

55th Annual



SATURDAY, APRIL 5
DOWNING STUDENT UNION

Western Kentucky University • Bowling Green, Kentucky

Acknowledgements

On behalf of the entire campus community, the WKU Student Scholar Showcase extends heartfelt appreciation and congratulations to the hundreds of students participating in this conference. Your talent, creativity, and dedication exemplify academic excellence and inspire those around you. We celebrate your achievements and commend your commitment to making the most of your educational journey at WKU.

We also recognize the invaluable contributions of WKU faculty and staff who mentor students in their research and creative projects. These mentors, listed alongside each student in the session details, provide essential guidance and support. Many also serve as Session Chairs, ensuring a seamless conference experience. Please see a special thanks to them on the following page.

Funding for the 55th Annual WKU Student Scholar Showcase was generously provided by the Office of the Provost and Vice President for Academic Affairs and the Office of Research and Creative Activity. The WKU Graduate School supports graduate students through research grants, some of which have directly benefited today's presenters. Additionally, undergraduate students can access funding opportunities, including the Faculty-Undergraduate Student Engagement (FUSE) grants, initiated in 2012, to foster intellectual development and active engagement in research, creative, and scholarly activities.

We extend our gratitude to Alicia Carter, Tommy Newton, Aurelia Spaulding, Scott French, Marcus Dukes, Eliza Marsh, Clinton Lewis, and the WKU Office of Communications and Marketing team for their vital assistance with conference artwork, electronic advertising, photography, and media outreach.

Special thanks to Diana Keeling for expert database support.

WKU faculty members Dr. Tong Wu, Dr. Daniel Keller, and Ashley Orehek Rossi provided informative professional development workshops to prepare students for this event. The Downing Student Union team, led by Meygan Oliver, played a crucial role in conference logistics, with WKU Dining and WKU Catering ensuring refreshments and meals.

The WKU Student Scholar Showcase Council organizes this annual conference, with representation from Academic Colleges, Communications and Marketing, Downing Student Union, University Libraries, Gatton Academy, and the Office of Research and Creative Activity. The 2024-2025 Council members include Dr. Jeffrey Budziak, Dr. Jenni Redifer, Dr. Ritchie Taylor, Dr. Cathleen Webb, Dr. Lily Zhuhadar, Andrew Adler, Alicia Carter, Dr. Samuel Earls, Ryanne Gregory, and Meygan Oliver.

Finally, we sincerely appreciate the students, faculty, staff, community members, friends, and family who contributed to the success of this interdisciplinary conference. Your support makes this event possible.

Session Chairs Special Thanks

We extend our sincere gratitude to the WKU faculty and staff who served as Session Chairs at this year's conference. Their time and dedication were instrumental in ensuring a successful event. Many have generously volunteered for years, even decades, and we deeply appreciate their continued support. We welcome and are grateful for the new faces as well!

Dr. Lester Archer, School of Leadership and Professional Studies
Dr. Simran Banga, Department of Biology
Catherine Cornwell, Department of Chemistry and Biochemistry
Dr. Thad Crews, Department of Analytics and Information Systems
Susanne Vries, Libraries
Dr. Patricia Desrosiers, Department of Social Work
Dan Forrest, Libraries
Dr. Nahid Gani, Department of Earth, Environmental, and Atmospheric Sciences
Margaret Glaser, Philanthropy & Alumni Engagement
Dr. Melinda Grimsley, Office of Scholar Development
Dr. Sungjin Im, Department of Psychology
Jae Kim, Department of Public Health
Dr. Rodney King, Mahurin Honors College
April McCauley, Center for Innovative Teaching and Learning
Dr. Jeffrey Miner, Department of History
Dr. Matthew Nee, Department of Chemistry
Ashley Orehek, Libraries
Dr. Sarah Scali, School of Kinesiology, Recreation & Sport
Todd Sequin, Libraries
Bradley Smith, Office of Scholar Development
Dr. Robin Valenzuela, Department of Folk Studies & Anthropology
Dr. Huanjing Wang, School of Engineering and Applied Sciences
Dr. Adam West, Department of Applied Human Sciences
Dr. Tong Wu, Department of Analytics and Information Systems

Contents

Acknowledgements	Page 1
Session Chairs Special Thanks.....	Page 2
Conference Schedule	Page 4
Conference Overview	Page 5
Oral Presentations, Videos, and Performances <i>(DSU Rooms 3003, 3005, 3007, 3023, 3024,3025)</i>	
Morning Sessions (9:30 am - 11:00 am)	Page 6
Midday Sessions (12:15 pm – 1:45 pm)	Page 9
Afternoon Sessions (2:00 pm – 3:30 pm)	Page 12
Poster Presentations <i>(First and Second Floor Atrium of DSU)</i>	
Morning Session (9:30 am - 11:00 am)	Page 15
Midday Session (12:15 pm – 1:45 pm)	Page 19
Afternoon Session (2:00 pm – 3:30 pm)	Page 22

Conference Schedule

Student and Session Chairs Registration

8:30 AM – 3:30 PM

- Location: First Floor Lobby
- Ongoing throughout the day
- Please register at least 30 minutes before your session begins.

Morning Sessions

9:30 AM – 11:00 AM

- **Oral Papers and Performances:** Rooms 3003, 3005, 3007, 3023, 3024,3025
- **Posters:** First and Second Floor Atriums
 - Presenters are asked to remove their posters at the end of the session.

Lunch Break

11:00 AM – 12:00 PM

- Complimentary lunch tickets will be provided to presenters, co-presenters, and Session Chairs who requested lunch within the Showcase portal prior to event day.
- Please pick up your lunch ticket with your nametag at the registration table.

Midday Sessions

12:15 PM – 1:45 PM

- **Oral Papers and Performances:** Rooms 3003, 3005, 3007, 3023, 3024,3025
- **Posters:** First and Second Floor Atriums
 - Presenters are asked to remove their posters at the end of the session.

Afternoon Sessions

2:00 PM – 3:30 PM

- **Oral Papers and Performances:** Rooms 3003, 3005, 3007, 3023, 3024,3025
- **Posters:** First and Second Floor Atriums
 - Presenters are asked to remove their posters at the end of the session.

Conference Overview

The 55th Annual WKU Student Scholar Showcase proudly presents 233 graduate and undergraduate research projects, including 149 posters/exhibits and 84 oral presentations/performances. The conference highlights a broad range of topics, with student participants from 36 WKU programs across all colleges, reflecting academic and creative excellence.

1. Agriculture and Food Science
2. Allied Health
3. Applied Human Sciences
4. Art
5. Chemistry and Biochemistry
6. Business Sciences
7. Communication
8. Communication Sciences and Disorders
9. Computer Information Systems
10. Counseling and Student Affairs
11. Earth, Environmental, and Atmospheric Sciences
12. Economics
13. Engineering and Applied Sciences
14. English
15. Family and Consumer Sciences
16. Folk Studies and Anthropology
17. Gatton Academy of Math and Science
18. Health Sciences
19. History
20. Information Systems
21. Interdisciplinary Studies
22. Journalism and Broadcasting
23. Kinesiology, Recreation and Sport
24. Mathematics
25. Music
26. Nursing
27. Physical Therapy
28. Physics and Astronomy
29. Political Science
30. Psychological Sciences
31. Psychology
32. Public Health
33. Social Work
34. Sociology
35. Teacher Education
36. Theatre and Dance

Oral Presentations and Performances

Morning Sessions (9:30 am – 11:00 am)

Rooms 3003, 3005, 3007, 3023, 3024, 3025

*GRADUATE PRESENTATIONS with SESSION CHAIR: **Simran Banga & Margaret Glaser***

Room # 3003	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
9:30 AM	Quantitative Analysis of Antimicrobial B-Defensin Proteins in Bovine Milk Using Liquid Chromatography-Mass Spectrometry	Annie	Arugha	Eric	Conte
9:45 AM	A Phylogeographic Study of The Kentucky Endemic Cave Beetle Neaphaenops Tellkampfi Erichson (1844)	Mahamad	Miya	Keith	Philips
10:00 AM	The Effects of Two Common Herbicides on the Growth and Development of Two Anuran Species (boreorana Sylvatica and Dryophytes Chrysoscelis)	Jerica	Eaton	Jarrett	Johnson
10:15 AM	Ceg10 Legionella Pneumophila Effector Protein Modulate Host Lipid Metabolism	Emmanuella	Ofoka	Simran	Banga
10:30 AM	Analysis of Computational Approaches to Cognitive Diagnosis	Andrew	Toussaint	Huanjing	Wang

*GRADUATE PRESENTATIONS with SESSION CHAIR: **Matthew Nee & Susann DeVries***

Room # 3005	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
9:30 AM	Influence of Substrate Temperature on the Morphology, Crystallinity, and Growth Dynamics of Zr Thin Films Deposited via Pulsed Laser Deposition	Berdimyrat	Annamuradov	Ali	Oguz Er
9:45 AM	Enhancing Photodynamic Therapy: Reserpine-mediated Efflux Pump Inhibition for Improved Pathogen Deactivation with Methylene Blue and Nanoparticles	Begench	Gurbandurdyev	Ali	Oguz Er
10:00 AM	Understanding the Behavioral Variation of Asian Elephants (Elephas maximus) as an Indicator of Human Elephant Conflict	Julia	Brzezicki	Bruce	Schulte
10:15 AM	Preliminary Investigation on Stream Flow Variations in the Black River Complex, Mammoth Cave	Ljubomir	Risteski	Patricia	Kambesis
10:30 AM	A Comprehensive Study of How Indirect and Direct Market Opportunities Influence Consumer Interest for Locally Produced Agricultural Products	MaKayla	Burrell	Dominique	Gumirakiza

Morning Sessions Continued
GRADUATE PRESENTATIONS with SESSION CHAIR: Sarah Scali

Room # 3007	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
9:30 AM	Investigating Groundwater Dynamics and Aquifer Recharge Patterns in Barbados Using Forensic Hydrology	Benjamin	Hauschild	Jason	Polk
9:45 AM	Prevalence And Source Tracking of Perfluoroalkyl and Polyfluoroalkyl (PFAS) Substances in Urban Karst Groundwater Systems	Gracie	Hendrickson-Brown	Jason	Polk
10:00 AM	Deep Learning Techniques for Better Geobody Delineation from 3D Seismic Data: A Case Study of the Northern Gulf of Mexico Basin, USA	Victor	Aham	Royhan	Gani
10:15 AM	Limestone Microscopy: A Case Study in the Optical Validation of Field Investigations in the Olmstead Quadrangle, Todd and Logan Counties, KY	John	Lunday	Nahid D.	Gani
10:30 AM	Leveraging Deep Learning and Remote Sensing-based Geomorphology for Flood Susceptibility Mapping in The Appalachian Mountain Regions of KY	Samir	Pahari	Nahid D.	Gani

GRADUATE PRESENTATIONS with SESSION CHAIR: Tong Wu

Room # 3023	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
9:30 AM	Mathematics Autobiographies by Pre-service Elementary Teachers: Past Experiences and Future Hopes	Piper	Scannell	Janet	Tassell
9:45 AM	Analyzing ALU and IO Instruction Distribution in Deep Learning on a Single CPU-GPU System	Michael	Seavers	Qi	Li
10:00 AM	English Phrasal Verb Difficulties Encountered by International Students Attending American Regional Universities	Nesma	Soliman	Trini	Stickle
10:15 AM	Flat Hats, Stephen Mather, and GS Scales: Inducement Strategies in National Park Service Training Documents	Rachel	Taylor	Jennifer	Mize Smith
10:30 AM	Student Workers' Experiences of New Employee Socialization	Tanya	Prabhakar	Jennifer	Mize Smith

Morning Sessions Continued

*UNDERGRADUATE PRESENTATIONS with SESSION CHAIR: **Jeffrey Miner***

Room # 3024	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
9:30 AM	A Large and Local-scale Investigation of the January 27-31, 2014 "snowpocalypse" In Atlanta, Ga	Alexis	Fugatt	Joshua	Durkee
9:45 AM	A Synoptic and Mesoscale Analysis of the January 27-31, 2014 "snowpocalypse" in Atlanta, Georgia	Alexis	Fugatt	Joshua	Durkee
10:00 AM	Carbon Storage in Old and New Growth Cloud Forests	Vidhi Alaina Jaime	Grover Arrollo Mendez-Cano	Martin	Stone
10:15 AM	Herbaceous Plant Diversity and the Effects of Forest Age	Himani Lydia Mitchell Adriana	Gangumolu Williams Marcum Williams	Martin	Stone
10:30 AM	A large scale and local variable analysis of the March 3-5, 2015, winter storm across Kentucky	Ryan	Marcum	Joshua	Durkee
10:45 AM	Kentucky's Coldest Year: A Case Study of the Causes and Impacts of KY's Coldest Year (1917)	Ryan	Marcum	Jerald	Brotzge

*UNDERGRADUATE PRESENTATIONS with SESSION CHAIR: **Rodney King***

Room # 3025	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
9:30 AM	Impact of Basic Physic Skills Quizzes on Student Success in an Introductory Physics Course	Nathaniel	Egan	Scott	Bonham
9:45 AM	Formation of Picosecond Laser-induced Periodic Surface Structures on Steel	Alper	Er	Ali	Oguz Er
10:00 AM	Development of the Gamma Array to Measure Angular Correlation of Gamma Rays	Lincoln	Potts	Ivan	Novikov
10:15 AM	Using Aquatic Macroinvertebrates as Bioindicators to Determine the Effect of Location on Water Quality in the Costa Rican Cloud Forest	Jonathan Alrose Rowan Logan	Philpot Noronha Bailey Potts	Martin	Stone
10:30 AM	Applying Gaussian Tools for the Study of Physical and Organic Chemistry	Luna Savannah	Asbell Isaacs	Jeremy	Maddox

Oral Presentations and Performances

Midday Sessions (12:15 pm – 1:45 pm)

Rooms 3003, 3005, 3007, 3023, 3024, 3025

*UNDERGRADUATE ORAL PRESENTATIONS with SESSION CHAIR: **Simran Banga***

ROOM # 3003	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
12:15 PM	Survey of Highway-railroad Grade Crossing Safety and Challenges in the State of Kentucky	Mustafa Salim	Abdekhalek Al Adawi	Kirolos	Haleem
12:30 PM	Abstract	Isabel	Concannon	Shahnaz	Aly
12:45 PM	Investigating Crash Contributing Factors at Public Highway-railroad Grade Crossings in Kentucky	Alrose Trenten	Noronha Cissell	Kirolos	Haleem
1:00 PM	Analysis of Distracted Driving Crashes Among At-fault Commercial Motor Vehicles in Kentucky Using Multiple Techniques	Cassidy Shamar Luke	Schrock Crump Southard	Kirolos	Haleem
1:15 PM	Brandscaping and Sustainability: The Use of Heritage Sites as Venues in the Paris 2024 Olympics	Katelin	Rutledge	Margaret	Gripshover

*UNDERGRADUATE ORAL PRESENTATIONS with SESSION CHAIR: **Matthew Nee***

ROOM # 3005	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
12:15 PM	Characterization of the Telomeric DNA Damage Response Pathway	Grayson	Duvall	Jason	Stewart
12:30 PM	Synthesis of Polymer Beads with Incorporated Photocatalyst for Water Remediation	Kellen	Patterson	Matthew	Nee
12:45 PM	Effects of Controlled Fires on Ruminant Nutrition in South Africa	Promise	Willhite	Michael	Stokes
1:00 PM	Analyzing the Function of a Bacteriophage Gene Toxic to Mycobacterium Smegmatis	Ava	Blackledge	Rodney	King

Midday Sessions Continued

*UNDERGRADUATE ORAL PRESENTATIONS with SESSION CHAIR: **Sarah Scali***

ROOM # 3007	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
12:15 PM	Computational Modeling of Free Association with Word2Vec and Frequency Analysis	Amogh	Patnaik	Lance	Hahn
12:30 PM	Proficiency and Positivity: Investigating Learner Affect Toward L2 Instructional Methods, Learner Goals, And L2 Success	Natalie	Spiva	Trini	Stickle
12:45 PM	Co-attention and the Autism Spectrum	Lara Sanam	Jaber Krishnani	Gordon	Baylis
1:00 PM	Are You Looking Where I'm Looking? A study of Co-attention and Emotion	Sanam Lara	Krishnani Jaber	Gordon	Baylis
1:15 PM	The Impact of Prenatal Yoga on Hip Mobility and Delivery Outcomes	Zoe	Avery	Rachel	Tinius

*UNDERGRADUATE ORAL PRESENTATIONS with SESSION CHAIR: **Tong Wu***

ROOM # 3023	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
2:00 PM	An Atmospheric Review of July 6, 2016, Major Flash Flooding over the Western Kentucky Region	Evan	Kidd	Joshua	Durkee
2:15 PM	Examination of the Large-scale and Local-scale Features that Contributed to the Spring Hill, TN Tornado Event	Sarah	McClanahan	Joshua	Durkee
2:30 PM	Examining Local-Scale Circulation Features that Contributed to the May 30th, 2024, EF3 Tornado in Midland, TX	Thomas	Payette	Joshua	Durkee
2:45 PM	A Case-Study Investigation of the Large-Scale and Local Atmospheric Forcing Responsible for the January 4-5th, 2014, Winter Storm and Arctic Air Outbreak Across the Ohio River Valley.	Jalyn	Radford	Joshua	Durkee
3:00 PM	A Large-to-Regional Scale Case Study Investigation of the May 26th-27th, 2024, Severe Weather Across the Mid-South	Nathan	Renner	Joshua	Durkee

Midday Sessions Continued

*UNDERGRADUATE VIDEOS with SESSION CHAIR: **Jeffrey Miner***

ROOM # 3024	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
12:15 PM	The Testimony of Sir Gareth	Christian Katherine	Colvin Thompson	Sara	Thomason
12:30 PM	Wya? (Where You At?)	Cristian	Pena	Shaina	Feldman
12:45 PM	The Sound of Love	Jonah Wade Alyssa Caleb	Smith Yates Goebel Evans	Shaina	Feldman

*UNDERGRADUATE PERFORMANCES with SESSION CHAIR: **Rodney King***

ROOM # 3025	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
12:15 PM	Emotional Exposure of Method Acting	Bailey	Bryant	Tiffany	Bostic- Brown
12:30 PM	Promoting Black and African Classical Composers in Vocal Studies	Ashleigh	Chapman	Tiffany	Brown
12:45 PM	Harmonizing Artistry: The Interplay of Gaga Movement and Classical Ballet in Dance Performance and Choreography	Lindy	Fischer	Meghen	McKinley
1:00 PM	Pas de Deux Past and Present: Examining the Future of Partnering Work in the Study of Teaching and Performance of Professional Ballet.	Madelyn	Groth	Anna	Patsfall

Oral Presentations and Performances

Afternoon Sessions (2:00 pm – 3:30 pm)

Rooms 3003, 3005, 3007, 3023, 3024, 3025

*UNDERGRADUATE ORAL PRESENTATIONS with SESSION CHAIR: **Simran Banga***

ROOM # 3003	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
2:00 PM	Quantitative Analysis of Geochemistry and Flow Dynamics in the Great Onyx Groundwater Basin, Mammoth Cave National Park, Kentucky	Daniel	Thelen	Lee	Bledsoe
2:15 PM	3D Mineralogy: Teaching in New Dimension of Learning	Mykah	Carden	Nahid	Gani
2:30 PM	Mapping Karst and Slope Hazards in Pulaski County, Kentucky Using High-resolution Lidar and Petrographic Analysis	Barrett	Gibbs	Nahid	Gani
2:45 PM	Geology In Flight: Unveiling WKU's Campus Karren Through Drone Technology	Charlie Maysn	Lowman Hughes	Royhan	Gani
3:00 PM	Windows into the Past: Fossil Identification and Classification Through Thin Section Microscopy	Dayvon	Woodard	Nahid	Gani

*UNDERGRADUATE ORAL PRESENTATIONS with SESSION CHAIR: **Matthew Nee***

ROOM # 3005	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
2:00 PM	Enhancing Community Recycling Awareness and Participation in Prospect, KY, USA	Morgan Katelin	Adamson Rutledge	Jason	Polk
2:15 PM	Karst Groundwater Flow Profile for Jennings Creek, Kentucky for Flood Management	Noah Logan	Jennings Sileo	Jason	Polk
2:30 PM	Urban Karst Flood Hazard Mitigation at Fairview Plaza, Bowling Green, KY, USA	Quade	Miles	Jason	Polk
2:45 PM	Spatial Analysis of Rain-on-snow Ablation Events in the United States	Spencer	Chafin	Zachary	Suriano

Afternoon Sessions Continued

UNDERGRADUATE ORAL PRESENTATIONS with SESSION CHAIR: Sarah Scali

ROOM # 3007	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
2:00 PM	Large and regional-scale analysis of the April 2nd, 2024 severe weather outbreak across the Ohio Valley	Trevor	Bramblett	Joshua	Durkee
2:15 PM	The June 2013 Yarnell Mountain, Arizona wildfire and its upper-atmospheric meteorological causes	Wyatt	Crutcher	Joshua	Durkee
2:30 PM	A Large and Small-Scale Evaluation of the Factors that Led to the June 29, 2012, Derecho Across the Midwest and Mid-Atlantic	Aaron	Derrick	Joshua	Durkee
2:45 PM	An Analysis of the Multiscale Atmospheric Contributions to the May 23, 2024, Eldorado, Oklahoma EF2 Tornado Event	Harmony	Guercio	Joshua	Durkee
3:00 PM	A Meteorological Breakdown of a Notable High Wind Event Across the Ohio Valley Region	August	Hug	Joshua	Durkee

UNDERGRADUATE ORAL PRESENTATIONS with SESSION CHAIR: Tong Wu

ROOM# 3023	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
2:00 PM	Heroes or Tyrants? Using the Leadership of Chiang Kai-shek to Reexamine the Legacy of Abraham Lincoln	Edward	Woolery	David	Serafini
2:15 PM	Optically Remaining: Residues of Life	Ally	Adams	Yvonne	Petkus
2:30 PM	Art Appropriation within Europe	Haley	Duarte	Eric	Reed
2:45 PM	Effects of Regulations on Digital Asset Prices: Evidence from The Counter-strike Game Series	John	Stewart	Stephen	Locke
3:00 PM	Clarity of the Source of Information in Attorney Advertisements and Effects on Risk Beliefs about Pharmaceuticals	Caleb	Neitzel	Jacob	Byl

Afternoon Sessions Continued

*UNDERGRADUATE ORAL PRESENTATIONS with SESSION CHAIR: **Jeffrey Miner***

ROOM # 3024	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
2:00 PM	Analysis of the Christmas Blizzard across the central Great Plains during December 23-27, 2009	Donovan	Roach	Joshua	Durkee
2:15 PM	Analyzing the Large-to-Regional Scale Influences that Produced Tornadoic Thunderstorms in the Southern Great Plains on May 25th, 2024	Samantha	Taylor	Joshua	Durkee
2:30 PM	An Examination of Atmospheric Features that Contributed to the Historic Ohio River Flood of 2011	Nick	Zrelak	Joshua	Durkee
2:45 PM	Performance Analysis of WRF-Hydro Parameterization Schemes in Eastern Kentucky	Jackson	Powers	Xingang	Fan

*UNDERGRADUATE ORAL PRESENTATIONS & PERFORMANCES with SESSION CHAIR: **Rodney King***

ROOM # 3025	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
2:00 PM	Comorbidity Differences Among Rural and Urban Osteoarthritis Patients	Alexandria	Anderson	Natalie	Mountjoy
2:15 PM	Impact of a Final Project in an Introductory Physics Course	Elena	Ley	Scott	Bonham
3:00 PM	Dental Health for Mental Wealth: A Comprehensive Analysis of The Underexplored Impact of Oral Health and Behaviors on Neurobiology and Psychological Well-Being	Brooke	Beck	David Amy	Ciochetty Brausch

Posters - Morning Session (9:30 am – 11:00 am)

SESSION CHAIRS: Adam West, Ashley Orehek, Dan Forrest, Huanjing Wang, Todd Sequin, Melinda Grimsley, Patricia Desrosiers, Robin Valenzuela, Nahid Gani, April McCauley, Bradley Smith, Sungjin Im, Catherine Cornwell

DSU 1ST FLOOR

BOARD #	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
1	Novel Diagnostic Application of Crispr-dcas9 And Graphene Oxide for Sensitive Antibiotic Resistance and Genetic Disease Detection	Hosamulhaq	Brula	Kevin	Williams
2	Synthesis of Silver Nanoparticles Via Laser Ablation in a Liquid Medium for Use in Photodynamic Therapy of Bacteria	Carli Hadley	Street Whipple	Ali	Oguz Er
3	Synthesis of Gold Nanoparticles Via Laser Ablation in A Liquid Medium for Use in Photodynamic Therapy of Bacteria	Hadley Carli	Whipple Street	Ali	Oguz Er
4	Utilizing Spatial Transcriptomics to Identify Molecular Mechanisms Underlying Spinal Cord Regeneration in the Larval Sea Lamprey	Cole	Meador	Hilary	Katz
5	Development of Polystyrene Beads with Titanium Dioxide Photocatalyst	Zing	Hnem	Matthew	Nee
6	Investigating the Interactions Between Elm1 and Hsl7 in the Morphogenesis Checkpoint of Saccharomyces Cerevisiae	Rachel	Foster	Joseph	Marquardt
7	Genetic Interactions between Ste20 and Elm1 Kinases Require Kinase Activity for Cell Morphogenesis	Emma	Thorn	Joseph	Marquardt
8	Investigating the Ability of an Interspecies Gene to Rescue Shape Control Defects in Budding Yeast	Amelia	Baker	Joseph	Marquardt
9	Cell Shape Is Mediated by a Joint Effort between a Septin-associated Kinase and Endocytic Protein	Presley	Neagle	Joseph	Marquardt

10	Discovery and Analysis of Mycobacteriophage Kochu	Sophia	Thomas	Rodney	King
11	Discovery, Characterization, Sequencing and Annotation of the Novel Mycobacteriophage Xandras	Ashley	Gledhill	Rodney	King
12	Synthesis And Catalytic Studies of Metalloporphyrin Complexes	Zachary	Talmon	Rui	Zhang
13	Loss of Human CST Leads to Increased Genome Instability	Colin Steven	Loveless Reed	Jason	Stewart
14	Exploring the Morphology of the Inner and Peripheral Ear of the Loricariid Catfish Pterygoplichthys Pardalis	Mabel	Vilt	Michael	Smith
15	Isolation And Analysis of Bacteriophages Princessmocha and Gangumolu	Sanam Himani	Krishnani Gangumolu	Rodney	King
16	Bacteriophage Gingery, a Novel Mycobacteriophage Isolated from Icelandic Soil	Trisha	Chhabra	Rodney	King
17	Effect of Photodynamic Treatment on Survival of Legionella Pneumophila	Brandon	Brion	Simran	Banga
18	Resolution of Temporomandibular Joint (TMJ) Sensitivity One Week After Equine Dental Procedures	Savanna	Arnold	Debra	Shoulders

DSU 2ND FLOOR ...

Morning Poster Session Continued

BOARD #	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
19	Coordination of Cell Growth by Two Yeast Kinases to Control Cell Shape	Lilian	Branch	Joseph	Marquardt
20	Investigating Mechanisms of Polarisome Regulation by the Kinase Elm1	Jenson	Harner	Joseph	Marquardt
21	Gene Expression Profiling of Cathepsin L Regulated Genes in Drosophila melanogaster Wing Development	Rangana	Ratnayake	Ajay	Srivastava
22	Investigating the Signal Intensity of Two Fluorescence Markers in Relation to Proteins in the Morphogenesis Checkpoint in Yeast	Luke	Walker	Joseph	Marquardt
23	Analyzing Patterns of Genetic Structure in Leuctra Stoneflies	Andrew	Jackson	Jarrett	Johnson

24	V-type ATPase's Role in Drosophila Melanogaster Air Sac Primordium Development	Sydney	Putnam	Ajay	Srivastava
25	Cell Shape Is a Coordinated Effort Between a Yeast Kinase and Cell Wall Machinery in Saccharomyces Cerevisiae	Kaylee	Brannon	Joseph	Marquardt
26	Leaf Litter Invertebrate Diversity in Cloudbridge Costa Rica	Lex Kate	Patterson Hans	Keith	Philips
27	On the DNA Binding Properties of Cisplatin and Its Analogs	Robert	Purvis	Kevin	Williams
28	Reactions of Guanine Nucleotides with Platinum (II) Complex Containing a Ligand That Can Switch Between Bidentate and Tridentate Binding Mode	Loveth	Marcel	Kevin	Williams
29	Using Guanine Derivatives to Ring-open Platinum (III) Tridentate Ligands	Alexander	Bentley	Kevin	Williams
30	Synthesis, Characterization, and Catalytic Study of Phthalocyanine-manganese (III) Complexes	Candice	Schlabach	Rui	Zhang
31	Understanding the Formation of Atmospheric Aerosols Using Molecular Dynamics	Rebecca	Awe	Matthew	Nee
32	Three-dimensional Metal-organic Framework of Zinc(II) And Histidine	Ibrahim	Ali	Bangbo	Yan
33	Distinguishing Between Flat Spectrum Radio Quasars and BL Lacertae Objects Using Optical Variability	Jo Frankie Andrea	Elmore Peak Shaw	Michael	Carini
34	Exploring the Role of Bingocize®: Workshops in Enhancing Health and Well-being in Older Adults	Kaitlyn	Gray	Mark	Schafer
35	Cannabidiol and Exercise: A Systematic Review	Abby	Brewer	Whitley	Stone
36	Water Intake During Pregnancy Has a Favorable Association with Infant Anthropometrics	Gillian	Johnston	Rachel	Tinius
37	Creation And Development of a Modulation-based Simulation to Assist in Development of Clinical Reasoning Skills and Confidence in First Year DPT Students with Specific Pathologies	Dylan Cy Mason Benjamin	Waldrop Whitler Kreilein Bruckner	Anthony	Mancini
38	Inter-rater Reliability of Human and Artificial Intelligence Assessment of Student Proficiency in Clinical Documentation	Hayden Austin Caitlyn	Barkley Woosley Patterson	Ashton	McPherson
39	Demystifying Assistive Devices for Older Adults	Jared Evan Sarah	Gobin Decker O'Daniel	Elizabeth	Norris

40	Level of Knowledge Among Doctor of Physical Therapy (DPT) Students Regarding the Function, Roles, and Objectives of the Apta House of Delegates	Haylee Casey	Vass Robinson	Kurt	Neelly
41	3d Motion Analysis of Single Leg Squat with Association to Hip Abductor Strength and Ankle Dorsiflexion in A Population with Ankle Injuries	Sydney Mason Ryan	Story Vandiver Bowman	Melissa	Tolbert
42	Examining the Impact of Clinical Instruction on Burnout Levels Among Practicing Physical Therapists: Stressors and Emotional Impact	Stephanie Emma Natalie	Bigham Chelf Hagewood	Vance	Pounders
43	Intra-rater Reliability of Activforce2 HHD in Assessing Hip Strength Musculature	Ben Joel Trent	Naas Butcher Rice	Melissa	Tolbert
44	Effects of Full PPE on the Balance and Stability of Firefighters	Leah Adasyn Michael	Adams Clarkson Wood	Sonia	Young
45	Assessing Heart Rate and Perceived Exertion in Virtual Reality Gaming for Aerobic Fitness	Hallie Ethan Parker	Parrish Walton Bates	David	Bell
46	Accuracy of Palpation of the Long Head of the Biceps Tendon in First Year DPT Students	Jamie Canon Kreyton	Ashburn Campbell Cunningham	Penny	Head
47	The Impact of Prenatal Yoga on Hip Mobility and Delivery Outcomes	Zoe	Avery	Rachel	Tinius
48	Understanding Perceived Pediatric Healthcare Needs in the Rural Mennonite Communities of South-Central Kentucky: A Community-based Research Study	Allison	West	Kim	Link
49	Descriptions of Black Autistic Girls' Social Communication Skills	Shayna	Garrett	Jenny	Burton
50	The Final Bow: A Musical Film on Transitioning to Professional Theatre	Hanneh	Kevorkian	Tiffany	Bostic-Brown

Posters - Midday Session (12:15 pm – 1:45 pm)

SESSION CHAIRS: Jae Kim, Thad Crews, Les Archer

DSU 1ST FLOOR

BOARD #	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
1	Qualitative Behavior of Solutions to Differential Equations in Abstract Spaces	Austin	Anderson	Lan	Nguyen
2	Blood Pressure Stress Reactivity Moderates the Association of Racial Discrimination to Ethnic Minority Youth's Conduct Problems	Sena	Er	Qingfang	Song
3	General Perception of Drug Effectiveness	Chealsea	Gachagua	Jacob	Byl
4	Predicting Covid-19 Severity: A Machine Learning Approach Using Patient Symptoms	Vedant	Garg	Huanjing	Wang
5	Arousal Regulation in Vigilance Task Among Patients with PTSD	Abigail Elijah Areej	Goodin King Ali	Sungjin	Im
6	Discovery And Analysis of Mycobacteriophage Saranya	Vidhi	Grover	Rodney	King
7	A Study on the Diversity and Distribution of Birds in Cloudbridge Nature Reserve	Charles Frankie Roby	Maddux Peak Hardesty	Martin	Stone
8	Assessing Fluorescent Dye Stability to Inform Groundwater Remediation	Leo Chris	Martinez Gachagua	Lee Anne	Bledsoe
9	Tracking a Rolling Can Filled with Fluid Oscillating Along a Ramp	Prthu	Naik	Ivan	Novikov
10	Black/White Residential Segregation and Rates of Black Homicide Victimization	Mallory	Quinn	James	Kanan
11	Resilient Architecture: Developing Infrastructure to Mitigate Flooding	Rehan	Shaikh	Aly	Shahnaz
12	Exploring Diversity: A Comparison of Bacteriophages Huggins and Hersh	Amelia Christina	Sheehan Gast	Rodney	King
13	Aquatic Macroinvertebrate Diversity as a Measure of Water Quality in Cloudbridge Nature Reserve	Austin Cameron	Wooden Collett	Keith	Philips

14	Comparing the Performance of the Baltimore, Warren, and Pratt Truss Bridge Designs	Marlowe Caroline	Hanel Cook	Kirolas	Haleem
15	Autonomous Robot for Mining Mayhem: IEEE Southeastcon 2025	Brandon William	Hydol-Smith Boyd	Mark	Cambron
16	Ergonomics Assessment to Meet the Needs of Employees' Health and Wellness	Ashlee Ashley	Greenidge East	Gretchen	Macy
17	Historical County Level Maps of Natural Disasters and Extreme Weather Events for A Statewide Public Health Jurisdictional Risk Assessment	Chase Jay	Pitchford Macy	Jacqueline	Basham
18	Diabetes Prediction Modeling with Machine Learning Techniques	Ryan	Yang	Huanjing	Wang

DSU 2ND FLOOR

Midday Poster Session Continued

BOARD #	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
19	Greenwood Acres at Vinalhaven	Caitlyn	Blandford	Shahnaz	Aly
20	Our Space	Syntyah	Hamilton	Shahnaz	Aly
21	United Fitness	Emily	Sanborn	Shahnaz	Aly
22	Form Follows Function: Applying Modern Design Principles to a Fun Center	Paige	Epperson	Shahnaz	Aly
23	Bluegrass Distillery	John	Shelton	Shahnaz	Aly
24	Sawtooth City Lodge	William	Weatherholt	Shahnaz	Aly
25	Creating Community in Sports and Activity	Nathaniel	Phillips	Shahnaz	Aly
26	Creating Safe Spaces: Evaluating Residential and Day Facilities for Vulnerable Populations	Caroline Carrigan Alaina Madison	Burton Watson Hess Miller	Shahnaz	Aly
27	Green Acres Golf Club House	Chloe	Wright	Shanaz	Aly
28	Cave City Stay and Play: A Family Fun Hotel	Kimberly	Lanham	Shahnaz	Aly
29	Sustainable Lighting on Modern Structures and the Methods Used to Bring Artistic Elements to the Forefront of Sustainable Lighting Design	Abigail	Abrams	Shahnaz	Aly
30	Cumberland Distillery: Where Bluegrass Meets Modern Bourbon Whiskey	Alexis	Cruz-Rodriguez	Shahnaz	Aly
31	Sustainable Fun for All: Clarksville's Ultimate Entertainment Hub	Arrmoni	Mixon	Shahnaz	Aly

32	Hendersonville Music Center: Where History Inspires the Present	Andrew	Tate	Shahnaz	Aly
33	Bridging The Past and Future of Equine Architecture in Kentucky	Madeline Grace Josie Kyler	Fey Lawson Raaf Adams	Shahnaz	Aly
34	The American Belle	Logan	Goss	Shahnaz	Aly
35	Engaging The Community Through Museum Design	Guadalupe	Ramirez	Shahnaz	Aly
36	Costa Rica Ecotourism Policy Analysis to Measure Biodiversity Sustainment	Riley	Summers	Leslie	North
37	Effects of Accessibility on Quality of Cenotes in the Mexican Yucatán Peninsula	Evie	Dukes	Chris	Groves
38	Evolving Impacts of Tropical Systems on Kentucky's Climate: A Historical and Statistical Analysis of Precipitation Trends	Helen	Rose	Jerald Chris	Brotzge Groves
39	Caves, Calculus, and Climate Change	Ava	Lich		
40	A History of Dye Tracing in The Hidden River Cave Groundwater Subbasin, Kentucky: Visualizations into Karst Hydrogeology and Contamination Risks	Mason	Oney	Patricia	Kambesis
41	Burch and Bark	Mia	Lampert	Sheila	Flener
42	The Secret Garden	Hallie	Pippin	Sheila	Flener
43	Elysian Wellness: A Nature-inspired Wellness Sanctuary for Women	Sophia	Dant	Sheila	Flener
44	Women's Neighborhood Gym "Haven Fitness"	Meg	Christensen	Sheila	Flener
45	A review on the safety of meat and poultry products sold at farmers' markets	Sage	McBride	John	Khouryieh
46	Impact of Temporomandibular Joint (TMJ) Sensitivity on Ridden and Ground Behavior in Horses	Remi	Hensley	Debra	Shoulders
47	Secondary Agricultural Mechanics Instructors Adaptations When Integrating Special Needs Students into The Laboratory Environment	Makayla	Bizzell	Thomas	Kingery
48	Proposing a TMJ Sensitivity Scoring System in Horses	Lily	Jones	Debra	Shoulders
49	Gender, Victimization and Substance Use	Caitlin	Hinds	Justin	Smith
50	Enhancing Photodynamic Therapy: Reserpine-mediated Efflux Pump Inhibition for Improved Pathogen Deactivation with Methylene Blue and Nanoparticles	Begench	Gurbandurdyev	Ali	Oguz Er

Posters - Afternoon Session (2:00 pm – 3:30 pm)

SESSION CHAIRS: *Jae Kim, Thad Crews, Les Archer*

DSU 1ST FLOOR

BOARD #	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
1	Preferences And Utilization of Stress Management Techniques Among Young Adult Heavy Drinkers Enrolled in a Digital Health Intervention	Lily	Milam	Matthew	Woodward
2	Dating While Trans: A Conjoint Analysis of Men's Romantic Preferences	Jade	Ismail	Aaron	Wichman
3	Age-related Differences in the Perception of Negative Emotions Including Pain	Alana Sheila	Medina- Disponett To	Andrew	Mienaltowski
4	The Association Between an EEG Biomarker of Language Abilities and Mental Health Symptoms in Survivors of Childhood Traumatic Brain Injury	Lynnsey	Cole	Patrick	Ledwidge
5	Examining Predictors of Maternal Parenting Behaviors: The Roles of Parental Efficacy, Infant Temperament, and Partner Support	Ama	Boateng	Diane	Lickenbrock
6	Infant Temperament as a Predictor of Parental Anxiety with Mothers and Fathers Across Early Infancy	Hailey	Borges	Diane	Lickenbrock
7	Can V1 Targeted Transcranial Focused Ultrasound Induce a Temporary Visual Blindspot?	Yulia	Mishchuk	Gordon	Baylis
8	Problematic Smartphone Use Is Associated with Posttraumatic Cognitions	Sophie Cassie Alex Amina	Jerome Barret Gehring Sulejmanovic	Matthew	Woodward
9	ERP Correlates of Cognitive Control During an Unanticipated Sidestep Maneuver: Preliminary Findings from an EEG Mobile Brain-Body Imaging (MOBI) Study	Carly	McPherson	Patrick	Ledwidge
10	Bipartisan Party Attribution Eliminates Negative Effects of Need for Chaos on Political Policies.	Trenton	Daugherty	Aaron	Wichman

11	Accuracy in Performing a Run-to-cut Sidestep Maneuver Is Poorer When Planting on Non-dominant Limb: Preliminary Findings	Jaime	Heckler	Patrick	Ledwidge
12	Planting with the Non-Dominant Limb during an Unanticipated Sidestep Maneuver Produces Higher Vertical Tibial Accelerations: Preliminary Findings	Lily Camille	Faulkenberg Ratcliff	Patrick	Ledwidge
13	The Impact of a Trauma-informed Brief Intervention on PTSD, Depression, and Anxiety	Dalton	Dickerson	Matthew	Woodward
14	Examining the Impact of Political Affiliation and Related Images on False Memories	Shawn	Sullivan	Amber	Giacona
15	Poor Attachment Mediates the Negative Impact of Parental Mental Disorders on Young Adults' Mental Health and Help Seeking Intentions	Alyssa Caleb	Bozeman Penick	Qin	Zhao
16	Beyond What Students Value: Investigating Perceived Dislikes in the College Learning Experience	Jordan Ava	Baird Shea	Lisa	Duffin
17	Safety in Numbers? An Experimental Exploration of The Effects of Police Force Size as Moderated by Legitimacy	Hannah Ashley Ava Jenna	Hennessey Cross Shea Clark	Christopher	Peters
18	Reevaluating Perlin's Nine Insanity Myths: The Influence of Demographics and Political Orientation in Modern Society	Hannah Chris Jessye	Hennessey Peters Denney	Christopher	Peters

DSU 2ND FLOOR

Afternoon Poster Session Continued

BOARD #	ABSTRACT TITLE	FIRST NAME	LAST NAME	MENTOR FIRST NAME	MENTOR LAST NAME
19	The Effects of Replication Crisis Instruction on the Development of Skepticism	Ericka	Hoppes	Amber	Giacona
20	Exploring Suicide Intervention Among a Community Sample	Kaymin	Wilkins	Sarah	Bonis
21	Performance Anxiety Across Sport Categories	Averi	Cline	Steven	Wininger

22	Perceptions of Crime: How Influencer and Celebrity Status Affect Blame and the Role of Media Outlets	Jessye	Denney	Christopher	Peters
23	Impact of Goal Type on Anxiety, Attention, and Performance: A Comparison of Intrinsic Versus Performance Goals	Kaitlin	Polly	Steven	Wininger
24	When Loyalty Leads to Blind Conformity: The Role of Member Loyalty, Leader Loyalty, and Leader's Mental Health in Sunk Cost Fallacy	Kendall Emma	Al-Halah Hicks	Young-Jae	Yoon
25	Buti Yoga: Movement, Mindfulness, and Mental Health	Victoria Cheyla	Minteer Ferguson	Jill	Sauerheber
26	Telehealth Use in Victims' Service Settings	Jamison	Brown	Whitney	Cassity- Caywood
27	From Classroom to Clinic: Evolving Attitudes Toward AI in the Counseling Profession	Lauren Duerell Oceanna	Wilson Bard Dykes	Lester	Archer
28	Why Is Sleep Difficult?	Parker	Wiggins	Lily	Zhuhadar
29	Social Media and Mental Health Insights For Public Policy And Public Health	Ryan	Spychalski	Lily	Zhuhadar
30	Predicting Hazardous Near-earth Objects Using Machine Learning for Planetary Defense	John	Costa	Lily	Zhuhadar
31	Enhancing Airline Passenger Satisfaction Through Predictive Analytics: A Data-driven Approach to Improving Customer Experience	Cole	Kidd	Lily	Zhuhadar
32	Leveraging Predictive Analytics to Mitigate Employee Attrition: A Data-Driven Approach to Workforce Retention	Hayden	Coles	Lily	Zhuhadar
33	Employee Future Prediction	Christian	Sander	Lily	Zhuhadar
34	Predicting Body Fat Percentage Using Machine Learning: A Cost-effective Approach for Health & Wellness	Michael	Delaney	Lily	Zhuhadar
35	Predicting College Student Drop Out Rates Using Predictive Analytics	Jenna	Wells	Lily	Zhuhadar
36	Inquiry Oriented Dynamical Systems and Modeling for Pre-service Secondary Mathematics Teachers: Literature Review and Preliminary Data	Melanie	Stewart	Nicholas	Fortune
37	Exponential Stability Preserving Semi-Discretized Model Reduction for Two Interconnected Strings with a Dynamic Interior Mass	Zoe	Brown	Ahmet Ozkan	Ozer

38	Strategies and Outcomes of an Hourglass Quadrue	Dastin	Scott	Dominic	Lanphier
39	Unconscious Political Messaging in Children's Films: An Analysis of The Nut Job (2014)	Emma Jamie	Hyman Browder-Seguin	Dorothea	Browder
40	Investigating the Twin Prime Conjecture	Alyssa	Hauber	Dominic	Lanphier
41	Predicting Uptake of New Pharmaceuticals Based on Perceptions of Credibility and Risk Beliefs	Macie	Conger	Jacob	Byl
42	Music Education for All: Connecting Cultures and Conservation	Lauren	Lane	Andrew	Braddock
43	Patrice Lumumba: Champion Of Human Rights and Self-determination	Flora	Lin	Patricia	Minter
44	Nexus: Xr Lab Game Design Research Project	Samantha	Bowling	Mark	Simpson
45	What If? A Contemporary Take on the Speculative Design Project, Attenborough Design Group	Samantha	Tinsley	Leah	Spalding
46	Totspot Ar	Sarah Kelly	Thompson Miller	Jeffrey	Galloway
47	Comparing The Performance of the Fink, Fan Fink, And Compound Fink Truss Bridge Designs	Luke	Phelps	Kirollos	Haleem
48	Rhetorical In/Exclusivity in Church Welcome Messages	Taryn	Deckard	Jessi	Thomsen
49	Ritual Landscapes on the Periphery of The Turkic Empire: A Spatial Analysis of Monuments in The Zuunkhangai Region, Mongolia	Tyler	Dedic	Jean-Luc	Houle
50	Enhancing Injury Prevention and Management: Developing Standardized Injury Screening Survey for WKU's Dance Program	Grace	Carter	Meghen	McKinley