

SENIOR DESIGN DAY

April 26, 2024

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ROY. J CARVER

— department of —

**BIOMEDICAL
ENGINEERING**

Welcome!

The faculty and staff of the Roy J. Carver Department of Biomedical Engineering welcome you to Senior Design Day 2024, as we celebrate the achievements of our students. Please note that presentations will be conducted concurrently in Auditoriums 295 and 235 of the Boyd Law Building. Groups A and B will be presenting in the morning session and groups C and D will be presenting in the afternoon session.

Senior Design Instructors

Prof. Colleen Bringman

Prof. Kristan Worthington

GROUP C

Boyd Law Building, room 295; Prototypes displayed in Central lobby

Moderator: Wrik Bhadra

12:45 pm
Team 22 **Limb Ischemia Prevention in pVA-ECMO Patients**
Sushma Santhana, Vaeh Bowen, Ethan Pierce, Anne Cunningham

Mentor: James Pascalo and Matthew Karabestos

Created a cannulation device to prevent limb ischemia in pVA-ECMO patients.

1:05 pm
Team 1 **Adjustable Rigidity Guide Catheter for TAVR Procedures**
Matthew Heery, Anthony Prucha, Blake Goins, Jacob Stoffer

Mentors: Kevin Simoens and David Piotrowski

Developed a solution to demonstrate the application of granular jamming within a guide catheter to allow for variable rigidity and secure fixation during cardiovascular procedures.

1:25 pm
Team 3 **Lighted Retractor for Breast Cancer Surgery**
Keegan Staab, Tarynn Rodman, Reilly Corken

Mentors: Dr. Ingrid Lizarraga and Dr. Jacklyn Engelbart

Designing a surgical retractor that decreases complications and

1:45 pm **SHORT BREAK**

2:00 pm
Team 9 **Dual-Lumen Handle for Inguinal Hernia Repairs**
Jatin Dhamrait, Morgan Dexter, Luke Law, Kaitlyn Schnitzler

Mentor: Dr. Julia Shelton

Created a 3D printed handle with suture and anesthesia capabilities to increase the efficiency and accuracy of pediatric inguinal hernia laparoscopic surgeries.

2:20 pm
Team 15 **Air Removal from the Stomachs of Patients with PEG Tubes**
Chase Zawilinski, Matthew Slabinger, Alex Saffert, Lauren Bar

Mentor: Dr. Ana McCracken

Created a filtration device that allows for easier release of air trapped in the stomachs of patients with gastrostomy tubes.

2:40 pm **Review of Desi**

3:40 pm **End of afternoo**

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Engineering**

Wrik

Bhadra