

# ISAT & GEOGRAPHY

Saturday, April 26th

**20 | SENIOR  
25 | SYMPOSIUM**  
SCHOOL OF INTEGRATED SCIENCES

The SIS Senior Symposium is part of the 2025 CISE Student Showcase. Learn more here:



## SESSION A | 9-9:55 AM

\* Projects with external partners

	King 148	King 150	King 348	King 350
9 AM	The Characterization of Hazelnut Biochar for use as an agricultural soil amendment (Teel)	Geopolitical Anchors: Understanding China's Global Port Investments (Bachmann and Baxter)	The Presence of An Ecological Engineer in the Sediment of Retention Ponds at JMU (Li)	9 AM - Residential Energy Auditing (Papadakis)  9:30 AM - Clearing the Waters: Stream Remediation Utilizing Biochar Filtration (Coffman)*
9:20	Assessing a Bio-Engineered Solution for Streambank Erosion at the JMU Farm* (Nash)	Investigating Chinese Research Buoys in the Arctic (Bachmann and Walton)	Enhancing Poultry Wastewater Treatment with Sediment Microbial Fuel Cells (Li)	
9:40	Root to Resilience: A Sustainability Plan for King Hall Rooftop Garden (Klevickis and Nash)	LifeNet Health's Matracell Automation Process (Bachmann and Li)*	Microbial Electrolysis for Hydrogen in Abandoned Oil Reservoirs (Li)	<b>King 337 - Geography</b>  9 AM - Assessing Land Change and Urban Heat Islands in the City of Harrisonburg (X.Tang)*  9:30 AM - Differences in Image Understanding and Perception of Danger in Remotely Sensed Images (Bortolot)

## POSTERS & DISPLAYS | 10:00-11:15 AM

Refreshments are available in King 136.

**INTEGRATED SCIENCE AND TECHNOLOGY (ISAT) JUNIOR-LEVEL PROJECT POSTERS**  
FIRST FLOOR KING HALL -- MAIN HALLWAY

**ISAT SENIOR-LEVEL PROJECT DISPLAYS AND ARTIFACTS** | Tables will be staffed between 10 AM and noon  
FIRST FLOOR KING HALL -- MAIN HALLWAY

## SESSION B | 11:20-11:55 AM

\* Projects with external partners

	King 148	King 150	King 348	King 350
11:20 AM	Developing an Environmental Management System for JMU's Sustainability Goals (Frysinger)	Automation Design of a Protein Purification System (Zhang)	Detecting Mercury Contamination in Cosmetics (Brent)	Impacts of Sand Dams on Water and Soil Quality in Semi-arid Kenya (Coffman)
11:40	Modeling Nutrient Accumulation in the Chesapeake Bay (Frysinger)	Smart Machine Control for Sustainable Manufacturing (Zhang)	Design and Construction of a Sonar-Equipped Hydro-Drone for Lake Bathymetry (Brent and Benzing)*	An Analysis of Drought in the Shenandoah Valley (Gerken)

## LUNCH | NOON-1 PM -- King 136

12:45-1 PM | ISAT Junior Poster Award Ceremony

## SESSION C | 1:10-2:05 PM

\* Projects with external partners

	King 148	King 150	King 348	King 350
1:10 PM	Enhancing Solar Roadway Implementation with ArcGIS (Frysinger)	Investigating Mechanical Properties of Recycled Plastics (Zhang)	JMU DukeSat: Satellite Ground Station Development and Testing (Spindel)*	The Leftovers Project: Feeding Students by Mitigating Food Waste (Zaini)
1:30	Community Energy Resilience and the Impact of Transportation (Miles)	Tackling the Plastic Waste Crisis with Engineered Enzymes (Stockwell)	Intelligent Security: Computer Vision in a Robotic Dog (Teate)	Systems Thinking for the Visually Impaired using Generative AI (Zaini)
1:50	America's Offshore Wind Challenge: Lessons Learned from CVOW (Miles)	Rethinking Plastics: Sustainable Solutions in Life Science Labs (Stockwell)	DrumEcho: Real-time Audio-to-Notation Transcription Using Machine Learning (Teate)	

Schedule & Project Summaries:

