

WKU

**51ST ANNUAL STUDENT
RESEARCH
CONFERENCE**

VIRTUAL CONFERENCE

**Friday, April 9TH
2 pm CDT**

**Saturday, April 10TH
9 am CDT**

Western Kentucky University • Bowling Green, KY

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CONFERENCE SCHEDULE

Friday, April 9, 2021

- 2:00 pm – 3:00pm **2021 Welcome & Keynote Speaker**
Live Session via Symposium
Dr. Ruth Karron
"COVID-19 Vaccines: One Year and Counting"
- 3:15 pm – 4:15 pm WKU Faculty & Student Research Highlight
Live Session via Symposium
YouTube Videos from 2021 WKU Faculty Research award winners

Saturday, April 10, 2021

- 9:00 am – 10:30 am **Concurrent Morning Sessions I**
Live via Symposium
<https://symposium.foragerone.com/2021-wku-student-research-conference/presentations>
- 11:00 am – 12:30 pm **Concurrent Morning Sessions II**
Live via Symposium
<https://symposium.foragerone.com/2021-wku-student-research-conference/presentations>
- 1:00 pm – 2:30 pm **Concurrent Afternoon Sessions I**
Live via Symposium
<https://symposium.foragerone.com/2021-wku-student-research-conference/presentations>

Symposium by ForagerOne is a virtual platform to curate and share research and creative projects with others, all while facilitating discussion. Live presentation links will be available under the "Live Sessions" tab on Symposium site. Recorded presentations will be available all week under the "Presentations" tab on the Symposium site.

KEYNOTE SPEAKER AND LECTURE



Dr. Ruth A. Karron

COVID-19 Vaccines: One Year and Counting

**Friday, April 9, 2021
2:00 pm – 3:00 pm CST**

Symposium Live Session

Free & Open to the Public

Ruth Karron, M.D., is a Professor of International Health in the Bloomberg School of Public Health with a joint appointment in the Department of Pediatrics in the School of Medicine, Johns Hopkins University. Dr. Karron is a pediatric infectious diseases physician, virologist, and vaccinologist, and is Director of the Center for Immunization Research and the Johns Hopkins Vaccine Initiative. Dr. Karron has substantial experience in the evaluation of respiratory virus vaccines in adult and pediatric populations. Dr. Karron's research interests also include the development of immune responses to respiratory viral infections in early life, the epidemiology of RSV and other respiratory viral diseases in low resource settings, and public policy and ethical issues related to vaccine development and distribution. She co-led the Pregnancy Research Ethics for Vaccines, Epidemics, and New Technologies (PREVENT) Working Group, which released "*Pregnant Woman & Vaccines Against Emerging Epidemic Threats: Ethics Guidance for Preparedness, Research and Response*", a guidance document with specific actionable recommendations to ensure that pregnant women are no longer excluded from receiving vaccines against emerging infectious diseases. Dr. Karron has served on a number of national and international vaccine advisory committees and panels, including the CDC Advisory Committee on Immunization Practices (ACIP), and the FDA Vaccine and Related Biological Products Advisory Committee (VRBPAC), which she chaired from 2006-2008. She is currently a member of the WHO Product Development for Vaccines Advisory Committee (PDVAC), the Gavi Vaccine Innovation Prioritisation Steering Committee (VIPS), the COVAX ACT-acclerator COVID vaccine Maternal Immunization Working Group, and chaired the Vaccines Advisory Panel for the Wellcome Trust. In 2016, Dr. Karron received the Robert M. Chanock award for outstanding contributions to RSV research.

CONFERENCE INTRODUCTION

The WKU Student Research Conference showcases scholarly activities of graduate and undergraduate students of diverse disciplines from across the main and regional campuses. An annual tradition since 1970, the conference has provided opportunities for thousands of students to present papers, performances, posters, exhibits, and displays on their research and creative endeavors.

Scholarly activity is original and creative work that is shared with colleagues and the general public. Research is a form of scholarly activity that involves the discovery of new knowledge. Other forms of scholarship include the development of new technologies, methods, materials or uses; the integration of knowledge that leads to new understanding; and artistry that creates new insights and interpretations.* As demonstrated by the Student Research Conference, students significantly enrich their academic experiences at WKU by engaging in scholarly activity.

CONFERENCE HISTORY

WKU has a long history of promoting student research and creative activity. Between 1970 and 2002, the WKU Chapter of Sigma Xi organized and funded the WKU Student Research Conference. Sigma Xi is a national research honor society of scientists and engineers that recognizes scientific achievement. The society is a diverse organization of members and chapters dedicated to companionship in science and engineering and advancement of knowledge through research, teaching, and service. For the next three years, the conference was jointly sponsored and organized by Sigma Xi and the University Honors Program. In 2006, WKU hosted a weekend-long celebration of student scholarship that included the Potter College Undergraduate Conference on Friday and the annual WKU Student Research Conference on Saturday, the latter again sponsored by Sigma Xi and the University Honors Program. The following year, a special committee composed of representatives of each college, the University Honors Program, and Sigma Xi organized a single conference. In 2006-2007 Sigma Xi and the Office of the Provost provided financial support for the conference.

In 2008 Provost Barbara Burch created the Student Research Council, a university-wide committee charged with promoting student scholarly activity on campus and organizing the annual student conference. Since that year, the Student Research Council has organized the annual Student Research Conference, with financial support provided by the WKU Chapter of Sigma Xi, the Office of the Provost, the Office of Research and Creative Activity, and other university units. With support from the Office of the Provost and the Office of Research, in 2012 the Student Research Council developed a weeklong celebration of student scholarship called REACH (Research Experiences and Creative Heights) Week. Currently REACH is coordinated by the Office of Research and Creative Activity and highlights student and faculty scholarship at events hosted by WKU colleges and units.

* Weiser, C. J. (1996, March 7) The Value System of a University: Rethinking Scholarship. Retrieved 30 November 2010 at www.adec.edu/clemson/papers/weiser.html.

CONFERENCE ORGANIZATION AND SESSION WINNERS

The research and creative projects presented at the conference are organized into sessions based on the subject areas of their projects. WKU faculty, professional staff, and retired faculty and staff serve as judges to evaluate student presentations at the conference. The judges select one winner from each of the sessions listed in this program. Session winners will be announced on the Student Research Council website at www.wku.edu/studentresearch. Winners will receive award certificates, and all student presenters will receive judges' feedback via their mentors after the conference.

CONFERENCE HIGHLIGHTS

The 51st Annual WKU Student Research Conference proudly showcases 202 research projects and creative works. A total of 235 students are presenters and co-presenters at the conference, including 160 undergraduate, 41 master's, and 1 doctoral student. An index of presenters is provided at the end of this program.

The interdisciplinary nature of the conference is evident in the broad range of subject areas covered in the presentations. Student participants represent diverse disciplines from 32 schools, departments, programs, and institutes in all colleges.

Accounting	Educational Leadership Doctoral Program
African American Studies	Engineering and Applied Sciences
Agriculture	English
Art	Environment, Health & Safety
Biochemistry	Folk Studies & Anthropology
Biology	Journalism & Broadcasting
Chemistry	Kinesiology, Recreation & Sport
Communication	Marketing and Sales
Communication Sciences and Disorders	Mathematics
Computer Information Technology	Music
Earth, Environmental, and Atmospheric Sciences	Nursing
Economics	Physics & Astronomy
	Political Science

Psychological Sciences
Psychology
Public Health

School of Teacher Education
Social Work
Theatre & Dance

The research and creative projects presented at the conference are organized into sessions based on the subject areas of their projects. WKU faculty, professional staff, and retired faculty and staff serve as judges to evaluate student presentations at the conference. Judges select one winner from each session listed in this program, and session winners will be announced on the Student Research Council website at www.wku.edu/studentresearch. Winners will receive award certificates, and all student presenters receive judges' feedback via their mentors after the conference.

ACKNOWLEDGEMENTS

On behalf of the entire campus community, the WKU Student Research Council extends appreciation and congratulations to the hundreds of students participating in the conference. We applaud your talent, creativity, dedication, and commitment to making the most of your educational experience at WKU. Your passion for learning and academic excellence, as well as your motivation to overcome challenges, not only distinguishes you from your peers but also serves as an inspiration to others. We are proud of your accomplishments, and you should be too.

WKU faculty and staff who have supervised the students on their research and creative projects are referred to as "mentors" and are identified parenthetically in the detailed session listings on pages 9-24. A total of 99 faculty and staff served as mentors on the projects presented at this year's conference. We commend the mentors for their support of student scholarly activities and for their assistance in preparing students for the conference.

Funding for the 51st Annual WKU Student Research Conference was 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 provides grants to graduate students to support scholarship that promotes inquiry and contributions to knowledge. A number of the graduate students presenting today were assisted by funding from the Graduate School.

A variety of funding opportunities are available to assist undergraduate students with their scholarship. In 2012 the Office of the Provost and Vice President for Academic Affairs and the Office of Research and Creative Activity initiated an internal funding program for undergraduate students called Faculty-Undergraduate Student Engagement (FUSE) grants. FUSE grants are designed to support students' intellectual development by fostering active engagement in the areas of research, creative and

scholarly activities, and/or artistic performances. Over 600 undergraduate students have received FUSE grants since the inception of the program, many of whom are among the conference participants this year.

Alicia Carter, Amy Bingham DeCesare, Tommy Newton, Scott French, and other members of the WKU Office of Public Affairs staff provided vital assistance with electronic advertising, press and social media releases, conference artwork design, and a *View from the Hill* video segment.

Diana Keeling provided expert database support to the Student Research Council.

WKU faculty members Kandy Smith, Stacy Leggett, Kayla Baker, and Allie McCreary delivered informative professional development workshops in advance of the conference.

The WKU Student Research Council organizes the annual conference. Council members represent the following campus units: academic colleges, Honors College, Graduate School, University Libraries, University Senate, Gatton Academy, Sigma Xi, Student Government Association (SGA), and Office of Research and Creative Activity. Members in 2020-2021 are Simran Banga (chair), Scott Gordon, Ranjit Koodali, Rynne Gregory, Lawrence Hill, Christopher Biolsi, Timothy Rich, Kayla Baker, Kyle Phillips, Kandy Smith, Derick Strode, Leah Thompson, Tim Thornberry, Dan Forrest, and Haiwang Yuan. This year, junior, Felicia McCroskey, an English major helped as a web and social media coordinator. For more information about the Council, visit www.wku.edu/studentresearch.

The Council sincerely appreciates the students, faculty, staff, and community members who contributed to the great success of this interdisciplinary conference, as well as the friends and family members who attend the virtual event.

Listed below are the 76 WKU faculty, staff, and retired faculty and staff who served as judges at this year's conference. We greatly appreciate the assistance of the judges and thank them for volunteering. Many are veteran judges who have supported the conference for years or decades.

Katie Algeo	Tyler Clark	Anthony Harkins
Shahnaz Aly	Walter Collett	Gail Hiles
Darlene Applegate	Jason Crandall	Jean-Luc Houle
Lester Archer	Xiuhua Ding	Ted Hovet
Farhad Ashrafzadeh	Marko Dumančić	Xiaoxia "Silvie" Huang
Ferhan Atici	Gihan Edirisinghe	Sungjin Im
Jacqueline Basham	Timothy Evans	Tammy Inscoe
Marliese Belt	Xingang Fan	Kumi Ishii
Mark Berry	Yuan Fang	Pamela Jukes
Brent Bjorkman	Ann Ferrell	Patricia Kambesis
Lauren Bland	Nahid Gani	Charles Kile
Crystal Bohlander	Sherrie Godbey	Jae Kim
Jacoby Byl	Destinee Greer	Rodney King
Manohar Chidurala	Thomas Gross	

Cheryl Kirby-Stokes
Alex Lebedinsky
O.E. Mansour
Wren Mills
Jeffrey Miner
Matthew Nee
Amy Nemon
Beth Norris
Pauline Norris
Sam Oldenburg
Anne Onyekwuluje

Juliana Ortolani
Ahmet Ozkan Ozer
Jason Polk
Claire Rinehart
Naomi Rowland
Sarah Scali
Megan Schargorodski
Todd Seguin
Luiz Henrique Silva
Qingfang Song
Trini Stickle
Whitley Stone

Liz Sturgeon
Anotonia Szymanski
Jenni Teeters
Patricia Todd
Jessica Torelli
Kelli Truelove
Huanjing Wang
Aaron Wichman
Blairanne Williams
Matthew Woodward
Sonia Young

Explanation of Presentation Listings

The program includes details for each presentation in the following order: presenter, co-presenters (as applicable), co-authors (as applicable), the session title, and the mentor for a project. Each WKU student was permitted to serve as the primary presenter on one presentation at the conference. Up to three co-presenters and up to six co-authors could also be listed. The sample below illustrates the format.

Sample

Presenter Last Name, First Name; Co-Presenter Last Name, First Name; Co-Author Last Name, First Name; "Title of a Great Presentation" (Mentor First Name Last Name)

CONCURRENT MORNING SESSIONS

9:00 – 10:30 am

Session 1 Graduate Oral Presentations, Arts and Humanities

Judges Marko Dumancic (moderator), Gail Hiles

- 9:15 Willoughby, Ginny** "Hanoks: Subsidization, tourism, and space" (Tim Frandy)
- 9:30 Survance, Anthony** "Professorial Identities: Managing Identity Crises During a Global Pandemic" (Jennifer Mize-Smith)
- 9:45 Myers, Jeffrey** "Learning How to Get Good" (Huanjing Wang)
- 10:00 Hatch, Landyn** "'A labor of love": The Creation of Sperr Memorial Park" (Ann Ferrell)

Session 2 Graduate Oral Presentations, Natural Sciences

Judges Cheryl Kirby-Stokes (moderator), Ozkan Ozer

- 9:00 Shrestha, Niroj; Gani, Nahid;** "Understanding the Tectonic Geomorphology of the Eastern Fold and Thrust Belt of the Bengal Basin" (Nahid Gani)
- 9:15 Wilson, Nathan; Nee, Matthew;** "Monitoring Paraquat Degradation in Real Time Using Colloidal Gold Surface-enhanced Raman Spectroscopy" (Matthew Nee)
- 9:30 Cecil, Matthew;** Polk, Jason; "Examining Hydrogeological Dynamics of Baselevel and Reverse Flow of the Green River and Major Springs of Mammoth Cave, Kentucky" (Jason Polk)
- 9:45 Jaybhaye, Amol** "Synthesis of Amine and Thiol Functionalized Ionic Liquids to Control Platinum Nanoparticle Morphology for Catalytic Hydrogenation Reaction" (Lawrence Hill)
- 10:00 DeCelle, Christian** "Developing an Integrated Karst Evaluation and Management Priority Tool Using a Comparative Case Study Application in Alaska and Belize" (Jason Polk)

Session 3 Undergraduate Oral Presentations, Arts and Humanities

Judges Brent Bjorkman (moderator), Tim Evans

- 9:00 Martinez-Ramon, Lizbeth** "Social Media Analysis: St. Jude Children's Research Hospital" (Kumi Ishii)
- 9:15 Lancaster, Emily** "No Day But Today: The Cultural Impact of Rent 25 Years Later" (Ted Hovet)
- 9:30 Russell, Fallon** "Typographic Tone in Texting" (Angela Jones)
- 9:45 Hatfield, Brooke** "History Has Its Eyes on Hamilton's Dissent" (Anthony Harkins)
- 10:00 Smith, Claire; Elliott, Brian;** "The Unfaithful Bride" (Matthew Herman)
- 10:15 Caldwell, Emily** "Effective Community Engagement Programs in Contemporary Concert Dance Companies" (Amanda Clark)

Session 4 Undergraduate Oral Presentations, Interdisciplinary

Judges Aaron Wichman (moderator), Amy Nemon

- 9:00 Johnson, Lilly** "The Architecture and Design Building" (Shahnaz Aly)
- 9:15 Matheny, Steven; Love, Ryan** "Traffic Safety Impact of Covid-19 Pandemic in the City of Bowling Green, KY" (Kirolos Haleem)
- 9:30 Phillips, Benjamin** "Community and Health: The Frosty Squirrel" (Aly Shahnaz)
- 9:45 Pinney, Abbott** "Finding the Information Rates of Secret Sharing Schemes Using Decomposition Construction" (Mustafa Atici)
- 10:00 Schmidt, Cole; Al Aofi, Ayuob Abdallah Mohammed** "Safety Investigation of Distracted Driving Behavior in Kentucky Using a Driving Simulator" (Kirolos Haleem)

Session 5 Undergraduate Oral Presentations, Natural Sciences

Judges Jacob Byl (moderator), Yuan Fang

- 9:00 Wasson, Fiona; Yusuf, Augustine; Nguyen, Ngoc;** "Optimizing the Synthesis of a Degradable Initiator Towards Novel Degradable Polymers for Drug Delivery" (Lawrence Hill)
- 9:15 Ryumae, Mina** "Implementing and Comparing Various Dots and Boxes Monte Carlo Tree Search Techniques" (Uta Ziegler)
- 9:30 Al madhani, Mohammed** "Tornado Outbreak of December 16-17, 2019" (Josh Durkee)
- 9:45 Musick, Matthew; Aldossary, Sami; Johnson, Brentley; Newton, Samuel;** Galloway, Michael; "Virtual Experiment on Frequency Response and Bode Plots" (Walter Collett)

- 10:00** **Quire, Michael** "Synoptic and Mesoscale Forcing in the March 2019 North American Cyclone" (Josh Durkee)
- 10:15** **Hoffman, Seth** "Atlantic Mudskippers Signal Through the Substrate During Territorial Behavior" (Michael Smith)

Session 6 Undergraduate Oral Presentations, Natural Sciences
Judges Rodney King (moderator), Megan Schargorodski

- 9:00** **Brown, John** "Synoptic and Mesoscale Analysis of the Derecho Event on June 28, 2018" (Joshua Durkee)
- 9:15** **Campbell, Olivia**; Goodrich, Greg; "Drought in the Breadbasket of America and the Influence of Oceanic Teleconnections" (Greg Goodrich)
- 9:30** **Almarri, Hamed** "In Shape Gym" (Shahnaz Aly)
- 9:45** **Grey, Kelli** "An Analysis of the 6-7 June 2020 Derecho and Accompanying Mesoscale Events" (Josh Durkee)
- 10:00** **Krause, Hannah**; Wulff, Andrew; Groves, Chris; "Characterization of Minerals in Great Onyx Cave, Kentucky" (Andrew Wulff)
- 10:15** **Almarry, Jaber** "Kfu Student Center" (Shahnaz Aly)

Session 7 Undergraduate Oral Presentations, Social Sciences and Education

Judges Toni Szymanski (moderator), Crystal Bohlander

- 9:00** **Bray, Kylie** "Investigating Special Education Services for Elementary English Language Learners within the South-Central US:" (Trini Stickle)
- 9:15** **Puhakka, Erika** "Understanding Public Support for Foreign Aid in the United States" (Timothy Rich)
- 9:30** **Hanson, Benjamin** "The Socioeconomics of Homelessness in Bowling Green, Kentucky" (Joel Turner)
- 9:45** **Beavin, Amanda** "Pathways to Self-governance and Resilience: An Exploratory Study of Community Gardens in Louisville, Kentucky" (Molly Kerby)
- 10:00** **Thomas, Jayden** "The My Parents are Rich Scholarship: Exploring the Effects of Expected Family Contribution and University Aid" (Scott Lasley)
- 10:15** **Weafer, David** "Leadership, Emotional Intelligence, and the Enneagram: A Study of the Effects of Enneagram Training on College Student Leaders" (Steven Wininger)

Session 8 Graduate Posters, Interdisciplinary

Judges **Gihan Edirisinghe (moderator), Liz Sturgeon**

- 01A** **Fragnoli, Joseph** "Cointegration in House Prices and Wages" (Christopher Biolsi)
- 02A** **Gabbard, Annika**; Weiler, Brian; Neils-Strunjas, Jean; Crandall, Jason; Green, Kimberly; "Social Engagement of Nursing Home Residents: A Comparison of Two Observation Methods" (Brian Weiler)
- 03A** **Buoncristiani, Nicholas** "The Validity of Perceptual Recovery Status as a Marker of Intra-Session Recovery During Intermittent Sprint Work" (Danilo Tolusso)
- 04A** **Dickinson, Eli**; Burch, Katrina; "Psychosocial Work Influences on Adaptive Performance" (Katrina Burch)

Session 9 Undergraduate Posters, Arts and Humanities

Judges **Jean-Luc Houle (moderator), Tammy Inscoc**

- 06A** **Fontes, Cameron** "Crafting Character: An Exploration of Elder Identity Through Story" (Trini Stickle)
- 07A** **Price, Kaitlin** "Landscape Analysis and Content Strategy of Team Kentucky Covid-19 Response Website" (Daniel Liddle)
- 08A** **Scott, Tracy**; Bell, Onya; Tilford, Markkeah; Trowel, Kameron; Washington, Tani; Lokuku, Divine; Braden, Kiria; "WKU, Black Female Co-ed and Code Switching: Personal Reflections and Experiences by the WKU South Central Kentucky Chapter of the Association for the Study of African American Life and History" (Selena Sanderfer Doss)
- 09A** **Gumbel, Rachel** "The Federal Prosecution of Al Capone and its Impact on the Evidentiary Evolution of Forensic Accounting" (Stacy Bibelhauser)
- 10A** **Johns, Emily** "Determining Who is Willing to Pay for Conservation at Mammoth Cave National Park" (Jacob Byl)
- 11A** **Johnston, Laurel** "Choose Your Sorry Carefully: How Corporate Apology Elements Affect Consumer Responses" (Joanna Phillips-Melancon)

Session 10 Undergraduate Posters, Natural Sciences

Judges **Jenni Teeters (moderator), Naomi Rowland**

- 12A** **Dominguez, Raquel** "A Meteorological Analysis of the March 3, 2020 Tornadoic Event Over Macon and Lee County, Alabama" (Joshua Durkee)
- 13A** **Chestnut, Alyvia** "Sustainable City of Virtual Reality" (Shahnaz Aly)

- 14A Fisher, Wesley;** Chidurala, Manohar; Bishop, Riley; Hollingsworth, Elena; Mazzoni, Brian; Doom, Alex; Harper, Doug; "Measuring Aerodynamic Forces" (Manohar Chidurala)
- 15A Boling, Tyler** "Davies County High School: Reinventing Educational Buildings" (Shahnaz Aly)
- 16A Camfield, Caroline;** Ashrafzadeh, Farhad; Priddy, Clay; Buendia, Ali; "KFC: Kentucky Factory Cobots" (Farhad Ashrafzadeh)

Session 11 Undergraduate Posters, Natural Sciences

Judges Wren Mills (moderator), Katie Algeo

- 17A Summers, Jackson** "Isolation and Analysis of Novel Microbacterium Phage Makinzy" (Rodney King)
- 18A Wriedt, Zachary** "Acute Sleep Fragmentation Increases Inflammation in White, But Not Brown, Adipose Tissue" (Noah Ashley)
- 19A Ateyeh, Ahmad** "Simulation of high-speed metal forming processes" (Morteza Nurcheshmeh)
- 20A Palmer, Jeffery;** Jaybhaye, Amol; "Synthesis of Nanoparticles Using Functionalized Ionic Liquids to Enhance Catalytic Performance" (Lawrence Hill)
- 21A Schulte, Connor;** Ainembabazi, Lovence; Nee, Matthew; "Polydimethylsiloxane Bead and Photocatalysts as a Method for Treating Organic Water Pollution" (Matthew Nee)
- 22A Driehaus, Alexandra;** Dobrokhotov, Vladimir; Novikov, Ivan; "Collection of Gas Chromatography Signals for the Development of Scent Categorization Algorithm" (Ivan Novikov)

Session 12 Undergraduate Posters, Natural Sciences

Judges Alex Lebedinsky (moderator), Tony Harkins

- 23A Ruben, Stacia** "Mammoth Cave Sharks" (Patricia Kambesis)
- 24A Williams, Jessica** "Mapping Out the Natural Underground "plumbing System" of the Great Onyx Groundwater Basin, Mammoth Cave National Park, Kentucky" (Chris Groves)
- 25A Gover, Harrison;** Pimienta, Matthew; "How Much Curvature is in a Knot?" (Claus Ernst)
- 26A Brunt, William;** Hancock, Dylan; Lee, Ting-Hui; "Light Curves of the Rr Lyrae Variable Star Rx For" (Ting-Hui Lee)
- 27A Menon, Ashwin;** Er, Ali; Kylychbekov, Salizhan; "Laser Shock Peening to Improve Fatigue Resistance of Nickel Titanium Alloy" (Ali Er)
- 28A Pimienta, Matthew** "Classifying particle tracks in a cloud chamber with deep learning algorithm" (Ivan Novikov)

Session 13 Undergraduate Posters, Social Sciences & Education

Judges Qingfang Song (moderator), Jeffrey Miner

- 29A Bragg, Rachel**; Redifer, Jenni; "Cognitive Resources and the Modality Effect: Input Modality Pairings Influence Dual-task Costs" (Jenni Redifer)
- 30A Chang, Samuel**; Zhao, Qin; "Could Directly Shifting Self-doubt Mindset Reduce the Negative Effects of Self-doubt?" (Qin Zhao)
- 31A Farmer, Sofia**; Bieze Wilson, Ashley; "Preservice Teachers' Beliefs as Predictors of Response Style Toward Tgnc Victimization" (Lisa Duffin-Rexroat)
- 32A Powell, Lindsey**; Thornberry, Timothy; "How Connected is Parenting Stress and Child Adaptability Through Child Prosocial Talk?" (Timothy Thornberry)
- 33A Gorski, Kathleen** "School-based Stress and Trauma Management Intervention and Prevention for Elementary School Students" (Thomas Gross)

**CONCURRENT MID-MORNING
SESSIONS
11:00 am – 12:30 pm**

Session 14 Graduate Oral Presentations, Interdisciplinary

Judges Todd Seguin (moderator), Mark Berry

- 11:00 Sisler, Julie** ""The Communication of Sexual Consent by College Students in Casual Sexual Encounters"" (Jennifer Mize-Smith)
- 11:15 Weiler, Austin**; Mallinger, Gayle; "Psychosocial Risk and Body Dysmorphic Disorder: A Systematic Review" (Gayle Mallinger)
- 11:30 Pedigo, Ariana** "Bringing the Dancing Demons Back to Life: Tsam Dances in 21st Century Mongolia" (Ann Ferrell)
- 11:45 Cate, Allison** ""They Say a Jewish Demon Has Possessed the Groom"": Folklore and the Folkloresque in The Film "demon"" (Ann Ferrell)

Session 15 Graduate Oral Presentations, Natural Sciences

Judges Huanjing Wang (moderator), Manu Chidurala

- 11:00 Troxell, James;** Polk, Jason; "An Adaptive Incident Response Framework for Urban Karst Groundwater Hazards" (Jason Polk)
- 11:15 Hakimov, Somon;** Hurley, Jordyn; "Improved Antimicrobial Effect of Silver Nanoparticles With Methylene Blue" (Ali Oguz Er)
- 11:30 Ayorinde, Kehinde** "Synthesis of CdS/ZnS Core/shell Nanoparticles for Hydrogen Gas Production from Water Splitting" (Lawrence Hill)
- 11:45 Ragi, Pallavi;** Mahmoudi, Faranak; Conte, Eric; "Occurrence of Estrogens and Other Steroids in Anaerobically Digested Cattle Waste" (Eric Conte)
- 12:00 Williams, Abigail** "Improving Best Management Practices for Siting, Maintenance, And Design of Urban Karst Groundwater Injection Wells" (Jason Polk)

Session 16 Undergraduate Oral Presentations, Interdisciplinary

Judges Patricia Todd (moderator), Destinee Greer

- 11:00 Adams, Ashton;** "Impact of Demographic Variables on the Public Opinion of White-collar Criminals" (Timothy Rich)
- 11:15 Johnson, Miles** "Studying Financial Risk Aversion with the Jeopardy! Daily Double" (Susane Leguizamon)
- 11:30 Lenihan, Avery** "The Informational Role of Self-Reported Importance and Credibility of Information Sources" (Jacob Byl)
- 11:45 Merdian, David** "Impact of Monetary Shocks on the Optimal Currency Area status of the United States" (Christopher Biolsi)
- 12:00 Pare, Zena** "Banking on Her: The Effects of Microfinance on Women's Autonomy in Developing Economies" (Susane Leguizamon)
- 12:15 Einhorn, Madelynn** "How Often Do South Koreans Think About Inter-Korean Issues? Evidence from an Experimental Survey" (Timothy Rich)

Session 17 Undergraduate Oral Presentations, Interdisciplinary

Judges Pauline Norris (moderator), Tyler Clark

- 11:00 Taggart, Kaharie** "The Seed That Grows" (Shahnaz Aly)
- 11:15 Williams, Baron; Clouser, Jessica;** Smith, James; Anastasio, Israel; Hosseinpour, Mehdi; "Comparative Analysis of Aggressive-driving And Distracted-driving Crashes Involving Commercial Motor Vehicles in Kentucky" (Kirolos Haleem)

- 11:30 Hamm, Lillian** "Answers in The East: An Examination of China's Renewable Energy and its Application to Central Appalachia" (Patricia Kambesis)
- 11:45 Arora, Shreeya** "Detecting Gerrymandering with Computational Algorithms" (Bruce Kessler)
- 12:00 Satish, Diksha;** Schugart, Richard; "Calculating Individual and Population Parameter Values in the Healing of Chronic Wounds Through Mixed-effects Modeling" (Richard Schugart)
- 12:15 Archey, Casey** "An Analysis of the May 3rd, 2020 Derecho" (Josh Durkee)

Session 18 Undergraduate Oral Presentations, Natural Sciences

Judges Matthew Nee (moderator), Ted Hovet

- 11:00 Brown, James** "A Synoptic and Mesoscale Analysis of the April 12-13, 2020 Easter Tornado Outbreak" (Josh Durkee)
- 11:15 Bishop, Riley;** Mazzoni, Brian; Hollingsworth, Elena; Fisher, Wesley; Doom, Alex; "Force Balance Development for Wind Tunnel Research" (Manohar Chidurala)
- 11:30 Farley, Corbin; Alashour, Ali; Stahl, Brenton;** Galloway, Michael; "Virtual Experiment with Operational Amplifiers" (Walter Collett)
- 11:45 Mahmutovic, Adis** "The Towers of Nature" (Shahnaz Aly)
- 12:00 Mazzoni, Brian;** Thompson, Tate; Palmquist, Shane; "Finites & Omnifinites Honoring Prof. Dr. Georg Cantor's Legacy" (Shane Palmquist)
- 12:15 Kubala, Josie;** Wulff, Andrew; Suggs, Mike; McDavid, Courtney; "Characterizing Mesonet Clay Samples" (Andrew Wulff)

Session 19 Undergraduate Oral Presentations, Natural Sciences

Judges Walter Collett (moderator), Shahnaz Aly

- 11:00 Danford, Ellen** "Informing Sustainable Policy with Carbon Sequestration Analysis" (Leslie North)
- 11:15 Stinnett, Sylvia** "An Analysis of the 3 March 2020 Nashville Ef-3 Tornado" (Joshua Durkee)
- 11:45 Wright, Emily** "Geologic Mapping of the "incrop" in the Mammoth Cave System, Kentucky" (Patricia Kambesis)
- 12:00 Mack,Darius** "August 10-11, 2020 Derecho: An Extraordinary Severe Wind Event" (Joshua Durkee)

Session 20 Undergraduate Performance, Interdisciplinary

Judges **Xingang Fan (moderator), Charlie Kile**

- 11:00** **Jones, Ashton** "I Hear You: The Everyday Struggle Living with Misophonia" (Brad Pfranger)
- 11:15** **Ndayirukiye, Frederic** "Elevate Fitness" (Shahnaz Aly)
- 11:30** **Panzade, Aarohi; Wimsatt, Hunter; Shankar, Kaaustaub;** "Using Machine Learning to Interpret Dice Rolls" (Warren Campbell)
- 11:45** **Turner, Grant** "Simplification of Robotics Through Autonomous Navigation" (Mark Cambron)

Session 21 Graduate Posters, Interdisciplinary

Judges **Ellen Godbey (moderator), Sungjin Im**

- 01B** **Duchette, Cathryn;** Tinius, Rachel; Stone, Whitley; Blankenship, Maire; Tomes, Ariel; "The Influence of Prenatal Yoga on Mental Health in Pregnancy During the COVID-19 Pandemic" (Rachel Tinius)
- 02B** **Yusuf, Augustine;** Hill, Lawrence; Wasson, Fiona; Palmer, Jeff; "Design of a Novel Class of Degradable Antioxidant Polymers" (Lawrence Hill)
- 03B** **Bailey, Dalton** "Political Identity Fusion Magnifies Liking for Political Policies Proposed by Our Own Party" (Aaron Wichman)
- 04B** **Rollins, Casandra; Matheson, Kathryn;** Burch, Katrina; "Work-to-school Conflict, Stress, and Alcohol Use Among College Students" (Katrina Burch)

Session 22 Undergraduate Posters, Interdisciplinary

Judges **Beth Norris (moderator), Amy Nemon**

- 05B** **Pepke, Brenna** "The Effectiveness of Translation/Interpretation through the Visual Process" (Yvonne Petkus)
- 06B** **Mills, John;** Tinius, Rachel; Rowland, Naomi; Meece, Kylee; Lawrence, Stephanie; "Gene Expression & Metabolic Health in Pregnancy" (Rachel Tinius)
- 07B** **Eltzroth, Becca;** Reece, Michelle; "A Review of the Covid-19 Pandemic in Spain and the USA" (Michelle Reece)
- 08B** **Srivastava, Arivumani** "Legislative Recommendations to Curb Road Traffic Injuries and Improve Patient Outcomes in the Gambia" (Edrisa Sanyang)
- 09B** **McKee, Madison** "Implementing Virtual Manipulatives into the Elementary Math Classroom" (Janet Tassell)

Session 23 Undergraduate Posters, Interdisciplinary

Judges Pat Kambesis (moderator), Ann Ferrell

- 10B Turner, Grant; Sellers, Emma; Estes, Joshua; Hardesty, Logan;** Alshaiki, Abdullah; Almajed, Mahmoud; Alrefaei, Mohammed; Maners, Nolan; Alanzi, Saud; "IEEE Student Robot Team" (Mark Cambron)
- 11B Hartman, Sarah** "Effects of COVID-19 on Kentucky Air Pollutant Levels" (Jacqueline Basham)
- 12B Wilhelm, Garrett** "Warren County Career & Technical Center" (Shahnaz Aly)
- 13B Yarberry, Ashley** "Sustainability in Architecture: Royal Oak Transit Center" (Shahnaz Aly)
- 14B Bowen, Jacob;** Philips, Keith; "Dung Beetle (Scarabaeinae) Species Diversity of the Highest Mountain Range in West Africa: The Nimba Mountains" (Keith Philips)
- 15B Owens, Landon; Aldarawish, Loai; Almarhun, Mustafa; Bedaiwi, Fahad;** "Eye, Robot: How Do Robots Perceive and Make Sense of Their Environment" (Farhad Ashrafzadeh)

Session 24 Undergraduate Posters, Natural Sciences

Judges Pamela M Jukes (moderator), Marliese Belt

- 16B Chhabra, Sahil;** King, Rodney; "Discovery and Analysis of Novel Mycobacteriophage Lucifer906" (Rodney King)
- 17B Barnaby, Koji** "Antibiotic Resistant Bacteria Gene Presence and Quantification in Karst Groundwater Systems from Fertilizer Application Under Agricultural Landuse" (Jason Polk)
- 18B Cooper, Chloe** "Enhancing WKU Sustainable Food Systems Through Education and Local Agriculture Development" (Leslie North)
- 19B Davis, Britton;** Polk, Jason; "Karst Hydrogeologic Investigation of Cave Inputs Related to the Lost River Cave Gasoline Leak" (Jason Polk)
- 20B Harris, Kaleb** "Offering Opportunity: Community Impact of Sports Architecture" (Shahnaz Aly)

Session 25 Undergraduate Posters, Natural Sciences

Judges Jessica N Torelli (moderator), Thomas Gross

- 21B Copeland, Allyson;** Amacendes, Lizbeth; Hatfield, Makenna; "Age Differences in the Effects of Plausibility and Perspective-Taking While Reading Counterfactuals" (Matthew Shake)

- 22B** **Dick, Olivia**; Benningfield, Chloe; Mills, Emma; Woodward, Kelsey; Ellis, Annalee; "Examining the Relationship Between Coronavirus Infection and Mental Health" (Matthew Woodward)
- 23B** **Kendrick, Mia**; Hurt, Cora; Andrulonis, Emily; Burch, Katrina; "Examining the Work and Personal Determinants of Technology Use Among Seniors" (Katrina Burch)
- 24B** **Knapp, Emily** ""Is My Mop Angry With Me?": Understanding How People Use Emotion Labels Via Pareidolia" (Andrew Mienaltowski)
- 25B** **McKinney, Heather** "Suicide Risk in LGBTQ College Students: The Role of Social Support, Internalized Homophobia, and Outness" (Amy Brausch)

Session 26 Undergraduate Posters, Social Sciences & Education

Judges **Sonia Young (moderator), Xiuhua Ding**

- 26B** **Greis, Rachel** "The Development and Validation of the General Attitudes Toward Police Scale (gaps)" (Melissa Baker)
- 27B** **Roehm, David** "The Effect of Parenting Stress on Child Behaviors Mediated by Parental Negative Talk" (Timothy Thornberry)
- 28B** **Schmitt, Margaret**; Lockwood, Adam; "The Course on Norm-referenced Academic Assessment" (Sarah Ochs)
- 29B** **Wheeler, Lindsey**; Wininger, Steven R.; "The Effects of Outdoor Therapy on Depression and Anxiety: A Quantitative Review" (Steven R. Wininger)
- 30B** **VanHoose, Kathryn** "Western Kentucky's University's Agriculture Student's Behaviors and Attitudes Toward Class Adjustments Due to the COVID-19 Outbreak" (Thomas Kingery)

CONCURRENT AFTERNOON SESSIONS II

1:00 – 2:30 pm

Session 27 Graduate Oral Presentations, Natural Sciences

Judges **Claire Rinehart (moderator), Blairanne Williams**

- 1:00** **Deering, Austin;** Polk, Jason; "An Investigation of Groundwater Hydroclimate Dynamics Using an Isotopic Calibration Study in South-central Kentucky" (Jason Polk)
- 1:15** **Indulkar, Ajinkya Vishwas** "K-means Clustering Using Gravitation" (Qi Li)
- 1:30** **Kylychbekov, Salizhan;** Menon, Ashwin; Hakimov, Somon; "Laser Patterning of Niti Shape Memory Alloys" (Ali Oguz Er)
- 1:45** **Willis, Victoria;** Gunter, Dr. Phillip; "Effect of Supplemental Garlic on the Incidence of Heinz Body Anemia in Horses" (Phillip Gunter)
- 2:00** **Horner, Wilson** "Analysis of Boundary Observability of Strongly Coupled One-dimensional Wave Equations with Mixed Boundary Conditions" (Ahmet Ozkan Ozer)

Session 28 Graduate Oral Presentations, Interdisciplinary

Judges **Anne Onyekwuluje (moderator), Silvie Huang**

- 1:00** **Rippy, Madison** "Flirting Through the Ages: Changing Social Customs in the Victorian Era and Now" (Ann Ferrell)
- 1:15** **Turner, James;** Griffiths, Austin; Murphy, April; "The Development and Utility of The Child Welfare Employee Feedback Scale (CWEFS-R)" (Austin Griffiths)
- 1:30** **Burden, Taylor** "To Worship and Conserve: The Role of American Christian Churches in the Conservation of Deaf Culture" (Ann Ferrell)
- 1:45** **Searcy, Kaylee** "Distinguishing Autism Spectrum Disorder from other Developmental Delays at 24 Months" (Lisa Duffin)
- 2:00** **Northern, Samuel** "Effects of a Curriculum-based PLC on Teachers' Attitudes and Self-efficacy Toward Inquiry-based Science Instruction" (Gary Houchens)

Session 29 Undergraduate Oral Presentations, Health and Human Services

Judges Sarah L Scali (moderator), Lauren Bland

- 1:00 Cherry, Meredith** "Hallucinogenic and Sedative Drug Treatment and Its Impact on Mental Health Nursing" (Kim Link)
- 1:15 Craig, Kaitlynn** "The Effect of School Return During Covid-19 Pandemic on Children's Physical and Mental Health" (Miranda Peterson)
- 1:30 Flora, Kirbey;** Garrett-Wright, Dawn; Sturgeon, Liz; "Parental Health Literacy: Comparing Perceptions of Pediatricians and Nurse Practitioners" (Dawn Garrett-Wright)
- 1:45 Ackermann, Shelby** "The Financial Reality of a Career in Veterinary Medicine for Kentucky Residents" (Michael Stokes)
- 2:00 Sledge, Gabrielle** "The Effect of the Pura Vida Lifestyle on Perceptions of Mental Health in Costa Rica" (Tim Thornberry)
- 2:15 Clark, Caroline** "Autism and the Foster Care System in Kentucky" (Christina Noel)

Session 30 Undergraduate Oral Presentations, Natural Sciences

Judges Jason Polk (moderator), Nahid Gani

- 1:00 Jones, Margaret;** Stone, Martin; "Hypergravity Inhibits Crop Growth: Implications for Space Farming" (Martin Stone)
- 1:15 Birkhead, Andrew;** Jacobshagen, Sigrid; "Lower Temperature Limits of Circadian Rhythms of Phototaxis in *Chlamydomonas Reinhardtii*" (Sigrid Jacobshagen)
- 1:30 Mason, Ruby;** Jacobsgahen, Sigrid; "Persistence of the Circadian Rhythm of Phototaxis in *Chlamydomonas Reinhardtii* After Acclimation to Elevated Temperatures" (Sigrid Jacobshagen)
- 1:45 Negron, Marcus;** Heck, Aaron; Kitchen, Gabrielle; Wheeler, Nicholas; Galindo, Cristi L.; "Sex-based Differences in Cardiac Gene Expression and Function in BDNF Val66met Mice" (Cristi Galindo)
- 2:00 Salifu, Samirah;** King, Rodney; "The Discovery and Analysis of Novel Bacteriophage PetiteSangsue" (Rodney King)
- 2:15 Henson, Chloe;** Hill, Lawrence; Cook, Elizabeth; "Synthesis of Semiconductor Nanoparticles in an Ionic Liquid" (Lawrence Hill)

Session 31 Undergraduate Oral Presentations, Natural Sciences

Judges Ferhan Atici (moderator), Luiz Silva

- 1:00 Park, Andrew** "An Algorithm to Estimate Lithium-Ion Battery Lifetime" (Sam Park)
- 1:15 Thaweechok, Taksin** "Home for The Arts" (Shahnaz Aly)

- 1:30** **Thompson, Kristen; Jackson, Cameron;** Palmquist, Shane; "Engineering Numbers: Innovation of Quantification" (Shane Palmquist)
- 1:45** **Bowen, John** "An Overview of the May 20, 2019 High-risk Day in the 2019 May Tornado Outbreak" (Josh Durkee)
- 2:00** **Brosky, Madeline;** Gani, Nahid; "Investigating Volcanic Eruption of The Ethiopian Plateau Flood Basalt in Relation to Past Climate Change" (Nahid Gani)

Session 32 Undergraduate Oral Presentations, Natural Sciences

Judges Farhad Ashrafzadeh (moderator), O.E. Mansour

- 1:00** **Moore, Emma;** Ozer, Ahmet Ozkan; "Reliable Exact Observability and Stabilization of the One-dimensional Wave Equation on a String" (Ahmet Ozkan Ozer)
- 1:15** **Hebenstiel, Lars;** Harper, Doug; Novikov, Ivan; "Current Status of an Experimental Damped Driven Duffing Oscillator" (Ivan Novikov)
- 1:30** **Lin, Allen** "Values of Dirichlet Series" (Dominic Lanphier)
- 1:45** **Loxley, Colin** "Identifying Effective Practices in a Standards-Based Grading System" (Scott Bonham)
- 2:00** **Miracle, Sebastian** "Optical Spectrum of Pn G309.0+00.8" (Ting-Hui Lee)
- 2:15** **Obielodan, Olufunmilola** "Monte Carlo Tree Search: How Much Can Be Learned from One Simulation?" (Uta Ziegler)

Session 33 Undergraduate Performance, Interdisciplinary

Judges Jason Crandall (moderator), Sam Oldenburg

- 1:00** **Wade, Mason; Brosky, Maggie;** Gani, Nahid; Gani, Royhan; "Geologic Mapping Methods of the McDaniels Quadrangle, Kentucky" (Nahid Gani)
- 1:15** **Panzade, Aarini** "The Effect of TIMP-1 Levels and MMP-1 Levels on the Wound Surface Area" (Richard Schugart)
- 1:30** **Taylor, Molly;** Rowe, Megan; "The Effect of Age on Neurological and Peripheral Inflammatory Responses to Sleep Fragmentation in Mice" (Noah Ashley)
- 1:45** **Gomez, Carlos; Alshatti, Mohammad; Alnajdi, Abdulwahab** "Parallels in Physics" (Farhad Ashrafzadeh)
- 2:00** **Hamilton, Jazzlin** "Inside the Minds of Persons with TBI" (Trini Stickle)

Session 34 Graduate Posters, Interdisciplinary

Judges Darlene Applegate (moderator), Kumi Ishii

- 01C Ellis, Annalee; Cotney, Sara;** Collins, Makayla; Woodward, Kelsey; Woodward, Matthew; "Examining the Emotional Effects of Social Media Use" (Matthew Woodward)
- 02C Nguyen, Teresa San;** Kendrick, Mia; Hurt, Cora; Burch, Katrina; "Examining Incivility and Micro-aggressions Against Ethnic Minorities in Academia" (Katrina Burch)
- 03C Thomas, Casey; Bendson, Malyra; Dinning, Kelsey;** Ochs, Sarah; "Academic Screeners and Language Background: Predicting Future Performance" (Sarah Ochs)
- 04C Foust, Kelly;** Funge, Simon; Foust, Kelly; "'Get Out There, Learn Something New': Impact of a Short-term Domestic Academic Sojourn on Social Work Students' Identity" (Simon Funge)

Session 35 Undergraduate Posters, Interdisciplinary

Judges Matt Woodward (moderator), Juliana Ortolani, April Murphy

- 05C Alvey, MacKenzie** "Aqua Vitae Distillery" (Shahnaz Aly)
- 06C Barnaby, Sachi; Krishnani, Sahil;** "The Best Laid Plans of Drones in Flight: Drone Trajectory Planning and Object Avoidance" (Farhad Ashrafzadeh)
- 07C Bush, Austin** "Convergence of Reno: Utilization of Design to Assist Mental Health Care" (Shahnaz Aly)
- 08C Dellecave, Olivia** "Synoptic and Mesoscale Analysis of the May 27th, 2019 Nuckolls County, Nebraska EF-0 Tornado" (Josh Durkee)
- 09C Head, Ryan; Hinkson, Clark; Tallent, Mackenzie; Cassady, Spencer;** McGowan, Ian; "Mitigating Washing Machine Vibration" (Morteza Nurcheshmeh)
- 10C Mack, Makayla;** Baker, Kayla; Tinius, Rachel; "The Effect of Warm-up Protocols on the Prevalence of Medial Tibial Stress Syndrome In High School Cross Country Athletes" (Kayla Baker)

Session 36 Undergraduate Posters, Natural Sciences

Judges Kelli Truelove (moderator), Jae Kim

- 11C Mattingly, Joseph** "Seasonal Cycles of Zooplankton Abundance in Barren River Lake, With Special Emphasis on the Introduced Water Flea *Daphnia Lumholtzi*" (Philip Lienesch)
- 12C Norman, Bella;** King, Rodney; Rinehart, Claire; "The Discovery and Genomic Analysis of Bacteriophage Venture" (Rodney King)

- 13C** **Cassity, Hunter** "Old Style with a Touch of Modern" (Shahnaz Aly)
- 14C** **Casada, Nicholas** "Bowling Green Entertainment Venue" (Shahnaz Aly)
- 15C** **Meredith, Austin; Hughes, Trevor; Rice, Jeremy; Groves, Kolby;**
Spargo, Will; "Modeling Stresses on Wind Turbine Blades" (Manohar Chidurala)

Session 37 Undergraduate Posters, Natural Sciences

Judges **Whitley Stone (moderator), Jacqueline Basham**

- 16C** **Frederick, Caity** "March 2, 2012, Tornado Outbreak" (Josh Durkee)
- 17C** **Hourigan, Amy;** Groves, Chris; Kambesis, Patricia; Gripshover, Margaret; Bledsoe, Lee Anne; Singer, Autumn; "Hidden Landscapes: Potentially Vulnerable Communities in the Karst Groundwater Region" (Chris Groves)
- 18C** **Krohman, Kayla** "Using Streamflow Forecasts, in Addition to Soil Moisture, to Indicate the Impacts of Floods in Agricultural Areas of Kisumu, Kenya" (Joshua Durkee)
- 19C** **Lawler, Trayson;** Polk, Jason; Shelley, Adam; "Spatiotemporal Analysis of Precipitation Distribution Influences on Water Levels in the Lost River/Jennings Creek Watershed, Bowling Green, Kentucky" (Jason Polk)
- 20C** **Garden, Harrison** "Sustainable Design in Commercial and Landscape Architecture" (Shahnaz Aly)
- 21C** **Mohr, Blake** "Tomorrow's Community in Today's World" (Shahnaz Aly)

Session 38 Undergraduate Posters, Natural Sciences

Judges **Trini Stickle (moderator), Les Archer**

- 22C** **McKinney, Katelyn;** Brausch, Amy; "Suicide Risk, Reasons for Living, and Protective Factors in Individuals With Disabilities." (Amy Brausch)
- 23C** **Pinilla, Valentina** "Is the Pupil Old/new Effect Influenced by Cognitive Load or Strength of Memory? A Meta-analysis" (Sharon Mutter)
- 24C** **Polen, Reese;** Wichman, Aaron; "Zero Sum Thinking Predicts Stronger Covid Conspiracy Beliefs: Admission of Medical Supply Scarcity Eliminates this Relationship for those Higher in Government Trust" (Aaron Wichman)
- 25C** **Rigney, Kendra** "The Role of Protective Factors for Nonsuicidal Self-injury in Sexual Minority Individuals" (Amy Brausch)
- 26C** **Okocha, Assumpta** "Using Logic Models to Evaluate Educational Practices to Reduce Exclusionary Punishment and Increase Positive Behaviors for Minority Students" (Thomas Gross)

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