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Welcome to the University of Tennessee’s 26th annual Exhibition of Undergraduate Research and Creative Achievement (EURēCA)! This event honors original and creative works completed by undergraduate students as the highlight of Research Week events and celebrations. The Office of Undergraduate Research and Fellowships coordinates this unique competitive showcase to encourage, support, and reward undergraduate participation in the campus research enterprise. Participating in campus research empowers students to produce original work, develop and cultivate faculty mentoring relationships, enhance their resumes, become more competitive when applying to graduate school, and lay the groundwork for prestigious fellowships. EURēCA continues to expand its opportunities to participate. We are excited to host the in-person exhibit in addition to an online interactive database, and are proud of our students’ resilience during this time as they adjust to an ever-changing landscape. The diverse array of exhibits and performances highlights a broad range of endeavors and approaches, including both individual and collaborative efforts, as well as research produced both within and outside the classroom. Student research posters can be viewed in our online symposium at symposium.foragerone.com.

Awards are provided by colleges for college and divisional awards. The Office of Undergraduate Research and Fellowships recognizes student achievement across the colleges. This event would not be possible without the hard work of many individuals. We send a big thank you to our division representatives in organizing the participants from their areas and to our judges for all of their hard work in selecting this year’s winners.

We would especially like to thank each of you for taking the time to visit the event, engage with the students, and support the excellent undergraduate research and creative activity at the University of Tennessee, Knoxville. If you would like to become more involved in undergraduate research, I encourage you to take advantage of our enhanced institutional membership of the Council on Undergraduate Research as well as contact our office for information on how to get started.

Sincerely,

The University of Tennessee
Office of Undergraduate Research and Fellowships
EURēCA

Exhibition of Undergraduate Research & Creative Achievement

We are excited to bring back the in-person showcase of research while continuing to showcase research posters and video presentations online at symposium.foragerone.com. Although the global COVID-19 pandemic has presented a challenging landscape, our students continued their pursuit of knowledge and creative works, and we are proud of their resilience and flexibility. Their research covers many different disciplines, from music to mechanical engineering to stock market studies, and are categorized into the following judging divisions:

- College of Architecture and Design
- College of Architecture and Design, School of Design
- College of Arts and Sciences, Humanities
- College of Arts and Sciences, Natural Sciences
- College of Arts and Sciences, Social Sciences
- College of Arts and Sciences, Visual and Performing Arts
- College of Arts and Sciences, School of Music
- College of Education, Health, and Human Sciences
- College of Nursing
- College of Social Work
- Haslam College of Business
- Herbert College of Agriculture
- Tickle College of Engineering
# Exhibition of Undergraduate Research and Creative Achievement

## 2022 Division Representatives

<table>
<thead>
<tr>
<th>Division Representatives</th>
<th>College/Program</th>
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<tbody>
<tr>
<td>Larry McKay</td>
<td>College of Arts &amp; Sciences</td>
</tr>
<tr>
<td>Kristina McCue</td>
<td>College of Arts &amp; Sciences, Honors English 298</td>
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<tr>
<td>Hollie Raynor</td>
<td>College of Education, Health, and Human Sciences</td>
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<tr>
<td>Tyler Wall</td>
<td>College of Arts &amp; Sciences, Social Sciences</td>
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<td>Paul Lee</td>
<td>College of Arts &amp; Sciences, School of Art</td>
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<td>Kevin Kit</td>
<td>Tickle College of Engineering</td>
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<tr>
<td>Jeremiah Johnson</td>
<td>College of Arts &amp; Sciences, Natural Sciences</td>
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<tr>
<td>Tracy Moir-McClean</td>
<td>College of Architecture &amp; Design</td>
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<tr>
<td>Brent Lamons</td>
<td>Herbert College of Agriculture</td>
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<tr>
<td>Elias Fernandez</td>
<td>College of Arts &amp; Sciences, Natural Sciences</td>
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<tr>
<td>Cary Staples</td>
<td>College of Architecture &amp; Design, School of Design</td>
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<tr>
<td>Bill Nugent</td>
<td>College of Social Work</td>
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<td>Stefanie Ohnesorg</td>
<td>College of Arts &amp; Sciences, Humanities</td>
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<td>Suzie Allard</td>
<td>College of Communication and Information</td>
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<tr>
<td>Beth Meko</td>
<td>College of Communication and Information</td>
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<tr>
<td>Virginia Fowler</td>
<td>College of Nursing</td>
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<tr>
<td>Gina DiSalvo</td>
<td>College of Arts &amp; Sciences, Department of Theatre</td>
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<tr>
<td>Kathleen Thompson</td>
<td>College of Nursing</td>
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*Thank you to all of our division representatives who put in countless hours to make this event a success!*

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Office of Undergraduate Research and Fellowships

Andrew Seidler, Director  
Erin Darby, Faculty Director  
Laura DeFurio, Assistant Director  
Janna Caspersen, Assistant Director  
RK Fauth, Writing Specialist  
Julianna Tullos, Program Coordinator  
Mari LaCure, Administrative Specialist  
Sandra Wairimu, Graduate Assistant
Exhibition of Undergraduate Research and Creative Achievement
2022

Schedule of Events

Monday, April 25
4:30 p.m. – 5:00 p.m. EURēCA Kickoff:

Vice Provost for Student Success Amber Williams,
Provost John Zomchick,
and URF Staff
Pilot Flying J Ballroom

5:00 p.m. – 8:00 p.m. Exhibition opens for judging and viewing
Pilot Flying J Ballroom

Monday, May 2
5:30 p.m. - 7:00 p.m. EURēCA Awards Ceremony

EURēCA Division Representatives,
and URF Staff
Alumni Memorial Building

We invite you to view the research posters from this year’s event at symposium.foragerone.com
EURēCA 2022

College of Architecture and Design

#3 An Introduction to Representing Non-Euclidean Spaces
Presenter: Shakori Carpenter
Mentor: Tracy W. Moir-Mcclean

#4 Ford Automotive Experience Center
Presenters: Zachary Dulin, Nicholas van Son, Michael Jenks
Mentor: Hansjoerg Goeritz

#5 Cone’s Camp & Residency
Presenters: Carson Fischer, Hannah Lessem, Hector Carrera Miranda
Mentor: Katherine Ambroziak

#6 A Design Guideline for Humanity in Extreme Environments
Presenter: Erin Ganserer
Mentor: Milagros Zingoni

#7 Architectural Reuse and the Welfare Institutions of Late Antique Rome
Presenter: Zachary Graham
Mentor: Gregor Kalas

#8 The Biotic Machine: WHO Headquarters
Presenters: Sarina Hermanto, Elijah Hale, Rose Crawford
Mentor: Brian Ambroziak

#9 Breaking Barriers
Presenters: Lauren Johnson, Mary Catherine McGovern, Hannah Phillips
Mentor: Katherine Abrosziak

#10 Immigrants & Urbanism: Perspectives into Ethnic Enclave’s History - Chinatown
Presenter: Singwei Ling
Mentor: Hochung Kim

#11 Spatial Echelons: An Exposé on Power in the Built Environment
Presenter: Sarah Lloyd
Mentor: Jennifer Akerman

#12 Middlesboro Masterplan
Presenters: Gunner Martin, Logan Guidera, Emily Slappy, Kayla Moretti
Mentor: Katherine Ambroziak

#13 R.I.I.V.E.R.
Presenters: Joanna Martin, Jacob Rabideau, Olivia Campbell, Emily Swarzenberg
Mentor: Katherine Ambroziak

#14 Patchwork Colossus
Presenters: Briley Houston, Edyn McCarty, Tyler Trent
Mentors: Katherine Ambroziak, David Matthews

#15 The Appalachian Spark
Presenters: Porto Michel, Austyn balcom, Rebecca Neale, Madison Leeblick
Mentor: Katherine Ambroziak

#16 W.H.O. STATION
Presenters: Jakob Mikres, Kathleen Rice, Mary Powers, James Casey
Mentor: Brian Ambroziak

#17 Death Valley Motel
Presenter: Gina Nguyen
Mentor: Brian Ambroziak

#18 Spatial Ebonics: Redefining Identity through the exploration of Black Space and Architectural Language
Presenter: Gianna Noel
Mentor: Jennifer Akerman

#19 The Unfamiliar Familiar: An Exploration into the Architectural Uncanny
Presenter: Jessica Peters
Mentor: Jennifer Akerman

#20 What are the inhabitable characteristics of Prehistoric caves, dwellings, and settlements that can be applied to modern-day architectural design?
Presenter: Olivia Robbins
Mentor: Marie Saldaña

#21 Impact! An exploration of Urban Ecosystems
Presenter: Sophia Spock
Mentor: Jennifer Akerman

#22 Design-Build STEAM Trailer: Partnering with 6th Graders as Co-designers
Presenters: Elizabeth Tondreau, Jacob Abdu, Autumn Hanks, Emily Roach
Mentor: David Matthews

#23 Thickening the Membrane: Integrating lightweight sheet material and extruded plastics to refine modular additive construction techniques
Presenters: Nicholas Van Son, Matthew Baumgartner, Trey Robbins, Cayden Masters, Jonah Zahn, Stephen Kelley, Evan Filson
Mentor: Marshall Prado
| #24 Guerrilla Museology: By All Means Necessary  |
| Presenter: Brendan Wallace  |
| Mentor: Jennifer Akerman  |
| #25 Hill Hub: A Strategy for Supporting Appalachian Neighborhood Connectivity  |
| Presenters: Bradford Webster, Rebecca Mull, Mary Grace Shuttleworth, Emily Roach  |
| Mentor: Katherine Ambroziak  |
| #26 Mend: Redefining the Appalachian Holler Through Interconnecting Family and Place  |
| Presenters: Camryn Weekly, KariBeth Propes, Christina Ceniceros  |
| Mentors: David Matthews, Katherine Ambroziak  |
| #28 Bee Aware  |
| Presenters: Kennedy Davis, Ché Davis  |
| Mentor: Cary Staples  |

**College of Architecture and Design, School of Design**

| #29 The Future of Human Ecosystems  |
| Presenter: Gabriel Eckstein  |
| Mentor: Cary Staples  |
| #30 Coping  |
| Presenter: Leah Falin  |
| Mentors: Cary Staples, Susan Kalisz  |
| #31 Coping Companion: Anxiety Tracking App  |
| Presenter: Jua Im  |
| Mentor: Cary Staples  |

| #32 Eco-Chess  |
| Presenters: Victoria Wheelock, Jacqueline Juneau, Jacob Hirschmann  |
| Mentor: Cary Staples  |
| #33 Savor the Invasion  |
| Presenter: Kailey Kears  |
| Mentor: Cary Staples  |
| #34 Fantasy Flora Warfare  |
| Presenter: Howard Mosby  |
| Mentor: Cary Staples  |
| #35 Plant Smack  |
| Presenter: Abigail Ramirez  |
| Mentors: Dr. Susan Kalisz, Cary Staples  |
| #36 NUDNIK  |
| Presenter: Matt Rightsell  |
| Mentor: Cary Staples  |

| #37 Sundry  |
| Presenters: Julie Simpson, Henry Dunning, Avery Jones  |
| Mentor: Professor Cary Staples  |
| #38 Design in the World of VR Gaming  |
| Presenter: Casey Taylor  |
| Mentor: Cary Staples  |
| #39 Golden Garden  |
| Presenter: Ashleigh Williams  |
| Mentor: Cary Staples  |

**College of Arts and Sciences, Humanities**

| #40 Reproductive Rights, Racism, and Nationalism in Modern Israel  |
| Presenter: Inshira Bediako  |
| Mentor: Dr. Helene Sinnreich  |
| #41 Vikings, Anglo-Saxons, and England: The Germanic revival of the 9th, 10th, and 11th centuries  |
| Presenter: Amanda Boeing  |
| Mentor: Dr. Scott Mackenzie  |
| #42 Haredi (Ultra-Orthodox Jewish) Women’s Fine Art in Israel  |
| Presenter: Emily Constantin  |
| Mentor: Helene Sinnreich  |
| #43 ’Buy Jewish’ and ’Buy American’: Consumer Nationalism and Evangelical Holy Land Pilgrimage  |
| Presenter: Daniel Dassow  |
| Mentor: Dr. Helene Sinnreich  |
| #44 Peers, Professors, and Passersby: Antisemitism and Antizionism on College Campuses Across America  |
| Presenter: Leah Faupel  |
| Mentor: Helene Sinnreich  |
| #46 Zionism as a Religious and Cultural Movement  |
| Presenter: Chad Larkin  |
| Mentor: Helene Sinnreich  |
| #47 Contemporary Challenges and Changes to Traditional Models of Haredi Education  |
| Presenter: Elizabeth Plant  |
| Mentor: Helene Sinnreich  |
| #48 The Legality of and Reason for Balfour Declaration  |
| Presenter: Aaron Norton  |
| Mentor: Helene Sinnreich  |
| #49 Zionism’s Masada: The Myth versus the Archaeology  |
| Presenter: Madison Smith  |
| Mentor: Helene Sinnreich  |
#50 The Political Nature of Trade in the Israel-Palestine Conflict  
Presenter: Austin Tallent  
Mentor: Dr. Helene Sinnreich

#51 Prosodic Variation Between Autistic and Allistic Individuals By Gender  
Presenter: Isabelle Toth  
Mentor: Dr. Jessica Grieser

#52 Israel's Silent Holocaust Survivors  
Presenter: Jennifer Ware  
Mentor: Helene Sinnreich

#54 Cytoplasmic Chemoreceptors Modulate Chemotaxis Sensitivity in Azospirillum brasilense  
Presenter: Mustafa Abdulhussein  
Mentors: Elena Ganusova, Gladys Alexandre

#55 Investigating biofilm formation in a nematode-bacterium symbiosis  
Presenter: Omar Alani  
Mentor: Dr. Jenny Heppert

#56 Phylogenetic Analysis of Shifts in Sponge Skeletal Complexity  
Presenter: John Anderson  
Mentor: Brian O’Meara

#57 Abundance of Pollinators Associated with Plant Traits  
Presenter: Sydney Baldwin  
Mentor: Laura Russo

#58 Post-fire Endophyte Succession in Table Mountain Pines  
Presenter: Findlay Black  
Mentor: Dr. Karen Hughes

#59 Synthesis of Symmetric Water Soluble N-Heterocyclic Carbene Ligands for AuNPs  
Presenter: Rowan Borsari  
Mentor: Dr. David Jenkins

#60 Deep Learning algorithms aid in identifying movement kinematics important for pup retrieval behavior  
Presenter: Benjamin Bridges  
Mentor: Dr. Keerthi Krishnan

#61 Synthesis of C2-symmetric Chiral Diimidazoles for NHC Macrocycle Construction for Catalytic Applications  
Presenter: Henry Brothers  
Mentor: Dr. David Jenkins

#61 Comparison of Methane and Sulfur Cycling in Cape Lookout Bight and White Oak River Estuary  
Presenter: Gage Coon  
Mentor: Karen G. Lloyd

#62 Exploring Noncovalent Interactions of Molecular Models of Van der Waals Heterostructures  
Presenter: Carmen Brown  
Mentor: Konstantinos D. Vogiatzis

#63 The characterization of synchronous two-state probabilistic cellular automata  
Presenter: Garrett Byrd  
Mentor: Dr. Vitaly Ganusov

#65 See “Agricultural Land Use Affects the Body Size of Some Bees” on page 24, column 3

#67 Raman Spectroscopic Characterization of UV Degraded Emulsion Lotions with and without Protective Additives  
Presenter: Isabelle Dancer  
Mentor: Bhavya Sharma

#68 Tracking of genetically modified bacterial symbiont from the pea aphid to post-infection fungal spores  
Presenter: Yazmin Deanda Acosta  
Mentor: Benjamin J. Parker

#69 Investigating Changes in Canopy Cover and Tree Community Composition in High Elevation Ecosystems in the Great Smoky Mountains National Park  
Presenter: Susanna Diamond  
Mentor: Jessica M Budke

#70 Effect of Ethylene in Biofilm Formation in Azospirillum brasilense  
Presenter: Lauren Donnelly  
Mentor: Brad Binder

#71 Plasmid Stability in Sulfitobacter pontiacus CB-D  
Presenter: Hannah Edwards  
Mentor: Alison Buchan

#72 Effects of herbivory and increased temperatures on photosynthetic rates of Viola rostrata  
Presenter: Drew Freshour  
Mentor: Dr. Susan Kalisz
#73 Isolated Microbes from a Briny Antarctic Ocean Worlds Analog
Presenter: Kristen Holbrook
Mentor: Dr. Jill Mikucki

#74 Experimental Evidence For Liquid Iron Alloy Flotation On Silicate Melt
Presenter: Noah Hooper
Mentor: Nick Dygert

#75 A Mathematical Model of Biomolecular Treadmilling Dynamics
Presenter: Victoria Howard
Mentor: Ioannis Sgouralis

#76 Fast and comprehensive analysis of perineuronal net expression across the whole brain
Presenters: Sami Isaac, Miranda Blevins, Sarah Perez
Mentor: Keerthi Krishnan, PhD

#78 Drug Discovery for Polycystic Kidney Disease
Presenter: Austin Jernigan
Mentor: Dr. Micholas Smith

#79 Reducing Perineuronal Nets in Primary Somatosensory Cortex Rescues Pup Retrieval Behavior in Female Mouse Model of Rett Syndrome
Presenter: Beyza Kartal
Mentor: Keerthi Krishnan

#80 Molten Ferrofluid
Presenters: Ellie Kim, Dianna Nguyen
Mentor: Sheng Dai

#81 Quantifying Movement Kinetics of Plasmodium Sporozoites in Skin
Presenters: Anderson King, Kailynn Deck
Mentor: Vitaly Ganusov

#82 Exploring the Role Ethylene has on Growth and Metabolism in Azospirillum brasilense
Presenter: Josie King
Mentor: Scott Carlew

#83 The Future of Forest Wildflowers: How Climate Warming and Herbivory Affect Growth and Reproduction of the Long-Spurred Violet
Presenter: Nicholas Koziol
Mentor: Susan Kalisz

#84 Plant-neighbor interactions of a native goldenrod impact richness and composition of pollinator communities
Presenter: Emma Kruse
Mentor: Jennifer Schweitzer

#85 Impact of Conformational Restriction on Tetraazacyclododecane Ligands for Atom Transfer Radical Polymerization
Presenter: Nick Legaux
Mentor: Brian Long

#86 The Untold Story of Mouse Insulin 1 & Insulin 2
Presenter: Connor Long
Mentor: Thanh Do

#87 Identifying Novel Genes Regulating Leaf Initiation and Meristem Size Through an Enhancer Genetic Screen
Presenter: Bethany Lunsford
Mentor: Dr. Elena Shpak

#88 Within-Host Mathematical Modeling of Influenza A and B Viral Dynamics During Treatment
Presenter: John Maddox
Mentor: Dr. Vitaly Ganusov

#89 Age dependent tactile sensory deficits in a female mouse model of Rett syndrome
Presenter: Alexandra McBryar
Mentor: Keerthi Krishnan

#90 Teamwork makes infections work: Investigating different models of viral cooperativity
Presenter: Joshua Miller
Mentor: Vitaly V. Ganusov

#92 Extracellular enzyme activities and mineralogy of thawing permafrost soils near Ny Alesund, Svalbard
Presenter: Cheyenne Mireles
Mentor: Andrew Steen

#93 Examining Gut-Brain Axis Interactions Through Entomopathogenic Nematodes and Their Bacterial Endosymbionts
Presenter: Tyler Myers
Mentor: Dr. Heidi Goodrich-Blair

#94 Single-Molecule Studies on DNA Bending by Transcription Factor Protein Sox2
Presenter: Chandni Naidoo
Mentor: Dr. Rajan Lamichhane

#95 Fungal communities may mediate aboveground biomass in increasingly diverse plant communities
Presenter: Alivia Nytko
Mentor: Dr. Jen Schweitzer
#96 Investigating evolutionary relationships between moss species in the genus Fissidens using DNA sequence data from herbarium specimens
Presenter: Amy Okafor
Mentor: Dr. Jessica M. Budke

#97 See "Substance Use is More than a Test" on page 10, column 3

#98 Activated CD8 T cells perform persistent random walks and not Levy walks in the brain
Presenter: Dhruv Patel
Mentor: Vitaly Ganusov

#99 Evolution of bud break phenology in Populus angustifolia driven by climatic variation
Presenter: Katherine Reed
Mentor: Jennifer Schweitzer

#100 Rapid and Improved Surface Passivation Method for Single-Molecule TIRF Experiments
Presenter: Anthony Rios
Mentor: Rajan Lamichhane

#101 Deep Tissue Detection of N-Heterocyclic Carbene Gold Nanoparticle Probes With SESORS
Presenters: Nicholas Robins, QUen Deckbar, Tarek Atyia, Lillian Mooney
Mentor: Bhavya Sharma

#102 The Effect of Meteoric Fluids on Deformation in the Cordillera Blanca Shear Zone
Presenter: Lena Schwebs
Mentor: Micah Jessup

#103 Investigation into the Identity and Function of Ruegeria pomeroyi DSS-3 Pigment Production
Presenter: Taylor Smith
Mentor: Alison Buchan

#104 Encoding Angular Information in Persistent Images for Machine Learning Algorithms
Presenter: Jacob Steeley
Mentor: Dr. Konstantinos D. Vogiatzis

#105 Identification of Optimal Affinity Tag for C. albicans Cho1 Protein Purification
Presenter: Jawhar Syed
Mentor: Todd Reynolds

#106 Genetic Analysis of a Sequence Motif in DNA Elimination
Presenter: Vincent Terta
Mentor: Jianbin Wang

#107 Exploring Mu-Opioid Receptor Dynamics Using Single-Molecule Fluorescence
Presenter: Raegan Van Wirt
Mentor: Dr. Rajan Lamichhane

#108 Biochemical role of the plant GCN2-eIF2α module in mRNA ribonucleoprotein particle homeostasis
Presenter: Lindsey Young
Mentor: Albrecht von Arnim

College of Arts and Sciences, Social Sciences

#97 Substance Use is More than a Test
Presenter: Madison Owens
Mentor: Erin Darby

#109 Does mixed-species flock size and composition influence foraging and calling under risky contexts?
Presenter: Colton Adams
Mentor: Todd Freeberg

#110 Influence of Speaker Type and Group Child Care Experience on Word Learning in Toddlers
Presenters: Reva Bagi, Makenzie Sims, Noah Bosilca, Sadira Austin
Mentors: Jessica Hay, Daniela Santos Oliveira

#111 Interrupting Dynamics: How the Supreme Court’s Switch to Teleconferences During COVID Altered Patterns of Interruptions
Presenter: Gavin Buehring
Mentor: Dr. Kirsten Widner

Presenter: Keri Burge
Mentor: Anneke Janzen

#113 The Impact of Inattention and Working Memory Difficulties on Children’s Social Functioning and Friendships
Presenter: Alyssa Cooley
Mentor: Jennifer Bolden Bush
#114 Connection between Sleeping Habits and Academic Success in Times of a Global Pandemic
Presenter: Zachary Coover
Mentor: Dr. Lance Dean

#115 An Assessment of the Dynamics of Social Play in Syrian Hamsters
Presenter: Leila Hennon
Mentor: Matthew Cooper

#116 The Archaeology of 17th-century Conflicts along the Potomac River: A Case Study from Coan Hall
Presenter: Axel Huichapa
Mentor: Dr. Barbara J. Heath

#117 Alcohol use moderates the association between coercive sexting and intimate partner violence perpetration
Presenter: Mary Jensen
Mentors: Dr. Gregory Stuart, Alisa Garner

#118 The Effects of Caffeine Usage at Different Times of the Day on Sleep Quality
Presenters: Alysia Kang, Jacqueline Gonzalez, Andrea Mcdowell
Mentor: Hollie Pellosmaa

#119 Scientific Patterns of Behavior and Neural Activity in Female Syrian Hamsters Following a Stressful Event
Presenter: Jessica Kearney
Mentor: Matthew Cooper

#121 A Chinese Olive Branch to the West: The Promising Tropical Island, Hainan
Presenter: Pelbo Li
Mentor: Dr. Wonjae Hwang

#122 The Development of Tone Discrimination in Infancy: An online adaptation
Presenters: Ashlynn Malone, Sophia Diorio, Chloe Fleenor, Alyssa Lee, Juliana White
Mentor: Jessica Hay

#123 Neural Activation During Semantic Category Learning: An fNIRS Study of Language Lateralization in Children and Adults
Presenter: Alexis McCraw
Mentor: Aaron Buss

#124 Summary statistics for simultaneous tornado and flash flood (TORFF) warnings to analyze their general behavior and dynamics
Presenter: Zachary Medley
Mentor: Dr. Kelsey Ellis

#125 Investigation of the Ectocranial Squamosal Suture to Estimate Age-at-Death
Presenter: Navit Nachmias
Mentor: Dr. Joanne Devlin

#126 Exploring the Effect of Alcohol Use and Benevolent Childhood Experiences on the Relation Between Borderline Personality Disorder Symptoms and Intimate Partner Violence Perpetration
Presenter: Krissy Paradissis
Mentor: Dr. Gregory Stuart

#127 Who Sets the Human Rights Agenda?
Presenter: Nolan Li
Mentor: Dr. Jon Ring

#128 Black Feminist History Timeline
Presenter: Isabella Reed
Mentor: Dr. Danielle Procope Bell

#129 A Neurophysiological Investigation of Listening Effort in Normal Hearing Adults using fNIRS and Pupillometry
Presenter: Jubin Son
Mentor: Caglar Tas

#130 “It feels like nobody’s watching me!” A Case Study of Readers’ Theatre with African Immigrant and Refugee Students
Presenter: Denée Stewart Freeman
Mentor: Deborah Welsh

#131 What are the Effects of Gonadal Steroid Hormones on the Presence of Perineuronal Nets in the Ventromedial Hypothalamus in c/57 Mice?
Presenters: Courtney Tolbert, Micah Igot
Mentor: Kalynn Schulz

College of Arts and Sciences, Visual and Performing Arts/Music

#132 Callaway: Examining the Present with the Past
Presenter: Emily Pope
Mentor: Dr. Gina Di Salvo
#133 An analysis on the compositional techniques of Donkey Kong Country and Donkey Kong 64
Presenter: Garrett Byrd
Mentor: Dr. Brendan McConville

#134 Notes About Nothing: Seinfeld and the End of the Sitcom Theme Song
Presenter: Alan Cook
Mentor: Dr. Nathan Fleshner

#135 Hydration and Health: College Student Behaviors and Priorities
Presenter: Jacob Altrock
Mentor: Dr. Sarah Colby

#136 Navigating Hidden Hunger: An Exploratory Analysis of the Lived Experience of Food Insecurity Among College Students
Presenters: Ashlyn Anderson, Jacqui Lazarus
Mentor: Betsy Anderson Steeves

#137 Food acquisition behavior for those at-risk for food insecurity at the beginning of the COVID-19 pandemic
Presenter: Sydney Bernard
Mentor: Dr. Sarah Colby

#138 Demographic characteristics of women reporting higher stress at the beginning of the COVID-19 pandemic.
Presenter: Hanna Boshnag
Mentor: Dr. Sarah Colby

#139 BetterBus
Presenters: Karrie Bowen, James Tatum, Laura Gulledge
Mentor: Yolanda Kirkpatrick

#140 Genetic Ablation and Pharmacological Inhibition of Soluble EpoxideHydrolase in the \( \beta \)-Cells Enhance Glucose-Stimulated Insulin Secretion
Presenters: Cole Bozeman, Kerrigan Magnus
Mentor: Ahmed Bettaieb

#141 Moms and Vaccines: A Cross-Sectional Survey Assessing COVID-19 Vaccine Acceptance During Pregnancy
Presenter: Sara Burnette
Mentor: Samantha Ehrlich

#142 Regulation of thermogenic adipogenesis via the PKM2/\( \beta \)-catenin axis
Presenter: Jenna Demeter
Mentor: Ahmed Bettaieb

#143 Reduce, Reuse, Recreation: Redesigning Local Playgrounds for a Sustainable Future
Presenters: Courtney Drennen, Daniel Blackburn, Austin Marsh
Mentor: Yolanda Kirkpatrick

#144 Ginsenoside-Rc Alleviates Palmitate-Induced Cell Injury in Primary Cochlear Cells
Presenter: Nick Gill
Mentor: Dr. Ahmed Bettaieb

#145 Who was more likely to become less active at the beginning of COVID-19?
Presenter: Jacob Hahn
Mentor: Dr. Sarah Colby

#146 Demographic Characteristics of Individuals Experiencing Changes in Stress and Boredom Eating Habits During the COVID-19 Pandemic
Presenter: Rhea Joshi
Mentor: Sarah Colby

#147 W3Design Homes
Presenters: Janyia Joyner, Sarah Jennings, Benjamin Bridges
Mentor: Yolanda Kirkpatrick

#148 A Case Study: acute continuous interstitial glucose measurements during various types, intensities, and durations of exercise in a Type I diabetic.
Presenter: Valeria Lozano
Mentor: Jessica Kutz Fleming

#149 Novel Insights into the Role of Soluble Epoxide Hydrolase in Adipogenesis
Presenters: Caroline Macfee, Eduardo Villalobos
Mentor: Ahmed Bettaieb

#150 Hazing and Leadership: Do student leaders have the ability to break the cycle?
Presenter: Dariana Martre
Mentor: James Williams
#151 Supporting Science Teacher Learning through Capturing and Selecting Video of One’s Own Classroom
Presenter: Brandon Meadows
Mentor: Dr. Elizabeth Dyer

#152 Merchandising Strategies for the Big Orange Pantry
Presenter: Madison Morgan
Mentors: Dr. Michelle Childs, Dr. Christopher Sneed

#153 Play and the Built Environment
Presenter: Hannah Morris
Mentors: Dr. Margaret Quinn, Michael Camponovo

#154 Vaccination Behavior and Beliefs in Individuals with Pregnancy Hyperglycemia
Presenter: Emily Olatt
Mentor: Samantha Ehrlich

#155 Adults with Chronic Disease and Older Adults, Regardless of Chronic Disease Status had Increased Stress and Worry at the Beginning of COVID
Presenter: Chloe Potter
Mentor: Sarah Colby

#156 Impact and Implementation of a Structured Phonological Awareness Intervention for Children who Benefit from AAC: Picture Validation Test
Presenter: Isabelle Toth
Mentor: Dr. Jillian McCarthy

#157 The Relationship between Working Memory and Speech in Noise
Presenter: Alexis Williams
Mentor: Dr. Eun Jin Paek

#158 A Systematic Review of Sexual Consent Education Research
Presenter: Nikki Williams
Mentor: Spencer Olmstead, Ph.D.

#159 Redesigning the Outdoor Water Fountain Infrastructure on UTK’s Campus to make water access more equitable.
Presenters: Max Workman, Reese Taylor, Patsy Donahue
Mentor: Yolanda Kirkpatrick

#160 Effects of a 17,18-EEQ stable analog on murine brown adipocyte differentiation
Presenter: Haoying Wu
Mentor: Ling Zhao

#162 Effects of Increased Companionship on Decreasing Loneliness and Depression in the Elderly Population
Presenters: Karlee Anderson, Crimson Sanders
Mentor: Gail A. Griffith, MSN, RN, CHSE

#163 The effects of age, gender, race, and socioeconomic status on Covid-19 vaccine hesitancy in adults in the United States: A review of the literature
Presenter: Noah Anderson
Mentor: Dr. Koijma

#164 Girl Scouts of the Southern Appalachians Engagement through COVID-19
Presenters: Abigail Baker, Ellie Williams, Kaitlyn Weeden
Mentor: Cindi Adams

#165 Effect of Diet Modifications on ADHD Behaviors in Children and Adolescents
Presenters: Annalee Baldwin, Chloe Siscoe, Jaiden Kraft, Abigail Taylor
Mentor: Katherine Morgan

#166 The Effects of Consistent Exercise on the Mental Health of Adolescents
Presenters: Laurel Barrentine, Lauren Irvine
Mentor: Frank Thomasson
#167 Maternal Prenatal Acetaminophen Use and Risk for ADHD in Children
Presenters: Bailee Bentley, Shelby Turek, Lizzie Pereira, Shelby Stevens
Mentor: Amy Alspaugh

#168 The Effects of Hepatitis C Education on the Health Literacy and Maintenance Levels of Knox County Harm Reduction Participants
Presenter: Vanessa Betancourt
Mentor: Maria Hurt

#170 The Effects of Caffeine on Adolescents with Depressive Symptoms
Presenters: Sydney Birchfield, Julia Horras, Sophia Clark, Sara Leese
Mentor: Cristina Barroso

#172 Effect of Patient Play Board Use for Two Months on ED Volunteer PlayInterventions in Behavioral Health Patients at East Tennessee Children’s Hospital
Presenters: Mary Bosson, Sarah Hodges
Mentor: Melanie Mixon

#173 Increasing Career Planning Confidence in Low-Income School-Aged Kids
Presenters: Allie Brown, Haley Benson
Mentor: Deonna Anderson-Washington, MSN-Ed, RN

#174 The Impact of Mental Health Screenings in Primary Care Settings on Adolescent Suicide Rates
Presenters: Isabella Brown, Emma Joseph, Rebecca Fowver, Sydney Born
Mentor: Cristina Barroso

#175 The Effect of Exercise on Cognitive Function in Adults with Mild Cognitive Impairment or Dementia: A Literature Review
Presenters: Claire Phillips, Sarah Bryant, Hannah Kirby, Grace Gardener
Mentor: Dr. Dominique Bulgin

#176 Effects of Health Disparities on Mental Health in School Aged Children
Presenter: Vada Butler
Mentor: Kathleen Thompson

#177 Strategies for the College-aged Population to Reduce Risk Factors of Alzheimer’s disease
Presenter: Krista Cameron
Mentor: Kathleen Thompson
PhD, RN

#178 Sexual Assault Education
Presenters: Alexis Campbell, Phoebe Grossman
Mentor: Sara Borges

#179 Effects of Art Therapy on Anxiety Levels of Children
Presenter: Kaitlyn Carmichael
Mentor: Melanie Mixon

#180 Evaluating the Positive Effects of Animal Assisted Therapy on Symptom Management in Children Diagnosed with Cancer
Presenters: Abby Read, Amelia Cassidy, Anna Lynne Brandon, Kieran Elliott
Mentor: Dr. Dominique Bulgin

#181 The Impact that Mentoring has on School Attendance for Children Ages 4-17 Years Old in the Amachi Program
Presenters: Madison Cavalli, Shelby Moore
Mentor: Frank Thomasson

#182 Increase the Awareness of Resources for Food Insecure Students
Presenters: Mackenzie Cavnar, Trang Nguyen
Mentor: Maria Hurt, DNP, MSN-Ed. FNP-C

#183 Cognitive Behavioral Therapy Interventions and the Increase in Mental Health among Adolescent LGBTQ+ Individuals: A Literature Review
Presenters: Seri Chang, Leanna Sanders, Payton Fielder, Nolan Pearson
Mentor: Amy Alspaugh

#184 Self-Testing as an Evidence Based Option to Increase Access to STI Testing for Men Who Have Sex with Men - A Review of the Literature
Presenters: Zoe Childs, Kelsey Conboy, Sophie Morrow, Jane Hughes, Madison Houston
Mentor: Amy Alspaugh, PhD, CNM
#185 Is there a correlation between socioeconomic factors and and pain levels in rural Appalachia?
Presenters: Megha Chitturi, Carter Satterfield
Mentor: Patricia N.E. Roberson PhD

#186 Assessing the Effects of a Vaccine Information Sheet on COVID-19 Vaccine Hesitancy at Cherokee Health Systems in East Tennessee’s Rural Primary Care
Presenters: Linus Cho, Emily Dermis, Lauren Caradine, Macy Feldman, Katelyn McBride, Ana Bridgeman, Tiya Ruffin, Gavin Blakely
Mentor: Professor Chris Brown

#187 The Effects of Hand Washing Education in Elementary Students in Decreasing Illness
Presenter: Yoo Jin Cho
Mentor: DeOnna Anderson-Washington, MSN-Ed, RN

#188 Effect of Social Media Outreach on Health Literacy of Knox County Residents
Presenter: Yeonjeong Choi
Mentor: Cindi Adams MSN, PMHNP-BC

#189 The effects of social media on increasing awareness for nonprofit organizations
Presenters: Jaclyn Clark, Josie Parsons
Mentor: Amanda Harper, DNP, RN, CPNP

#190 The effects of social media breaks on adolescent’s mental health
Presenters: Julia Clark, Lauren Hennigar
Mentor: Marcia McAllister

#192 The Effects of Daily Exercise on Self-Esteem in Students
Presenters: Carson Clinard Grisham, Holly Del Vecchio
Mentor: Travis Rhoten

#193 The Socio-Economic Relationship to Oral Health: Addressing Oral Health at Thrive
Presenters: Lillie Cole, Merelove Myers, Anna Klepzig, Holly McComas
Mentor: Shelia Swift

#194 An Inconclusive Study of the Effects of the HPV-Vaccine (Gardasil”) on the Development of HPV-Related Cancers and the Efficacy of HPV Education on Vaccination Rates for Males Ages 11-18
Presenters: Amanda Colla, Natalie Bueche, Emily Woods, Stella Weinkauf
Mentor: Green-Laughlin

#195 The Relationship between Attending Social Activities at Maud Booth and the Incidence of Depression Among Maud Booth Residents
Presenter: Rachel Colon
Mentor: April Bryant

#196 Conducting a Needs Assessment and Implementing an Educational Intervention of UT Students and Staff on the American Red Cross
Presenters: Emily Considine, Alex Gerkin
Mentor: Dr. Kathleen Thompson

#197 Prophylactic Medications in Reducing Sexually-Transmitted Infections in Sexual Assault Victims
Presenters: Chelsea Consolini, Taylor Carter
Mentor: Edelyn Bishop

#198 Effects of Community Building Activities on the Self-Reported Depression and Mental Health of the Residents at the YWCA in Knoxville
Presenters: Marilee Cowden, Sarah Regener
Mentor: Gail Griffith

#199 The Effects of Animal Assisted Therapy on the Psychological Health of Older Adults with Dementia - A review of the literature
Presenter: Natasha Coy
Mentor: Dominique Bulgin

#200 The Relationship Between Guided Reading Interventions and Elementary Students’ Reading Levels
Presenter: Casey Crownover
Mentor: Vikki Meloy
#201 The Effects of a Physical Health Class on Health Literacy in the Homeless Population
Presenter: Russell Cunningham
Mentor: Dr. Freddie Kojima

#202 Use of Behavioral Chart to Improve Behavior in Preschool Age Children
Presenter: Bryce Cutting
Mentor: Kimberly Brown DNP, MSN-Ed

#203 The Relationship Between Vaccine Hesitancy Amongst Parents and the Risk of Increased Childhood Illness: A Literature Review
Presenters: Karsen Daniel, Maggie Martin, Nicole Cohen, Isabela Gebhardt
Mentor: Cristina Barroso

#205 The Impact of In-School Prevention Programs on Suicidal Behavior in Teens
Presenters: Owen Dittes, Samantha Burress, Jamison Gould, Honor Worthy
Mentor: Dominique Bulgin

#206 The Epidemic Lost in the Pandemic: Effects of Community Education on Opioid Epidemic Awareness and Prevention Involvement in Knoxville
Presenters: Jenna Doak, Michael Darby
Mentor: Edelyn Bishop

#207 Academic Service Learning Project for the College of Nursing
Presenters: Madolyn Donehoo, Emma Clifton
Mentor: Marcia McAllister

#208 The Effect of a Balanced Macronutrient Intake on the Mental Health Status of Children and Adolescents: A Review of the Literature.
Presenters: Savannah Ashley Eaton, Jessie Bonnell, Abigail Mullinix, Katherine Cimino
Mentor: Cristina Barroso

#209 Preventing Adolescent Pregnancy and Enhancing Adolescent Sexual Health
Presenters: Rachel McAllister, Alicia D’Amore, Rebecca Elias, Katie Meyer
Mentor: Knar Sagherian, PhD, RN

#210 Investigation of Parental Influence on Adolescent Vaccination Rates in the United States: A Literature Review
Presenters: Josephine Ellis, Victoria Wilson, Lily Setter, Brenna Etherton
Mentor: Cristina Barroso

#211 The Effects of Tablets and Media on Helping With Isolation and Depression Levels in the Elderly During the Covid Pandemic
Presenter: Jazmine Ervin
Mentor: Gail Griffith

#212 Do Healthy Diets Play a Role in Decreasing Symptoms of Depression in College Students?
Presenters: Hannah Esguerra, Laurnea Marks, Kaitlyn Biggs, Daniella Tate
Mentor: Dr. Katherine Morgan

#213 How can the implementation of sex education in rural communities be used to decrease unplanned pregnancy among teenagers?
Presenters: Jaylah Espy, Hailey Benner, Gabriella Huzyk, Jamie Jordahl
Mentor: Freddie Kojima

#214 How Animal Therapy Affects Psychological Health in Patients with Dementia in the United States
Presenters: Taylor Etheridge, Anna Dunham, Marina Morra, Alex Colburn
Mentor: Karen Carver

#215 The Effects of Clonidine on Outcomes in Patients with Neonatal Abstinence Syndrome
Presenter: Claire Flatt
Mentor: Jennifer Tourville, DNP

#216 The Increased Risk of Developing Metabolic Syndrome in Night Shift Nurses: A Review of the Literature
Presenters: Allison Flynn, Lindsey Dickman, Summer Nesto, Elizabeth Ellis
Mentor: Knar Sagherian

#217 The Effect of Online Learning on Increasing Understanding in The Dream Connection
Presenter: Juliana Foreman
Mentor: Amanda Harper
#218 Improving Planning and Scheduling Strategies to Better Involve Interns Within Knoxville Fellowship of Christian Athletes
Presenter: Ashley Foster
Mentor: Travis Rhoten

#219 The Relationship Between Mentorship and Mental Health of Adolescents
Presenters: Melissa Freifelder, Elizabeth Roddy, Sarah Mccloud
Mentor: Frank Thomasson

#220 Effects of Delayed First Baths on Thermoregulation, Exclusive Breastfeeding Rates, and Glucose Stability in Newborns
Presenters: Victoria Furka, Marya Hubbard, Coutney Bailey, Morgan Amick
Mentor: Dr. Amy Alspaugh

#221 The Effects of a Brief Educational Poster on the Health Literacy of People 'Under the Bridge'
Presenter: Stacie Gaddis
Mentor: Maria Hurt, DNP, MSN-Edu, APRN, FNP-C

#222 The Role of Birth Plans in the American Perinatal Experience
Presenter: Juli Anna Gibson
Mentor: April Bryant, RN, MSN, APRN, FNP-C

#223 The Positive Effects of Delayed First Bath on Glycemic Control, Temperature Regulation, and Breastfeeding among Neonates
Presenters: Hannah Goralnick, Madison Crabtree, Jasmine Russell, Lucy Gilbert
Mentor: Dominique Bulgin

#224 Effect of Aerobic and Physical Exercise on Reducing Symptoms Associated with Cognitive Function in Adults with Mild Cognitive Impairment or Dementia
Presenters: Samuel Greeley, Joshua Porter, Steven LeBreux, Michael Smith
Mentor: Dylindia Green-Laughlin

#225 The Impact of the Implementation of a Nutrition Education Program on the Nutritional Knowledge and Preferences of Knoxville Inner City Kids Outreach Participants
Presenter: Madeline Grimes
Mentor: DeOnna Anderson-Washington

#226 The Positive Correlation of the COVID-19 Pandemic and Anxiety and Depression Amongst Adolescents Aged 12-18 Years Old
Presenters: Ann Ragan Grissom, Nealy Anderson, Sophie Hitchens, Sarah Johnson
Mentor: Dr. Crawford

#227 The Intersection of Metabolomics and Potential Biomarkers of Parkinson’s Disease: A Review of Literature
Presenter: Katherine Havranek
Mentor: Katherine Morgan

#228 Effects of Blowing Bubbles on Fear and Pain from Pediatric Outpatient Injections
Presenter: Lindsey Hedrick
Mentors: Dr. Robert Cornette Dr. Kathleen Thompson

#229 GC-MS Analysis of Firefighter Urine to Identify Potential Carcinogenic Compounds
Presenter: Evan Heldt
Mentor: Ji Youn Yoo

#230 Socioeconomic Impact to Perceived Social Support in Breast Cancer Patients Residing in Rural versus Urban Communities
Presenter: Amelia Helms
Mentor: Dr. Patricia Roberson

#231 Examining Child-Life Volunteer Use of Communication Boards with Spanish-Speaking Patients
Presenter: Hallie Henegar, Katie Pendergast
Mentor: Melanie Mixon

#232 ASL Project: Effectiveness of reading logs on improving reading time and quality over a month
Presenter: Logan Hinch
Mentor: Sara Borges
#233 Increasing Incidence of Depression in Adolescents Due to COVID-19 Pandemic Crisis and the Impact on Academic Performance: A Literature Review
Presenters: Devin Hinson, Anber Akmaniligil, Sydney Stapleton, Sara Hunley
Mentor: Dr. Kathryn Crawford

#234 The Use of Educational Handouts to Increase Parental Knowledge of Infant Nutrition Between Ages 6-12 Months
Presenters: Caitlyn Hintz, Nicole Wigent
Mentor: Melissa Hessock

#235 The Effects of an Educational COVID-19 Protection Program on the Implementation of Safety Measures amongst Primary Care Nurses
Presenter: Megan Hoffman
Mentor: Dr. Laurie Acred-Natelson

#236 The Effect of Animal Assisted Therapy on Decreasing Physiological Outcomes to Improve Pain and Stress Levels in Hospitalized Pediatric Patients: A Literature Review
Presenters: Alayna Holbert, Ashleigh Harrison, Shelby Campbell, Megan Lawless
Mentor: Amy Alspaugh

#238 The Effect of Reading on Students’ Test Scores at Emerald Youth Foundation
Presenter: Sydney Horner
Mentor: Tammy Bullard

#239 The Effect of Hand Hygiene in children for Underserved Communities: A Literature Review
Presenter: Christopher Hough
Mentor: DeOnna Anderson-Washington MSN-Ed, RN

#240 The Application of Communication Platforms to Improve Communication and Organization in Businesses and Non-Profit Organizations
Presenters: Emma House, Maggie Piazza
Mentor: Amanda Harper, DNP, RN, CPNP

#241 The Effects of Art Therapy on Aggression Related Write Ups Among Children at Boys and Girls Club
Presenters: Amanda Howard, Catie Heilman
Mentor: Marcia McAllister

#242 Blood-Injection-Injury Phobia: A Study to Identify the Demographics of Adults with this Phobia
Presenter: Aliza Huff
Mentor: Dr. Shelia Swift

#243 The Impact of Patient Anxiety on Caregiver Anxiety in Breast Cancer Patients in Rural Appalachia
Presenters: Merrell Irion, Emmanuel Quezada
Mentor: Dr. Patricia N.E. Roberson

#244 How Animal Assisted Therapy Affects Psychological Health in Older Adults with Dementia: A Review of the Literature
Presenters: Taylor Irwin, Faith Whitt, Ellie Streeter, Charley Sullivan
Mentor: Kathryn Crawford

#245 The Effects of Communication on Families with Children who Suffer from Life-threatening Disease
Presenter: Brooke Jackson
Mentor: Dr. Amanda Harper

#246 The Effects of Moral Reconciliation Theory (MRT) Therapy on Self-Esteem and Resilience in Incarcerated Sexual Assault Survivors
Presenter: Drew Janes
Mentors: Kathleen Thompson, Amanda Harper

#247 The Positive Effects of Reading with Students of the Joy Baker Program
Presenter: Jessica Jones
Mentor: n/a

#248 One-On-One Conversations About Coping Mechanisms and Their Effect on Mental Health: A Study on Children and Adolescents
Presenters: Christine Karklins, Rebekah Brandon
Mentor: Vikki Meloy
#249 Access to Substance Abuse Treatment and Rates of Substance Abuse in Rural Communities Within the United States
Presenters: Eva Karnowski, Courtney Miller, Maren Stevens, Elly Stanga
Mentor: Freddie Kojima

#250 The Usefulness of a Quick Tips Profile Card in Healthcare Visits for Intellectually and Developmentally Disabled Patients Caregivers
Presenter: Sarah Keller
Mentor: Kathleen Thompson

#251 Administration of Probiotics and Neurodevelopment in Low-Birth-Weight Infants
Presenters: Lindsey Cummings, Megan Kizer, Haley Reed, Elizabeth Dowd
Mentor: Katherine Morgan

#253 Medication Management: Equipping Those Who Suffer From Homelessness
Presenter: Margaret Lavoie
Mentor: Freddie Kojima

#254 The Effects of COVID-19 Education on Vaccination Rates Among Pediatric Students
Presenters: Tina Le, Claire Hayes
Mentor: Susan Hebert

#255 The Increased Rate of Maternal Satisfaction for Women Who Were Free to Eat and Drink During Active Labor of Low-Risk Pregnancies
Presenters: Adrianna Leicht, Anna Taylor, Erica Weaver, Jamie Stauffer
Mentor: Amy Alspaugh

#256 The Effectiveness of New Methods of STI Screening Reducing Barriers to Care and Increasing Patient Accessibility Among Adolescent College Students
Presenters: Taylor Hosmer, Katherine Regan, Nikki Leishman, Kara Robinson
Mentor: Amy Alspaugh

#258 The Effects of an Urban Gardening Course on the Availability of Fresh Produce in a Food Desert
Presenter: Barklee Loflin
Mentor: Tammy Bullard

#259 Correlational Study Between Disordered Eating and Postpartum Depression Among Women Four-to-Eight Weeks Postpartum
Presenter: Mika Long
Mentor: Dr. Melissa Hessock

#260 The Effects of Education Interventions on the Use of Developmentally Appropriate Play by Daycare Teachers
Presenters: Emily Malott, Elizabeth Martin
Mentor: Dr. Melissa Hessock

#261 The Effect of Mental Health Screenings on the Incidence of Suicide in Middle School Aged Girls
Presenter: Taylor Mann
Mentor: Dr. Kathleen Thompson

#262 The Effect of Education on Recognizing HIV in Homeless Population at Knox Area Rescue Ministries
Presenters: Gabrielle McClarin, Abby Miller
Mentor: Dr. Kojima

#263 Improving Self-Efficacy in the Residents of Love Towers in Relation to Blood Pressure
Presenters: Margaret McConnell, Radha Patel, Brooke Paris, Kemar Ali
Mentor: Christina Brown

#264 How Coping Skills Developed in Nursing School Effect Burnout in the Transition to Practice
Presenter: Natalie Meade
Mentor: Kimberly Brown

#265 Can Art Decrease Loneliness in Children with Cancer?
Presenter: Heidi Middeke
Mentor: Amanda Harper

#266 Adolescents Diagnosed with Autism Spectrum Disorder and the Discrepancies Related to Access to Specialized Healthcare Services in Rural vs Urban Areas
Presenters: Savanah Miles, Mary hart, britt Klosterman, ryan stone, lefler mcmanus
Mentor: DeLyndia Green-Laughlin
#267 Improving Communication within East Tennessee Children’s Hospital Through Reduction of Language Barriers
Presenter: Margaret Miller
Mentor: Melanie Mixon BSN, RN

#268 Activity for Preschoolers During Nap Time to Reduce Behavioral Outbursts
Presenter: Sarah Morin
Mentor: Dr. Kimberly Brown

#269 Gaining Awareness for the Wesley House Food Pantry
Presenters: Jenna Mrkonich, Jessica McChesney, Annika O’Neill
Mentor: Dr. Casey Norris

#270 Effects of Systematic Improvements on Quality of Sleep in a Women’s Homeless Shelter Dorm
Presenter: Annie Nelson
Mentor: Dr. Freddie Kojima

#271 Improving Infection Control Knowledge and Tracking Among Day-Care Teachers
Presenters: Ashlyn Nokes, Emma Seigmund
Mentor: Melissa Hessock

#272 Effects of Social Media on Volunteer Recruitment
Presenters: Madison Peret, Camille Philliply
Mentor: Libby Burns

#273 Breaking Barriers to Long Acting Reversible Contraception with STI Education
Presenter: Haley Persch
Mentor: Eddie Petrie

#274 The Negative Effect Caregiving Can Have on Caregiver Quality of Life
Presenters: Kaylee Gray, Celine Phan
Mentor: Patricia Roberson

#275 The Relationship between Probiotic Use and Delayed Onset of the Neurodegenerative Disease, Alzheimer’s, in Older Adults over 65
Presenters: Hannah Piepol, Catherine House, Mackenzie Cain, Natalie Handshy
Mentor: Katherine Morgan, PhD, FNP-BC

#276 Promoting Resilience in Pediatric Hematology/Oncology Patients and Their Families
Presenter: Ryleigh Rayburn
Mentor: Dr Amanda Harper

#277 The Positive Effects of the HPV (Gardasil®) Vaccine on the Development of Throat Cancer Among Men
Presenters: Erin Remijan, Jared Henderson, Patrick Phillips, Karli Dallas
Mentor: Dr. Amy Alspaugh

#278 The Effect of Working Through the COVID-19 Pandemic on Nurses: A Literature Review
Presenters: Paige Rounsavall, Samantha Lawson, Kate Roberson, Erin Weiland
Mentor: Christina Barroso

#279 The Effect of Working Through the COVID-19 Pandemic on Nurses: A Literature Review
Presenters: Paige Rounsavall, Samantha Lawson, Kate Roberson, Erin Weiland
Mentor: Christina Barroso

#280 Improving Quality of Care of Pediatric Behavioral Health Patients by Implementation of Tabletop Activities
Presenters: Tavyn Santee, Mary-Katherine Kidney
Mentor: Melanie Mixon, PPCNP, MSN, RN

#281 Irregular Sleep Cycles and Development of Metabolic Syndrome in Night Shift Nurses: A Literature Review
Presenters: Gracie Satterfield, Alexandria Yarnell, Emily Holmes, Kylie McConnell
Mentor: Cristina Barroso

#282 Positive Effects of Mindfulness-Based Interventions on Levels of Occupational Stress in Hospital Nurses
Presenters: Bryanna Schroeter, Candace Reid, Thy Kim, Marina Ibrahim
Mentor: Dr. DeLyndia Green-Laughlin

#283 Barriers of Medication Assisted Treatment (MAT) for Pregnant Women with Opioid Use Disorder (OUD) in Rural Tennessee: Treatment Protocols and Training of Providers
Presenter: Rachel Schutte
Mentor: Jennifer Miller PhD, RN

#284 Self Esteem of Adolescents Attending High School Online: A Quality Improvement Project
Presenter: Amanda Shamp
Mentor: Frank Thomasson, Jr.
#285 Productive Leisure Time Activities for Inner City Adolescents  
Presenter: Chris Sheets  
Mentor: Deonna Anderson  
MSN-Ed, RN

#286 Study Tactics for Elementary-Aged Children in Single Parent Homes  
Presenter: Cheyenne Simon  
Mentor: Vivian Rookard

#287 The Effects of Hosting a Social Media Giveaway on Increasing Feminine Hygiene Collection for I Support the Girls-Knoxville  
Presenters: Jillian Simpson, Dailey Davis, Elissa Adams, Mikayla Nailey  
Mentor: Brooke Lakin

#288 Neuroprotective Care and Breastfeeding in Neonates: A Literature Review  
Presenters: Caroline Sims, Casey Langsjoen, Emma Swingle, Olivia Gossard, Tori Reed  
Mentor: Dr. Cristina Barroso

#289 The Effects Low Socioeconomic Status Has on Childhood Nutrition  
Presenter: Lauren Skoog  
Mentor: Vivian Rookard

#290 The Effects of Sex Education on the Rate of Unintended Pregnancies in Adolescent Females in Rural Communities: A Review of the Literature  
Presenters: Elizabeth Smith, Paulina Hutchinson, Vontae Sebastian, Bridgette Anderson  
Mentor: Dr. Barroso

#291 The Effects of Prenatal Dietary Intake of Macronutrients on Fetal Birth Weight  
Presenter: Lauren Song  
Mentor: Kathleen Thompson

#292 Healthcare worker perceptions of treatment of drug withdrawal among pregnant women in jail in the South-Central Appalachia region: A qualitative pilot study  
Presenter: Skylar Sopko  
Mentor: Dr. Sadie Hutson

#293 The Effects of Social Interaction Interventions on Mental Health in Older Adults Who Experienced Isolation During the COVID-19 Pandemic  
Presenters: Alyssa Steffy, Lillian Sackleh, Amy Dieu, Sydney Gregg  
Mentor: April Bryant

#294 Induction of Labor Versus Expectant Management and Rates of Severe Maternal Morbidity  
Presenters: Elise Strevell, Olivia Francis, Rebecca Seigmund, Hannah Hooper  
Mentor: Amy Alspaugh

#295 Health Care Experiences of Older Adults and Their Family Caregivers During the COVID-19 Pandemic  
Presenter: Audrey Summers  
Mentor: Joel Anderson

#296 An Implementation of Chair-Yoga Exercise and the Impact on the Mental and Physical Health in Adults with Alzheimer's Disease  
Presenter: Mary Swafford  
Mentor: Libby Burns

#297 Differences Between College Males and Females’ Coping Mechanisms in Relation to the COVID-19 Pandemic  
Presenter: Margaret Tasket  
Mentor: Dr. Allyson Neal

#298 Adjusting Material Format for Partnerships to Advance Nursing Practice and Education: The Precious Prints Project*  
Presenters: Alexandra Taylor, Marissa Newman  
Mentor: Lynne Miller, MSN, RN, CNE

#299 Joining Forces: A Quantitative Study on the Effect of Interdisciplinary Collaboration Among Business and Nursing Students  
Presenter: Megan Tomasek  
Mentor: Lynne Miller

#300 The Impact of Social Support on Mental Health Outcomes among Breast Cancer Patients  
Presenters: Minh Tran, James Griffith  
Mentors: Patricia Roberson, PhD, Jordan Tasman
#301 The Positive Effects of Sex Education on Unintended Pregnancies in Schools in Rural Communities - A Literature Review
Presenters: Madelyn Turner, Sabrina Sowell, Hannah Cooke, Caroline Current
Mentor: Amy Alspaugh

#302 The Effect of Schoolwork Incentives and Education Programs on Inner-City kids
Presenter: Samantha Vawter
Mentor: Deonna Anderson-Washington

#303 The Positive Effect of Oral and/or Intravenous Intake During Labor on Physical and Emotional Outcomes of Birthing People
Presenters: Amia Walker, Kayla Steele, Tara Vincenc, Elea Sevrain
Mentor: Amy Alspaugh

#304 Pregnant Women with Asthma: Factors that Influence Their Decision to Continue or Discontinue Their Medications
Presenter: Emma Vysoky
Mentor: Dr. Tami Wyatt

#305 Metabolic Syndrome in Night Shift Nurses
Mentor: Karen Carver

#306 ASL: Education and Incentivization of Proper Mask-wearing in Children Ages 5-14
Presenter: Lindsay Webb
Mentor: Vivian Rookard

#307 The Effectiveness of Animal Assisted Therapy on Decreasing Psychological Distress in Older Adults with Dementia
Presenters: Olivia Weggeman, Mikayla Walter, Matthew Waznis, Isabelle Way
Mentor: DeLyndia Green-Laughlin

#308 The Effect of a Reward System on Adolescent Attention Span
Presenter: Maiya Welch
Mentor: Deonna Washington-Anderson

#309 Management of Hypertension in an Aging Adult Population
Presenters: Morgan Wettengel, Sam Smith, Kaitlyn Reinhardt
Mentor: April Bryant

#310 The Effects of Cognitive Based Therapy (CBT) and Stress in Health Care Providers
Presenters: Chloe Windham, Sheridan Lennartz, Leslie Robison, Olivia Zimmerman
Mentor: Dominique Bulgin

#311 An Exploration into How Animal Assisted Therapy Has No Effect On Cognitive Functioning in Older Adults Aged 65+ With Dementia, in Comparison to Human Assisted Therapy
Presenters: Zechariah Wooten, Jordan Nabors, Siegfried Boehm
Mentor: Carrie Bailey

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**College of Social Work**

#312 Descriptive Analysis of Causation for Recurring Support Requests from Social Assistance Recipients
Presenter: Jessie Baer
Mentor: Dr. William Nugent

#313 Comparing the Attendance Rates between Face-to-Face Therapy Sessions and Telehealth Therapy Sessions
Presenter: Olivia Dowling
Mentor: Dr. William Nugent

#314 Equity in the Number of Student Conduct Sanctions for Academic Misconduct Given to Students as it Relates to Race and Sex in Higher Education
Presenter: Paola Gomez
Mentor: Dr. William Nugent

#315 Demographic Study of Individuals Experiencing Homelessness
Presenter: Anna Higgins
Mentor: William Nugent
#316 Relationship Between Agency Resources and Client HIV Viral Load
Presenter: Arianna Hill
Mentor: Dr. Bill Nugent

#317 An Analysis of a Local Mentoring Program Per Match Success
Presenter: Summer Hunley
Mentor: Dr. William Nugent

#318 What is the Relationship between Pre-Trial Diversion programs and Rates of Recidivism?
Presenter: Maggie Kelly
Mentor: William Nugent

#319 A Descriptive Analysis of Demographics of Individuals Experiencing Substance Use & Entering Programs for Service
Presenter: Amari Ratliff
Mentor: Dr. Bill Nugent

#320 A Study of the Relationship Between Adolescent Bullying and Suicide Consideration, Planning, and Attempt
Presenter: Sophie Richards
Mentor: Dr. Bill Nugent

#321 A Linear Regression Analysis of Re-Hospitalization Rates in Relation to Psychosocial Therapy Attendance
Presenter: Emma Richey
Mentor: William Nugent

Haslam College of Business

#322 Harlan County, Kentucky in a Post-Coal America: A Case Study
Presenter: Karli Ailshie
Mentor: Sara Easler

#323 The world’s on fire! Won’t you be my neighbor? Comparative Analysis of Reddit Community Growth and Sentiment Before and During the Covid-19 Pandemic
Presenter: Kayla Beard
Mentor: Brian Stevens

#324 The 2021 Texas Winter Outage: An Equity and Energy Analysis of an Independent Grid
Presenter: Ameera Bhatti
Mentor: Dr. Scott Holladay

#325 Does Corporate ESG Reporting Reflect Internal Feelings?
Presenter: Nicholas Brodeur
Mentor: Dr. Wenjun Zhou

#326 The Implications of Corporate Social Responsibility within the Supply Chain: Does it Really Help the Bottom Line?
Presenter: Lauren Brown
Mentor: Dr. Sining Song

#327 The Effect of the Local Economy on Opioid Overdoses: Evidence from the States
Presenter: Helen Chiasson
Mentor: Larry Fauver

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Presenter: Mikahla Clemens
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#329 How Negative is Instagram? A Study of Body Positivity Through Instagram
Presenter: Claire Donelan
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#330 Corporate Sustainability: The Effectiveness of ESG Standards in the Measuring of Corporate Environmentalism
Presenter: Joseph Geibig
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#332 Exploring How Small Businesses are Utilizing Digital Marketing to Promote Their Products and Services
Presenter: Alyssa Grissom
Mentor: Jules Morris

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Presenter: Ellysa Groh
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Herbert College of Agriculture

#65 | Agricultural Land Use Affects the Body Size of Some Bees |
| Presenter: Maggie Clark Mentor: Laura Russo |
#352 | Novel Ultraviolet Light Technologies for the Inactivation of Murine Hepatitis Virus, a SARS-CoV-2 Surrogate |
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#371 A novel method for point-of-care pathogen detection: development of a DNA-based molecular probe for double stranded DNA sensing
Presenter: Bailey Morgan
Mentor: Shigetoshi Eda

#372 Impact of Alkaline Treatment on Split Pigeon Pea Protein
Presenters: Avery Ollis, Laila Martin
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Presenter: Luis Perez
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#375 Plasma Metabolome Profiles to Predict Average Daily Gain in Weaned Heifers
Presenter: Samantha Roberts
Mentor: Dr. Sarah Moorey

#376 Alcalase and bromelain hydrolysis improved the bioactivity of hempseed protein isolate
Presenter: Joshua Saad
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#378 Cytocompatibility of a High Graphene Content polymer-based ink for Bone Regeneration
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Presenters: Merrie Urban, Carmen Merolle
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#385 Quillaja saponaria bark extract prevents Salmonella enterica serovar Typhimurium Sal54 attachment on Vero Cells
Presenter: Halia Walrond
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Presenter: Holly Whited
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#387 Ring Amplifier Frequency Response Simulations for Technology Scaling
Presenter: Samuel Aba
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#388 Atomic-Scale Structure of Yttria-Stabilized Zirconia
Presenter: Cade Abbott
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#389 Reverse Engineering of a Bioreactor for Cultured Meat Research
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#390 Camera Based System for Noninvasive Monitoring in the NICU
Presenters: Samantha Bell, Jordan Grant, Michael Palmaccio, Gabrielle McClarin
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#391 Microplastics Methodology: A Study of Second Creek
Presenter: Claudia Bible
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Presenter: Nathaniel Blalock
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Presenter: Isabel Boyd
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**#395 The effect of composition on the thermodynamics and properties of deep eutectic solvents**
Presenter: William Brackett
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**#397 Investigation of Preferential CO₂ Binding and Lignin-derived Carbon Quantum Dots Through Molecular Dynamics Simulations**
Presenter: Michael Broud
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Presenter: Emily Buckner
Mentor: Dr. Rigoberto Advincula

**#399 The unexpected effect of ligand exchange on the internal ordering of perovskite nanocrystals**
Presenter: Alexandria Carter
Mentor: Katharine Page

**#400 Establishing Crystal Structure in Dissolved Organic Molecules Through Low Temperatures**
Presenter: Jakob Cielo
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**#401 Influence of Advancing Operating Speed on Milling-Induced Phase Transformation in Ho₂O₃ and Yb₂O₃ Sesquioxides**
Presenter: Casey Corbridge
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**#402 Al-Ce Alloys for Riverine Turbines**
Presenters: Emilee Counce, John Rayle, Michelangelo Hooghkirk, Jacob Morton
Mentor: n/a

**#403 Vacuum Time Dependence on Uniform Dispersion**
Presenter: Sherrice Dale
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**#404 Metal Coating as Electrodes in High Purity Germanium Gamma Radiation Detectors**
Presenters: Mollie Daniell, Eli Christoph, David Crigger, Mohamed Shoieb, Josh Moorey
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**#406 3D Printing of Graphene Oxide Nanocomposites for Biocompatible Devices via Digital Light Processing**
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Mentor: Dr. Daniel Yoder

**#410 Adhesive Characterization for Automotive Applications**
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Presenters: Madeline Ginsberg, Ella Knight, Jaimie Armitage, Bryce Miller
Mentors: Andrea Ludwig, Forbes Walker

**#412 Measurement of Thrombectomy Device Removal Forces in Experimental Models of Acute Ischemic Stroke**
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#413 Assessment of Atomic Ordering in Alloys
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#415 Characterization of Al-Ce Alloys via Atomic Force Microscopy
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Presenter: Rachel Ivy
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#418 Evaluation of different ion-exchange membranes for aqueous organic redox flow battery
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#419 Evaluation of Forces Required by a Stent Retriever to Remove Experimental Models of Acute Ischemic Stroke
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#425 Single-size and cluster dynamics modeling of intragranular fission gas bubbles in UO$_2$
Presenter: Nicholas Militello
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#426 Optimizing Processing Parameters of 316L Stainless Steel Bellows
Presenters: Colin Moore, Mary Hagemeyer, Sarah Lantzy, Ryan Maples
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#427 Optimal Double-Vacuum Preservative Treatment for Cross-Laminated Timber Panels
Presenter: Alex Moore
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#428 Neutronics Modeling for a Two-Fluid Molten Salt iso-Breeder Reactor Operating on the Thorium Fuel Cycle
Presenter: C. Erika Moss
Mentor: Dr. Ondrej Chvala

#429 3D Printing of Polyelectrolyte Materials via Direct Ink Writing
Presenters: Anh Nguyen, Alicja Zeligowska
Mentor: Rigoberto Advincula

#430 Soft poly-ethylene-glycol (PEG) micelles and lipid nanoparticles (LNPs) resolve autophagy and reduce pro-inflammatory cytokine secretion in RAW264.7 mouse macrophages
Presenter: Nicole Nguyen
Mentor: Paul Dalhaimer

#431 3D Printing of Polyelectrolyte Materials via Direct Ink Writing
Presenters: Anh Nguyen, Alicja Zeligowska
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#432 Structural stability of REE-PO$_4$ (REE=Sm,Tb) under swift heavy ion irradiation
Presenter: Cale Overstreet
Mentor: Maik Lang

#433 3D Printing of Epoxy-Silica Corrosion Resistant Coatings
Presenter: Taegyung Park
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#435 Microstructural and Microhardness Evolution in Similar and Dissimilar Aluminum 2219 and 2195 Self-Reacting Friction Stir Welds
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#436 Machine Learning for Bioinformatics
Presenter: Owen Queen
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#437 Measuring Pre-Service, K-12 Teachers’ Self-Efficacy in Teaching Engineering and Their Perceptions of Engineering as a Career
Presenter: Neel Reeves
Mentors: Dr. Courtney Faber, Dr. Betsy Chesnutt

#438 Flow Characteristics of Fast Molten Salt Reactors (FC-FMSR)
Presenter: Harrison Reisinger
Mentor: Dr. Ondrej Chvala

#439 3-D Printed PLA: Making a commonly brittle polymer elastic and ductile via annealment
Presenter: Salvador Rohan
Mentor: Dr. Rigoberto Advincula

#440 Passive Structural Control Achieved with a Mass Lever Inerter
Presenter: Jonathan Shell
Mentor: Dr. Nicholas Wierschem

#441 Hysteretic Rectification Utilizing Insulator to Metal Transition Materials
Presenter: Dawson Smith
Mentor: Dr. Ahmedullah Aziz

#442 Investigation into the Unloading Response of Porous Materials
Presenter: Noah Smith
Mentor: Andrew Wereszczak

#443 Bioprinting osmotically actuated tissue-like materials
Presenter: McKayla Torbett
Mentor: Andy Sarles

#444 Restoration of Musical Organs: Analysis of Rubber Cloth and Other Historical Materials
Presenters: Matthew Valderrama, Mackenzie Camp, Christopher Webb, Charlotte Buchanan
Mentor: Dr. David Keffer

#445 Diamond-like Carbon Thin Films for Anti-fog Lens Coatings in Laparoscopy
Presenter: Daniel Woods
Mentor: Jacqueline Johnson

#446 A high-speed synchrotron x-ray radiography study on the effect of dwell time on melt-pool dynamics during the laser melting and solidification processes
Presenter: Raymond Wysmierski
Mentor: Hahn Choo
Research presented at the 26th Annual Exhibition of Research and Creative Achievement benefitted, or was conducted in conjunction with the following organizations:

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American Conifer Society
American Red Cross
AMETEK, Inc.
Boys and Girls Club of America
Breakthrough Electrolytes for Energy Storage (BEES), an Energy Frontier Research Center
CAC Office on Aging
Catholic Charities
Center for Materials Processing
Cherokee Health Systems
Choice Health Network
City of Florence
Dream Connection
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USDA Forest Service Products Laboratory
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