

WKU REACH 2019

Research Experiences and Creative Heights



**49th Annual
Student
Research
Conference
Session
Winners**

**Saturday
March 23, 2019**

Downing Student Union

**Western Kentucky University
Bowling Green, KY**

The 49th Annual WKU Student Research Conference proudly showcased **294 research projects and creative works**. There were 159 posters and exhibits, 130 oral papers, four performances, and one video. A total of 374 students were presenters and co-presenters at the conference, including 294 undergraduate students, 77 master's students, and four doctoral students. In addition, 105 graduate and undergraduate students were listed as co-authors on the papers, posters, and performances presented this year. Over 150 faculty and professional staff served as mentors to the student presenters. About 100 WKU faculty, professional staff, and retired faculty and staff served as judges to evaluate student presentations at the conference. The judges selected one winner from each of the sessions, each of whom received award certificates.

Session 1 Graduate Papers, Arts and Humanities

Spalding, Helen "The Valley of the Fallen: The Intersection of Religion and Nationalism in a Spanish Civil War Monument, 1939-1980" (Dr. Tamara Van Dyken)

Session 2 Graduate Papers, Natural Sciences

McCaslin, Lauren; Schulte, Bruce "Documenting Marine Mammal Behavior and Evaluating the Benefits and Consequences of Viewing Marine Mammals in Southcentral Alaska" (Dr. Bruce Schulte)

Session 3 Graduate Papers, Natural Sciences

Rooney, Brigit "Assessing the Relationship between Tourism and African Elephant (*Loxodonta africana*) Habitat Use in Zambezi National Park, Zimbabwe" (Dr. Bruce Schulte)

Session 4 Undergraduate Papers, Arts and Humanities

DePoy, Hannah "Canada's Memorialization of Indigenous Residential Schools" (Dr. Marko Dumančić)

Session 5 Undergraduate Papers, Arts and Humanities

Chagnon, Elizabeth "Fragments and Frescoes: Contextualizing the Void in the Modern Art Museum" (Dr. Guy Jordan)

Session 6 Undergraduate Papers, Interdisciplinary

Tawasha, Isabella "Inconsistency and Inaccuracy of Sizing within the Fashion Industry" (Dr. Carrie Cox)

Session 7 Undergraduate Papers, Natural Sciences

Lynn, Gabriella; Huskey, Stephen; Gray, Keegan; Walters, Nicole; Gill, Jennifer "A New Model for Quantifying Hoof Pressure Distribution Using Fujifilm®" (Dr. Jennifer Gill)

Session 8 Undergraduate Papers, Social Sciences and Education

Porter, Jocelyn "The Effectiveness of Minority Party Legislative Strategies in Congress" (Dr. Jeffrey Budziak)

Session 9 Undergraduate Posters, Natural Sciences

Dillingham, Megan; King, Rodney "Using Chromosomal Engineering to Investigate the Importance of a Conserved Cysteine Residue in *E. coli* RNA Polymerase" (Dr. Rodney King)

Session 10 Undergraduate Posters, Natural Sciences

Ramisetti, Hasitha; Danturthi, Amara; Rowland, Naomi; King, Rodney "Comparison of Two Novel Microbacteriophages from Bowling Green, Krogelio and Xiomara" (Dr. Naomi Rowland)

Session 11 Undergraduate Posters, Interdisciplinary

Gregory, Jennifer; Coker, Riyonna; Pedigo, Harry; Miller, Serenity "How Would Amending HB 40 Remove Barriers to Restoration of Rights?" (Dr. Whitney Harper)

Session 12 Undergraduate Posters, Interdisciplinary

Miller, Lauren; Furgal, Karen; Tinius, Rachel; Rajendran, Nikitha; Edens, Kolbi; Yoho, Kristin "Modifiable Factors That Influence Infant Motor Development at 4 and 12 Months of Age" (Dr. Rachel Tinius)

Session 13 Undergraduate Posters, Health and Human Services

McKay, Anna "Language Sampling with Early Adolescents with Specific Language Impairment" (Dr. Janice Carter Smith)

Session 14 Undergraduate Posters, Arts and Humanities

DiMeo, Chris "Lucky No. 8/8 大財" (Prof. Matt Tullis)

Session 15 Undergraduate Posters, Social Sciences and Education

Miller, Kendall "The Effectiveness of Juvenile Drug Courts on Reducing Recidivism: A Meta-Analysis of Research from 1993-2018" (Dr. Holli Drummond)

Session 16 Graduate Posters, Interdisciplinary

Antle, Austin "Synthesis of Core/Shell Semiconductor Nanoparticles in Ionic Liquids" (Dr. Lawrence Hill)

Session 17 Graduate Posters, Health and Human Services

Lebryk, Eric; Sullivan, Jake; Cravens, Matthew; Young, Sonia "Interaction Effects of Whole Body Vibration and LSVT BIG® on Gait and Balance in Parkinson's Disease" (Dr. Sonia Young)

Session 18 Graduate Papers, Interdisciplinary

Antonic, Maja "Female Combatants and Activists: Anti-Fascist Front of Women in Yugoslavia" (Dr. Marko Dumančić)

Session 19 Graduate Papers, Natural Sciences

Twidwell, Robert; Hahn, Lance "The Impact of a Therapist's Use of Language in Computer-Mediated Communication" (Dr. Lance Hahn)

Session 20 Undergraduate Papers, Social Sciences and Education

Hedrick, Katherine "The Prosecution of Conflict-Related Sexual Violence in Post-War Bosnia and Herzegovina: An Analysis" (Dr. Marko Dumančić)

Session 21 Undergraduate Papers, Arts and Humanities

McDowell, Seth "The History of Psychedelic Drugs Before United States Law" (Dr. Patricia Minter)

Session 22 Undergraduate Papers, Interdisciplinary

Bushon, Hannah "Scientology: The Cult of Religion" (Dr. Sandra Hughes)

Session 23 Undergraduate Papers, Natural Sciences

Suggs, Michael; Wulff, Andrew "An Analysis of Molybdenum Ores" (Dr. Andrew Wulff)

Session 24 Undergraduate Papers, Natural Sciences

Hatter, Evan "Synoptic Analysis of the October 7, 2014 Kentucky Bluegrass Tornado Outbreak" (Dr. Joshua Durkee)

Session 25 Undergraduate Papers, Social Sciences and Education

Fugate, Samuel; Geiger, Romin; Martin, Hannah; Williams, Cynthia; Gregory, Jordan; Gopan, Gopika "Self Regulation: A Cross-Sectional Study of Preschool-Aged Children" (Dr. Elizabeth Lemerise)

Session 26 Undergraduate Posters, Interdisciplinary

Graham, Anthony; Williams, Joseph "Revitalization: Creating New Architecture from Remnants" (Prof. Shahnaz Aly)

Session 27 Undergraduate Posters, Interdisciplinary

Liddle, Brendan "Safe Space: The Psychological Impact of the Built Environment" (Prof. Shahnaz Aly)

Session 28 Undergraduate Posters, Social Sciences and Education

Woodward, Kelsey; Elder, Sarah; McBride, Robert; Henry, Shelby; Teeters, Jenni "Rates of Campus Sexual Assault among Minority Groups" (Dr. Jenni Teeters)

Session 29 Undergraduate Posters, Natural Sciences

Alcantar, Christian "An Efficient and Chemoselective Oxidation of Organic Sulfides Catalyzed by Manganese Corroles with Iodobenzene Diacetate" (Dr. Rui Zhang)

Session 30 Undergraduate Posters, Natural Sciences

Irihamye, Ivy; Johnson, Jarrett "Genealogical History and Admixture Proportion of Tiger Salamanders in Black Lake, Mono County, California" (Dr. Jarrett Johnson)

Session 31 Undergraduate Posters, Natural Sciences

Howard, Isaac; Wang, Ban; Deng, Yongming "Synthesis of Chiral Bis(imino)pyridine Ligands: Asymmetric Bis(imino)pyridine Iron Catalysis for Carbene Transfer Reactions" (Dr. Yongming Deng)

Session 32 Undergraduate Posters, Natural Sciences

Johnson, Matthew; King, Rodney; Rinehart, Claire; Al Khayyat, Sarah "Discovery, Purification, and Analysis of Microbacterium Phage Clancy" (Dr. Naomi Rowland)

Session 33 Undergraduate Posters, Natural Sciences

Scott, Morgan "Fighting Addiction through Design" (Prof. Shahnaz Aly)

Session 34 Graduate Posters, Interdisciplinary

Lemberg, Getter Marie; Wininger, Steven "Impact of Texting While Cycling on Self-Selected Exercise Intensity" (Dr. Steven Wininger)

Session 35 Graduate Papers, Natural Sciences

Hodinka, Brett; Ashley, Noah "Effect of Sleep Loss on Cognitive Function and Baseline Plasma Corticosterone Levels in an Arctic-Breeding Songbird, the Lapland Longspur (*Calcarius lapponicus*)" (Dr. Noah Ashley)

Session 36 Graduate Papers, Natural Sciences

Belekov, Ermek; Lauren, Cooper; Kholikov, Khomidkhodzha; Devarakonda, Koushik "Bacterial Deactivation by Using Graphene Quantum Dot as an Effective Photodynamic Therapy Agent" (Dr. Ali Oguz Er)

Session 37 Undergraduate Papers, Arts and Humanities

Rehmel, Celeste "A Handful of Words" (Dr. David Bell)

Session 38 Undergraduate Papers, Natural Sciences

Bonds, Brandon "Synoptic and Mesoscale Analysis of the November 6-7th, 2012 Nor'easter" (Dr. Joshua Durkee)

Session 39 Undergraduate Papers, Natural Sciences

Dodeja, Krishna; Byrd, Lindsey; Brady, Joseph; Alshaikhjafar, Muhannad "A Design Approach to Separated Heat and Light Sources in a Brooder House" (Dr. Julie Ellis)

Session 40 Undergraduate Papers, Natural Sciences

Garrison, Jessica; Wulff, Andrew "Paleoclimate Model of Clay Minerals and Sediments from Lake Tecopa, California" (Dr. Andrew Wulff)

Session 41 Undergraduate Papers, Natural Sciences

Garnelo, Israel "Synoptic Analysis of the January 3-5, 2018 North American Blizzard" (Dr. Joshua Durkee)

Session 42 Undergraduate Papers, Organized Session: Contemporary Challenges in Political Science

Stone, Kelly "Debt Accumulation and Economic Growth in Emerging Market Economies: Is Debt Promoting or Hindering Growth?" (Dr. Shannon Vaughan)

Session 43 Undergraduate Posters, Natural Sciences

Henson, Alex; Evans, Brendan; Gupta, Sanju "Engineered 'Organic-Inorganic' Nanocomposites Properties through Embedding of Smaller Nanoparticles in a Thermoset Polymer Matrix" (Dr. Sanju Gupta)

Session 44 Undergraduate Posters, Natural Sciences

Devarakonda, Koushik; Cooper, Lauren; Belekov, Ermek; Kholikov, Khomidkhodza; Er, Ali "The Effects of Photo-Activated Graphene Quantum Dots on Bacterial Deactivation" (Dr. Ali Oguz Er)

Session 45 Undergraduate Posters, Natural Sciences

Morgan, Elizabeth; Mahoney, Lorenzo; King, Rodney "The Discovery and Comparison of Two Novel Microbacteriophages, Fawn and Oznerol" (Dr. Rodney King)

Session 46 Undergraduate Posters, Natural Sciences

Ringo, Wyatt; Gupta, Sanju "Scanning Electrochemical Microscopy of Transition Metal Carbides (Ti₃C₂T_x) MXenes Phases with Different Interlayer Spacing for Renewable Energy" (Dr. Sanju Gupta)

Session 47 Undergraduate Posters, Natural Sciences

Butler, Sarah "Bias of Voting Systems and How Far Can the Non-Transitivity of Random Variables Be Stretched" (Dr. Attila Por)

Session 48 Undergraduate Posters, Interdisciplinary

Hebenstiel, Lars "Monte Carlo Modelling of Multiple Isotropic Scattering of Neutrons through Various Solids" (Dr. Eric Steinfelds)

Session 49 Undergraduate Posters, Social Sciences and Education

Siewers, Anna; Brausch, Amy "Non-Suicidal Self-Injury, Suicide Attempts, and Resilience in Ethnic and Sexual Minority Groups" (Dr. Amy Brausch)

Session 50 Undergraduate Posters, Social Sciences and Education

Fisk, Samuel; Brausch, Amy "Suicidal Ideation in Young Adults with Autism Spectrum Disorder" (Dr. Amy Brausch)

Session 51 Graduate Posters, Health and Human Services

Yoho, Kristin; Maples, Jill; Edens, Kolbi; Blankenship, Maire "Changes in Resting Metabolism from Pregnancy to Postpartum" (Dr. Rachel Tinius)

Presenter; Co-Presenter(s); Co-Author(s) "Paper or Poster Title" (Mentor)