram Peri**Principal Investigator:** Lyle Hood**Author(s):**

Lyle Hood

Robert De Lorenzo

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 503**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS  
**Point of Care / Mobile Devices****Abstract Title:** Label-free Nanoplasmonic Biosensors  
for Multiplexed COVID-19 Antibody Profiling**Presenter:** Wihan Adi**Principal Investigator:** N/A**Author(s):**

Dhruv Biswas

Miriam Shelef

Filiz Yesilkoy

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 504**Track:** DEVICE TECHNOLOGIES AND  
BIOMEDICAL ROBOTICS  
**Surgical Robotics****Abstract Title:** A Mixed Reality System Combining  
Augmented Reality, 3D Bio Printed Physical  
Environments and Inertial Measurement Unit Sensors  
for Task Planning**Presenter:** Ernest Kabuye**Principal Investigator:** N/A**Author(s):**

Philip LEDUC

Jonathan Cagan

Ernest Kabuye

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 505**Track:** DRUG DELIVERY  
**Delivery Systems for Proteins and  
Vaccines****Abstract Title:** Enzyme-responsive Polymersomes  
for Protein Delivery to Enhance Autophagy in GM1  
Gangliosidosis**Presenter:** Bipin Chakravarthy**Principal Investigator:** Jessica Larsen**Author(s):**

Jessica Larsen

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 507**Track:** DRUG DELIVERY  
**Delivery Systems for Proteins and  
Vaccines (Summer Undergraduate)****Abstract Title:** Positively Charged PLL-PLA  
Micelles for Cas9 Ribonucleoprotein Delivery**Presenter:** Brian Barbery**Principal Investigator:** George Barbery, Jessica  
Larsen**Author(s):**

Brian Barbery

Jessica Larsen

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 507

**Track:** DRUG DELIVERY

**Delivery Systems for Proteins and Vaccines**

**Abstract Title:** Cellulose Nanomaterial Hydrogel for Applications in Vaccine and Drug Delivery

**Presenter:** Brian Barbery

**Principal Investigator:** George Barbery, Jessica Larsen

**Author(s):**

Michael Mason

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 508

**Track:** DRUG DELIVERY

**Delivery Systems for Proteins and Vaccines**

**Abstract Title:** Actuable Hollow DNA Origami Drug Delivery Constructs

**Presenter:** Abigail Koep

**Principal Investigator:** N/A

**Author(s):**

Abigail Koep

Anwasha Sarkar

Sardar Alam

Tanya Prozorov

Ian Schneider

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 509

**Track:** DRUG DELIVERY

**Delivery Systems for Proteins and Vaccines**

**Abstract Title:** Host-modified hydrogels enable sustained release through engineered biomolecule affinity

**Presenter:** Arielle D'Elia

**Principal Investigator:** N/A

**Author(s):**

Christopher Rodell

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 510

**Track:** DRUG DELIVERY

**Delivery Systems for Proteins and Vaccines**

**Abstract Title:** Inhalable SARS-CoV-2 Mimetic Particles Induce Pleiotropic Antigen Presentation

**Presenter:** Atip Lawanprasert

**Principal Investigator:** N/A

**Author(s):**

Atip Lawanprasert

Andrew Simonson

Sopida Pimcharoen

Scott Medina

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 511

**Track:** DRUG DELIVERY  
**Delivery Systems for Proteins and Vaccines**

**Abstract Title:** Multivalent Presentation of Bone Morphogenic Protein-2 from Glass Surface  
**Presenter:** Chee Meng Eugene Cheong  
**Principal Investigator:** N/A  
**Author(s):**  
David Radford  
Rahul Upadhy  
Shashank Kosuri  
Adam Gormley

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 512

**Track:** DRUG DELIVERY  
**Delivery Systems for Proteins and Vaccines**

**Abstract Title:** Spontaneous Formation of Antigen-Loaded Depots inside Lymph Nodes to Improve Vaccine Efficacy  
**Presenter:** Erin Euliano  
**Principal Investigator:** Kevin J McHugh  
**Author(s):**  
ERIN EULIANO  
Anushka Agrawal  
Kevin McHugh

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 513

**Track:** DRUG DELIVERY  
**Delivery Systems for Proteins and Vaccines**

**Abstract Title:** Co-assembled Peptide-Protein Granules for Intracellular Protein Delivery  
**Presenter:** Renjie Liu  
**Principal Investigator:** N/A  
**Author(s):**  
Gregory Hudalla

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 514

**Track:** DRUG DELIVERY  
**Delivery Systems for Proteins and Vaccines**

**Abstract Title:** Chemical Activation of Piezo1 to Enhance TRAIL-induced Apoptosis in Glioblastoma Cells  
**Presenter:** Samantha Knoblauch  
**Principal Investigator:** N/A  
**Author(s):**  
Samantha Knoblauch  
Jenna Dombroski  
Jacob Hope  
Michael King

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 515**Track:** DRUG DELIVERY**Delivery Systems for Proteins and Vaccines****Abstract Title:** Rapid Generation of Protein-Conjugated Liposomes using Cell-Free Protein Synthesis**Presenter:** Timothy Vu**Principal Investigator:** N/A**Author(s):**

Justin Peruzzi

Neha Kamat

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 516**Track:** DRUG DELIVERY**Delivery Systems for Proteins and Vaccines****Abstract Title:** Autonomous Untethered Microinjectors for Gastrointestinal Delivery of Insulin**Presenter:** Wangqu Liu**Principal Investigator:** N/A**Author(s):**

Arijit Ghosh

Ling Li

Gayatri Pahapale

Si Young Choi

Liyi Xu

qi huang

Florin Selaru

David Gracias

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 517**Track:** DRUG DELIVERY**Delivery Systems for Proteins and Vaccines****Abstract Title:** 3D-Printed Microfluidic Production of Monodisperse Lipid Nanoparticles**Presenter:** William Bostic**Principal Investigator:** N/A**Author(s):**

Wan-Zhen Lin

Noah Malmstadt

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 518**Track:** NANO AND MICRO TECHNOLOGIES**Other / Non-specified (Implantable systems, flexible/wearable systems, 3D printing/bioprinting, tools to study and manipulate the microbiome, courses and training approaches, etc.)****Abstract Title:** A 3D-Printed MicroTesla-Enable Microfluidic Platform for 3T3L1 Culturing and Differentiation**Presenter:** Kai Duan**Principal Investigator:** N/A**Author(s):**

Joe Lo

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 519

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** Volatile Response of Lung Cells Following Pathway Perturbation

**Presenter:** Abhinav Bhushan

**Principal Investigator:** Abhinav Bhushan

**Author(s):**

Micah Oxner

Jhalak Mehta

Allyson Trang

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: O, Poster  
**Number:** 520

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** Modeling neuroepithelial connections in the gut using a novel microfluidic device

**Presenter:** Jose de Hoyos Vega

**Principal Investigator:** Alexander Revzin

**Author(s):**

Jose de Hoyos Vega

Xi Yu

Alan Gonzalez-Suarez

Arnaldo Mercado-Perez

Brooke Druliner

David Linden

Arthur Beyder

Alexander Revzin

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 541

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** Dielectrophoresis Reveals Dynamic Changes in Red Blood Cells (RBC's) Due to Experimental Handling

**Presenter:** Timothy Swimmer

**Principal Investigator:** Erin Henslee

**Author(s):**

Sydney Joseph

Erin Henslee

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 542

**Track:** NANO AND MICRO TECHNOLOGIES  
**Other / Non-specified (Implantable systems, flexible/wearable systems, 3D printing/bioprinting, tools to study and manipulate the microbiome, courses and training approaches, etc.)**

**Abstract Title:** Synthesis And Characterization Of Polyester-Polyamide Thin Film Composites For Water Purification

**Presenter:** Mariah Turner

**Principal Investigator:** Natalie Y. Arnett

**Author(s):**

Natalie Arnett

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 543**Track:** NANO AND MICRO TECHNOLOGIES  
**Other / Non-specified (Implantable systems, flexible/wearable systems, 3D printing/bioprinting, tools to study and manipulate the microbiome, courses and training approaches, etc.)****Abstract Title:** Toward Early Diagnosis of Sepsis via Filtration-Based Separation of Bacteria from Blood and Digital Melt-Based Detection**Presenter:** Matthew Park**Principal Investigator:** N/A**Author(s):**

Tza-Huei Wang

Kuangwen Hsieh

Liben Chen

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 544**Track:** NANO AND MICRO TECHNOLOGIES  
Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems (Summer Undergraduate)**Abstract Title:** Assessing CAR T-Cell Potency Using a Glioblastoma-on-Chip Platform**Presenter:** Lilly Speier**Principal Investigator:** Lohitash Karumbaiah**Author(s):**

Amin Davarzani

Leidong Mao

Krishanu Saha

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 545**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems (Summer Undergraduate)****Abstract Title:** Versatile Fabrication of Perfusable Human Microvessels with a Commercially Available 3D Printer**Presenter:** Sara Meehan**Principal Investigator:** William Polacheck**Author(s):**

Stephanie Huang

Sarah Kubik

William Polacheck

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 546**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems (Summer Undergraduate)****Abstract Title:** Effect of PEDOT:PSS on Electrode Impedance within a Multielectrode Array Brain-on-a-Chip Model**Presenter:** Kaleigh Smith**Principal Investigator:** Jeffrey Zahn**Author(s):**

Denise Robles

Jeffrey Zahn

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster**Number:** 547

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems (Summer Undergraduate)**

**Abstract Title:** Clogging-Free Intracellular Microfluidic Delivery Platform**Presenter:** Soohyun Jeon**Principal Investigator:** Aram Chung**Author(s):**

Aram Chung

Gi-Beom Kim

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster**Number:** 548

**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for Diagnostics and Biomedical Imaging**

**Abstract Title:** Mechanophenotyping of Cells by a Microfluidic Constriction Device Shows Similar Patterns to CD44-Associated Elastic Moduli Distributions**Presenter:** Graylen Chickering**Principal Investigator:** Eric Darling**Author(s):**

Eric Darling

Ryan Dubay

vera fonseca

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster**Number:** 549

**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for Diagnostics and Biomedical Imaging**

**Abstract Title:** Machine learning nanosensor array to detect a disease fingerprint from serum**Presenter:** Mijin Kim**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster**Number:** 550

**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices for Diagnostics and Biomedical Imaging**

**Abstract Title:** Perfluorocarbon-modified Dyes to Enhance Activatable Strategies in Cancer Imaging and Therapy**Presenter:** Pavel Tsitovich**Principal Investigator:** Konstantin Sokolov**Author(s):**

Maryam Hatamimoslehabadi

Dmitry Nevozhay

Sangheon Han

Alexander Schill

Kirill Larin

Konstantin Sokolov

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 551

**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices  
 for Diagnostics and Biomedical Imaging  
 (Summer Undergraduate)**

**Abstract Title:** Stimuli-Responsive Surface Coatings  
 for Molecular Imaging with T2 MRI Contrast Agents  
**Presenter:** Dylan Ines  
**Principal Investigator:** Vicki Colvin  
**Author(s):**  
 Vicki Colvin

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 552

**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices  
 for Diagnostics and Biomedical Imaging  
 (Summer Undergraduate)**

**Abstract Title:** Tuning Pore Size of Porous Silicon  
 to Detect IgG Concentrations in Serum for Machine  
 Learning Applications in Diagnostics  
**Presenter:** Gianna Paier  
**Principal Investigator:** Sharon Weiss  
**Author(s):**  
 Simon Ward  
 Sharon Weiss

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 553

**Track:** NANO AND MICRO TECHNOLOGIES  
**Molecular Sensors and Nanodevices  
 for Diagnostics and Biomedical Imaging  
 (Summer Undergraduate)**

**Abstract Title:** Comparison of Passive and Active  
 Microrheological Techniques in the Characterization  
 of Semi-Synthetic Mucus  
**Presenter:** Kellan Moore  
**Principal Investigator:** Jamel Ali  
**Author(s):**  
 Yating Mao  
 David Quashie  
 Jamel Ali

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 554

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-  
 on-Chip and Organ-on-Chip Systems**

**Abstract Title:** A Microfluidic Platform With  
 Integrated ECIS Electrodes For Biological Barrier  
 Modeling  
**Presenter:** Alisa Ugodnikov  
**Principal Investigator:** N/A  
**Author(s):**  
 Alisa Ugodnikov  
 Joy Lu  
 Craig Simmons

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 555

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** Quantifying Breast Cancer Intravasation, Extravasation and Angiogenesis Using High Throughput Assays  
**Presenter:** Awurama Ofori - Kwafo  
**Principal Investigator:** N/A  
**Author(s):**  
Indira Sigdel  
Robert Heizelman  
Yuan Tang

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 556

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** Nanostructured microfluidics for high-throughput gene delivery and rapid plasmid DNA expression  
**Presenter:** Apresio Kefin Fajrial  
**Principal Investigator:** N/A  
**Author(s):**  
Ian Elliott  
Xiaoyun Ding

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 557

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** Microphysiological Systems To Study Memory-Like NK Cell Immunotherapy For Patients with HIV+ Cancer  
**Presenter:** Catherine McBain  
**Principal Investigator:** N/A  
**Author(s):**  
Catherine McBain  
Maria Virumbrales-Muñoz  
Rebecca Schmitz  
Cristina Sanchez de Diego  
Melissa Skala  
David Beebe  
Jose Ayuso

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster  
**Number:** 558

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** Standard 96-Well Based High Throughput Microfluidic Perfusion Biofilm Reactor  
**Presenter:** David McLeod  
**Principal Investigator:** N/A  
**Author(s):**  
David McLeod  
Lai Wei  
Zhenyu Li

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster**Number:** 559**Track:** NANO AND MICRO TECHNOLOGIES**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Development of  $\mu$ Machined Parylene Electroactive Membranes with Microfluidics for LOC Applications**Presenter:** Fernando Antonio**Principal Investigator:** Rebolledo Uscanga**Author(s):**

Jeffrey Zahn

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: P, Poster**Number:** 560**Track:** NANO AND MICRO TECHNOLOGIES**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Automated Microfluidics Co-culture Platform (AMCP) for Studying Neuroinflammation**Presenter:** Heritier Adam**Principal Investigator:** N/A**Author(s):**

Caroline Jones

Michael Burton

Ritika Nayak

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster**Number:** 581**Track:** NANO AND MICRO TECHNOLOGIES**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Development of an ultrasound-transparent organ-on-chip platform towards modeling bubble-assisted focused ultrasound (BAFUS) cellular barrier disruption**Presenter:** Jian Gu**Principal Investigator:** N/A**Author(s):**

Frederic Zenhausern

Adam Akkad

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster**Number:** 582**Track:** NANO AND MICRO TECHNOLOGIES**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Native Plasma Membrane on a Chip for in vitro Single-Molecule Investigations**Presenter:** Jonathan Weerakkody**Principal Investigator:** Sathish Ramakrishnan**Author(s):**

Sathish Ramakrishnan

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster**Number:** 583**Track:** NANO AND MICRO TECHNOLOGIES**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** All-Plastic Integrated Modular Fluidic System: Selection and Enumeration of Biological Nanoparticles**Presenter:** Kathryn Childers**Principal Investigator:** N/A**Author(s):**

Kathryn Childers

Steven Soper

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster**Number:** 584**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Design of a Novel In Vitro Platform for Mechanistic Probing of Bone-Vascular Interactions**Presenter:** Kathryn Benedict**Principal Investigator:** N/A**Author(s):**

Kathryn Benedict

Sandra Stangeland-Molo

Michael Daniele

Jacqueline Cole

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster**Number:** 585**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Thermo-Fluidic Coupling Induced Cell Adhesion On Substrate In The Presence Of Micro Fins**Presenter:** Kunal Mitra**Principal Investigator:** N/A**Author(s):**

Saurabh Gupta

Arindam Bit

ARUPJYOTI KAKATI

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster**Number:** 586**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Industrial-Scale Fabrication of Low-Cost Microfluidic Devices**Presenter:** Liza White**Principal Investigator:** N/A**Author(s):**

Caitlin Howell

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster**Number:** 587**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Impedance-based CAR T Cell Identification after T-Cell Transduction: Towards the Development of a Label-free Tool in Cell Manufacturing Technologies**Presenter:** Marco Becerra-Arias**Principal Investigator:** N/A**Author(s):**

Valerie Perez Medina

Ruben Diaz Rivera

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 588**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** A Continuous Flow Cell Culture System for Precision Cell Stimulation and Time-Resolved Profiling of Cell Secretion**Presenter:** Patrick Erickson  
**Principal Investigator:** N/A**Author(s):**  
Gunjan Jetley  
Param Amin  
Aamena Mejevdiwala  
Ashna Patel  
Raphaela Imbriani Bento  
Yadiel Varela-Soler  
Himani Chavda  
Charles Roth  
Biju Parekkadan**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 589**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Microvascular on chip revealed red blood cell adhesion on red cell extracellular vesicle activated endothelium mediated by von willebrand factor**Presenter:** An Ran  
**Principal Investigator:** N/A**Author(s):**  
utku goreke  
Jane Little  
Umut Gurkan**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 590**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Exploring the Size Dependence of Patient-Derived Organoids Enabled by a Novel Silicon  $\mu$ Dicer**Presenter:** Seth Cordts  
**Principal Investigator:** N/A**Author(s):**  
Seth Cordts  
Vinh Dao  
DALIN ZHANG  
Saisneha Koppaka  
James Brooks  
Donna Peehl  
Sindy Kam Yan Tang**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 591**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems****Abstract Title:** Structured hydrogel microcapsules for understanding cell physiology in a chronic wound biofilm community**Presenter:** Shawna Pratt  
**Principal Investigator:** Connie B. Chang  
**Author(s):**  
Connie Chang

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 592

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** Immunomagnetic Separation Chip, Target Cells Separation for Medical Diagnosis

**Presenter:** Heesik Shin

**Principal Investigator:** N/A

**Author(s):**

Heesik Shin

Suyeon Shin

Hyogeun Yun

JUNSEOK HWANG

Sungyoung Choi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 593

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** Millifluidic Platforms for Cultivation and Biomechanical Studies of Dendroaer Excentricus

**Presenter:** Siavash Ahrar

**Principal Investigator:** N/A

**Author(s):**

Moses Villeda

Akue Adjovi Brenda Beni Ametepe

Douglas Pace

siavash ahrar

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 594

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** A Microfluidic Viscometer based on Micropillar Deflection and Machine Learning

**Presenter:** Melikhan Tanyeri

**Principal Investigator:** Melikhan Tanyeri

**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 595

**Track:** NANO AND MICRO TECHNOLOGIES  
**Micro/Nano Fluidic Engineering, Lab-on-Chip and Organ-on-Chip Systems**

**Abstract Title:** Using Design of Experiments Methodology for Optimizing Microfluidic Designs for Delivery in HSPCs

**Presenter:** Tiffany Dunn

**Principal Investigator:** N/A

**Author(s):**

Tiffany Dunn

Jocelyn Loo

Ian Sicher

Ockchul Kim

Alla Zamarayeva

Sewoon Han

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 596

**Track:** NANO AND MICRO TECHNOLOGIES  
**Other / Non-specified (Implantable systems, flexible/wearable systems, 3D printing/bioprinting, tools to study and manipulate the microbiome, courses and training approaches, etc.)**

**Abstract Title:** Improving the Limit of Detection of a Low-cost Optical Cavity-based Biosensor

**Presenter:** Aidan Hagemann

**Principal Investigator:** N/A

**Author(s):**

Savanah Smith

Marzhan Sytabekova

Seung Kim

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 597

**Track:** NANO AND MICRO TECHNOLOGIES  
**Other / Non-specified (Implantable systems, flexible/wearable systems, 3D printing/bioprinting, tools to study and manipulate the microbiome, courses and training approaches, etc.)**

**Abstract Title:** 3D Printed Microfluidic Assay for Cortisol Detection via a Noninvasive Wearable Device

**Presenter:** Alexis Warchock

**Principal Investigator:** N/A

**Author(s):**

Joe Lo

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 598

**Track:** NANO AND MICRO TECHNOLOGIES  
**Other / Non-specified (Implantable systems, flexible/wearable systems, 3D printing/bioprinting, tools to study and manipulate the microbiome, courses and training approaches, etc.)**

**Abstract Title:** Microneedle-based Sampling of Dermal Interstitial Fluid for Diagnostic Testing

**Presenter:** Elizabeth Wilkirson

**Principal Investigator:** N/A

**Author(s):**

Elizabeth Wilkirson

Xue Jiang

Peter Lillehoj

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 599

**Track:** NANO AND MICRO TECHNOLOGIES  
**Other / Non-specified (Implantable systems, flexible/wearable systems, 3D printing/bioprinting, tools to study and manipulate the microbiome, courses and training approaches, etc.)**

**Abstract Title:** Mini Hydrocyclone: Continuous Flow Cell Centrifugation

**Presenter:** Josiah Rhome

**Principal Investigator:** N/A

**Author(s):**

Batoul Dabajeh

Josiah Rhome

Benson Hang

Reem Omer

Joe Lo

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: Q, Poster  
**Number:** 600

**Track:** NANO AND MICRO TECHNOLOGIES  
**Other / Non-specified (Implantable systems, flexible/wearable systems, 3D printing/bioprinting, tools to study and manipulate the microbiome, courses and training approaches, etc.)**

**Abstract Title:** Ultrasound-based Implantable Pressure Sensor to Diagnose Shunt Failure

**Presenter:** Cecilia Luna

**Principal Investigator:** N/A

**Author(s):**

Cecilia Luna

Saeyoung Kim

Bowen Jing

Priscilla Delgado

Brooks Lindsey

David Myers

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 621

**Track:** NANO AND MICRO TECHNOLOGIES  
**Other / Non-specified (Implantable systems, flexible/wearable systems, 3D printing/bioprinting, tools to study and manipulate the microbiome, courses and training approaches, etc.)**

**Abstract Title:** Amphiphilic Silicones for the Dispersion of Carbon Nanotubes

**Presenter:** Lucas Lott

**Principal Investigator:** N/A

**Author(s):**

Alec Marmo

Jackson Pickett

Melissa Grunlan

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 622

**Track:** NANO AND MICRO TECHNOLOGIES  
**Other / Non-specified (Implantable systems, flexible/wearable systems, 3D printing/bioprinting, tools to study and manipulate the microbiome, courses and training approaches, etc.)**

**Abstract Title:** Master Mold Multiplication into Polycarbonate Sheets for Biomedical Microfabrication

**Presenter:** Utku Sonmez

**Principal Investigator:** N/A

**Author(s):**

Stephen Coyle

Rebecca Taylor

Utku Sonmez

Philip LEDUC

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 623

**Track:** NEURAL ENGINEERING  
**Other / Non-specified**

**Abstract Title:** Platelet-Inspired Drug Delivery Vehicle Targets Brain Implanted Microelectrodes

**Presenter:** Dhariyat Menendez

**Principal Investigator:** N/A

**Author(s):**

Dhariyat Menendez

Longshun Li

Danny Lam

Anna Pogharian

Brett Zaorski

Anirban Sen Gupta

Jeffrey Capadona

Andrew Shoffstall

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 624**Track:** NEURAL ENGINEERING  
**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Evaluating the Route of Systemic Administration for Platelet-Inspired Nanoparticles for Targeting Brain-Implanted Microelectrodes**Presenter:** Elizabeth Jitendran**Principal Investigator:** Andrew Shoffstall**Author(s):**

Dhariyat Menendez

Longshun Li

Anna Pogharian

Brett Zaorski

Anirban Sen Gupta

Jeffrey Capadona

Andrew Shoffstall

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 625**Track:** NEURAL ENGINEERING  
**Other / Non-specified (Summer Undergraduate)****Abstract Title:** Eye Tracking to Measure Parkinsonism in a Nonhuman Primate Model of Parkinson's Disease**Presenter:** Mark Connolly**Principal Investigator:** Oluwatobi Arogundade, Annaelle Devergnas**Author(s):**

Oluwatobi Arogundade

Mark Connolly

Anne-Caroline Martel

Adriana Galvan

Thomas Wichmann

Annaelle Devergnas

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 626**Track:** NEURAL ENGINEERING  
**Neural Device Interfaces****Abstract Title:** NeuroString: a tissue-like neurochemical sensor for brain and gut**Presenter:** Jinxing Li**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 627**Track:** NEURAL ENGINEERING  
**Neural Device Interfaces****Abstract Title:** Machine Learning Evaluation of Multichannel Battery-Free Wireless Neuropotential Recorder**Presenter:** Melany Gutierrez Hernandez**Principal Investigator:** N/A**Author(s):**

Melany Gutierrez Hernandez

Carolina Moncion

Satheesh Bojja Venkatakrishnan

Jorge Riera

John Volakis

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 628**Track:** NEURAL ENGINEERING  
**Neural Device Interfaces****Abstract Title:** Microelectrode arrays for simultaneous electrophysiology and advanced brain imaging**Presenter:** Sagnik Middy**Principal Investigator:** N/A**Author(s):**  
N/A**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 629**Track:** NEURAL ENGINEERING  
**Neural Device Interfaces****Abstract Title:** Shape-morphing Materials for Deployable Intracortical Probes**Presenter:** Mahjabeen Javed**Principal Investigator:** Taylor Ware**Author(s):**  
Joseph Pancrazio  
Taylor Ware**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 630**Track:** NEURAL ENGINEERING  
**Neural Device Interfaces****Abstract Title:** Multivariate Analyses Show Topography Dependent Relationships Amongst Neurite Morphological Features**Presenter:** Derek Nelson**Principal Investigator:** Ryan J. Gilbert**Author(s):**  
Derek Nelson  
Devan Puhl  
Jessica Funnell  
Uwe Kruger  
Ryan Gilbert**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 631**Track:** NEURAL ENGINEERING  
**Neural Device Interfaces****Abstract Title:** Shell Microelectrode Arrays (MEAs) for brain organoids**Presenter:** Qi Huang**Principal Investigator:** N/A**Author(s):**  
Gayatri Pahapale  
David Gracias  
Lena Smirnova  
Fang Han  
ZHao Qin  
Mallory Solazzo  
CAROLINA ROMERO  
Itzy Morales Pantoja

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster

**Number:** 632

**Track:** NEURAL ENGINEERING

### Neural Device Interfaces

**Abstract Title:** EEG Noise Removal using Tripolar Concentric Ring Electrodes and Canonical Correlation Analysis

**Presenter:** Scott Phillips

**Principal Investigator:** N/A

**Author(s):**

Andrew Nordin

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster

**Number:** 633

**Track:** NEURAL ENGINEERING

### Other / Non-specified

**Abstract Title:** Morphological Interictal Spike Analysis for Seizure Onset Zone Localization

**Presenter:** Carlos Aguila

**Principal Investigator:** N/A

**Author(s):**

N/A

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster

**Number:** 634

**Track:** NEURAL ENGINEERING

### Other / Non-specified

**Abstract Title:** The Development of Chronic Pain Symptoms Following Blast Neurotrauma

**Presenter:** Amirah Wright

**Principal Investigator:** N/A

**Author(s):**

Pamela VandeVord

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster

**Number:** 635

**Track:** NEURAL ENGINEERING

### Other / Non-specified

**Abstract Title:** Progress Towards Remote Neurostimulation of SH-SY5Y In Vitro

**Presenter:** David Hall

**Principal Investigator:** Jon Dobson

**Author(s):**

Kevin Otto

Jon Dobson

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster

**Number:** 636

**Track:** NEURAL ENGINEERING

### Other / Non-specified

**Abstract Title:** Liberal vs. Conservative Artifact Reduction in Quantitative EEG: Impact on ICU Delirium Detection

**Presenter:** Narenkumar Thirmiya

**Principal Investigator:** N/A

**Author(s):**

Shawniqua Williams Roberson

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 637

**Track:** NEURAL ENGINEERING  
**Other / Non-specified**

**Abstract Title:** Non-invasive Monitoring of Gene Expression in the Brain with Synthetic Serum Markers

**Presenter:** Sangsin Lee

**Principal Investigator:** N/A

**Author(s):**

Sangsin Lee

Shirin Nouraein

James Kwon

Zhimin Hunag

Jerzy Szablowski

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 638

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Musculoskeletal Stem Cell Engineering**

**Abstract Title:** Selective Mineralization of Nanofibers for Enthesis Repair

**Presenter:** Gabrielle Hamner

**Principal Investigator:** Justin Brown

**Author(s):**

Justin Brown

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 639

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Musculoskeletal Stem Cell Engineering**

**Abstract Title:** Leptin Drives the Regulation of Muscle Mass and Strength by Adipose Tissue

**Presenter:** Gretchen Meyer

**Principal Investigator:** N/A

**Author(s):**

Kelsey Collins

Chang Gui

Erica Ely

Kristin Lenz

Charles Harris

Farshid Guilak

Gretchen Meyer

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: R, Poster  
**Number:** 640

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Musculoskeletal Stem Cell Engineering**

**Abstract Title:** Transcriptional Evidence for Paracrine Signaling between Brown Adipose Tissue and Regenerating Muscle

**Presenter:** Chang Gui

**Principal Investigator:** N/A

**Author(s):**

Gretchen Meyer

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 661

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Musculoskeletal Stem Cell Engineering**

**Abstract Title:** MiRNA Induced 3D Bioprinted-  
Heterotypic Osteochondral Interface  
**Presenter:** Nazmiye Celik  
**Principal Investigator:** Daniel J Hayes, Ibrahim T  
Ozbolat  
**Author(s):**  
Daniel Hayes  
Myoung Hwan Kim  
Ibrahim Ozbolat

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 662

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Spine and Intervertebral Disc**

**Abstract Title:** MicroCT Comparison of Human  
and Bovine Bony Vertebral Endplates  
**Presenter:** Anton Bowden  
**Principal Investigator:** N/A  
**Author(s):**  
Anton Bowden  
Megan Stickle  
Danni Porter

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 663

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Spine and Intervertebral Disc**

**Abstract Title:** Patient-Specific Finite Element  
Modeling of Scoliotic Curve Progression using  
Region-Specific Stress-Modulated Vertebral Growth  
**Presenter:** Christian D'Andrea  
**Principal Investigator:** Sriram Balasubramanian  
**Author(s):**  
Amer Samdani  
Sriram Balasubramanian

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 664

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Spine and Intervertebral Disc**

**Abstract Title:** The Effects One-Level and Two-  
Level Lumbar Fusion Surgery on Adjacent Segment  
Compensation  
**Presenter:** Denis DiAngelo  
**Principal Investigator:** N/A  
**Author(s):**  
Perri Johnson  
Lyndsey Bouve  
Chase Mareno

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 665

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Spine and Intervertebral Disc**

**Abstract Title:** Automated Vertebral Segmentation  
using a Convolutional Neural Network

**Presenter:** Girish Viraraghavan

**Principal Investigator:** N/A

**Author(s):**

Ausilah Alfraihat

Amer Samdani

Sriram Balasubramanian

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 666

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Spine and Intervertebral Disc**

**Abstract Title:** Simulated Ligament Response of the  
Cervical Spine in Human Volunteers During Frontal  
Impact

**Presenter:** Jesse Gerringe

**Principal Investigator:** N/A

**Author(s):**

Jesse Gerringe

Karthik Somasundaram

Frank Pintar

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 667

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Spine and Intervertebral Disc**

**Abstract Title:** Local Delivery of FK506 Induces  
Osteogenesis in in-vivo Rat and Rabbit Models

**Presenter:** Julia Harrer

**Principal Investigator:** N/A

**Author(s):**

Julia Harrer

Travis Fulton

Sreedhara Sangadala

Jarred Kaiser

Emily Foerster

Scott Boden

Nick Willett

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 668

**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Spine and Intervertebral Disc**

**Abstract Title:** A Comparison of Standard Methods  
to Measure Static Axial Torque of Spinal Fixation  
Subassemblies.

**Presenter:** Kennedy Coplen

**Principal Investigator:** N/A

**Author(s):**

Zac Dooley

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster**Number:** 669**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Spine and Intervertebral Disc****Abstract Title:** Improving Bone Screw Pullout  
Testing: Investigating the Impact of Bone Foam Size**Presenter:** Zac Dooley**Principal Investigator:** N/A**Author(s):**

Sarah Pickering

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster**Number:** 670**Track:** ORTHOPAEDIC AND  
REHABILITATION ENGINEERING  
**Spine and Intervertebral Disc****Abstract Title:** Effect of Anterior Vertebral Body  
Tether Breakage on Curve Correction in Adolescent  
Idiopathic Scoliosis Patients**Presenter:**

Ausilah

Alfraihah

**Principal Investigator:** N/A**Author(s):**

Amer Samdani

Sriram Balasubramanian

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster**Number:** 671**Track:** TISSUE ENGINEERING  
**Other / Non-specified****Abstract Title:** Novel Bioreactor for Enhanced  
Fluid Flow and Electrical Stimulation of Engineered  
Excitable Tissues**Presenter:** Joseph Licata**Principal Investigator:** Peter Lelkes**Author(s):**

Peter Lelkes

Yah-el Har-el

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster**Number:** 672**Track:** TISSUE ENGINEERING  
**Other / Non-specified****Abstract Title:** Development of 3D Fibrosis Models-  
Effect of Critical ECM Components on Fibroblast  
Function**Presenter:** Khanh Tran**Principal Investigator:** Perla Ayala**Author(s):**

Perla Ayala

Kim Hor Keu

Jane Zavala

Julie Le

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 673

**Track:** TISSUE ENGINEERING  
**Engineering Replacement Tissues  
(Summer Undergraduate)**

**Abstract Title:** Bioabsorbable Interlocked Nail System for 3D Printed Segmental Bone Defect  
**Presenter:** Amarachukwu Oti  
**Principal Investigator:** N/A  
**Author(s):**  
N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 674

**Track:** TISSUE ENGINEERING  
**Engineering Replacement Tissues  
(Summer Undergraduate)**

**Abstract Title:** Physiochemical Characterization of Live and Dead Bovine Chondrocytes  
**Presenter:** Nehal Abu-Lail  
**Principal Investigator:** Abraham Rodriguez  
**Author(s):**  
Lindsey Attebery  
robert stannert  
Abraham Rodriguez

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 675

**Track:** TISSUE ENGINEERING  
**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** In Vitro Human Lung Fibroblast-to-Myofibroblast Transition Stimulated by Profibrotic Growth Factors  
**Presenter:** Catherine Sano  
**Principal Investigator:** Shayn Peirce-Cottler  
**Author(s):**  
N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster  
**Number:** 676

**Track:** TISSUE ENGINEERING  
**Other / Non-specified (Summer Undergraduate)**

**Abstract Title:** Engineering 3D Fibrosis Models- Effect of Physical and Biochemical Factors  
**Presenter:** Gabriela Pena Carmona  
**Principal Investigator:** Perla Ayala  
**Author(s):**  
Simon Galleta  
Daniel Ramos  
Alyssa Alfaro  
Madison Rivero  
Hector Toro Estrella  
Perla Ayala

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster

**Number:** 677

**Track:** TISSUE ENGINEERING

### Stem Cells In Tissue Engineering and Disease Modeling (Summer Undergraduate)

**Abstract Title:** Mechanobiology of the Aortic Heart Valve and the Influence of X-Chromosome Dosage on Aortic Endothelium in Pathophysiological Shear

**Presenter:** Akhil Adusumilli

**Principal Investigator:** K. Jane Grande-Allen

**Author(s):**

Jane Grande-Allen

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster

**Number:** 678

**Track:** TISSUE ENGINEERING

### Engineering Replacement Tissues

**Abstract Title:** Engineered Lymphatic Flap as Replacement for Lymph Vessel Transfer

**Presenter:** Alvis Chiu

**Principal Investigator:** Feng ZHao

**Author(s):**

Feng ZHao

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster

**Number:** 679

**Track:** TISSUE ENGINEERING

### Engineering Replacement Tissues

**Abstract Title:** Matrix Degradability Promotes the Development of Salivary Progenitor Cells with Secretory Functions

**Presenter:** Apoorva Metkari

**Principal Investigator:** N/A

**Author(s):**

Eric Fowler

Xinqiao Jia

Apoorva Metkari

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: S, Poster

**Number:** 680

**Track:** TISSUE ENGINEERING

### Engineering Replacement Tissues

**Abstract Title:** Stem Cell-Laden Microspheres as Building Blocks for Large Cardiac Tissue Production

**Presenter:** Justin Harvell

**Principal Investigator:** N/A

**Author(s):**

Mohammadjafar Hashemi

Elizabeth Lipke

## Friday, October 14

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster

**Number:** 701

**Track:** TISSUE ENGINEERING

### Engineering Replacement Tissues

**Abstract Title:** Methods to Improve Islet Transplantation Outcomes with Pre-Induced HIF-1 $\alpha$  Upregulation on Min6 Cells

**Presenter:** Cynthia Perez

**Principal Investigator:** N/A

**Author(s):**

Tejal Desai

Phillip Messersmith

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 702**Track:** TISSUE ENGINEERING**Engineering Replacement Tissues****Abstract Title:** Neutrophil Survival on Bioengineered Human Acellular Vessels Supports Infection Resistance**Presenter:** Juan Wang**Principal Investigator:** N/A**Author(s):**Shelby Blalock  
Heather Prichard  
Laura Niklason  
Robert Kirkton**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 703**Track:** TISSUE ENGINEERING**Engineering Replacement Tissues****Abstract Title:** The influence of substrate stiffness and biochemistry on retinal cell fate**Presenter:** Kristan Worthington**Principal Investigator:** N/A**Author(s):**Rion Wendland  
Brittany Allen  
Budd Tucker  
Kristan Worthington**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 704**Track:** TISSUE ENGINEERING**Engineering Replacement Tissues****Abstract Title:** Silk-Extracellular Matrix Patches for Repair of Congenital Heart Defects**Presenter:** Lauren Black**Principal Investigator:** N/A**Author(s):**Elizabeth Porter  
Whitney Stoppel  
David Kaplan  
Raymond Kudej  
Lauren Black**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 705**Track:** TISSUE ENGINEERING**Engineering Replacement Tissues****Abstract Title:** Bio-inspired Modification of Collagen Hydrogels to Achieve High Extensibility for Auricular Tissue Engineering**Presenter:** Leigh Slyker**Principal Investigator:** N/A**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 706**Track:** TISSUE ENGINEERING**Engineering Replacement Tissues****Abstract Title:** The In Vitro Assembly of Tissue Specific ECM via Cellular Deposition**Presenter:** Lisa Salmeron**Principal Investigator:** N/A**Author(s):**Joshua Morgan  
Esther Chin

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster  
**Number:** 707

**Track:** TISSUE ENGINEERING  
**Engineering Replacement Tissues**

**Abstract Title:** Fibrin Hydrogel Promotes Regeneration of Collecting Lymphatic Vessels Following Injury

**Presenter:** Mohammad Razavi

**Principal Investigator:** N/A

**Author(s):**

Mohammad Razavi

Timothy Padera

Lance Munn

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster  
**Number:** 708

**Track:** TISSUE ENGINEERING  
**Other / Non-specified**

**Abstract Title:** Engineered Liver Platforms to Investigate Species Differences in the Metabolism of Toxicants

**Presenter:** Ashlin Michell

**Principal Investigator:** N/A

**Author(s):**

Grace Brown

Alan Valdiviezo

Ivan Rusyn

Ashlin Michell

Salman Khetani

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster  
**Number:** 709

**Track:** TISSUE ENGINEERING  
**Other / Non-specified**

**Abstract Title:** Exploration Of Decellularized Plant-Based Scaffolds Demonstrates Potential for Tissue Engineering Applications

**Presenter:** Ashlee Harris

**Principal Investigator:** N/A

**Author(s):**

Jerome Lacombe

Frederic Zenhausern

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster  
**Number:** 710

**Track:** TISSUE ENGINEERING  
**Other / Non-specified**

**Abstract Title:** Investigation of Manuka Honey Inspired Therapeutics for Prevention of Neutrophil-Induced Fibrosis

**Presenter:** Evan Main

**Principal Investigator:** Gary Bowlin

**Author(s):**

Gary Bowlin

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster  
**Number:** 711

**Track:** TISSUE ENGINEERING  
**Other / Non-specified**

**Abstract Title:** Morphometric Analysis of Elastic Matrix Structural Changes in Abdominal Aortic Aneurysm (AAA) Patients with Large Aneurysms

**Presenter:** Francesca Morrell

**Principal Investigator:** N/A

**Author(s):**

Shataakshi Dahal

Anand Ramamurthi

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 712**Track:** TISSUE ENGINEERING**Other / Non-specified****Abstract Title:** The Impact of FAK Phosphorylation and EPA on Hepatic Functionality and Fibrosis in 3D Cultures**Presenter:** Lindsey Kirk**Principal Investigator:** N/A**Author(s):**

Nathaniel Hauser

Hannah LaMond

Chia Chi Key

Aleksander Skardal

Elaheh Rahbar

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 713**Track:** TISSUE ENGINEERING**Other / Non-specified****Abstract Title:** Expanding the Cell-Adhesion Peptide Library for Tissue Engineering Applications**Presenter:** Marina Yu**Principal Investigator:** N/A**Author(s):**

Marina Yu

Brett Pogostin

Kevin McHugh

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 714**Track:** TISSUE ENGINEERING**Other / Non-specified****Abstract Title:** Effect of Ellagic acid and retinoic acid on Elastin Deposition by Human Dermal Fibroblasts**Presenter:** Nasim Nosoudi**Principal Investigator:** N/A**Author(s):**

Jada Stutts

Chloe Duckworth

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 715**Track:** TISSUE ENGINEERING**Other / Non-specified****Abstract Title:** Multi-model Therapeutic Nanoparticles for Spinal Cord Injury Repair**Presenter:** Suneel Kumar**Principal Investigator:** N/A**Author(s):**

Thomas Theis

Rick Cohen

Francois Berthiaume

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 716**Track:** TISSUE ENGINEERING**3D Bioprinting and Patterning of Tissues****Abstract Title:** Initial Improvements in Cochlear Stria Vascularis Cell Lines with 3D Cell Culturing**Presenter:** Tobias Florida Campos de Souza**Principal Investigator:** Robert Frisina**Author(s):**

N/A

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 717**Track:** TISSUE ENGINEERING**Engineering Replacement Tissues****Abstract Title:** Bioengineered Scaffold Encourages Human Skeletal Myotube Formation In-Vitro**Presenter:** Megan Lauder**Principal Investigator:** Lauder**Author(s):**

Megan Lauder

Sanaa Waliuddin

Shannon Chaffin

Perla Ayala

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 718**Track:** WOMEN'S HEALTH**Cancers of female Organs****Abstract Title:** Multi-Compartment Fallopian Tube Organoids**Presenter:** Ashleigh Crawford**Principal Investigator:** Denis Wirtz**Author(s):**

Denis Wirtz

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 719**Track:** WOMEN'S HEALTH**Cancers of female Organs****Abstract Title:** Isothermal Human Papillomavirus (HPV16) DNA Amplification Assay for Cervical Cancer Screening**Presenter:** Ana Claire**Principal Investigator:** Jacqueline C. Linnes**Author(s):**

Luke Brennan

Jacqueline Linnes

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: T, Poster**Number:** 720**Track:** WOMEN'S HEALTH**Cancers of female Organs (Summer Undergraduate)****Abstract Title:** Ethyl Cellulose Injector for Cervical Pre-Cancer Ablation in Low- and Middle-Income Countries**Presenter:** David Garvey**Principal Investigator:** Martha Wang**Author(s):**

Kevin Aroom

Jenna Mueller

Martha Wang

Venkata Polavarapu Sarojasamhita

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: U, Poster**Number:** 727**Track:** WOMEN'S HEALTH**Cancers of female organs****Abstract Title:** HPV Rapid Test Design Informed by Clinician Preferences for Cervical Cancer Screening**Presenter:** Luke Brennan**Principal Investigator:** Natalia Rodriguez**Author(s):**

Natalia Rodriguez

Jacqueline Linnes

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: U, Poster  
**Number:** 728

**Track:** WOMEN'S HEALTH

**Sex-related Differences in Chronic Diseases**

**Abstract Title:** Lupus in a Dish: Investigating Ancestral Contribution to Monocyte Function

**Presenter:** Holly Ryan

**Principal Investigator:** N/A

**Author(s):**

Mark Segal

Erika Moore

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: U, Poster  
**Number:** 729

**Track:** WOMEN'S HEALTH

**Cancers of female organs**

**Abstract Title:** Quantitative Imaging to Assess the Impact of Autologous Breast Reconstruction on Bra Fit

**Presenter:** Mia Markey

**Principal Investigator:** Mia K. Markey

**Author(s):**

Yen-Tung Liu

Nova Khan

Mary Catherine Bordes

Greg Reece

Ashleigh Francis

Fatima Merchant

Mia Markey

**Friday, October 14**

2:30 PM - 3:30 PM

**Poster Session:** D, Section: E, Row: U, Poster  
**Number:** 730

**Track:** WOMEN'S HEALTH

**Endometriosis**

**Abstract Title:** A Biomimetic Model of the Fallopian tube to Study on Relationship between Endometriosis and Fallopian tube Epithelial Cells

**Presenter:**

**Principal Investigator:** N/A

**Author(s):**

Young Yang

Jungbok Lee

Woo Yeol Baek

Young Min Shin

**Friday, October 14**

12:00 AM - 12:00 AM

**Poster Session:** C, Section: C, Row: H, Poster  
**Number:** 208

**Track:** BIOMECHANICS

**Abstract Title:** Genotoxic Stress- and Oxidative Stress-Induced DNA Damage and Senescence in Vascular Endothelial Cells

**Presenter:** Erick Munoz

**Principal Investigator:** N/A

**Author(s):**

N/A

**Friday, October 14**

12:00 AM - 12:00 AM

**Poster Session:** C, Section: E, Row: U, Poster  
**Number:** 723

**Track:** WOMEN'S HEALTH

**Other / Non-specified**

**Abstract Title:** Sex Difference in Average Braincase Size Can Increase the Average Translational Coup Contrecoup Brain Injury Threshold for Women

**Presenter:** Anne Staples

**Principal Investigator:** N/A

**Author(s):**

Mrigank Dhingra