

2025 Research Creative Inquiry Day | Winners

PRIMARY AUTHOR	AUTHOR_2	AUTHOR_3	AUTHOR_4	AUTHOR_5	CLASSIFICATION	Faculty Advisor's Department	FA College	Title of Abstract
Raven Mullis	Cole Williams				Undergraduate	Agriculture	AGHEC	Effects of Organic Residue C:N Ratios on Soil Nitrogen Dynamics and Availability
Nickolas Fuller	Daniel Metzgar				Undergraduate	Agriculture	AGHEC	Analyzing the Impact of Grain Production on Broiler Chicken Farming
Sarah Elliott	Windsor Kiefer				Masters	Agriculture	AGHEC	Atrazine, it leaches
Md Bayazid Rahman	Ahmed Avatar Tulsi				Ph.D.	Agriculture	AGHEC	Soybean Quality Evaluation Using Artificial Intelligence and Hyperspectral Imaging
Kaelyn Adams					Undergraduate	Human Ecology	AGHEC	The Connection Between Early Childhood Hospitalization and Perceptions of Healthcare in Adulthood
Addison Howard					Undergraduate	Human Ecology	AGHEC	The Impact of Therapy Dogs on Hospitalized Children’s Coping Skills
Adia Byron					Undergraduate	Human Ecology	AGHEC	Child Neglect: A Common but Unclear Form of Maltreatment
Audrey Presley					Undergraduate	Human Ecology	AGHEC	Reintegration of Survivors of Childhood Human Trafficking Back Into Society
Maya Most					Undergraduate	Human Ecology	AGHEC	The Effects of Child Abuse on Cognitive Development
Valerie Maynard	Bayli Whitehead	Aaron Jerd			Undergraduate	Human Ecology	AGHEC	From Rags to Rooms: Textile Waste as Thermal Insulation
Ashleigh Shores					Undergraduate	Human Ecology	AGHEC	Association of Social Media and Eating Disorders
Hannah Schreader					Undergraduate	Human Ecology	AGHEC	The Correlation of Diet Changes with Ulcerative Colitis: Active and Dormant Flare-Ups

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Kainen Stoner					Masters	Human Ecology	AGHEC	Pre-operative Education on Supplemental Nutrition for Bariatric Patients: Preparing Patients for Post-operative Success
Alexandra Garcia	Reagan Baker				Ph.D.	Human Ecology	AGHEC	Fighting Food Insecurity on Campus
Caitlyn Petrey	Windsor Kiefer				Undergraduate	Biology	CAS	Soil analysis at native habitat sites for the federally endangered plant species Physaria globosa (Brassicaceae)
Ari Mortensen	Justin King				Masters	Biology	CAS	Functional Analysis of Silent Information Regulator 2 (Sir2) in Pyricularia oryzae
Peter Blum					Ph.D.	Biology	CAS	PFAS Bioaccumulation and Biomagnification in Middle Tennessee Freshwater Food Webs
Evie Lawlor					Undergraduate	Chemistry	CAS	3D Printing an Electrode Array
Connor Boles					Undergraduate	Chemistry	CAS	Determination of the effectiveness of a non-ionic surfactant for the extraction of a neonicotinoid pesticide
Brooklynn Mckenzie					Undergraduate	Chemistry	CAS	Exploring Alternative Dyes for Enhanced Sensitivity and Specificity in the Bradford
Patience Nortey	Bailey Allred	Diana Popa			Masters	Chemistry	CAS	Double salt ionic liquids from trihexylphenidyl cation
Margaret Hobbs					Undergraduate	Earth Sciences	CAS	Interrelation of Insect Herbivory & Paleoenvironment to Holocene Climatic Change as seen via the Middle Eocene Claiborne Formation

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Daniel Adams					Ph.D.	Earth Sciences	CAS	Machine Learning of Building Characteristics for Probabilistic and Uncertainty-Aware Population Estimates in Environmental Science
Hannah Byers					Undergraduate	English	CAS	Breaking the Cycle: Generational Trauma, Black Masculinity, and Systemic Oppression in Fences by August Wilson
Daisy Hudson					Undergraduate	English	CAS	Laughing at Those Who Take: The Use of Humor for Resistance and Survival in Green Grass, Running Water
Caroline Grugin					Masters	English	CAS	The Dead Women of Poe and Hawthorne
Samuel Blake	Mason Henderson	Kennedi Booker	Kailyn Culpepper	Riley Dugan, Noha Elkeelany, Aiden Gillis, Isabella Gresham	Undergraduate	History	CAS	Tennessee Minded Her Business: A Historical and Hydrology Analysis of the Dust Bowl in Tennessee
Chloe Alto	Olivia Howell	Samuel Hartmann	Alexia Young		Undergraduate	History	CAS	Tennessee Tech Rural Crime Database
Nolan Holbrook					Undergraduate	Mathematics	CAS	Analyzing Crime in Berlin with Poisson Regressions
Shamima Nasrin Tumpa					Masters	Mathematics	CAS	Hybrid Deep Sequence Models for Forecasting and Real-Time Strategy Design in Cryptocurrency Markets
Nikolas Vassilev					Undergraduate	Physics	CAS	Behavior of 3D printed plastics in a Vacuum
Anna Donalies					Undergraduate	Sociology and Political Science	CAS	Unlocking the patterns: A mathematical exploration of the distribution of mathematical markers in U.S. historical marker databases
Addison Dorris	Lydia Fanning				Masters	Accounting	COB	The Effect of Federal Reserve Rates on Corporate Financial Leverage
Aidan Spires	Ashlyn Fults	Isabella Hale	Colton Berghoff		Undergraduate	Economics/Finance/Marketing	COB	Ollie's Effect: A Dive into Restraint Usage Post Visit

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Yulieth Mercado					Undergraduate	Chemical Engineering	COE	Multiscale Modeling of Ammonia cracking reaction: Investigating Solvent and Electric Field Effects
Easton Cash	Christopher Elson				Undergraduate	Chemical Engineering	COE	Wireless Sensors in the Soil
Christopher Elson	Cash Easton				Masters	Chemical Engineering	COE	Wireless Gas Sensors in Soil
Hoda Ross	Pedro Arce	Andrea Arce-Trigatti			Ph.D.	Chemical Engineering	COE	Enhancing Acetaminophen Degradation in Wastewater Using TiO <sub>2</sub> Thin-Film and Suspension Photocatalysis: AOP Enhancers, Photocatalytic Kinetic Modeling
Sahera Abumariam	Emilee Toombs	Shafieh Karami			Ph.D.	Chemical Engineering	COE	Quantitative and Qualitative Analysis of Microplastics in Cookeville Wastewater Treatment Plant
Md Saeid Ebna Maleque	Pramashis Kar	M. Shariful Islam			Masters	Civil and Environmental Engineering	COE	Characterization of Cost-Effective Ultra-High Performance Concrete for Patching and Structural Applications
Brendan Atarigiya					Ph.D.	Civil and Environmental Engineering	COE	Consolidation Behavior of Highly Overconsolidated Clays
Riley Grimaud	Jamie Boyd	Kashaina Nucum	Jared Scott		Undergraduate	Computer Science	COE	Predicting Length of Stay: A Machine Learning Approach to Hospital Resource Management
Sahaya Jestus Lazer					Masters	Computer Science	COE	Adversarial Robustness and Explainability of Machine Learning Models for Cybersecurity Applications
Maraz Mia					Ph.D.	Computer Science	COE	Characterizing Event-themed Malicious Campaigns Using Case Study on Russia-Ukraine War-Themed Websites
Brett Ballew	Benjamin Byerly				Undergraduate	Electrical and Computer Engineering	COE	Device Fingerprinting for Zero-Trust Continuous Authentication on Automotive Ethernet – Testbed Development

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Md.Ebrahim Khalilil					Masters	Electrical and Computer Engineering	COE	Performance Evaluation of LSTM and PINN for Internal Resistance Estimation in Lithium-Ion Batteries
Musayyibi Shuaibu					Ph.D.	Electrical and Computer Engineering	COE	Design of a Robust Observer for Sensorless Speed Control of Multi Three–Phase Synchronous Reluctance Motor Drives
Anson Fry					Undergraduate	Manufacturing and Engineering Technology	COE	Advancing Foundry Training Through Virtual Reality: A Low-Cost, Immersive Learning Environment
Mushfig Mahmudov					Masters	Manufacturing and Engineering Technology	COE	Development of Epoxy-Infused Composite Materials for Enhanced Isotropy and Watertightness in 3D-printed Structures
Vivekanand Naikwadi					Ph.D.	Manufacturing and Engineering Technology	COE	Enhanced Performance of Nanoparticle-Infused Polymers: Characterization, Post-Processing, and Vibration Analysis in Material Extrusion
Scott Schmitz					Undergraduate	Mechanical Engineering	COE	Finding Weld Path Geometries with Deep Learning
Md Azizul Islam					Masters	Mechanical Engineering	COE	Developing and Implementing a Camber Morphing Mechanism for UAVs
Rajendra Tadakhe					Ph.D.	Mechanical Engineering	COE	Characterization of the Functionalized Nano Diamonds Enhanced Phase Change Materials for Li-ion Battery Thermal Management
Spencer Jones	Neal Patel				Ph.D.	Mechanical Engineering	COE	A Radiative Cooling Review for Engineering Applications

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Hailey Pippin	Spencer Burritt	Colby Brewster			Undergraduate	Environmental Studies	CIS	Index of Biotic Inventory at Meadow Creek Park
Ademola Adeoye					Masters	Environmental Studies	CIS	Assessment of pesticide residue contamination in surface water and wastewater utilizing solid phase extraction and LC-MS/MS
Dushmantha N Koku Hannadige Abeysooriya	Ademola Adeoye				Ph.D.	Environmental Studies	CIS	A Comprehensive Adsorption Study of Simazine Interactions with a Range of Microplastics: Mechanisms and Environmental Implications
Javier Gonzalez					Ph.D.	Professional Studies	CIS	Social Media as a Predictor of Youth Mental Health: A Binary Logistic Regression Analysis
Kennady Campbell					Undergraduate	Counseling and Psychology	ED	Commitment Level as a Potential Moderator: Cross-sex Friendships Yielding Romantic Jealousy
Joshua Thomas					Undergraduate	Counseling and Psychology	ED	Envy’s Mediating Effects in the Relationship between Similarity and Performance
Bethany Gibson					Undergraduate	Curriculum and Instruction	ED	Exploring the Impact of a Structured Mentorship Model on Preservice Teacher Preparation in Rural Tennessee
McClane Oakley					Masters	Curriculum and Instruction	ED	Mad Topics in Education 2024: Building Partnerships With School Counselors to Support Teachers’ Mental Health Literacy

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Julia Grecol					Ph.D.	Curriculum and Instruction	ED	Student Perspectives on the Transition from Eighth- to Ninth-Grade Mathematics
Mallory Matthews					Ph.D.	Curriculum and Instruction	ED	Exploring Faculty Perspectives on AI Integration in Chemistry Education: Insights from a Qualitative Interview
Brianna Moore					Undergraduate	Exercise Science	ED	Can Genetic Testing Predict Sudden Cardiac Arrest In Young Athletes
Madelyn Bobo	Autumn Sells	Katie Maynard	Kendall Tate		Undergraduate	Nursing	WHSON	Evaluating the effectiveness of aromatherapy on pain management in hospitalized patients.
Robin Harvey	Emmie Speich	Sarah Capella	Chloe Wade	Alyssa Manis	Undergraduate	Nursing	WHSON	Comparison of types of analgesia used for IUD insertion
Rheagan Woodlee	Ryder Miller	Matthew O'Brien	Thomas Richardson		Undergraduate	Nursing	WHSON	Maternal and Neonatal outcomes for home births with a midwife versus hospitals with a provider