

46th Annual Student Research Conference



Saturday, April 2, 2016
Downing Student Union

Western Kentucky University
Bowling Green, Kentucky



CONFERENCE SCHEDULE

8:00 am – 2:00 pm

Student and Judges Registration

DSU 3rd Floor Lobby

ongoing throughout the day

register at least 30 minutes before session

9:00 am – 10:30 am

Concurrent Morning Sessions I *pages 8-14*

Sessions 1-8 Oral Papers

Rooms 2084, 2085, 2086, 2113, 2122, 2123, 2124, 3005

Sessions 9-18 Posters

Rooms 3023, 3024, 3025

10:30 am – 10:45 am

Morning Break

10:45 am – 12:15 pm

Concurrent Morning Sessions II *pages 15-20*

Sessions 19-27 Oral Papers

Rooms 2084, 2085, 2086, 2113, 2122, 2123, 2124, 3004, 3005

Sessions 28-36 Posters

Rooms 3023, 3024, 3025

12:15 – 1:15 pm

Lunch Break

student presenters and judges pick up free lunch ticket for Fresh Foods at registration

1:15 – 1:30 pm

Afternoon Break

1:30 – 3:00 pm

Concurrent Afternoon Sessions *pages 21-26*

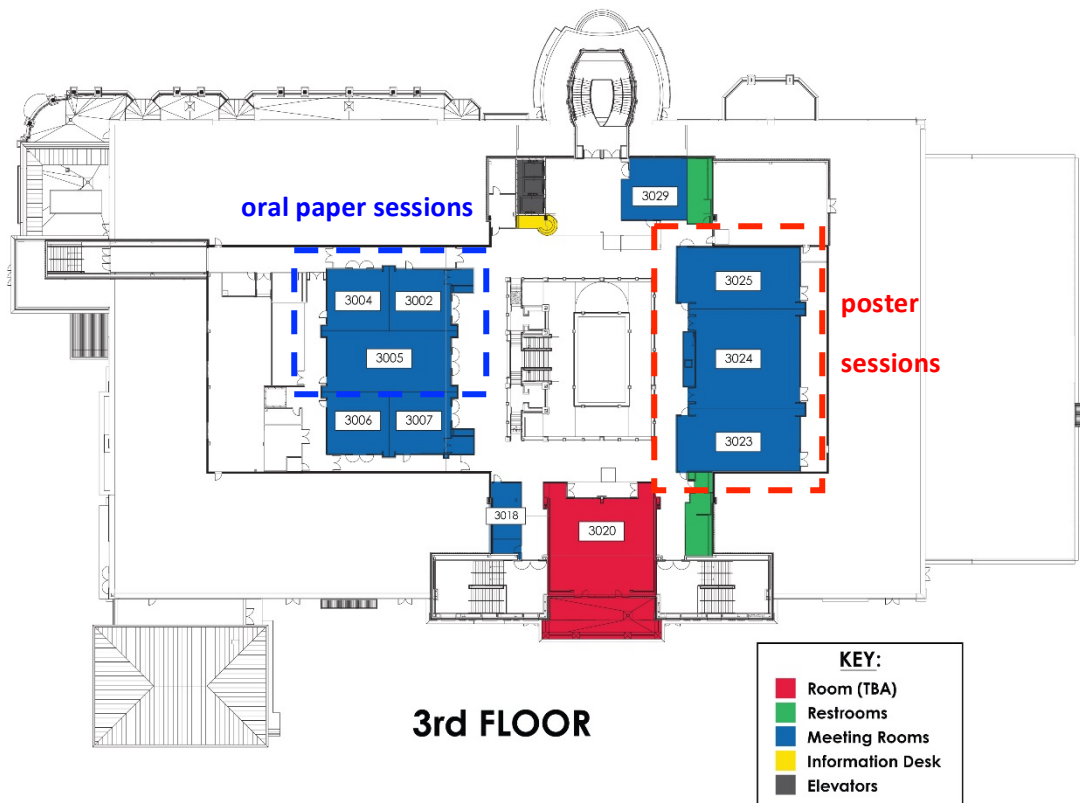
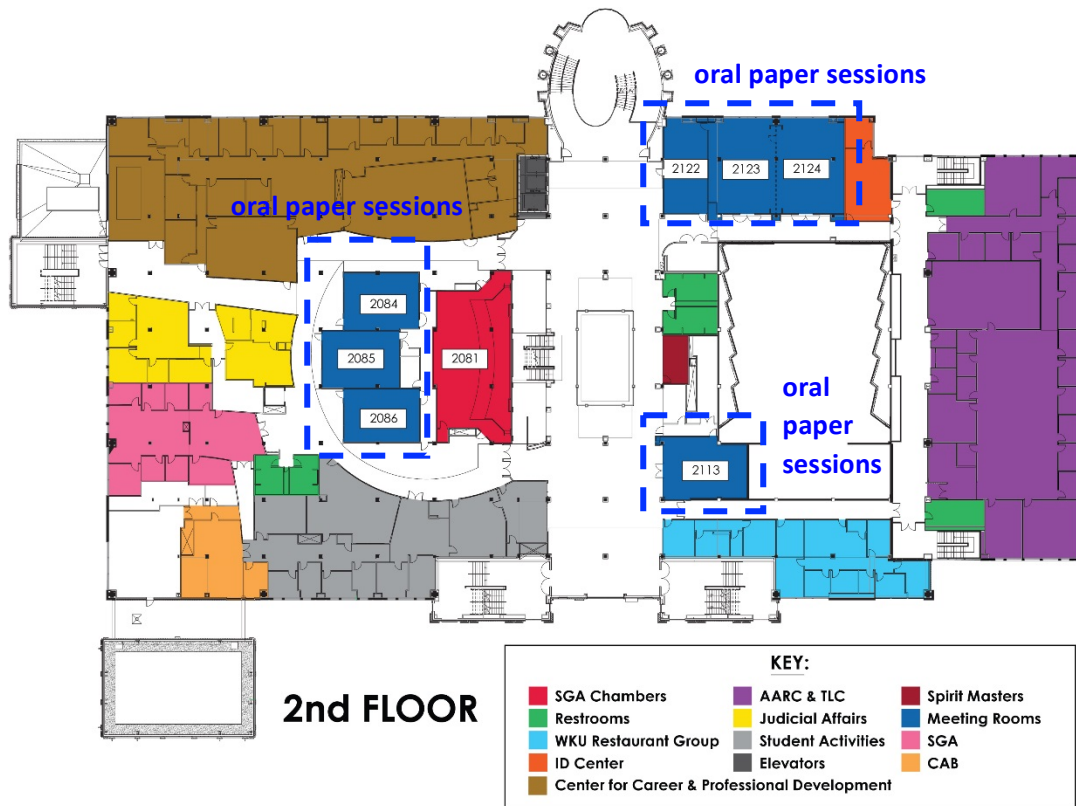
Sessions 37-43 Oral Papers

Rooms 2084, 2085, 2086, 2113, 2122, 2123, 2124

Sessions 44-53 Posters

Rooms 3023, 3024, 3025

DOWNING STUDENT UNION FLOOR PLANS



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 has been defined as 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.

HISTORY

WKU has a rich history of scholarly engagement of students. 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 comprised 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 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. This year REACH is coordinated by the Office of Research and Creative Activity and spans the entire spring semester, highlighting student and faculty scholarship at events hosted by various WKU colleges and units. The 46th Annual Student Research Conference is a major university-wide event of REACH.

* 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 HIGHLIGHTS

The 46th Annual WKU Student Research Conference showcases 301 research and creative projects. There are 162 posters and exhibits, 137 oral papers, and two performances. A total of 376 students are presenters and co-presenters at the conference, including 287 undergraduate students, 85 master's students, and four doctoral students. An index of presenters is provided at the end of this program. In addition, 93 other graduate and undergraduate students are co-authors on the papers and posters presented this year.

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 34 schools, departments, programs, and institutes in all colleges.

Accounting	Information Systems
Agriculture	Journalism & Broadcasting
Allied Health	Kinesiology, Recreation & Sport
Architecture & Manufacturing Science	Marketing
Art	Mathematics
Biology	Master of Business Administration
Chemistry	Modern Languages
Communication	Music
Communication Sciences & Disorders	Physics & Astronomy
Computer Science	Political Science
Diversity & Community Studies	Professional Studies
Economics	Psychological Sciences
Engineering	Psychology
English	Public Health
Family & Consumer Sciences	Social Work
Folk Studies & Anthropology	Teacher Education
History	Theatre & Dance

CONFERENCE ORGANIZATION AND SESSION WINNERS

The 301 research and creative projects presented at the conference are organized into 53 graduate and undergraduate sessions with five-six students in each session. Students are grouped into sessions by the subject areas of their projects: natural sciences, social sciences and education, health and human services, humanities, business, and interdisciplinary.

WKU faculty, professional staff, and advanced graduate students, as well as members of the community at large, evaluate student presentations at the conference. The judges select one winner from each of the 53 sessions listed in this program. Session winners will be announced on the Student Research Council website at www.wku.edu/studentresearch by Monday, April 4. Winners will receive award certificates via their mentors, and all students will 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 meet and overcome challenges, not only distinguishes you from your peers, it 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 8-27. A total of 154 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.

Listed below are the 81 WKU faculty, staff, and graduate students and the local community members who are serving as judges at this year’s conference. We greatly appreciate the assistance of the judges and thank them for volunteering. A number of judges are veterans who have supported the conference for years or decades.

Darlene Applegate	Sanju Gupta	Mohammed Matin
Farhad Ashrafzadeh	Anthony Harkins	Sara McCaslin
Leah Ashwill	Tim Hawkins	April McCauley
Robin Ayers	Gail Hiles	Rosemary Meszaros
Simran Banga	Jean-Luc Houle	Andy Mienaltowski
Brent Bjorkman	Ted Hovet	Chloe Muller
Lauren Bland	Sylvie Huang	Mathew Nee
Laura Bohuski	Sandra Hughes	Elizabeth Norris
Lorraine Bormann	Xiaoxia “Sylvie” Huang	Jason Polk
Siera Bramschreiber	Jooyeon Hwang	Attila Por
Barbara Brindle	Nezam Iraniparast	Eric Rappin
Jennifer Brinkley	Kumi Ishii	Claire Rinehart
Bryan Carson	Jennifer Joe	Mark Schafer
Wanda Chandler	John Khouryieh	Nilesh Sharma
Ismail Civelek	Jae Kim	Devesh Shukla
Brian Coutts	Samuel Kim	Janet Smith
K. Jason Crandall	Rodney King	Roxanne Spencer
Daniel Curry	Gail Kirby	Rick Starks
Cheryl Davis	Cheryl Kirby-Stokes	Brad Stinnet
Robert Davis	Amy Krull	Ashley Stinnett
Timothy Evans	Chase LaDue	Rosten Tembo
Dustin Falls	Rama Brahman Lanke	Manish Tiwari
Ann Ferrell	Sharon Leone	Shannon Vaughan
Jim Fulkerson	Chris Lewis	Carol Watwood
Cecile Garmon	Donielle Lovell	Adam West
Andrea Garr-Barnes	Gargya Malla	Aaron Wichman
Chris Groves	Jill Maples	Lee Winchester

Funding for the 46th Annual WKU Student Research Conference and other REACH activities was provided by the Office of the Provost and Vice President for Academic Affairs, the Office of Research and Creative Activity, and the WKU Chapter of Sigma Xi.

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 students with their research. 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. Three hundred undergraduate students have received FUSE grants over the past three years, many of whom are among the conference participants this year.

Tom Meacham, Tommy Newton, and the WKU Office of Public Affairs staff provided vital assistance with electronic advertising, press releases, and conference artwork design. We appreciate the support of Will Hoagland at the *College Heights Herald*.

We greatly acknowledge David Brinkley at WKYU and Amy Bingham DeCesare in the WKU Public Affairs Office for their help in advertising the conference and other student scholarship on campus. Diana Keeling provided expert web support to the Student Research Council.

WKU faculty members Lance Hahn, Leila Watkins, and Leyla Zhuhadar organized and presented informative professional development workshops for students in advance of the conference. With faculty supervision from Dawn Bolton, Michael Schilling, Chia I. Shen, and Tiffani Walton, three students in the WKU Center for Entrepreneurship & Innovation's Entrepreneurship Lab, organized and presented another valuable student workshop.

With faculty supervision from Victoria LaPoe, broadcasting students Makayla Ballman, Karri Blanton, Marcus Browning, Catharine Gardner, and Alexis Ratterman created an inspirational series of video clips featuring student-faculty research and creative collaborations at WKU. We thank the following faculty – Farhad Ashrafzadeh, Thaddeus Crews Jr., Jonathan Jeffrey, Molly Kerby, Jill Maples, Jenni Redifer, and Timothy Rich – and students – Chad Brode, Bethanne Clayton, Brooke Grimes, Sean T. Jacobson, Alyssa Olenick, McKenzie Perdew, Paige Settles, Megan Skaggs, Paige Wessel, and Elizabeth Willenbrink – for sharing their work in the videos, which can be viewed at www.wku.edu/studentresearch.

The Downing Student Union staff at WKU provided logistical support for the conference. Special thanks to Sandra Hughey, Bryan Hamann, and Amanda Jarrett. Bryant Blodgett of WKU Campus and Community Events kindly assisted with venue setup. We appreciate the logistical contributions of students in the Carol Martin Gatton Academy of Mathematics and Science in Kentucky. Holly Case, Miranda Holcomb, Maddie Hughes, and McKenzie Perdew of the HonorsToppers kindly volunteered at the conference, assisting with registration and errands.

The WKU Student Research Council organizes the conference. Members represent each college, University Senate, and the Student Government Association: Darlene Applegate (chair), Leah Ashwill, Colette Chelf, Andrea Cheney, Cheryl Davis, Xiaoxia “Silvie” Huang, Victoria LaPoe, Rosemary Meszaros, Kim Newell, Morteza Nurcheshmeh, Merrall Price, Megan Skaggs, Derick Strode, Rachel Tinius, Leila Watkins, and Leyla Zhuhadar. 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 attended the event.

CONCURRENT MORNING SESSIONS I

9:00 – 10:30 am

Session 1 Graduate Oral Papers, Natural Sciences

Room 2084

Judges Farhad Ashrafzadeh (Moderator), Manish Tiwari

- 9:00 **Farshid Alavi** “Optimization of Process Parameters in Micro Electrical Discharge Machining (EDM) of Ti-6al-4v Alloy Based on Full Factorial Design” (Muhammad Jahan)
- 9:15 **Matthew Buchholz and Carl Dick** “Host-Parasite Associations of Small Mammal Communities: Implications for the Spread of Lyme Disease” (Carl Dick)
- 9:30 **Mayank Kapadia and Ajay Srivastava** “Identification of Collagen IV Associated Proteins form Third Larval Instar Using Drosophila Genetics and Mass Spectrometry” (Ajay Srivastava)
- 9:45 **Rippa Sehgal** “Reactions of Oxaliplatin and Its Analog with DNA Nucleotides at Variable pH and Concentration Levels” (Kevin Williams)
- 10:00 **Wei Long Luo and Rui Zhang** “Synthetic and Catalytic Oxidation Studies by Metalloporphyrin and Metalloporphyrin” (Rui Zhang)
- 10:15 **Anu Kini** “Detection of Methylated DNA Using Engineered Zinc Finger Proteins” (Moon-Soo Kim)

Session 2 Graduate Oral Papers, Natural Sciences

Room 2085

Judges Wanda Chandler (Moderator), April McCauley

- 9:00 **Jason Payne, Sarah Tockstein, Fenil Chavda, and Harsh Moolani** “Novel Self-Patented Gold Nanoparticles for Augmented Antineoplastic Activity” (Stuart Burris)
- 9:15 **Kawai Kwong** “Synthetic and Mechanistic Studies of Bis-porphyrin-manganese (iii) H_2O Dimer” (Rui Zhang)
- 9:30 **Michael Gilbert** “Impacts of Habitat Fragmentation on the Trophic Morphology of a Threatened Desert Fish (*Xyprionodon pecosensis*)” (Michael Collyer)
- 9:45 **Laken Cooper** “Effect of Sleep Disruption Upon Cytokine Gene Expression of Zebra Finch (*Taeniopygia guttata*)” (Noah Ashley)
- 10:00 **Chase LaDue** “Chemosignaling in Asian Elephants (*Elephas maximus*): Concentration Effects with Applications for Management and Conservation” (Bruce Schulte)

Session 3 Graduate Oral Papers, Health/Human Services and Humanities
Room 2086
Judges Leah Ashwill (Moderator), Adam West

- 9:00 **Jessica Stallings and Tamara Thomas** “Childbirth Experiences of Doula-Assisted Births” (Marilyn Gardner)
- 9:15 **Aditya Sharma, Sai Adigarla, Yagnaroopa Kasaraneni, and Jenina Ortega** “Inappropriate Use of Emergency Services in Immigrant Populations” (William Mkanta)
- 9:30 **Rachel Haberman** “In the Shadow of the Cave: The Persistence of Tradition in Edmonson County” (Ann Ferrell)
- 9:45 **Kristen Clark** “Avenging Cinderella: Melding Traditions and Metanarrative in *If The Shoe Fits*” (Tim Evans)
- 10:00 **Reba Hall** “Police Reform and Diversification: Can Police Brutality Be Impacted by a Diversified Police Department?” (Andrew Rosa)
- 10:15 **Ajay Kalra** “Whispering Pines: Spatial Codes of Recorded Late- and Post-Counter-cultural Pastoral Music” (Ann Ferrell)

Session 4 Undergraduate Oral Papers, Humanities
Room 2113
Judges Ann Ferrell (Moderator), Sara McCaslin

- 9:00 **John Garratt** “The MPAA and the NC-17 Stigma” (Jerod Hollyfield)
- 9:15 **Brittany Broder** “The Rise of Nuclear Energy in Arab States: Future Impacts” (David DiMeo)
- 9:30 **Maelee Fleming** “Women Domination: The Presence and Role of Women Warriors in Herodotus’ *Histories*” (Eric Kondratieff)
- 9:45 **Benjamin Bedell** “‘When They’re Through with Their Work, They’ll Be Out of Here Lightning Fast and That’ll Be the End of Them’” (Jerod Hollyfield)
- 10:00 **Blake Anderson** “You’re *Rain Man*: The Film Industry’s Impact on the Autism Community and Research” (Jerod Hollyfield)
- 10:15 **Jarred Johnson** “Disaqueer: An Investigation of Queerness in German Cinema” (Laura McGee)

Session 5 Undergraduate Oral Papers, Humanities
Room 2122
Judges Cheryl Kirby-Stokes (Moderator), Brent Björkman

- 9:00 **Delaney Holt** “‘The Creature Creation’: Popular Culture’s Altered Depiction of Mary Shelley’s *Frankenstein*” (Ted Hovet)
- 9:15 **Dani Craig** “Is Juno a ‘Can-do’ Girl or an ‘At-risk’ Girl?: Being a Feminist Is Not a One-way Street” (Jerod Hollyfield)
- 9:30 **Ann Hupman** “Can You Imagine?: The Presence of the Dystopian Society in Film” (Jerod Hollyfield)
- 9:45 **Hannah Ruggles** “The Age-Friendly Cities Project in Bowling Green: An Oral History” (Dana Bradley)
- 10:00 **Samantha Kroger** “Making Men: Toxic Masculinity in Stanley Kubrick’s *Full Metal Jacket*” (Jerod Hollyfield)

Session 6 Undergraduate Oral Papers, Natural Sciences
Room 2123
Judges Claire Rinehart (Moderator), Matthew Nee

- 9:00 **Kristin Pedersen and Steve Huskey** “The Kinematics of Stingray Envenomation” (Steve Huskey)
- 9:15 **Audrey Brown and Noah Ashley** “Disruption of HPA-Axis Function in Fetal Development Alters Endocrine Responses to Stress Throughout Life” (Noah Ashley)
- 9:30 **Chi Fai Wong, Xingang Fan, and Jun Yan** “Historical Cropland Distribution Change Over the Past 300 Years in China at Provincial Level” (Xingang Fan)
- 9:45 **Isaac Bowers** “The Severe Weather Outbreak of March 2, 2012: An Analysis of Remote Sensing Techniques” (Joshua Durkee)
- 10:00 **Aubrey Penn and Niharika Neerudu** “Environmentally Friendly Method for Nickel Nanostructure Synthesis” (Hemali Rathnayake)
- 10:15 **Sarah Tockstein and Jason Payne** “Designing a Unique Therapeutic Agent Involving Gold Nanoparticles Capped with Cephalosporins for Potent Antibacterial Applications” (Stuart Burris)

Session 7 Undergraduate Oral Papers, Natural Sciences
Room 2124
Judges Simran Banga (Moderator), Robert Davis

- 9:00 **Nicholas Johnson** “Tracking Cancer Through the Genes” (Chandra Emani)
- 9:15 **Jacob Brumley and Philip Lienesch** “Changes to the Fish Species Diversity of the Middle Fork of Drakes Creek Over 40 Years” (Philip Lienesch)
- 9:30 **Caleb Koostra and Jason Polk** “Using Raman Spectroscopy to Analyze Oxygen Isotope Ratios in Calcite Speleothems” (Jason Polk)
- 9:45 **Grant Larkin, Greg Docekal, William Rodgers, Philip Silva, and Matthew Nee** “Identifying and Characterizing Initial Trends with in Agriculturally Produced Chemicals That Result in Atmospheric Aerosols” (Rezaul Mahmood)
- 10:00 **Jennifer Campbell, Bethany Oakes, Hanady Adam, Chad Wilkerson, and Chandra Emani** “Plant Extracts as Alternative and Integrative Treatment Options for Cancer” (Chandra Emani)
- 10:15 **John Bertram** “TiO₂ Embedded in PDMS - A Buoyant, Microstructured Photocatalyst” (Matthew Nee)

Session 8 Undergraduate Oral Papers, Humanities
Room 3005
Judges Cecile Garmon (Moderator), Jean-Luc Houle

- 9:00 **Elizabeth Knebel** “The Mixed American Dream: An Analysis Into the Fascination and Hatred of America Through Hollywood Success” (Jerod Hollyfield)
- 9:15 **Tori Mills** “Unveiled: The Embodiment of an Idyllic and Enlightened Poland in Pawlikowska’s *Ida*” (Jerod Hollyfield)
- 9:30 **Sean Jacobson** “Western’s New Deal: The Shaping of College Heights During the Great Depression” (Patricia Minter)

- 9:45 **Matthew Blanchette** “‘You Look Interesting’: Consumers Meet a Growing World of Independent Cinema” (Jerod Hollyfield)
- 10:00 **John Bailey** “Language Proficiency Benefits of an Arabic Language Immersion House” (David DiMeo)
- 10:15 **Madeline Kramer** “Rosencrantz and Guildenstern are Dead: A Web of Meta-Absurdism” (Ted Hovet)

Session 9 Undergraduate Posters, Health/Human Services

Room 3023

Judges Jason Crandall (Moderator), Mark Schafer

- 1 **Niah Soult and Darbi Haynes-Lawrence** “Illustrated Storybook Helps Parents Explain Their Multiple Sclerosis to Their Children” (Darbi Haynes-Lawrence)
- 2 **Savannah Bottles, Margaret Feiman, and Taylor Leighty** “Shared Spaces” (Sheila Flener)
- 3 **Larissa Lewis, Summer Land, Taylor Van Wagner, and Alissa Minor** “Shared Spaces” (Sheila Flener)
- 4 **Kailee Williams, Aaron Brown, Christy Cowan, Rachel Tinius, and Jason Crandall** “Effect of Evidence-Based Educational Information on Knowledge Regarding Exercise During Pregnancy in Women of Child-Bearing Age” (Rachel Tinius)
- 5 **Megan Sircy and Christian Williams** “Nursing Home Administrators’ Perceived Knowledge of the Affordable Care Act (PPACA)” (Melanie Eaton)
- 6 **Leo Liu, Racheal Childress, and Alina Sajan** “Elevation Studio” (Sheila Flener)

Session 10 Undergraduate Posters, Business

Room 3023

Judges Mohammed Matin (Moderator), Rick Starks

- 7 **Corey Travis** “Text Mining and its Place in Predictive Modeling” (Leyla Zhuhadar)
- 8 **Zach Ross** “Lend Smarter: Using Predictive Analytics to Better Enhance Consumer Lending” (Leyla Zhuhadar)
- 9 **Jessica Canada** “Tipping the Scales: Is ‘Right-to-Work’ Legislation Your Right to Prosperity?” (Brian Strow)
- 10 **Zechariah Daugherty** “The Benefits of a ‘Right-to-Work State’” (Brian Strow)
- 11 **Amanda Pearce** “27 Floors of Support: How to Effectively Promote Campus Resources to College Students” (Alexander Olson)

Session 11 Undergraduate Posters, Natural Sciences

Room 3023

Judges Robin Ayers (Moderator), Lorraine Bormann

- 12 **Amber Bishop** “Finding a Link Between Circadian Rhythms and the Immune System of Captive Zebra Finches (*Taeniopygia guttata*)” (Noah Ashley)
- 13 **Olivia Urso, Katie Alexander, and Rodney King** “Discovery and Comparison of Novel Mycobacteriophages Schadenfreude and Widewale” (Rodney King)
- 14 **Alexandra Wright** “Reactions of Anticancer Analogs with Proteins and DNA” (Kevin Williams)

- 15 **Brody Bruns, Chisom Ogonnaya, and Thomas Murray** “Exploring the Complexities of Developing a Smart Home System” (Jeffrey Galloway)
- 16 **Aaron King** “Architecture: Being Prospective for Society” (Shahnaz Aly)
- 17 **Johnathon Keith, Jackson Massengale, Duc Nguyen, and Brandon Hanna** “Heat Curving Steel Girder Highway Bridges” (Morteza Nurcheshmeh)

Session 12 Undergraduate Posters, Natural Sciences

Room 3023

Judges Attila Por (Moderator), Samuel Kim

- 18 **Riley Walch** “Exploring Electrohydraulic and Electromagnetic Forming of Sheet Metal” (Morteza Nurcheshmeh)
- 19 **Katherine Brown and Nahid Gani** “Tectonic Activities on Mars: An Analysis of Faults in the Valles Marineris Graben System” (Nahid Gani)
- 20 **Hayden Hickey** “Is Workplace Justice Blind? Social Media Use in Employee Selection” (Amber Schroeder)
- 21 **Levi Travis** “The Impact of Risk and Volatility on Emotional States” (Andrew Mienaltowski)
- 22 **Hamilton Brindley** “A Cultural Center and Town Hall: to Propel Adairville, Kentucky's Revitalization” (Shahnaz Aly)
- 23 **Rebecca Brown** “Understanding Blazars with Space Based Optical Variability Studies” (Michael Carini)

Session 13 Undergraduate Posters, Natural Sciences

Room 3024

Judges Nilesh Sharma (Moderator), Lee Winchester

- 24 **Wesley Russelburg** “Wind Effects On Testing Air Tightness in Buildings” (Robert Choate)
- 25 **Aaron Jernigan** “Importance of Environment in Architectural Education” (Shahnaz Aly)
- 26 **Sejla Kazaferovic** “Restriction Enzymes That Generate Cluster-Specific Patterns in Mycobacteriophages” (Claire Rinehart)
- 27 **Jodi Thomas and Tiara Cochran** “The Discovery and Analysis of Microbacteriophage Alleycat and Katy131” (Naomi Rowland)
- 28 **Sara Carrizosa and Benjamin McDonald** “Hybrids of Cobalt Oxide Polymorphs on Graphene-Related Materials: High-Performance Supercapacitors and Enzymeless Glucose Detection” (Sanju Gupta)
- 29 **Brandon Ernestes** “Hydrocarbon Potential of Salem-Warsaw in Warren County, Kentucky” (Michael May)

Session 14 Undergraduate Posters, Natural Sciences

Room 3024

Judges Elizabeth Norris (Moderator), Amy Krull

- 30 **Dustin Avery, Michael Belcher, and James Senig** “Potential Energy Models for Diatom and Atom Plus Diatom Molecular Systems” (Jeremy Maddox)

- 31 **Amber Carroll, Xavier Brickeen, and Rodney King** “Isolation and Characterization of Novel Mycobacteriophages Baehexic and Ruin” (Rodney King)
- 32 **Rebecca Wood** “Development of Aptamer/Graphene Oxide Fret Biosensor for Ultrasensitive Detection of Bisphenol A and Analogues” (Sanju Gupta)
- 33 **Jordan Gregory, Jasmine Ernst, and Elizabeth Lemerise** “Follow Up Analysis of the Negative Comments/Commands Provided by Head Start Teachers” (Elizabeth Lemerise)
- 34 **Ayush Prasad** “A Mathematical Model for the Interactions of Matrix Metalloproteinase and Their Inhibitors in a Wound” (Richard Schugart)
- 35 **Ryun Warren** “Alvaton Church of Christ: A Contemporary Worship Center” (Shahnaz Aly)

Session 15 Undergraduate Posters, Natural Sciences

Room 3024

Judges Aaron Wichman (Moderator), Nezam Iraniparast

- 36 **Patricia Thompson, Ethan Abate, Robert Bosh, Katherine Brown, Honor Hare, Mia Weaver, and Jessica Williams** “An Overview of the Citizen Cate Project for Continental Scale Data Collection During the 21 August 2017 Total Eclipse of the Sun” (Richard Gelderman)
- 37 **Dana Biechele-Speziale, Kolton Jones, Seyitliyev Dovletgeldu, Selahaddin Gumus, and Ali Er** “Shape Memory Alloy Patterning On Niti Surfaces Via Laser Shock-Assisted Direct Imprinting” (Ali Er)
- 38 **Emma Saarinen and Thomas Richmond** “Primitive Pythagorean Triangles in Two and Three Dimensional Space” (Thomas Richmond)
- 39 **Jasmine Ernst, Jordan Gregory, and Elizabeth Lemerise** “An Analysis of the Types of Feedback Provided by Head Start Teachers to Children” (Elizabeth Lemerise)
- 40 **Andrew Jones** “Investigating Water Quality Impacts from Visitor Impact in the Red River Gorge Area of Kentucky” (Jason Polk)

Session 16 Undergraduate Posters, Health/Human Services

Room 3025

Judges Barbara Brindle (Moderator), Dustin Falls

- 41 **Ashley Latham, Kendra Bradenstein, and Tara Warf** “A Mobile Application to Reduce Perceived Stress in Female Undergraduate Students” (Jason Crandall)
- 42 **Leah Cannady, Don Hoover, and Brad Stinnett** “An Assessment of Scholastic Basketball Training Facilities: Size, Equipment, and Management” (Don Hoover)
- 43 **Jamie Doctrow** “Cross-Cultural Attitudes About HIV/AIDS Stigmatization” (Tony Paquin)
- 44 **Hannah Stone, Brenna Menke, and Amanda Funk** “Systemic Review of Benefits, Risks, Health Related Fitness Outcomes and Opportunities of Dance Based Fitness Programs” (Amanda Funk)
- 45 **Allison Glascock, Shelby Schaefer, Kennedy McAlpin, Meredith Tade, and Jason Crandall, and Megan French** “A Novel Game for Improving Engagement in Older Adults with Dementia” (Jean Neils-Strunjas)
- 46 **Alexandra Oldham** “Causal Attributions as a Mediator for the Relationship Between Self-Efficacy and Performance – Do Performance Goals Also Impact This Relationship?” (Steven Wininger)

Session 17 Undergraduate Posters, Natural Sciences
Room 3025
Judges Andy Mienaltowski (Moderator), Gargya Malla

- 47 **Jessica Williams, Ethan Abate, Robert Bosh, Katherine Brown, Honor Hare, Patricia Thompson, and Mia Weaver** “The Sun’s Magnetic Field and Its Impact on the Solar Corona” (Richard Gelderman)
- 48 **Jessica Johnson and Jarrett Johnson** “Growth and Survival of Salamanders Exposed to Different Formulations of Glyphosate-Based Herbicide” (Jarrett Johnson)
- 49 **Chase Knibbe, Noah Ashley, and Ejike Anyanwu** “Effect of Sleep Fragmentation Upon Microglial Activation in the Murine Brain” (Noah Ashley)
- 50 **Michael Henley, Brody Bagshaw, Anthony Ford, and Dusty Phelps** “Two Designs of a Simple Electrical Difference Engine” (Walter Collett)
- 51 **Nicole Capps** “Escape Reality” (Shahnaz Aly)
- 52 **Benjamin McDaniel** “The Contemporary Farmhouse” (Shahnaz Aly)

Session 18 Graduate Posters, Health/Human Services
Room 3025
Judges Gail Kirby (Moderator), Ashley Stinnett

- 53 **Adam Paicely, Adam Hyman, Brandon Evans, Gary Goss, and Harvey Wallmann** “The Acute Effects of Whole Body Vibration on Vertical Jump, Power, Balance, and Agility in Untrained Adults” (Harvey Wallmann)
- 54 **Apurva Ambekar, Ann-Ashleigh Gray, and Sonia Young** “Motor Profile of Individuals with Agenesis of the Corpus Callosum: Development and Initial Stages of a Systematic Review” (Sonia Young)
- 55 **Leah Taylor, Daniel Lee, Benjamin Mahoney, Sarah McCandless, and Sonia Young** “Prevalence of and Risk Factors Associated with Congenital Anomalies of the Nervous System in Kentucky 2000-2010: Development and Initial Stages of a Prevalence Study” (Sonia Young)
- 56 **Scott Boudreaux, Jesse Espe, and Corey Moore** “Comparison of Shoulder Torque Production in Make and Break Tests as Performed by DPT Students Using a Hand-Held Dynamometer” (Kurt Neelly)
- 57 **Nuha Shaker, Lee Winchester, Jill Maples, Sudhakar Veeranki, and Suresh Tyagi** “Exercise Reverses the Pathophysiology Associated with Elevated MMP-9 in a Hyper-homocysteinemic Mouse Model” (Jill Maples)
- 58 **Joshua Brown, Jason Crandall, Alyssa Olenick, and Mark Schafer** “Workstations for Improving Workplace Physical Activity and Sitting Time” (Jason Crandall)

CONCURRENT MORNING SESSIONS II

10:45 am – 12:15 pm

Session 19 Graduate Oral Papers, Humanities

Room 2084

Judges Darlene Applegate (Moderator)

- 10:45 **Charlotte Brindley** “The Hite House: Blood, Decay, and Jesse James” (Tim Evans)
11:00 **Anita Kay Westhues** “Well Stories: Alternative Understandings On Water Purity and Stewardship” (Ashley Stinnett)
11:15 **Frederick Flynn** “How the U.S. Came to Recognize Israel” (Beth Plummer)
11:30 **Austin Biggs** “Conservatives v. Moderates: Baptist Culture Wars” (Tamara Van Dyken)
11:45 **Sarah Shultz** “Transformation and Transgression in *The Complete Fairy Tales of the Brothers Grimm*” (Ann Ferrell)
12:00 **Rachel Burns, Rebecca Russell, Callie Haynes, and Ahuva Ambush** “Signing with Children with Down Syndrome” (Janice Smith)

Session 20 Graduate Oral Papers, Natural Sciences

Room 2085

Judges Chris Groves (Moderator), Nezam Iraniparast

- 10:45 **Travis Brummett** “Cloud Middleware” (Michael Galloway)
11:00 **Zachary Sullivan, Xingang Fan, Jason Polk, and Rezaul Mahmood** “Influences Karst Geologic Terrains Have on Atmospheric Phenomena with in Tennessee and Kentucky” (Xingang Fan)
11:15 **Pezhman Sheinidashtegol** “Impact of DDoS Attack on Three Common Hypervisors” (Michael Galloway)
11:30 **Gongbo Liang** “Pedestrian Detection Using Line Segments” (Qi Li)
11:45 **Clarissa Roe, Brittany Border, Edward Kintzel, Keith Andrew, and Shane Palmquist** “Investigation of Carbon Nanomaterials Embedded in a Cementitious Matrix” (Edward Kintzel)
12:00 **Bryan Knowles** “Decision Making Under Visible Uncertainty” (Mustafa Atici)

Session 21 Undergraduate Oral Papers, Natural Sciences

Room 2086

Judges Jason Polk (Moderator), Sanju Gupta

- 10:45 **Haleh Jeddi, Weilong Luo, and Rui Zhang** “Kinetic Studies of Oxygen Atom Transfer Reactions by an Oxo-manganese(v) Corrole” (Rui Zhang)
11:00 **Joshua Baunach** “Choosing Software Metrics for Defect Prediction” (Huanjing Wang)
11:15 **Aaron Kirtland** “Geometry Methods for Reducing the Number of Hypothesis Boxes in the Context of Pedestrian Detection” (Qi Li)
11:30 **Lauren Bailes and Diane Lickenbrock** “Examining Predictors of Paternal Sensitivity: The Role of Paternal Personality and Infant Temperament” (Diane Lickenbrock)
11:45 **Scout Munday and Andrew Wulff** “Color Variation in Sphalerites from Northern Tennessee” (Andrew Wulff)
12:00 **Jacob Wilkins, Rezaul Mahmood, and Josh Durkee** “Impacts of Land Between the Lakes on Local Precipitation Climatology” (Rezaul Mahmood)

Session 22 Undergraduate Oral Papers, Natural Sciences

Room 2113

Judges Eric Rappin (Moderator), Ismail Civelek

- 10:45 **Connor Brooks, Christopher Goulet, and Michael Galloway** “Autonomous Control of an Indoor Micro Aerial Vehicle Using a Multi-Layer Architecture” (Michael Galloway)
- 11:00 **Nicole Williams** “Expression of Cellulose-Digesting Enzymes in *Chlamydomonas*” (Sigrid Jacobshagen)
- 11:15 **Chelsea Ballard, Jason Polk, and Kegan McClanahan** “Tracing Carbon in Karst Environments to Investigate the Geochemical Evolution Processes of Karst Aquifers” (Jason Polk)
- 11:30 **Luke Miles** “Four Different Measures of Graph Integrity (Planar Graphs Especially)” (Dominic Lanphier)
- 11:45 **Jonathan Malone, Tse-Hong Chen, and Ka Wai Kwang** “Visible Light Generation of High-Valent Iron-oxo Intermediates” (Rui Zhang)
- 12:00 **Konnor Jones and Matthew Nee** “Temperature and Electric Field Dependency of Asymmetric Stretching of Nitrate Ion” (Matthew Nee)

Session 23 Undergraduate Oral Papers, Natural Sciences

Room 2122

Judges Rodney King (Moderator), Rama Brahmam Lanke

- 10:45 **Mary Spraggs and Steven Gibson** “Constraining the Physical Properties of Cold Interstellar Gas Clouds” (Steven Gibson)
- 11:00 **Brooke Duke and Blairanne Williams** “Toxicity Effects of Platinum Compound Leaving Ligands on Cancer Cells” (Kevin Williams)
- 11:15 **Cory Owens, Kristen Griffin, Hanna Khouryieh, and Kevin Williams** “Influence of pH and Xanthan-Locust Bean Mixtures on the Creaming and Flocculation of Whey Protein-Stabilized Oil-In-Water Emulsions” (Hanna Khouryieh)
- 11:30 **Connor Brown** “Circadian Rhythms of Gene Expression in *Chlamydomonas*” (Sigrid Jacobshagen)
- 11:45 **Brittany Dixon** “Bioinformatics Study of EZH2” (Chandra Emani)
- 12:00 **Alex Sizemore** “Investigation of the 16 June 2014 Pilger, Ne Tornado Event” (Joshua Durkee)

Session 24 Undergraduate Oral Papers, Humanities

Room 2123

Judges Gail Hiles (Moderator), Chloe Muller

- 10:45 **John Winstead** “Genealogy of Race and State” (Tiara Na'puti)
- 11:00 **Rachel Sudbeck** “Bobbie Ann Mason's Tenth Birthday Party – Cultural Coping Mechanisms in Dealing with Child Death” (Mary Ellen Miller)
- 11:15 **Alex Brislin** “Virtual Reality: A Film Making Tool or Destruction of an Art Form?” (Jerod Hollyfield)
- 11:30 **Tim Mwizerwa** “Hollywood vs. Time and Progression” (Jerod Hollyfield)
- 11:45 **Meredith Wadlington** “Pan-African Pastoral: Reimagining the Natural Spaces of Harlem Renaissance Poetics” (Christopher Lewis)
- 12:00 **Claire Bellar** “Carrie Nation: The Contradictions of Her Dissent Against the Shift from Traditional Gender Roles” (Anthony Harkins)

Session 25 Undergraduate Oral Papers, Humanities

Room 2124

Judges Laura Bohuski (Moderator), Ted Hovet

- 10:45 **Erin Woolen** “17th Century Views of Witchcraft in Shakespeare’s *Macbeth*” (Alison Langdon)
- 11:00 **Abigail Ponder** “The Preservation of Identity: A Narrative Examination of National Parks in Kentucky” (Judith Szerdahelyi)
- 11:15 **Frederick Hayslip** “Does Simón Bolívar Still Influence Latin America?” (Sonia Lenk)
- 11:30 **Bennett Couch** “Heteronormativity is a Drag: Drag Performance as Dissent in an Aggressively Gendered World” (Sandra Hughes)
- 11:45 **Cynthia Gilpin** “The Disappearance of a Middle Ground in Filmmaking” (Jerod Hollyfield)
- 12:00 **Joseph Johnson** “The Perfect Storm: Delving Into Italian Neo Realism’s Influence On the TV Series *Trailer Park Boys* and How the Effects of These Influences Employ a Sense of Reality” (Jerod Hollyfield)

Session 26 Undergraduate Oral Papers, Social Sciences

Room 3004

Judges Tim Evans (Moderator), Kumi Ishii

- 10:45 **Brandon Pruitt** “The Development of Latin American Militaries: Impacts of the Late-Colonial Era” (David Keeling)
- 11:00 **Jay Richey** “Building a Superpower: The Asian Infrastructure Investment Bank” (Timothy Rich)
- 11: 15 **Maya LeMaster** “Bethlehem Chapel of Prague: How a Place Can Be Interpreted Differently by Government” (Roger Murphy)
- 11:30 **Hannah Gossett** “Self-Esteem, Sense of Belonging, and Body Satisfaction of College-Aged Women” (Jennifer Cribbs)
- 11:45 **Taylor Hillard** “Spanning Generations: An Oral Family History Project” (Blair Thompson)
- 12:00 **Kate McElroy, Brianna Brown, Lauren Kenney, Kalli Beasley, Emily Gouvas, and Darlene Applegate** “Bioarchaeological Analysis of Human Skeletal Remains from Three Graves, Site 15Wa916, An Early Woodland Period Burial Ground in Warren County, Kentucky” (Darlene Applegate)

Session 27 Undergraduate Oral Papers, Social Sciences

Room 3005

Judges Amy Krull (Moderator), Carol Watwood

- 10:45 **Cade Brown and Edward Yager** “On Liberty: Mill’s Time at Westminster” (Edward Yager)
- 11:00 **Andrew Henderson, Cathryn Ellis, Sydney Collier, Jacob Tipton, Emily Peck, Carley Jackson, and Chelsea Murray** “Gender and Communication” (Blair Thompson)
- 11:15 **Mollie Todd** “An Analysis of Female Genital Circumcision and Its Relation to Islam” (Kate Hudepohl)
- 11:30 **Derek Scott** “Disparities in Felony Case Processing: An Analysis of a Southern, Semi-Urban Jurisdiction” (Jeffrey Budziak)
- 11:45 **Hannah Neeper** “Gender Perceptions in Taiwan” (Timothy Rich)
- 12:00 **Victor Lecoffre** “Perception of Space in Architecture” (Shahnaz Aly)

Session 28 Undergraduate Posters, Natural Sciences
Room 3023
Judges Jim Fulkerson (Moderator), Claire Rinehart

- 1 **Garrett Haug** “Developing the Body of Philadelphia” (Shahnaz Aly)
- 2 **William Johnson, Adam Winstead, Sultan Alamri, and Brody Bagshaw** “Designing and Building an Automatic Chamfer Grinding System” (Chris Byrne)
- 3 **Nolan Hughes** “Applications and Process of Photogrammetry” (Joel Lenoir)
- 4 **John Evans** “The Lagging State of Renewable Energy in Kentucky” (Leslie North)
- 5 **Shelby Wade** “An SEM Image Reference Guide to Hairs of Seventeen Species of Large African Mammals” (Michael Stokes)
- 6 **Davis Ranburger** “Synthesis and Spectral Studies of Manganese 5,10,15-tris (Pentafluorophenyl) Corrole Complexes” (Rui Zhang)

Session 29 Undergraduate Posters, Health/Human Services
Room 3023
Judges Jooyeon Hwang (Moderator), Brad Stinnet

- 7 **Abigail Pace, Margaret Cook-Newell, and Heather Payne-Emerson** “Benefits of a Flexitarian Diet: Educating College Students About Lifestyle Approaches to Reduce the Risk of Developing Breast and Prostate Cancer” (Margaret Cook-Newell)
- 8 **Kimberly Miles** “The Female Perception of Safety On a College Campus” (Gayle Mallinger)
- 9 **Phillip Parsons** “Student Perceptions of Services for Veterans and Military Personnel” (Dana Sullivan)
- 10 **Heather Harris** “Fusion: A Shared Space” (Sheila Flener)
- 11 **Kaitlin Ward** “Sunlight Designs” (Sheila Flener)
- 12 **India Martinez** “Prevalence of Depression in Children Diagnosed with Autism Spectrum Disorder” (Colin Farrell)

Session 30 Undergraduate Posters, Natural Sciences
Room 3023
Judges Barbara Brindle (Moderator), Tim Hawkins

- 13 **Taylor Senay, Rodney King, and Claire Rinehart** “Spontaneous Mutations in a Viral Population Increase Genetic Diversity” (Rodney King)
- 14 **Ryan Uthoff** “Using GIS to Locate and Determine Areas Served by High Tunnels in Kentucky” (Kevin Cary)
- 15 **Daniel Salami and Chisom Ogbonnaya** “Cloud” (Michael Galloway)
- 16 **Jared Walden** “Facile Synthesis of Water-Soluble Graphene Quantum Dots/Graphene Hybrid Nanoplatelets as an Efficient Photodetector” (Sanju Gupta)
- 17 **Adam Wise, Antony Ford, Sanel Music, Andrew Garmon, Jayson DeGraves, and Mark Cambron** “Anti-Poaching Technology” (Mark Cambron)
- 18 **Micah Bidwell** “Sustainability in Business” (Shahnaz Aly)

Session 31 Undergraduate Posters, Social Sciences/Education
Room 3023
Judges Gail Kirby (Moderator), Siera Bramschreiber

- 19 **Lillie Hoskinson, Nancy F. Hulan, and J. Dusteen Knotts** “Tutor in a Bag: Reaching Struggling Readers” (Nancy Hulan)
- 20 **Luci Keller** “Tourism Impacts On Chilean Patagonia: What Is Happening and How Can We Fix It?” (David Keeling)
- 21 **Hannah Keith** “The Relationship Between Secondary Mathematics Teachers’ College Experiences and Their Personal Classroom Practices” (Jennifer Cribbs)
- 22 **Joshua Price** “Catchin’ Zzzzz’s” (Jennifer Cribbs)
- 23 **Shane Hancock, Lindsey Cash, Ariana Kuhn, Alex Oldham, Leisel Iverson, and Daniel Pulliam** “Examination of Attentional Focus Strategies and Exercise Intensity on Rape, Affect, and Cognitive Processing” (Steven Wininger)
- 24 **McKenzie Perdew and Jenni Redifer** “To Cheat Or Not to Cheat: Impacts of Learning Disability Status and Impulsivity” (Jenni Redifer)

Session 32 Undergraduate Posters, Natural Sciences
Room 3024
Judges Simran Banga (Moderator), Elizabeth Norris

- 25 **Tori Hampton** “A Meteorological Perspective of the Hazardous Outcomes During Two Consecutive February-March 2015 Winter Storms Across Kentucky” (Josh Durkee)
- 26 **Harsh Moolani, Jason Payne, and Rajalingam Dakshinamurthy** “Direct Aminoglycoside Coated Gold Nanoparticle Synthesis, Characterization and Antibacterial Susceptibility Testing” (Stuart Burris)
- 27 **Colton Dillard, Bryce Aberg, and Michael Henley** “Design of a Web Accessible Experiment to Improve Student Understanding” (Walter Collett)
- 28 **De’Sean Patterson** “House of Fraternal Brotherhood” (Shahnaz Aly)
- 29 **Nicholas Henderson and Zackary Houck** “Architecture Providing a Sustainable Community” (Shahnaz Aly)
- 30 **Sanida Palavra and Michael Smith** “Mechanoreceptors in Chameleons (*Chamaeleo senegalensis*) for Seismic Communication” (Michael Smith)

Session 33 Undergraduate Posters, Natural Sciences
Room 3024
Judges Sylvie Huang (Moderator), Ariste Dobrovolskaite

- 31 **Ngo Fung Lee, Jonathan Malone, and Ka Wai Kwong** “Synthesis and Spectra Studies of Manganese(iii) and Manganese(v)-oxo Corroles” (Rui Zhang)
- 32 **Eura Shin and Jenna Ellis** “The Development of a Computer Program to Simplify Complex Knot Diagrams Using Global Moves” (Uta Ziegler)
- 33 **Thomas Gregory** “An Approach to Identify Mycobacteriophage Diversity Prior to DNA Sequencing” (Claire Rinehart)
- 34 **John Davis** “Rustic Timbers” (Shahnaz Aly)

- 35 **Chandler Clark, Caleb Carpenter, Jonathon Deel, Ryan Howell, and Jacob Latham** “Optimizing and Organizational Program for Halton Company” (Robert Choate)
- 36 **Clayton Hollen, Saxon Steel, Muhamed Suljic, and Abdulaziz Suqair** “Alucore Failure Testing” (Mortenza Nurcheshmeh)

Session 34 Undergraduate Posters, Natural Sciences

Room 3024

Judges Sharon Leone (Moderator), Wanda Chandler

- 37 **Chelsey Kipper and Patricia Kambesis** “Hydrograph Analysis of a Karst Conduit in Winneshiek County, Iowa” (Patricia Kambesis)
- 38 **Courtney Hamilton** “Contribution of a Putative Up Element DNA Sequence to the Activity of a Newly Identified Phage Promoter” (Rodney King)
- 39 **Aimee (Yuan) Ma** “The Rainbow Kindergarten” (Shahnaz Aly)
- 40 **Chase Wicker** “Community Center for Now and Later” (Shahnaz Aly)
- 41 **Jonathan Kinnard, Kyle Moss, and Stacy Wilson** “Security Analysis of the MQTT Protocol for the Internet of Things” (Stacy Wilson)
- 42 **Bryce Aberg and Sara Carrizosa** “A Single-Step Hydrothermal Synthesis of Vanadium Pentoxide-Reduced Graphene Oxide Composite Electrodes for Enhanced Electrochemical Energy Storage” (Sanju Gupta)

Session 35 Undergraduate Posters, Natural Sciences

Room 3024

Judges John Khouryieh (Moderator), Andrea Garr-Barnes

- 43 **Jennifer Gibbs** “Test for Measuring Cutting Effectiveness” (Christopher Byrne)
- 44 **Brandon Mudd, Naomi Rowland, and Jill Maples** “Exercise to the Rescue: An Analysis of Altered Metabolic Gene Regulation Post-Exercise in Lean and Obese Individuals” (Jill Maples)
- 45 **James Biddle, Sherafghan Khan, and Rodney King** “Isolation, Characterization, and Comparison of Two Novel Bacteriophages” (Rodney King)
- 46 **Wendy Loomis, Kelly McKenna, John Ferguson, and Hemali Rathnayake** “Preparation of Core-Shell Nanoparticles Using a Hydrophilic-Hydrophobic Approach” (Hemali Rathnayake)
- 47 **Hatem Alsolaim** “Architecture in the Work Place” (Shahnaz Aly)

Session 36 Undergraduate Posters, Humanities

Room 3025

Judges Lorraine Bormann (Moderator), Donna Kasznel

- 48 **Shelby Wooldridge** “Culture Shock: Understanding World Cultures Through Arts Integration” (Jennifer Adam)
- 49 **Lauren Boone** “Poster Design: Exploring Methods and Materials” (Matt Tullis)
- 50 **Kelby Auten** “Yes Sir, She Can Tap: An Exploration of the Influence of Women in Tap Dance History” (Amanda Clark)
- 51 **Sara Pecina** “Steps in Time: An Exploration of Tap Dance Education” (Amanda Clark)
- 52 **Isaac Edmonds** “The Sense Center” (Shahnaz Aly)

CONCURRENT AFTERNOON SESSIONS

1:30 – 3:00 pm

Session 37 Graduate Oral Papers, Humanities

Room 2084

Judges Roxanne Spencer (Moderator), Sandra Hughes

- 1:30 **Diane Williams** “Gaelic Women’s Stories: The Influence of Context On Narrative” (Ann Ferrell)
- 1:45 **Brenna Sherrill** “The Manic Pixie Dream Girl in Independent Film” (Ted Hovet)
- 2:00 **Svetlana Ter-Grigoryan** “No (Wo)man’s Land: Popular Press Discourses on Erotica and Pornography in the USSR, 1987-1991” (Marko Dumancic)
- 2:15 **Claire Casey** “Opposing Treatments of Ethnic Representation in the Television Series *Parks and Recreation*” (Ann Ferrell)
- 2:30 **Samantha Castleman** “Subversion in Search of Tradition: The Fairy Tale Heart of Dreamworks’ *Shrek*” (Ann Ferrell)

Session 38 Graduate Oral Papers, Natural Sciences and Social Sciences/Education

Room 2085

Judges Shannon Vaughn (Moderator)

- 1:30 **Robert Schaefer, Jason Polk, and Kegan McClanahan** “Sourcing and Dynamics of Karst Hydrologic Inputs On Harmful Algal Bloom Occurrences in Kentucky Lakes” (Jason Polk)
- 1:45 **Indu Bhattarai and Nahid Gani** “Quantitative Geomorphic Analysis and Digital Processing of Aster Imagery in the Siwalik Foreland Basin, Nepalese Himalaya: An Investigation of Landscape Response to Neotectonics” (Nahid Gani)
- 2:00 **Lori Froedge** “Assessments: Where Has the Accountability Gone?” (Jennifer Cribbs)
- 2:15 **Berenice Anaya and Elizabeth Lemerise** “Self-Regulation in Preschoolers: Hot and Cold Self-Regulation Tasks as Predictive Measures of School Readiness” (Elizabeth Lemerise)
- 2:30 **Elizabeth McCrary, Jessica Lopez, and Aaron Wichman** “Reconsidering the Role of Affect in Terror Management Research: Experiencing Fear Under Mortality Salience” (Aaron Wichman)
- 2:45 **Meagan Luttrell, Sharon Mutter, Catherine Woosley, Madison Osbourn, and Meredith Cundiff** “Effects of Reward Motivation on Verbal and Non-Verbal Recognition Memory” (Sharon Mutter)

Session 39 Undergraduate Oral Papers, Humanities

Room 2086

Judges Anthony Harkins (Moderator), Rosemary Meszaros

- 1:30 **Michael Blackshire** “Their Eyes Were Watching Brooklyn: Cinema’s Use of Racial and Social Issues in Brooklyn and How Gentrification and Appropriation Define a Borough” (Jerod Hollyfield)

- 1:45 **Patrick McDowell** “The Poet, the Pope, and the Pauper” (Alison Langdon)
- 2:00 **Alexandra Schulte** “Universities and Local Food Practices: An International Comparison Along the Pacific Coast of North America” (Alexander Olson)
- 2:15 **Trenton Marcum** “Come and Let Us Justify the Ways of God to Men: An Evaluation of the Intertextuality of Milton's *Paradise Lost*” (Jerod Hollyfield)
- 2:30 **Julia Porter** “‘Expelliarmus!’ How The Harry Potter Franchise Has Helped Pave the Way for Modern Day Feminism” (Jerod Hollyfield)

Session 40 Undergraduate Oral Papers, Social Sciences

Room 2113

Judges Brian Coutts (Moderator), Siera Bramschreiber

- 1:30 **Deborah Parrish, Aecha Helm, Kayla Ward, SarahAnn Greiner, and Darlene Applegate** “Bioarchaeological Analysis of Human Skeletal Remains from Grave 14, Site 15Wa916, an Early Woodland Period Burial Ground in Warren County, Kentucky” (Darlene Applegate)
- 1:45 **Heather Byerly, Jean-Luc Houle, and Cheryl Makarewicz** “Ritual and Mobility: $^{87}\text{Sr}/^{86}\text{Sr}$, $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ Analyses Comparing Modern and Bronze Age Khirigsuur Horses from Khanuy Valley, Mongolia” (Jean-Luc Houle)
- 2:00 **Matthew Riggle** “Spatial Analysis of Burmese Refugee Resettlement Locations” (Jun Yan)
- 2:15 **Barrett Greenwell** “Do Ask, Do Tell: The Exclusion of Gay Men from Universal Male Conscription in the Republic of Turkey” (Patricia Minter)
- 2:30 **Megan Skaggs** “Invisible Children: The Effectiveness of Non-Governmental Organizations (NGOs) in Primary Education in Central America” (Timothy Rich)
- 2:45 **Sarah Reed** “Democratic Satisfaction in the Czech Republic for Non-Voters and Losers” (Timothy Rich)

Session 41 Undergraduate Oral Papers, Natural Sciences

Room 2122

Judges Jill Maples (Moderator), Rama Brahman Lanke

- 1:30 **Peter Agaba** “Incorporating Exponential Functions Into an Optimal Control Model for a Chronic Wound” (Richard Schugart)
- 1:45 **Jessica Lasher** “IDH1 Gene” (Chandra Emani)
- 2:00 **Franklyn Wallace** “Use of Surface Enhanced Raman Spectroscopy to Monitor Photocatalytic Reactions” (Matthew Nee)
- 2:15 **William Hamilton, Jason Payne, and Rajalingam Dakshinamurthy** “Carbapenem Functionalized Gold Nanoparticle Synthesis, Characterization, and Antibacterial Susceptibility Testing” (Stuart Burris)
- 2:30 **Jauan Burbage, Sharma Nilesh, and Manish Tiwari** “Physiological and Molecular Evaluation of Titanium Dioxide Nanoparticles Toxicity in Tomato (*Solanum esculentum*)” (Shivendra Sahi)
- 2:45 **Joshua Castlen** “Cancer Research Engagement for Students” (Chandra Emani)

Session 42 Undergraduate Oral Papers, Humanities
Room 2123
Judges Donna Kasznel (Moderator), Chris Lewis

- 1:30 **Dantin Greenwell** “Depictions of Mental Illness in American Cinema: How Film Has Influenced Mass Media Interpretations of Mental Illness” (Jerod Hollyfield)
- 1:45 **Ellis Fraser** “Float Like a Repressive White Society, Sting Like a Black Liberation Movement: The Use of Cinema to Tell Narratives of Black Liberation” (Jerod Hollyfield)
- 2:00 **Rachel Phelps** “Lady Brett Ashley and the Unattainable Female Ideal” (Walker Rutledge)
- 2:15 **Hope Jackson** “The Fruitlands Failure, Or How Not to Create an Intentional Community” (Tim Evans)
- 2:30 **Robert Dubell** “Goal! Goal! Goal! Social Reflection and Soccer in the United States” (Jerod Hollyfield)

Session 43 Undergraduate Oral Papers, Combination of Subject Areas
Room 2124
Judges Bryan Carson (Moderator), Jim Fulkerson

- 1:30 **Jonathan Sahlman** “The Need for New Domestic Patent Legislation to Prevent the Exploitation of Traditional Knowledge Holding Communities” (Jessica Furgerson)
- 1:45 **Kelly Fussman** “Outcomes of a Speech and Language Pilot Program for International Students” (Mary Lloyd Moore)
- 2:00 **MaryEllen Hendrick** “More Than Just Torture Porn: Eli Roth and Dismantling American Exceptionalism” (Jerod Hollyfield)
- 2:15 **Jacob Willoughby** “The Concept of Truth: Examining a Cornerstone of Narrative Cinema” (Jerod Hollyfield)
- 2:30 **Corbin Wilson** “CSR Reporting and the University” (Steve Wells)
- 2:45 **Nathan Powers** “Altering Expression of JAK/STAT Pathway Components in Air Sac Primordia of *Drosophila melanogaster*” (Ajay Srivastava)

Session 44 Graduate Posters, Natural Sciences
Room 3023
Judges Rosten Tembo (Moderator), Sharon Leone

- 1 **Qianna Xu** “Body Morphology Diversification Among the Pecos Pupfish Populations in Relation to Interspecific Interactions and Environmental Factors (Michael Collyer)
- 2 **Kenneth Anderson** “Growth of the Marbled Salamander (*Ambystoma opacum*) on Substrates of Varying Acidity” (Jarrett Johnson)
- 3 **Juhwa Kim** “Multiplexed Detection of Pathogenic DNA Using Zinc Finger Proteins without DNA Amplification” (Moon-Soo Kim)
- 4 **Dolly Na-Yemeh, Rezaul Mahmood, and Gregory Goodrich** “Synoptic Conditions and Equivalent Temperature Variations in Kentucky” (Rezaul Mahmood)
- 5 **Kolton Jones and Yan Cao** “Dynamic Modular Instrumentation Platform” (Yan Cao)
- 6 **Stacy Hicks** “Characterization and Threat Assessment of Potentially Hazardous Near Earth Asteroids” (Michael Carini)

Session 45 Graduate Posters, Health/Human Services
Room 3023
Judges Jae Kim (Moderator)

- 7 **Michelle Bubnis, Jason Crandall, Mark Schafer, and Fredrick Grieve** “Body Image Comparisons Between High Intensity Functional Training and Traditional Strength Training Participants” (Jason Crandall)
- 8 **Paige Wessel, Brooke Grimes, BethAnne Clayton, Nuha Shaker, Battogtokh Zagdsuren, and Jill Maples** “Accuracy of Accelerometers During High Intensity Body Weight Resistance Training in Males and Females” (Jill Maples)
- 9 **Gargya Malla and Colin Farrell** “Obesity: Psychological Health vs. Cardiac Health” (Colin Farrell)
- 10 **Matthew Shirley, Rebecca Lauth, and Ritchie Taylor** “Watershed Health Assessment for a Small Municipal Separate Storm Sewer System with in the Mansker Creek Watershed” (Ritchie Taylor)
- 11 **Jimmy Shah and Gregory Ellis Griffith** “Trailblazing Uses of Health Information Technology” (Gregory Ellis Griffith)

Session 46 Graduate Posters, Health/Human Services
Room 3023
Judges Andrea Garr-Barnes (Moderator), Lauren Bland

- 12 **Jamye Bowins Hardy** “Benefits of Regular Volunteerism for Undergraduate Students” (April Murphy)
- 13 **Yu-Hsuan Chen** “The Role of Hypertension in the Prevention of Cardiovascular Disease” (Colin Farrell)
- 14 **Sai Pavan Adigarla** “Nutritional Status and the Effectiveness of ARVs in HIV Patients in Tanzania” (William Mkanta)
- 15 **BethAnne Clayton, Paige Wessel, Brooke Grimes, Nuha Shaker, Battogtokh Zagdsuren, and Jill Maples** “Influence of Gender on Attitudes Toward and Perceived and Self-Selected Intensity During High-Intensity Body-Weight Exercise” (Jill Maples)
- 16 **Dustin Falls, Jason Crandall, and Matthew Shake** “Mobile Application for Improving Functional Performance and Health Education in Older Adults” (Jason Crandall)

Session 47 Graduate Posters, Business and Education
Room 3023
Judges Mohammed Matin (Moderator), Jennifer Joe

- 17 **Steven King, Tyler Mock, Ogoma Egembah, and Tania Tando** “Implementing Tele-Stroke in Rural Hospitals” (Bob Hatfield)
- 18 **Sarah Adams** “Participation in Organizational Health and Wellness Programs” (Amber Schroeder)
- 19 **Jacquelyn Cavanaugh** “Facebook Faking: Examining Ratings of Modified Profiles” (Amber Schroeder)
- 20 **Andrew Rowland and Alana Alexander** “The Value of Professionalism” (Amber Schroeder)
- 21 **Megan Sparks and Lisa Duffin** “Prevalent Brain-Based Myths in Education” (Lisa Duffin)

Session 48 Graduate Posters, Combination of Subject Areas

Room 3024

Judges Jennifer Brinkley (Moderator), Daniel Curry

- 22 **Jennifer Timmers, Fred DeGraves, Hunter Galloway, and Linda Brown** “Comparison of the Effects of Two Growth Implant Strategies on the Average Daily Gain of Suckling Calves Fed ‘KY-31’ Endophyte Infected Tall Fescue” (Linda Brown)
- 23 **Michael Durlin** “IMVU: The Introductory Study of a Technology Based Culture” (Ann Ferrell)
- 24 **Casey Taylor** “Hitler’s Model Protectorate: Resistance in Occupied Denmark” (Beth Plummer)
- 25 **Emily Martin** “Examining the Effect of Expatriate Narcissism Levels on Cultural Adjustment and Global Leadership Effectiveness” (Amber Schroeder)
- 26 **Samuel Galbraith** “Developing a Measure for Assessing Virtual Organizational Citizenship Behaviors” (Amber Schroeder)

Session 49 Undergraduate Posters, Natural Sciences

Room 3024

Judges Jesse Nugent (Moderator), Dustin Falls

- 27 **Tara Watkins, Becky Gilfillen, and Naomi Rowland** “Influence of Tillage and Fertilizer Regime On Presence of Select Pathogenic Organisms in a Silt Loam Soil” (Becky Gilfillen)
- 28 **Andrew Davis and Bruce Kessler** “Matrices for Discrete Logistic Population Modeling with Distribution Control” (Bruce Kessler)
- 29 **Tithe Ahmed and Makenzie Daniels** “Comparison of Bacteriophages Nearlyheadless and Hemsworth” (Rodney King)
- 30 **Komlan Tamatekou** “Sustainable Sports Facility” (Shahnaz Aly)
- 31 **Trevor Brown, Christopher Goulet, Dylan Howard, Darshan Patel, Thomas Lackey, Saad Ahmad, and Manh Do** “An Educational Vertical Cloud” (Michael Galloway)

Session 50 Undergraduate Posters, Natural Sciences

Room 3024

Judges Rodney King (Moderator), Chase LaDue

- 32 **Benjamin McDonald and Sara Carrizosa** “Nanodiamond Modified Boron-Doped Diamond Surface Redox Chemistry: Influence of Physicochemical Properties On Electrocatalytic and Biocatalytic Processes” (Sanju Gupta)
- 33 **Anthony Steiner** “The Differential Effects of Low-intensity Fire and Precipitation On Fall Herbs in Kentucky” (Albert Meier)
- 34 **Catherine Dowell and Stevie Hoyng** “Haptic-Visual Solid Shape Matching with Variable Numbers of Fingers” (Farley Norman)
- 35 **Cory Valjien** “Bowling Green Center for Natural Creativity” (Shahnaz Aly)
- 36 **Kayla Frye** “Sustainable Concrete Canoe” (Matthew Dettman)

Session 51 Undergraduate Posters, Natural Sciences
Room 3024
Judges Devesh Shukla (Moderator), Robin Ayers

- 37 **James Senig, Michael Belcher, and Dustin Avery** “Cluster-Weighted Modeling Approach to Constructing Potential Energy Surfaces” (Jeremy Maddox)
- 38 **Molly Shircliff and Bryce Aberg** “Multi-Physics Modeling and Simulation Using Modelica/Dymola and Matlab/Simulink: A Comparative Study” (Farhad Ashrafzadeh)
- 39 **Logan Mitchell and Kegan McClanahan** “Long-Term Monitoring of Storm Responses with in a Complex Karst Aquifer” (Jason Polk)
- 40 **Ashton Pye** “Eco-Friendly Luxury Abode” (Shahnaz Aly)
- 41 **Ben Conrad** “Sustainable Lifestyle” (Shahnaz Aly)

Session 52 Undergraduate Posters, Natural Sciences
Room 3025
Judges Janet Smith (Moderator), Donielle Lovell

- 42 **Andrew Frits** “Community Revitalization Through Architecture” (Shahnaz Aly)
- 43 **Daniel Hickey** “Green Overlook Hotel and Restaurant “(Shahnaz Aly)
- 44 **Joy Fan** “An Immunohistochemical Screen for Genes Expressing in Air Sac Primordium in *Drosophila*” (Ajay Srivastava)
- 45 **Brittany Moore and Patricia Kambesis** “Distribution of Bedrock Collapse Sinkholes in Warren County, Kentucky” (Patricia Kambesis)
- 46 **Brad Cockrel, James Sowers, Abdulrahman Almannaa, and Darko Palkic** “Transmission Noise Modification” (Chris Byrne)

Session 53 Undergraduate Posters, Health/Human Services and Business
Room 3025
Judges Meghan Parsley (Moderator)

- 47 **Ali Weinzapfel** “Analyzing the Regionalized Awareness of Distraction Osteogenesis” (Joseph Evans)
- 48 **Emily Hannah** ““Get in the Zone: A Survey of Dental Professionals’ Knowledge of Ozone Therapy” (Lynn Austin)
- 49 **Alejandra Valadez Rodriquez** “The Implementation of Alternative Pain Control Methods by Dental Hygienists” (Joseph Evans)
- 50 **John Bal, Eric Blair, Kassie Huffman, and Barry Sweatt** “DVT Prevention” (Joel Lenoir)
- 51 **Matthew Pate and Allen Hunt** “Responses to Regulators: An Analysis of Letters Written by the Institute of Internal Auditors” (Allen Hunt)

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