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## ABOUT CAPTURE 180

The Capture 180 Research Challenge tasks undergraduates to describe their work in 2-3 minutes, using one static slide or prop. It is based on the popular 3MT® competition for graduate students.

## JUDGING & PRIZES

Capture 180 judges are students, community partners, and leaders within various ECU units. They are charged to use the judging criteria of:

- Impact, Comprehension, and Content
- Audience Engagement
- Communication

The challenge is divided into two rounds, a preliminary round with two groups carrying out their presentations in parallel, and a final round. The field is reduced in half after the preliminary round. The final round is composed of presenters who have advanced from the preliminary round. Presenters who do not advance to the final round are cordially invited to attend the final round. In the final round, the presenter who ranks first according to the judges will be the Overall Champion. The audience will have an opportunity to complete an online survey with the same criteria. The presenter who ranks first according to the audience's rating will be the People's Choice Winner. Both winners are announced afterwards and receive paperweight awards. Winners and their mentors will be invited to attend the RCAF Awards Luncheon and Ceremony.

ADA Accommodation: 252-737-1018 or [ada-coordinator@ecu.edu](mailto:ada-coordinator@ecu.edu)



**Main Campus Student Center**  
**April 3<sup>rd</sup>, 2025 | 2:00 PM - 4:30 PM**



## EVENT ITINERARY

### Preliminary Round

1:45 PM – 2:00 PM	Check-In Group A MCSC 249 Group B MCSC 253
2:00 PM – 2:45 PM	Presentations
2:45 PM – 3:00 PM	Judge Deliberations Final Round Presenters Announced

### Final Round MCSC 200

3:15 PM – 3:30 PM	Check-In and Introduction
3:30 PM – 4:15 PM	Final Round Presentations
4:15 PM – 4:30 PM	Judge & Audience Deliberations Winners Announced

## ACKNOWLEDGEMENTS

### Final Round Judges

Alejandra Valle Garcia  
Admissions Counselor  
Undergraduate Admissions

Jamie Bloss  
Library Associate Professor  
Laupus Health Sciences Library

Kathy Cox  
Associate Dean  
ECU Graduate School

### Preliminary Round Judges

### Preliminary Round Moderators

### Video and Onsite Assistance

Douglas S. Bell, Jr

## Group A

### PRELIMINARY PRESENTATIONS MCSC 249 1:45 PM -3:00 PM

Moderator: Maelee Becton

#### 1. Investigating the Role of the Nucleocytoplasmic Protein Tnpo-SR in the Germline Stem Cells of *Drosophila Melanogaster*

*The Uber of the Cell: How Tnpo-SR Drives Drosophila Germline Stem Cell Destiny*

**Lovens Paul** (Biochemistry)  
Elizabeth T. Ables (Mentor)

#### 2. Altered Cell Signaling in an Aged Model of Heart Failure with Preserved Ejection Fraction

*Aging is Not Optional: Characterizing a Model of HFpEF with Aging in Mind*

**Caitlyn Mooers** (Biology)  
Bobbie Garvin (Mentor)

#### 3. Voice-Based Mood Detection for Emotionally Appropriate AI Responses

*Creating Conversational Systems That Read the Room, Not Just the Words*

**Weston Nelson** (Computer Science)  
Nic Herndon (Mentor)

#### 4. Examining Southwest Airline's Paradoxical Communicative Response to the December 2022-2023 Crisis

*Weathering the Storm: The Impact of Southwest's Paradoxical Crisis Communication*

**Ilaria Noonan** (Communication)  
Drew T. Ashby-King (Mentor)

#### 5. AI-Powered Chatbot for Automated Essay Review: Enhancing Writing Feedback and Revision

*Smart Feedback, Stronger Writing: AI-Powered Essay Review*

**Stephanie Srambo** (Computer Science)  
Nic Herndon (Mentor)

#### 6. Investigating the Role of Tuberous Sclerosis Complex in Synapse Formation

*When Crafting Synapses You Better Bee on the Lookout for Genetic Mutations as it Tends to Get Complex*

**Robin Thomas** (Biology, Molecular/Cell Biology)  
Karen Litwa (Mentor)

#### 7. Navigating the Pitch: Path Planning and Computer Vision for Soccer Robots

*Where Technology Meets the Pitch*

**Darby Waters** (Computer Science)  
Nic Herndon (Mentor)

## Group B

### PRELIMINARY PRESENTATIONS

#### MCSC 253 1:45 PM - 3:00 PM

Moderator: Giulianna Catalano

##### 1. Using Machine Learning to Predict Breast Cancer Recurrence Score: Improving Accuracy

*Empowering Lives Through Collective Intelligence: Machine Learning for Breast Cancer Prognostics*

**Majoie Ngandi** (Software Engineering)  
Nic Herndon (Mentor)

##### 2. Creation of the First B-Cell Specific Ataxin-1 Conditional Knockout Mouse Model

*Created the First B-Cell-Specific Ataxin-1 Knockout Mouse Model, Revealing its Immunoregulatory Role and its Impact on Autoimmune Disease Mechanisms*

**Cindy Martines** (Neuroscience)  
Alessandro Didonna (Mentor)

##### 3. Breast Cancer Recurrence Prediction with Machine Learning

*Predicting Breast Cancer Recurrence Using Machine Learning Models to Examine Both Tumorous and Non-tumorous Regions of Breast Biopsy Images*

**Sofia Azam** (Computer Science)  
Nic Herndon (Mentor)

##### 4. Beyond Interpretation: Religious Experience as Phenomenon, Narrative, and Transformation

*Framing the Ineffable: Culture, Psychology, and Contemplation in Religious Experience*

**Wally McCown** (Religious Studies)  
Derek Maher (Mentor)

##### 5. Puzzles and Playlists: Can Music Help ADHD Focus?

*Puzzles and Playlists: How Can Music Help ADHD and Neurotypical Minds Focus?*

**Dhwani Hada** (Neuroscience)  
Michael Baker (Mentor)

##### 6. Molecular Surveillance of Babesia sp Infection in Lemurs of Madagascar

*Tiny Ticks, Big Impact: Exploring Babesia Infections in Lemurs of Madagascar*

**Lulea Adams** (Biology)  
Fidisoa Rasambainarivo (Mentor)

##### 7. Computational Pathology for Cancer Recurrence Prediction

*Decoding Breast Lesions: How AI Sharpens the Line Between Ductal Carcinoma in Situ and Usual Ductal Hyperplasia*

**Marian Sousan** (Computer Science)  
Nic Herndon (Mentor)

##### 8. Leveraging Virtual Reality for Pedagogical Innovation: A Case Study of a 3D Heart Model for Anatomical Education

*Bridging Technology and Anatomy: Using VR To Deepen Spatial Understanding and Drive Innovation in Medical Education Through Interactive and Dynamic 3D Organ Visualizations*

**Garrett Moore** (Art)  
Amy McIntyre (Mentor)

## FINAL ROUND PRESENTATIONS

### MCSC 200 (Blackbox Theatre)

#### 3:30 PM - 4:30 PM

Moderator: Tuan Tran

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