

## Biomedical Engineering

### Salisbury Labs Kinnicutt Hall Room 115

**9:05am**

#### **3D Bioprinting of an Aortic Valve with Cell-Laden Hydrogels**

Gillian Ebeling, Priyanka Joshi, Chloe Naasz, Khushi Soni

Advisor: Sakthikumar Ambady

**9:25am**

#### **Automatic Feeding Device for Premature Infants in Low-to-Middle Income Countries**

Alexis Compton, Melissa Hauman, Samantha Havel, Kelsey Leach

Advisors: Dirk Albrecht, Solomon Mensah

**9:45am**

#### **Developing a Behavioral Assay for Tinnitus Characterization**

Myah Caplan, Jacob Mills

Advisor: Adam Lammert

**10:10am**

#### **Design of a Ligament Regeneration System**

Carter Bach, Abigail Bartynski, Jonathan Coco, Julia Sherwin

Advisors: George Pins, Dr. David Magit (BIDMC)

**10:30am**

#### **System for Reporting Malfunctioning Biomedical Devices in Accra, Ghana**

Ana Grandgeorge, Elisabeth Lynn

Advisors: Solomon Mensah, Robert Krueger

**10:50am**

#### **Validating and Manufacturing a Bio-realistic Surgical Phantom for Laparoscopic and Robotic Surgical Training**

Caitlin Bonavita, Binh Diec, Alex Hill, Andrew Sifferlen

Advisors: George Pins, Dr. Thomas Cataldo (BIDMC)

## Salisbury Labs Room 104

**9:05am**

#### **User Study and Optimization of Wearable Transcutaneous Oxygen Sensor**

Sydney Hobson, Abigail Leonardi, Ciara Murphy, Vanshika Rohera

Advisor: Ulkuhan Guler

**9:25am**

#### **Improving Pulse Oximeters to Measure Blood Oxygen Saturation Accurately for All Skin Types**

Khaled Jarad, Ian LaFountain, Kaylie Lunderville, Emily Pacheco, Marcel Paolillo, Casey Peris

Advisors: Taimoor Afzal, Funmi Ayobami

**9:45am**

#### **Designing an In Vitro Model of Uterine Myometrium to Study Intramural Uterine Fibroids**

Zara Alkaff, Elizabeth Hicks, Micah Wilde

Advisors: Catherine Whittington, Marsha Rolle

**10:10am**

#### **Artificial Tongue Actuation Device**

Tatyana Barthold, Hope Soucy, Luese Ufuah, Marc Voorhees, Declan Williams

Advisors: Dirk Albrecht, Pradeep Radhakrishnan

**10:30am**

#### **Metric to Characterize Baseball Pitcher Fatigue**

Kyle Johns, Charlotte Kokernak, Crystal Murray, Amy Ngan

Advisor: Karen Troy

**10:50am**

#### **Detecting Ice Nucleation in Supercooled Red Blood Cell Samples**

Madison Gass, Grace Jolin, Isabel Nearing, Kathryn Woodland

Advisors: Sakthikumar Ambady, Ahmet Sabuncu

## Salisbury Labs Room 105

**9:05am**

### **Development of a Needle Insertion System for Ultrasound-Guided PCNL**

Alexander King, Abhinav Palisetti, Cabot Priestner, Haohao Yi

Advisors: Haichong Zhang, Yihao Zheng

**9:25am**

### **Modeling the Endothelial Glycocalyx Post Pneumonectomy in a 3D Fluidic Chip**

Eric Johnson, Mia Long, John Martel, Megan Ouellette, Sudish Vengat

Advisor: Solomon Mensah

**9:45am**

### **Haptic Feedback Controller for Robotic Neurointervention**

Troy Mullenberg, Shiyue Wang, Ethan Wilke

Advisors: Haichong Zhang, Yihao Zheng, Ziming Zhang

**10:10am**

### **Microfluidic Chip Design for Studying Ultrafiltration Failure in the Fibrotic Peritoneum**

Cleo Caldwell, Alison Drapeau, Araceli Baeza Gonzalez, Gabriel Rivera

Advisors: Catherine Whittington, Diana Alatalo

**10:30am**

### **Microfluidic Bioreactor to Simulate Fluid Flow in a Tissue-Engineered Heart Valve**

Casey Chabra, Rachel Drasser, Emma Smith, Alexandra Taylor

Advisor: Kristen Billiar

## Salisbury Labs Room 305

**9:05am**

### **Neuroblastoma Tumor on a Chip: Groundwork for a Fluidics Model of the Hypoxic Tumor Microenvironment**

Priscilla Anand, Gabrielle Healey, Santiago Rivero, Madison Sanborn, Tiffany Saunders

Advisor: Jeannine Coburn

**9:25am**

### **Automation of an Accurate, Auditory-Based Blood Pressure Monitor**

Riley Baranowski, John Clewley, Abigail Maynard, Aaron Searth, Vy Tran

Advisors: Dirk Albrecht, Pradeep Radhakrishnan

**9:45am**

### **Developing a Standard Procedure for Comparing the Effects of *Artemisia annua*, Artemisinin, and Artesunate on Fibroblasts**

Sarah Francis, Molly McGinn, Bella Vignola

Advisors: Raymond Page, Pamela Weathers

**10:10am**

### **Detecting and Alerting Risk of ACL Injury in Female Horizontal Jumps Due to Changes in Athletic Performance**

Sarah Boynton, Cayla Jumpp, Dreya Martin, Michaela Mattson, Emma Shulenburg

Advisors: Funmi Ayobami, Zoe Reidinger

**10:30am**

### **Injectable Glycosaminoglycan-Based Hydrogel Drug Delivery System**

Christina Avakian, Emelia Carleton, Akhil

Chilamkurthi, Andrew Voronin

Advisor: Jeannine Coburn