

Western Kentucky University
TopSCHOLAR®

Student Research Conference Select Presentations


Student Research Conference

3-28-2015

45rd Annual WKU Student Research Conference

Student Research Council
Western Kentucky University

Follow this and additional works at: http://digitalcommons.wku.edu/sel_pres

 Part of the [Arts and Humanities Commons](#), [Business Commons](#), [Education Commons](#), [Life Sciences Commons](#), [Medicine and Health Sciences Commons](#), [Physical Sciences and Mathematics Commons](#), and the [Psychology Commons](#)

Recommended Citation

Student Research Council, "45rd Annual WKU Student Research Conference" (2015). *Student Research Conference Select Presentations*. Paper 31.
http://digitalcommons.wku.edu/sel_pres/31

This Conference Proceeding is brought to you for free and open access by TopSCHOLAR®. It has been accepted for inclusion in Student Research Conference Select Presentations by an authorized administrator of TopSCHOLAR®. For more information, please contact todd.seguin@wku.edu.

45th Annual Student Research Conference



**Saturday, March 28, 2015
Downing Student Union**

**Western Kentucky University
Bowling Green, Kentucky**





Snippet_30B249E08.idms

TABLE OF CONTENTS

Conference Schedule	3
Downing Student Union Floor Plan	4
Conference Introduction	5
Conference Highlights	6
Student Spotlight on Creative Activity and Performance	8
Acknowledgements	10
Oral Presentations Session #1	13
Oral Presentations Session #2	17
Oral Presentations Session #3	20
Poster Session #1	23
Poster Session #2	25
Poster Session #3	27

Abstracts are available at www.wku.edu/studentresearch



WESTERN KENTUCKY UNIVERSITY
IS AN INSTITUTIONAL MEMBER OF THE
COUNCIL ON UNDERGRADUATE RESEARCH
Learning Through Research

CONFERENCE SCHEDULE

7:30am-1:30 pm **Registration**
Registration and Information Tables, 3rd Floor Lobby

Set up for Poster Session I

8:30-10:00 am **Session I**
Oral Presentations – Session I
3rd Floor Rooms: 3002, 3004, 3005, 3006, 3007, 3029,
2nd Floor Rooms: 2084, 2085, 2086, 2113, 2122, 2123, 2124

8:30-10:00 am **Poster Session I**
Rooms: 3023, 3024, 3025

10:00-10:15 am **Morning Break**
Set up for Poster Session II

10:15-11:45 am **Session II**
Oral Presentations – Sessions II
3rd Floor Rooms: 3002, 3004, 3005, 3006, 3007, 3029,
2nd Floor Rooms: 2084, 2085, 2086, 2113, 2122, 2123, 2124

10:15-11:45 am **Poster Session II**
Rooms: 3023, 3024, 3025

11:45 am-12:30 pm **Lunch Break**
Fresh Food
Set up for Poster Session III

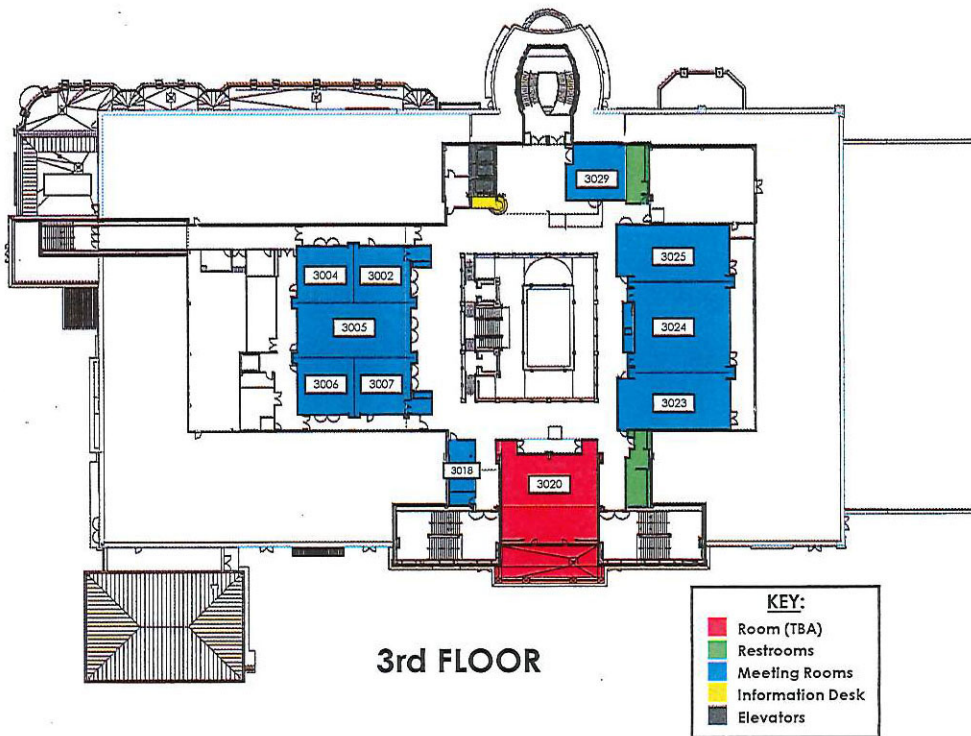
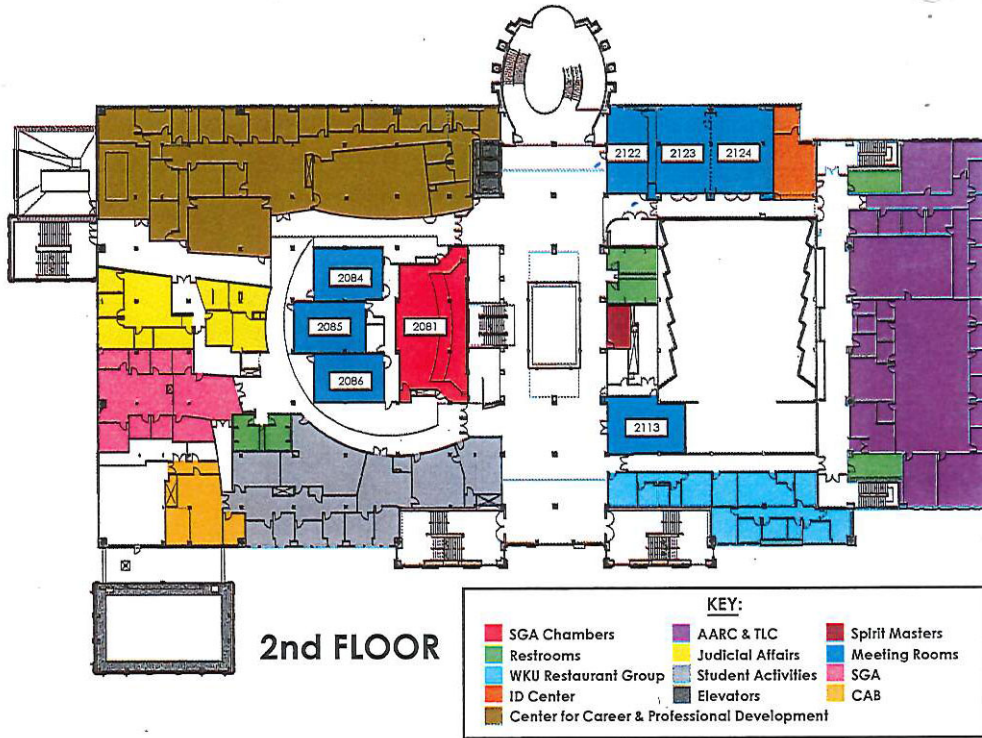
12:30-1:30 pm **Faculty “Ted Talks” and Conference Spotlight on Creative Activity, Performances, and Technical Demonstrations**
Fresh Food

1:30-3:00 am **Session III**
Oral Presentations – Sessions III
3rd Floor Rooms: 3002, 3004, 3005, 3006, 3007, 3029,
2nd Floor Rooms: 2084, 2085, 2086, 2113, 2122, 2123, 2124

1:30-3:00 am **Poster Session III**
Rooms: 3023, 3024, 3025

3:00 pm **Winners will be posted on the Website**

Downing Student Union Floor Plan



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 talks, 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 the 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. This year REACH (Research Experiences and Creative Heights) Week spanned March 23-28 and featured research showcases hosted by nine WKU colleges and units. The Student Research Conference is the culminating activity of REACH Week.

* 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 45th Annual WKU Student Research Conference will showcase 351 research presentations. There are 184 oral presentations, 166 posters/exhibits, and 1 video presentation, plus 5 student spotlight performances and 6 faculty "Ted Talks". A total of 253 undergraduate students, 89 master students, and 8 doctorate students are presenters 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 44 departments, programs, and institutes in all colleges.

Agriculture	Management
Allied Health	Mathematics
Architect & Manufacturing Sciences	Modern Languages
Art	Music
Biology	Philosophy & Religion
Chemistry	Kinesiology, Recreation & Sport (School of)
College of Ed & Behavioral Science	Physics & Astronomy
Communication	Political Science
Communication Disorders	Potter College of Arts & Letters
Computer Information Systems	Psychology
Computer Science	Public Health
Family & Consumer Sciences	Social Work
Economics	Sociology
Ed. Admin., Leadership & Research	Theatre & Dance
Engineering	Gender & Women's Studies
English	Teacher Education (School of)
Environment, Health & Safety	MBA
Folk Studies & Anthropology	Leadership Dynamics
Geography & Geology	Popular Culture Studies
Health Sciences	University Libraries
History	Psychological Sciences
Honors College	
Journalism & Broadcasting (School of)	

Among the undergraduate participants in the conference are 59 **Honors College** students. Many are presenting their capstone experience/thesis projects at the conference.

Peter Agaba
Brittany Austin
Greg Austin
Meghan Althausser
Brooke Barber
Michael Blankenship
Audrey Brown
Erika Brown
Rebecca Center
John Corum
Forrest Deacon
Samuel Dong
Morgan Duff
Cody Duncum
Carolyn Evans
Brandon Farmer
Kelly Fussman
Gabriel Garcia de Carvalho
Haley Garrison
William Hamilton
Tori Hampton
Parker Hanna
Ericka Hardin
Laura Harper
Tiffany Hughes
Katherine Knight
Kawai Kwong
Zachary Leasor
Jinglin Li
William Linder

Kyle Mann
Meghan McGuirk
Krstina Medero
Katie Meek
Ryan Pait
Hannah Pennington
Jade Primicias
Emily Potts
Colton Ramos
Benjamin Riley
Samuel Rosenthal
Meghan Ryckele
Cyrus Sadrinia
Mallory Schnell
Derek Scott
Kyle Sewell
Anna Shelton
Autumn Smith
Erik Smith
James Soper
John Stone
Beth Taylor
Chase Thomas
Cynthia Tope
Whitney Walker
Frankie Wallace
Kendra Whitaker
Jonathon Wurth
Amy Zenthoefler

Also among the undergraduate participants are 30 students in the **Carol Martin Gatton Academy of Mathematics and Science in Kentucky**. Since its creation in 2008, a total of 206 Gatton Academy students have presented at the conference.

Dana Biechele-Speziale
Valerie Richmond
Jack Wassom
Saadia Akhtar
Vir Patel
Ben Guthrie
Kelly McKenna
Andrew Davis
Michael Belcher
Ananya Sharma
Brian Carlson

Alexandra Wright
Ben Riley
Anna Braun
Ally King
Harsh Moolani
Rena Ryumae
Julia Gensheimer
Kathryn "Rachel" Price
NaKeya Owens
Alexander Gelderman
Rohan Deshpande
Linyue "Joy" Fan
Justin Bunch

The following are Gatton Academy students who are listed as co-authors on a presentation:

Lauren Pedersen
Julia Gensheimer
Sarah Herricks
Kristen Pedersen
Shelbi Broeking
Paul Hudson

STUDENT SPOTLIGHT
on
Creative Activity, Performances
and
Technical Demonstrations
Fresh Food Company
12:15 – 1:30 PM

The Student Research Council has assembled an inter-disciplinary group of students to spotlight original work that needs to be seen and heard for full effect. Students' fast and impactful six-minute performances and demonstrations will be paired alongside faculty members' TED-Talk-style presentations during a lunchtime program.

Join us at lunch. Grab your food, sit back, and enjoy the show!

Creative Writing—Rachel Sudbeck, “Patchwork” and “Upright”

Rachel Sudbeck is, presently, just a creative writing student trying to figure out what to do with her life. She will be presenting a selection of some of the nonfiction work she's written during her time in college. If anyone is skeptical as to why they should care about her life, she would like to mention that her work won third place at the Sigma Tau Delta convention, first place at the WKU gender and Women's studies writing contest, and now she's been nominated to speak at this Spotlight on Creative Activity, so she must be doing something right. While everyone in the WKU creative writing department has been amazing, right now Dr. Dale Rigby stands out in particular as a mentor in nonfiction.

Physical Therapy—Blake Perkins, *Physical Therapy Assessment of Shoulder Labral Pathologies*

Blake Perkins is a first year student of WKU's Doctor of Physical Therapy program and President of the Class of 2017. Blake completed his undergraduate coursework in Exercise Science in May of 2014 and received a Bachelor of Science degree before matriculating to WKU's DPT program. Blake, along with his faculty mentors, Dr. Mark Schafer and Dr. Don Hoover, have been working on a case study research project titled "Preparing a Student with Paraplegia for Health Fitness SpecialistSM Certification: Functional Capacity Evaluation and Accommodation." This research has been accepted, and will be presented, at the American College of Sports Medicine 62nd Annual Meeting in San Diego, California. Following this theme of accommodation, Blake will be demonstrating a brief physical therapy assessment of shoulder labral pathologies and explaining some of the modifications he has made as a paraplegic physical therapy student.

Photojournalism—Kreable Young, *A Way of Life*

Kreable Young, a photojournalism student at WKU, will be showing her two-minute documentary *A Way of Life*. The video was shot and produced during the spring of 2014 and gives insight into the passion that Coach Bill Powell has for swimming. Kreable has always had

an interest in swimming, as she was a competitive swimmer for 13 years, including swimming for WKU Swimming and Diving during the 2011-2012 academic year. *A Way of Life* is the first video Kreative ever shot or produced. It was made during *Web Narratives*, which is a short form documentary class taught by Tim Broekema. Kreative's mentor is Jeanie Adams-Smith.

Music—Ben Lee, *Flaheer*

Ben Lee, a music education major from Russell Springs, will present an excerpt from his wind ensemble composition, *Flaheer* (pronounced “flare”), and discuss the composition process from development to performance. Ben composed this piece over the 2014-15 school year. This piece is dedicated to his friend, Anthony Flaherty, who took his own life in 2012. This piece explores melodies derived from a unique harmony which provided solace to Ben throughout his coping process. This composition provides an artistic medium by which to explore mental health and silent disabilities. Outside of WKU, Ben maintains a clientele of high school band programs for whom he arranges marching band show music. His mentors include his composition professor, Dr. Michael Kallstrom, and director of bands, Dr. Gary Schallert.

Mechanical Engineering—William Johnson, Zach Lancaster, and Jesse Reesor, *WKU Engineering QuadCopter*

William Johnson, Zach Lancaster, and Jesse Reesor are mechanical engineering majors as well as the research team that designed, developed, and operates the WKU Engineering QuadCopter. The Quad was originally developed to be used in aerial photography, and it has since been used in multiple aerial videography scenarios – namely the sinkhole at the National Corvette Museum. The “Quad Team” will be presenting on the design challenges and the benefits of using a QuadCopter for aerial videography, as well as how these came into play at the National Corvette Museum disaster – with a demonstration of a live video feed from a Quad. The students’ mentor is Dr. Joel Lenoir.

WINNERS

WKU faculty and professional staff judge student presentations, performances, posters, and exhibits at the conference. The judges select one winner from each of the sessions listed in this program.

Conference session winners will be posted on the Student Research webpage by midnight of March 28, 2015. Winners will receive an Awards Certificate via their mentor.

ACKNOWLEDGEMENTS

On behalf of the entire campus community, the members of the WKU Student Research Council extend appreciation and congratulations to the hundreds of students who participated 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.

Faculty members who served as mentors to students are identified throughout the conference schedule. We commend the faculty mentors for their support of student scholarly activities and for their assistance in preparing students for the conference.

A total of 90 WKU faculty/staff serving as conference session judges are listed below. We greatly appreciate the support of the judges.

Darlene Applegate	Xingang Fan
Farhad Ashrafzadeh	Ann Ferrell
Lynn Austin	Nahid Gani
Wes Berry	Cecile Garmon
Mark Berry	Chris Groves
Brent Bjorkman	Jean Gumirakiza
Lauren Bland	Sanju Gupta
Lorraine Bormann	Tim Hawkins
Dana Bradley	Gail Hiles
Wolfgang Brauner	Jean-Luc Houle
Amy Brausch	Xiaoxia "Silvie" Huang
Barbara Brindle	Sandra Hughes
Bryan Carson	Nezam Iraniparast
Wanda Chandler	Kumi Ishii
Ismail Civelek	Trish Jagers
Jason Crandall	Muhammad Jahan
Jennifer Cribbs	Jennifer Joe
Lauren Cunningham	Pat Kambesis
Daniel Curry	Molly Kerby
Robert Davis	John Khouryieh
Patricia Desrosiers	Moon-Soo Kim
Ali Er	Jae Kim
Tim Evans	Tom Kingery

E. Gail Kirby
Sally Kuhlenschmidt
Justin Kunkle
Debbie LaMastus
Diane Lickenbrock
Nancy Mager
Gayle Mallinger
Jill Maples
Sean Marston
Sara McCaslin
Akihiko Michimi
Andrew Mienaltowski
Christian Montgomery
Kyle Moss
April Murphy
Beth Norris
Peggy Otto
Rhonda Patterson
Merrall Price
Jenni Redifer
Thomas Reece
Claire Rinehart

Juan Romero
Amber Schroeder
Matthew Shake
Lee Ann Smith
Lynette Smith
Roxanne Poster Session Please Spencer
Cheryl Stevens
Teresa Stidham
Brad Stinnett
Dana Sullivan
Dick Taylor
Brandy Tiernan
Shannon Vaughan
Jennifer Walton-Hanley
Leila Watkins
Adam West
Andrew West
Aaron Wichman
Mary Wolinski
Alison Youngblood
Jie Zhang

Funding for the 45th Annual WKU Student Research Conference and other REACH Week activities was provided by the Office of the Provost and Vice President for Academic Affairs, the Office of Research, and the WKU Chapter of Sigma Xi.

The Office of Public Affairs developed electronic advertising, provided photography services for REACH Week events, prepared press releases, and designed the conference artwork.

Web support was provided by Diana Keeling. Jennifer Tougas and staff in the Parking and Transportation Office provided parking maps for REACH Week events.

Honors Toppers, Office of Scholar Development Ambassadors, and Gatton Academy students assisted at the conference and other REACH Week events, Audra Jennings, Jill Maples, and Derick Strode.

The Downing Student Union staff provided logistical support for the conference. Special thanks to Sandra Hughey, Bryan Hamann, and Amanda Jarrett. Fresh Food staff and Campus Community and Campus Events provided logistical support. Special thanks to Vedrana Forsythe and her staff. Also special thanks to Kim Newell and Candice Tope-Phillips.

The WKU Student Research Council organizes the conference. Members represent each college, University Senate, and Student Government Association: Stacy Wilson (Chair), Darlene Applegate, Leslie Baylis, Colette Chelf, Chandra Emani, Lance Hahn, Scott Lyons, Rosemary Meszaros, Merrall

Price, Derick Strode, and Leyla Zhuhadar. For more information about the Council, visit www.wku.edu/studentresearch.

FUSE

A variety of funding opportunities are available to assist students with their research. In 2012 the Office of Academic Affairs and the Office of Research 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. Nearly 200 under-graduate students have received FUSE grants over the past two years, many of whom are among the conference participants this year. Also, the WKU Graduate School provides grants to graduate students to support creative scholarship that promotes inquiry and contributions to knowledge. A number of the graduate students presenting today were assisted by funding from the Graduate School.

An index of all student presentations will be available on the day of the conference as a separate insert.

The WKU Student Research Council thanks all students, mentors, and support staff who contributed to make this conference a success.

Oral Presentations

8:30 – 10:00

Room 3002

Judges: John Khouryieh and Nezam Iraniparast (Moderator)

- 8:30 **Pegah Kakavand**, An Experimental Investigation Into The Micro-electro-discharge Machining Of Niti Shape Memory Alloy (Muhammad Jahan)
- 8:45 **Abdulhameed Dawood**, Effect Of Tool Coating During The Sustainable Machining Of Aerospace Material Ti-6al-4v (Muhammad Jahan)
- 9:00 **Qinchuan Du**, Biomedical Applications Of Ti-6al-4v - A Review (Muhammad Jahan)
- 9:15 **Farshid Alavi**, Robust Optimization Design For Whipping Cream Within The Framework Of Six Sigma (Daniel Jackson)

Room 3004

Judges: Amy Brausch and Sara McCaslin (Modertor)

- 8:30 **Berenice Anaya**, Adaptation And Flexibility: The Integration Of Emotion And Cognitive Control (Brandy Tiernan)
- 8:45 **Meagan Luttrell**, Effects Of Reward Motivation On Young And Older Adults' Single Target And Dual Target Recognition (Sharon Mutter)
- 9:00 **Sarah Wilson**, Examining The Validity Of A Usual Care Screening Instrument For Identifying Individuals In Rural Communities With Ptsd Symptoms And Related Concerns (Stephen O'Connor)
- 9:15 **Kianoosh Ebrahimi**, GIS Applications In Developing Zero-waste Strategies At Universities - A Case Study Of Western Kentucky University (Leslie North)
- 9:30 **Nohammed Adnan Yousofi**, HIV, Syphilis, Hcv And Behavioral Risk Factors Among Men Who Have Sex With Men In A Drug-using Area (2013-2014)- (Frank Fan)
- 9:45 **Zach Vincent**, An Assessment Of Food Safety Practices At Farmers Markets (Martin Stone)

Room 3005

Judges: Claire Rinehart, Cecile Garmon, and Lorraine Bormann (Moderator)

- 8:30 **Jennifer Dumaine**, Acute Sleep Fragmentation Induces Tissue-specific Changes In Cytokine Gene Expression And Increases Serum Corticosterone In A Murine Model (Noah Ashley)
- 8:45 **Sarah Goodyear**, Habituation To Auditory Stimuli By Captive African Elephants (*Ixodonta Africana*), (Bruce Schulte)
- 9:00 **Charlotte Hacker**, Examination Of Enrichment Using Space And Food For African Elephants (*Ixodonta Africana*) At The San Diego Zoo Safari Park (Bruce Schulte)
- 9:15 **Christopher Fields**, Genetic Characterization Of A Basement Membrane Degradator In *Drosophila Melanogaster* (Ajay Srivastava)
- 9:30 **Amy Fehrenbach**, Hearing And Effects Of Sound Exposure On The Axolotl (*Ambystoma mexicanum*), (Michael Smith)
- 9:45 **Qian Dong**, Involvement Of A Protease In The Development Of Dorsal Air Sac Primordium (asp) Of *Drosophila Melanogaster* (Ajay Srivastava)

Room 3006

Judges: Moon-Soo Kim and Teresa Stidham (Moderator)

- 8:30 **Niharika Neerudu Sreeramulu**, Synthesis Of Nanoparticle Colloids For Colloidal Self Assembly Under Microgravity (Hemali Rathnayake)
- 8:45 **Xin Liu**, Synthesis, Structure And Characteristic Description Of Three New Metal Organic Framework Materials (Bangbo Yan)
- 9:00 **Weilong Luo**, Selective Sulfoxidation Catalyzed By Manganese(iii) Porphyrin Complexes With Different Axial Ligands (Rui Zhang)
- 9:15 **Tulsi Modi**, Understanding The Molecular Level Interaction Of hFGF-1 With A Cancer Inhibitor Imatinib (Rajalingam Dakshinamurthy)
- 9:30 **Swapnil Sahare**, Cost Effective Carbon-based Solar Cells (Hemali Rathnayake)
- 9:45 **Pavan Kumar Chityala**, Effect Of Xanthan/ Enzyme-modified Guar Gum Mixtures On The Stability Of Oil-in-water Emulsions (John Khouryieh)

Room 3007

Judges: Jason Crandall and Matthew Shake (Moderator)

- 8:30 **Autumn Smith**, Asiatic Clam Food Web Ecology: An Experimental Transplant Approach In A Karst Riverine System (Scott Grubbs)
- 8:45 **Audrey Brown**, Comparative Study Of Glucocorticoid And Mineralocorticoid Receptor Roles In Xenopus Development (Noah Ashley)
- 9:00 **Brandon Farmer**, Endothelin-1 Promotes Bovine Corneal Endothelial Cell Proliferation Via A Mapk Pathway: Implications For Global Keratopathy (Ken Crawford)
- 9:15 **Meghan Ryckley**, Evaluating The Social Behavior And Activity Patterns Of Clouded Leopards (neofelis Nebulosa) At The Nashville Zoo (Bruce Schulte)
- 9:30 **Cyrus Sadrinia**, Tio₂ Nanoparticle-induced Toxicity In Mice (Nilesh Sharma)
- 9:45 **Brooke Barber**, Analysis Of Food Preference To Determine Potential For Seed Predation By Smith's Bush Squirrels And Red Veld Rats In Lowveld Vegetation And An Analysis Of Efficiency Of Three Types Of Rodent Traps (Michael Stokes)

Room 2084

Judges: Nahid Gani and Jie Zhang (Moderator)

- 8:30 **Tori Hampton**, Aerosol Size Distribution Measurements During The 2014 Nasa Sarp Campaign In The Central Valley And Sierra Nevada Mountains In California (Rezaul Mahmood)
- 8:45 **Brittany Austin**, Food Forest In Urban Public Areas (John All)
- 9:00 **Erik Smith**, Teleconnective Analysis Of Winter-season Variability In The Ohio Valley (Gregory Goodrich)
- 9:15 **Zachary Leasor**, The potential influence of rivers on tornado morphology: A local-scale analysis of the Crosstown, MO tornado of 2006 (Josh Durkee)
- 9:30 **Mallory Schnell**, A case study analysis of the 4-5 December 2002 severe ice storm across the southeastern United States (Joshua Durkee)
- 9:45 **Kendra Whitaker**, Housing Opportunity - Architecture In A Social Context (Shahnaz Aly)

Room 2085

Judges: Cheryl Stevens and Robert Davis (Moderator)

- 8:30 **Whitney Walker**, Food Preference Trials Of Namaqua Rock Mice And Rodent Density Estimates In The Lowveld Savanna Of South Africa (Michael Stokes)
- 8:45 **Frankie Wallace**, Surface Enhanced Raman Spectroscopy To Study Photocatalytic Degradation Of Organic Pollutants (Matthew Nee)
- 9:00 **Cynthia Tope**, Reaction Rates Of The Amino Acids Cysteine, Methionine, And Histidine With Analogs Of The Anti-cancer Drug Cisplatin (Kevin Williams)
- 9:15 **Kawai Kwong**, Synthetic And Mechanistic Studies Of Catalytic Oxidation By Manganeses (iii) Porphyrins With Iodobenzene Diacetate (Rui Zhang)
- 9:30 **William Hamilton**, Designing A Unique Therapeutic Agent Involving Gold Nanoparticles Capped With Ceftazidime For Potent Antibacterial Applications (Rajalingam Dakshinamurthy)
- 9:45 **Kyle Mann**, Glutathione's Interaction With Platinum, And The Role Of Ph In Altering Ligand Formation Between N-acetylcysteine And Platinum (Kevin Williams)

Room 2086

Judges: Wes Berry and Debbie LaMastus (Moderator)

- 8:30 **Krstina Medero**, Scardy Rats (Benjamin Robin)
- 8:45 **Cody Duncum**, Foxcatcher, The American Dream: An Analysis Of Bennett Miller's Critique On Modern America (Jerod Hollyfield)
- 9:00 **Tiffany Hughes**, Out Of The Mouths Of Babes: A Short Story Collection (David Bell)
- 9:15 **John Corum**, The Many Faces Of Humanism: Benevolence And Colonialism In Marlowe's Discourse (Leila Watkins)
- 9:30 **Beth Taylor**, Methods Required For Writing Successful Grant Proposals For Religious Organizations (Jeffrey Rice)
- 9:45 **John Stone**, Hollywood's Shifting Priority (Jerod Hollyfield)

Room 2122

Judges: Dick Taylor and Jean-Luc Houle (Moderator)

- 8:30 **Tyler Keeton**, Lurking In The Shadows: The Return To Substance In Horror Cinema (Jerod Hollyfield)
- 8:45 **Michael Shannon**, The Influence Of Business Over Art (Jerod Hollyfield)
- 9:00 **Evan Daniels**, Edgar Wright And Modern Visual Comedy: Using The Camera To Make The Jokes (Jerod Hollyfield)
- 9:15 **Caleb Peyman**, Future Masterpiece: Ridley Scott's The Counselor (Jerod Hollyfield)
- 9:30 **Joshua Holland**, Multimedia Reporting: Creating Unique Content That Spans Multiple Platforms (Brad Pfranger)

Room 2123

Judges: Muhammad Jahan and Nancy Mager (Moderator)

- 8:30 **Chad Brode**, Wind Energy Harvesting, Conversion, and Control (Farhad Ashrafzadeh)
- 8:45 **Jessica Anderson**, High-speed Metal Forming Processes (Morteza Nurcheshmeh)
- 9:00 **Caitlyn Clark**, Study Of Energy Efficiency In Two Different Applications (Robert Choate)
- 9:15 **Molly Shircliff**, Performance Prediction Of Drying Process In Clothes Dryers Using Multi-physics Simulation Environment (Farhad Ashrafzadeh)
- 9:30 **Del Cox**, Creating A 3d Model Without Cad: Tools And Tips For Laser Scanning And Photogrammetric Techniques (Joel Lenoir)
- 9:45 **Josh Dye**, Real-time Clothes Mass and Moisture Estimation in Residential Clothes Dryer-A Virtual Approach to a Real System (Farhad Ashrafzadeh)

Room 2123

Judges: Chris Groves and Kumi Ishii (Moderator)

- 8:30 **Chi Fai Wong**, Estimating Historical Croplands Distribution Over The Past 300 Years In China (Xingang Fan)
- 8:45 **Colton Lindsey**, Influences of low-level atmospheric kinematics, thermodynamics, and circulation discontinuities on a particularly large, long-lived tornado near Bennington, KS on 28 May 2013 (Josh Durkee)
- 9:00 **Douglas Kaiser**, Urban Barge Agriculture (John All)
- 9:15 **Jacob Wilkins**, A local analysis of the historic lake-effect snow event in Buffalo, NY during November 2014 (Josh Durkee)
- 9:30 **John Thomas**, A comparison of five tornado-producing events across middle Tennessee (Josh Durkee)
- 9:45 **Ronald Waterbury**, Hydrothermal Yttrium Exchange Into A Nanoporous Structure Of A Naturally Occurring Erionite Zeolite Mineral (Aaron Celestian)

Oral Presentations

10:15 – 11:45

Room 3002

Judges: Matthew Shake and Xingang Fan and Gayle Mallinger (Moderator)

- 10:15 **Summer Abston**, Architectural Reformation of Education Institutions (Shahnaz Aly)
10:30 **Michael Harruff**, Micro-structuring In Copper, Brass And Aluminium Using Micro-milling Process (Muhammad Jahan)
10:45 **Bradley Logsdon**, Biocompatibility Of Titanium Alloys Machined By Electrical Discharge Machining - A Review (Muhammad Jahan)
11:00 **Benjamin Guthrie**, Monte Carlo Simulation Of A Micro-nuclear Battery (Phillip Womble)
11:15 11:30 **Joshua Williams**, Time Series Analysis Of The Kepler Light Curve Of The Seyfert Galaxy I Zw 229.015 (Michael Carini)

Room 3004

Judges: Dana Bradley and Nancy Mager (Moderator)

- 10:15 **Patrick Cassin**, The Mind Of Movies (Jerod Hollyfield)
10:30 **Wes Manakee**, Whiplash: The Current Beat Of American Youth (Jerod Hollyfield)
10:45 **Paul Correa**, The Rise Of Superheroes: Defining Its Own Genre? (Jerod Hollyfield)
11:00 **David Cheser**, Media Preaches Pro-war, While American Sniper Is Truly Anti-war (Jerod Hollyfield)
11:15 **Ian Dowty**, The Assignment: Adapting The Storyteller's Approach (Victoria LaPoe)
11:30 **Callie Allison**, Building A Community (Helen Sterk)

Room 3005

Judges: Jill Maples and Lauren Bland (Moderator)

- 10:15 **Rebecca Center**, Risk Assessment of Hazardous Materials Transported by Rail through the WKU and Bowling Green, KY Corridor (Ritchie Taylor)
10:30 **Greg Austin**, The Effect Of The Affordable Care Act On Physical Therapy (Christian Williams)
10:45 **Kelly Fussman**, Spanish Phonetics & Dialects Compared To American English Phonetics (Mary Lloyd Moore)
11:00 **Ericka Hardin**, Study Of A Contemporary Diet Of One Household In The Yucatan (Karen Mason)
11:15 **Jinglin Li**, Just-in-time Management In Healthcare Operations (Ismail Civelek)

Room 3006

Judges: Lee Ann Smith, Juan Romero, and April Murphy (Moderator)

- 10:15 **Dylan Jones**, What Is On The Menu: Food Identity In Cinema (Jerod Hollyfield)
10:30 **Natalie Hayden**, Mythological Influences On Southern American Authors (Walker Rutledge)
10:45 **Jennifer Phillips**, Rosie The Riveter: The Journey Of An Icon From 1942 To 2014 (Anthony Harkins)
11:00 **Justin Piercy**, Tarantino And Feminist Filmmaking (Jerod Hollyfield)
11:15 **Haley Quinton**, The Case Of The Disappearing Diamonds: A Sherlock Holmes Story In The Style Of Sir Arthur Conan Doyle (Rob Hale)
11:30 **Jordan Smith**, The Wrong Propaganda (Brad Pfranger)

Room 3007

Judges: Debbie LaMastus and Wolfgang Brauner (Moderator)

- 10:15 **Emily Potts**, The Paschal Controversy Revisited (Beth Plummer)
- 10:30 **Derek Scott**, From Civil Rights To Economic Rights: Martin Luther King And The Poor People's Campaign (Patricia Minter)
- 10:45 **Carolyn Evans**, Condemning The Cultural Defense As A Form Of Violence Against Women (Jessica Furgerson)
- 11:00 **Meghan McGuirk**, From 1929 to 1974, the Eugenics Board of North Carolina (Patricia Minter)
- 11:15 **William Linder**, Burning Resources: Traditional Fuel Use On The Mongolian Steppe (Jean-Luc Houle)
- 11:30 **Samuel Rosenthal**, Institutional Intersection: Capitalist Edifice And Masculine Construct (Kristi Branham)

Room 2084

Judges: Barbara Brindle and Patricia Desrosiers (Moderator)

- 10:15 **Jade Primicias**, Eye Of The Beholder: Surveying The Perception Of Artistic Fusion Across Cultures (Clifton Brown)
- 10:30 **Katherine Knight**, The Debussy Problem: Debussy The Impressionist, The Neo-impressionist, The Symbolist (Ingrid Cartwright)
- 10:45 **Morgan Duff**, A Study Of Chemistry: For Wind Ensemble (Michael Kallstrom)
- 11:00 **Forrest Deacon**, Gender And The History Of Philosophy (Alexander Olson)
- 11:15 **Laura Harper**, Nietzsche And The Self: Love And Overcoming (Grace Hunt)
- 11:30 **Erika Brown** Vicious Art Or Vicious Audience?: Understanding The E Audrey Anton

Room 2085

Judges: Ann Ferrell and Tim Hawkins (Moderator)

- 10:15 **Cyrus Johnson**, The Trends Towards Imitation To New Neorealism In Hollywood (Bradley Pfranger)
- 10:30 **Jennifer Ottersbach**, More Than Cookies: Falling Older Girl Retention Rates In Girl Scouting And How Gsusa Councils Are Combating The Situation (Elizabeth Gish)
- 10:45 **Brandon Nguyen**, Justice Saves Contamination- Cultural Relevance In Cinema (Jerod Hollyfield)
- 11:00 **Emily Potter**, Seeing The Sacred: Community Identity And Sacred Art (Elizabeth Gish)
- 11:15 **Omega Buckner**, Keep The Faith (D'lee Babb)

Room 2086

Judges: Daniel Curry and Brent Bjorkman (Moderator)

- 10:15 **Jamaque Newberry**, Dear School Daze: The Experience Of Black Life On Campus Through A Lens (Jace Lux)
- 10:30 **Samuel Cherry**, How Youtube Is Changing Education In Video Editing (Jerod Hollyfield)
- 10:45 **Amber Langston**, Lars Von Trier: Sexist Or Female Liberator (Jerod Hollyfield)
- 11:00 **Donald Elmi**, 'What's This': Tim Burton And Gothic Comedies (Christina Noel)
- 11:15 **Cicely Walters**, Women In Action: Representation Of Women In Action Genres (Jerod Hollyfield)
- 11:30 **Hope Jackson**, The Changing Face Of Marriage (Bryan Carson)

Room 2122

Judges: Cecile Garmon and Bryan Carson (Moderator)

- 10:15 **Sarah Jameson**, Blindman's Bluff: American Soldiers and Artillery during World War I (Beth Plummer)
- 10:30 **Frederick Flynn**, Kramer Vs. Kramer: Hollywood Confronts A Shift In American Cultural Attitudes (Beth Plummer)
- 10:45 **Svetlana Ter-Grigoryan**, Sexual Indignity: Representation Of Women And Sex In Glasnost-era Soviet Film (Marko Dumancic)
- 11:00 **Aaron Whitehead**, "Fatty" Arbuckle, Will Hays, And The New Censorship Of The 1920s (Anthony Harkins)
- 11:15 **Lucas Somers**, Abraham Lincoln's White House Funeral Dream (Glenn LaFantasie)
- 11:30 **Casey Taylor**, The Disaster At Gallipoli (Beth Plummer)

Room 2123

Judges: Aaron Wichman and Muhammad Jahan (Modertor)

- 10:15 **Zachary Sullivan**, Forecast Verification For North American Mesoscale (nam) Operational Model Over Karst/non-karst Regions (Xingang Fan)
- 10:30 **Caleb Chevalier**, Genesis of a localized tornado outbreak across the Dallas-Fort Worth Metro on 3 April 2012 (Josh Durkee)
- 10:45 **Lee Anne Bledsoe**, A Hydrogeologic Investigation At Patoka Dam, Indiana To Support Dam Safety Risk Assessment (Chris Groves)
- 11:00 **Christopher Hart**, Petrophysical And Lithological Characterization Oolitic And Dolomitic Reservoirs In The Ste. Genevieve Limestone, South Central Kentucky (Michael May)
- 11:15 **Steven Devine**, Petrographic Characteristics And Links To Weathering And Karst Development In The Haney Limestone (Michael May)
- 11:30 **Tyler Bodine**, Lithostratigraphy Of

Room 2124

Judges: Jean-Luc Houle and Teresa Stidham (Moderator)

- 10:15 **Anthony Stellaccio**, Lithuanian Folk Pottery In Context (Ann Ferrell)
- 10:30 **Eleanor Hasken**, Mothman: A History Of Fear In Rural West Virginia (Ann Ferrell)
- 10:45 **Sydney Varajon**, Blueprinting Bowling Green: The Work Of James Maurice Ingram (Michael Ann Williams)
- 11:00 **Celeste Happeny**, Supernatural Legends In Family Folklore (Ann Ferrell)
- 11:15 **Jess Holler**, Bringing The New Deal Back Home (to Itself)?: Scattered Archives, Changing Sites, And The Case Of Western Kentucky's Christian-Trigg Farms Project (Michael Ann Williams)
- 11:30 **Nicholas Schaedig**, Snow Walking In Silence: An Inquiry Into The Role Of Aesthetics And Identity, Shaping Snowshoe Use In The North Woods (Michael Ann Williams)

ORAL PRESENTATIONS

1:30 – 3:00

Room 3002

Judges: Wolfgang Brauner and Lauren Cunningham (Moderator)

- 1:30 **Colton Ramos**, Crafting Tools For Video Game Development (Jeffrey Galloway)
- 1:45 **Michael Blankenship**, Artificial Intelligence In Mancala (Uta Ziegler)
- 2:00 **Samuel Dong**, Exploring Effects Of Various Data Preprocessing Methods On The Classification Of DNA Microarray Data (Huanjing Wang)
- 2:15 **Hannah Pennington**, Applications Of Latin Hypercube Sampling Scheme And Partial Rank Correlation Coefficient Analysis To Mathematical Models In Wound Healing (Richard Schugart)
- 2:30 **Peter Agaba**, The Reality Of Being A Student Athlete (student Athletes Put More Hours On The Field Than Class) – (John Hagaman)
- 2:45 **Benjamin Riley**, Chemical Abundances Of Planetary Nebulae From Optical Spectra (Ting-Hui Lee)

Room 3004

Judges: Jennifer Cribbs and Mary Wolinski (Moderator)

- 1:30 **James Soper**, Public Relations Campaign: The Importance Of Affordable Housing (Vicki Bagwell)
- 1:45 **Katie Meek**, Gather Together (Tim Broekema)
- 2:00 **Kyle Sewell**, The Future Of Film Advertising And Marketing: Adapting A Classical Approach Into A New Technological World (Jerod Hollyfield)
- 2:15 **Jonathon Wurth**, Where The Rocks Bleed Ink: Palestinian Images Of Self In Political Cartoons (David DiMeo)
- 2:30 **Anna Shelton**, Funding In The Film Industry (Jerod Hollyfield)

Room 3005

Judges: Darlene Applegate and Leila Watkins (Moderator)

- 1:30 **Haley Garrison**, A Critical Analysis Of Volunteer Tourism And The Implications For Developing Communities (Donielle Lovell)
- 1:45 **Meghan Althaus**, WKU International Student Teaching Program: Professional, Cultural, And Character Impacts On In-service And Pre-service Teachers (Fred Carter)
- 2:00 **Chase Thomas**, The Prospect Of Democratic China: An Analysis Of The Possibility Of A Transition In Communist China (Timothy Rich)
- 2:15 **Parker Hanna**, They're Watching Us: Depictions Of Conspiracy Theorists In Popular Media (Anthony Harkins)
- 2:30 **Ryan Pait**, A Miniseries Of Unfortunate Events: Realizing The Full Potential Of Lemony Snicket's Book Series Through Television Adaptation (Ted Hovet)
- 2:45 **Amy Zenthoefer**, Tlac And Pbis Strategies In High Poverty Schools (Jennifer Cribbs)

Room 3006

Judges: Tim Evans and Xiaoxia Silvie Huang (Moderator)

- 1:30 Azadeh Vantanpour, Kusa Gelin: Rain-seeking Practices In Iran (Ann Ferrell)
- 1:45 Joshua Brunstad, Urban Legends And Film (Ann Ferrell)
- 2:00 Angela Arvizu, Fire as A Symbol Of Destruction And Rebirth (Ann Ferrell)
- 2:15 Ashton Ray, I Am Not My Hair, Or Am I? (Ann Ferrell)

Room 3007

Judges: Wanda Chandler and Daniel Curry (Moderator)

- 1:30 **Debadrita Sarkar**, Cloud Computing: Storage And Interface Design (Michael Galloway)
- 1:45 **Gary Hutchinson**, Confirmation Of Physician's Diagnosis Based On Patient's Emr (Gaungming Xing)
- 2:00 **Qinglong Sun**, Improving Medical History Collection Using Greedy Topological Sorting (Guangming Xing)
- 2:15 **Travis Brummett**, Building A Vertical Cloud (Michael Galloway)
- 2:30 **Bryan Knowles**, How Hard Is Getting Around Wku's Broken Sidewalks? (Mustafa Atici)
- 2:45 **Harinivesh Donepudi**, An Apache Hadoop Framework For Large-scale Peptide Identification (Zhonghang Xia)

Room 2084

Judges: Jennifer Joe and Molly Kerby (Moderator)

- 1:30 **Zehra Yousofi**, No Country For Diasporic Men: The Psychological Development Of South Asian Masculinity In A Diaspora (Deborah Logan)
- 1:45 **Anais Norman**, Babel (Dale Rigby)
- 2:00 **Caleb Ernst**, The Creatures And The Critics: Edgar Allan Poe's Menagerie Of The Grotesque (Sandra Hughes)
- 2:15 **Lindsey Houchin**, Tell-tale Teeth: Psychosymbolism in Poe's 'Berenice' (Sandy Hughes)
- 2:30 **Thomas Burden**, The Deamon of Andersonville: The War Crimes Trial of Henry Wirz (Glenn LaFantasie)
- 2:45 **Audie Wood**, Does The Way That You Meet Your Partner Affect Relationship Satifaction? (Donielle Lovell)

Room 2085

Judges: Justin Kunkle and Dana Sullivan (Moderator)

- 1:30 **Caleb Chappell**, Rare Earth Element Ion Exchange In Synthetic Zorite (Aaron Celestian)
- 1:45 **Ellen Barringer**, Sustainability Interpretive Sign Use On A University Campus: A Matter Of Perspective (Leslie North)
- 2:00 **Alex Sizemore**, An investigation of the 9 May 2014 severe storm macroburst over Evansville, IN (Joshua Durkee)
- 2:15 **Jacob Hughes**, Geothermobarometry Of Metamorphosed Banded Iron Formation From The Ruby Range, Montana (Andrew Wulff)
- 2:30 **Derek Thompson**, The potential influence of rivers on tornado morphology: A local-scale analysis of the Crosstown, MO tornado of 2006 (Joshua Durkee)
- 2:45 **Arden Gregory**, A case study analysis of the 19-20 March 1996 heavy snow event across southern Indiana and west-central Kentucky (Joshua Durkee)

Room 2086

Judges: Jean Gumirakiza and Kyle Moss and April Murphy (Moderator)

- 1:30 **Richard Dawson**, Analysis Of Protein Amounts Through Blotting Techniques (Sigrid Jacobshagen)
- 2:00 **Jason Payne**, Green Synthesis And Evaluation Of Catalytic Activity Of Sugar Capped Gold Nanoparticles (Rajalingam Dakshinamurthy)
- 2:15 **Sarah Tockstein**, Direct Aminoglycoside Coated Gold Nanoparticles Synthesis, Characterization And Antibacterial Susceptibility Testing (Rajalingam Dakshinamurthy)
- 2:30 **Jack Wassom**, A Study On The Effect Of Operating Parameters During The Micro-electro-discharge Machining Of Ti-6Al-4V (Muhammad Jahan)

Room 2122

Judges: Lynn Minton and Beth Norris (Moderator)

- 1:30 **Amanda Tinch**, Incorporating Anthropology Into A K-12 Curriculum (Kate Hudepohl)
- 1:45 **Shannon Wagner**, The Development Of Secularized Taoism In The West (Kate Hudepohl)
- 2:00 **Heather Byerly**, Ritual And Mobility: $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ Analyses Of Bronze Age Khirigsuur Horses From Khanuy Valley, Mongolia (Jean-Luc Houle)
- 2:15 **Brittani Simpson**, An Exploration Of Beginning Pre-service Teachers Concerns About Being An Educator In Today's Society (Lisa Duffin)
- 2:30 **Linly Turner**, Factors Influencing The Development Of Muscle Dysmorphia (Rick Grieve)
- 2:45 **Mohd Nizam Mokhtar**, Silence Effect: Teacher Nonverbal Immediacy, Motivation And Effective Learning Among College Students (Larry Caillouet)

Room 2124

Judges: Pat Kambesis and Peggy Otto (Moderator)

- 1:30 **Andrew Dockery**, An investigation of the atmospheric environment conducive to intensification of the historic EF-5 Greensburg, KS tornado (Joshua Durkee)
- 1:45 **Jared Graham**, Geothermometry Of Metamorphic Lithologies From Chunky Gal, N.C. (Andrew Wulff)
- 2:00 **Luiza Bin**, Three-dimensional Analysis Of Pharyngeal Airway Space In Patients Undergone Orthognathic Surgery (Becky Tabor)
- 2:15 **Shelby Adams**, Risky Business? The Effects Of Sensation Seeking Personality Traits On Performance Monitoring And Adjustment (Brandy Tiernan)
- 2:30 **Jennifer Gaiko**, Architectural Bridge Consequence (Shahnaz Aly)

Poster Presentations

8:30 – 10:00

- 1 Omitted
- 2 **Mitchell Schooler**, The Effects Of Glyphosate-based Herbicides On Amphibian Morphology, Escape Speed, And Mortality (Michael Collyer)
- 3 **Courtney Hamilton**, Contribution Of A Putative Up Element DNA Sequence To The Activity Of A Newly Identified Phage Promoter (Rodney King)
- 4 **Ananya Sharma**, A Drosophila melanogaster Model To Study Silver Nanoparticle Toxicity A (Ajay Srivastava)
- 5 **Charles Gregory**, Restriction Enzyme Identify (Claire Rinehart)
- 6 **Denis Hodzic**, The Role Of Melanin In Auditory Function Of Zebrafish (Danio rerio) (Michael Smith)
- 7 **Emily Hubbuch**, The Relationship Between Ankle Dorsiflexion Measures And Functional Performance (Beth Norris)
- 8 **Megan Fuller**, Reliability And Validity Of A Smartphone Application To Measure Hip Rom (Beth Norris)
- 9 **Cristina Macke**, Comparison Of The Duration Of Different Stretching Techniques On Hamstring Flexibility (Harvey Wallmann)
- 10 **Kirsti Vittitow**, Effectiveness Of Dr. Scholl's Custom Fit Orthotic Inserts (Harvey Wallmann)
- 11 **Katie DiTommaso**, Comparison Of Functional Activities On Structural Changes Of The Inferior Patellar Tendon Pole (Harvey Wallmann)
- 12 **Brant Goble**, Impact Of The Leader In Me On Student Engagement And Socio- Emotional Skills (Jie Zhang)
- 13 **Chika Ejike**, Influence Of Culture On The Utilization Of Healthcare Services By Refugees In Bowling Green, Kentucky (Randy Capps)
- 14 **Blake Perkins**, Preparing A Student With Paraplegia For Health Fitness Specialism Certification: Functional Capacity Evaluation And Accommodation (Don Hoover)
- 15 **Leslie Ford**, Socioeconomic Factors And Their Impact On Maternal And Child Healthcare In The Aarohi Project Villages Of Rural Kumaon (William Mkanta)
- 16 **Palpasha Jonchhe**, MPH Student Exit Survey Results:fall 2010 To Fall 2013 (Darlene Shearer)
- 17 **Mohammed Adnan Yousuf**, Problematic Alcohol Drinking Among Msm (Frank Fan)
- 18 **Venkata Sravani Seethi**, Changing Population Dynamics In The World From 1972 To 2012 And The Projections For 2030 (Elmer Gray)
- 19 **Rachell Bailey**, The Reality Of Prescription Opioid Addiction (Gretchen Macy)
- 20 **Faith Boldt**, The Importance Of Perinatal And Postpartum Maternal Mental Health (Darlene Shearer)
- 21 **Jimmy Shah**, The Influence Of Education Level, Income And Provider Density Among Children Visiting A Mobile Dental Unit In South Central Kentucky (Gregory Ellis-Griffith)
- 22 **Zona Ascensio**, The Effect Of Family Participation In Traditional Culture On American Indian And Alaska Native Youth Suicide Risk (Darlene Shearer)
- 23 **Dominique Walker**, Bowling Green Community Farmers' Market And Snap Benefits (Marilyn Gardner)
- 24 **Juliana Pace**, Creating A Care Continuum: An Analysis Of The Kindred/gentiva Merger (Gregory Ellis-Griffith)
- 25 **Allison Sklenar**, Fast Faces: Perceiving Rapidly Presented Faces (Andrew Mienaltowski)
- 26 **Brandon Coffey**, Impact Of Peripherally Presented Emotional Expressions On Subsequent Target Detection (Andrew Mienaltowski)

- 27 **Hayley Lambert**, Identifying Happiness In The Periphery Is Less Cognitively Demanding Than Anger (Andrew Mienaltowski)
- 28 **William Corley**, The Effect Of Forewarning On Suggestibility: Does It Depend On Working Memory Capacity? (Qin Zhao)
- 29 **Nick Sivek**, The Underlying Dynamics Of Student Engagement On Thesis Completion (Betsy Shoenfelt)
- 30 **Clarissa Roe**, Investigation Of Martian And Lunar Regolith Nanocomposites For Planetary Exploration (Edward Kintzel)
- 31 **Julie Scott**, Forensic Investigations Of Gunshot Residue On Bone Using The Large Chamber Scanning Electron Microscope (Ic-sem) (Edward Kintzel)
- 32 **Armin Smailhodzic**, A Cyber Social Model For Coupled Spatial And Temporal Threshold Memes (Keith Andrew)
- 33 **Kimberly Walker**, National Power Demand Map From Critical Infrastructure Evolution, Climate Change, And Population Migration (Steven Fernandez)
- 34 **Indu Bhattarai**, Thrust Belt Study In The Himalayan Foreland Basin- Nepal: An Integrated Approach Of Remote Sensing And GIS (Nahid Gani)
- 35 **Xingya Xu**, The Effect Of Anticipated Feedback Proximity On Performance: Exploring The Moderating Role Of Self-efficacy And Task Type (Qin Zhao)
- 36 **Lorena Barnes**, Fake It 'til You Make It: Examining Applicant Facebook Distortion (Amber Schroeder)
- 37 **Rippa Sehgal**, Reactions Of Oxaliplatin Analogs With DNA Nucleotides (Kevin Williams)
- 38 **Behraz Alipoorabedi**, The Risk Of Renal Failure In Patients With Diabetes Type 2 (Gretchen Macy)
- 39 **Chase Bolton**, Empirical Study Designed To Help Uncover The Cognitive Processes Behind Stem Learning For Students With Disabilities (Leyla Zhuhadar)
- 40 **Pezhman Sheinidashtegol**, Cloud Security (Michael Galloway)
- 41 **Adam Haynes and Ashley Avery**, Commercialization Of Pioneer Elite (Bob Hatfield)
- 42 **Siera Bramschreiber**, Positive Emotion And Its Impact On Spatiotemporal Vision (Andrew Mienaltowski)
- 43 **Danielle Berkshire**, Marketing Trends & Consumer Research In Kentucky & Tennessee Retail Full Service Floral Industry (Roger Dennis)
- 44 **Yao Xue**, The Threat Of Global Warming On Meeting Chilling Requirements Of Perennial Fruits Grown In Kentucky (Elmer Gray)
- 45 **Brittany Groh**, Impact Of Working Alliance On Clinical Outcomes In Veterans Enrolled In Suicide-specific Group Therapy (Stephen O'Connor)
- 46 **Allen Clark**, Masculinity Is Reactive: Mortality Salience Causes Increased Masculine, But Not Feminine, Self-stereotyping (Aaron Wichman)
- 47 **Lauren Bailes**, Examining Longitudinal Associations Between Parent Personality And Infant Temperament (Diane Lickenbrock)
- 48 **Hayden Hickey**, Inequity and Social Media in Hiring (Amber Schroeder)
- 49 **Stephanie Fusting**, Rating Reactivity: Correlations Between Parent And Experimenter Reports Of Infant Temperament (Diane Lickenbrock)
- 50 **Carson Price**, "Hybrid" Graphene / Conducting Polymer Multilayers as High-performance Supercapacitors: Layer-by-Layer Assembly via Electropolymerization and Property Characterization (Sanju Gupta)
- 51 **Courtney Goodwin**, Are Those Diamonds In My White Wine? (Edward Kintzel)
- 52 **Brian Carlson**, Visualizing Förster Resonance Energy Transfer (Wieb VanDerMeer)
- 53 **Mary Spraggs**, Constraining The Physical Properties Of Interstellar Gas Clouds (Steven Gibson)
- 54 **Brian Luna**, Improving Writing Instruction With Peer Review In Physics Labs (Scott Bonham)

- 55 **Tara Watkins**, Influence Of Tillage And Fertilizer Regime On Presence Of Select Fungal Species In A Silt Loam Soil (Becky Gilfillen)

Poster Presentations

10:15 – 11:45

- 1 **Cayla Baughn**, H₂SO₄ Contamination Of Freeman Branch Creek, Alabama From Disturbance Of Geologic Materials During Highway Construction (Chris Groves)
- 2 **Logan Mitchell**, An Analysis Of The Lost River Karst Aquifer's Hydrometeorological Response To Storm Events (Jason Polk)
- 3 **Brittany Moore**, Normal Faults On The Ethiopian Plateau: An Understanding Of The Geodynamics And Fault Zone Permeability (Nahid Gani)
- 4 **James Humphrey**, Research And Design Of A Sustainable Art Gallery And Artist Residency (Shahnaz Aly)
- 5 **Alexander Gelderman**, Timeless Strategies For Better Sound: The Study Of Reverberation In Architecture (Neal Downing)
- 6 **Connor Brooks**, Autonomous Multi-rotor Vehicle Creation (Michael Galloway)
- 7 **Kyndall Hudson**, Bone Stimulation Implemented Using The Leukocyte Platelet Rich Fibrin Technique Within The Clinical Settings Of Kentucky And Tennessee (Joseph W. Evans)
- 8 **Chelsea Howell**, Subgingival Air Polishing In Dentistry (Wendi Hulsey)
- 9 **Claire Warren**, Electronics Cigarettes - A New Generation Of Smoking (Barbara Bush)
- 10 **Madison Hayden**, The Effect Of Cheese On The Ph Levels In The Oral Cavity (Lynn Austin)
- 11 **Allison McCutchen**, Barriers To Care And Buyer Behavior In Relation To Oral Hygiene (Lynn Austin)
- 12 **Courtney Inabnitt**, Testing The Effects Of Professional Development On Pre-service Teacher's Beliefs About Inquiry Instruction In Mathematics (Lisa Duffin)
- 13 **Hannah Keith**, Pedagogy And Teacher Rapport: Impacts On Undergraduate Mathematics (Lisa Duffin)
- 14 **Rebecca Garrison**, The Effects Of New Materials And Teaching Methodologies In General Biology Courses (Kerrie McDaniel)
- 15 **Megan Siers**, In Name And Deed: A Rider's Tale (David Bell)
- 16 **Mara Muccigrosso**, Teaching A Feminist Reading Of (Rob Hale)
- 17 **Cole Manning**, A Master Community (Shahnaz Aly)
- 18 **Laketta Graves**, Finding Home (Shahnaz Aly)
- 19 **Jennifer Gaiko**, The Foundry: A Broadway United Methodist Church Community Center (Shahnaz Aly)
- 20 **Andrea Dunnaway**, Building A Culture Of Sustainability (Shahnaz Aly)
- 21 **Dylan Nonweiler**, Faith In Design (Shahnaz Aly)
- 22 **Alexis Hickerson**, The Waterfront Goes Greener (Shahnaz Aly)
- 23 **Julio Hogue**, Natural Training Grounds (Shahnaz Aly)
- 24 **Anthony Thorn**, Sustainable Design In Educational Venues (Shahnaz Aly)
- 25 **Jonathon Grebe**, Corvette Race Trace Hotel (Shahnaz Aly)
- 26 **DaMario Walker-Brown**, Sustainable Lifestyle (Shahnaz Aly)
- 27 **Jacob Thomas**, A Sustainable Option To Family Fitness (Shahnaz Aly)
- 28 **Long Tran**, Bringing The Outside In (Shahnaz Aly)
- 29 **Summer Abston**, Observational Sketching As A Platform To Improve Sketching Techniques

- (Shahnaz Aly)
- 30 **Michael Belcher**, Modeling In Fractional Calculus (Ferhan Atici)
 - 31 **Ryan Mahoney**, Application Of Equations To Explain Heat Transfer In Bimetallic Materials (Lester Pesterfield)
 - 32 **Mckinze Vowels**, Intergenerational Service-learning With Exercise Science Students (Jason Crandall)
 - 33 **Abby Flynn**, Dominant Vs Non-dominant Trunk And Should Flexibility In Collegiate Baseball Pitchers (Jason Crandall)
 - 34 **Jon Warren**, The Development And Implementation Of WKU Red Wave: The Official Student Group of WKU Athletics (Paula Upright)
 - 35 **Wade Weatherholt**, Bone Mineral Density Not Significantly Changed By Cycling Across The United States (Don Hoover)
 - 36 **Alexandra Hunter**, Variance Of Estrogenic Compounds In Waste Water Treatment (Ritchie Taylor)
 - 37 **Hana Nezirovic**, The Effects of Negative Salience on Employers' Ratings of Applicant Facebook Profiles (Amber Schroeder)
 - 38 **Emma Fleming**, Increased Motivation through Categorization of Rewards for a Meaningful Task (Amber Schroeder)
 - 39 **Joy Fan**, Exploring Biodiversity Through Isolation and Characterization of Bacteriophages Bilbo and Fanfare (Rodney King)
 - 40 **Nolan Calhoun**, Discovery and Comparison of Two Novel Bacteriophages, Enola and Leviathan, Through Genomic Exploration and Bioinformatics Analysis (Rodney King)
 - 41 **Jared Walden**, Cracking The Silicon Case: Graphene And Nanoporous Silicon Composite Nanoarchitectures As Stable, High-performance Li-ion Batteries Anodes (Sanju Gupta)
 - 42 **Sean Hurd**, Basic Motion Emulator (esterline-korry Project) (Stacy Wilson)
 - 43 **Kaitlin Oliver Butler**, IEEE Robot: Layout Optimization (Stacy Wilson)
 - 44 **Ryan Coleman**, Logan Sheet Tracking (Stacy Wilson)
 - 45 **Larkin Heintzman**, IEEE Robot Control System (Stacy Wilson)
 - 46 **Sara Brown**, The Importance Of Educating Dental And Dental Hygiene Students On The Correlation Between Vitamin D Deficiency And Dental Caries (Terry Dean)
 - 47 **Christina Guthrie**, The Correlation Of Childhood Obesity And Dental Caries In South Central Kentucky (Joseph Evans)
 - 48 **Ben Lee**, Flaher For Wind Ensemble (Michael Kallstrom)
 - 49 **Caroline Culbreth**, Examining Cultural Identity In Second- And Third-generation Hispanic Americans (Kate Hudepohl)
 - 50 **Mollie Berger**, Women's Contraceptive Choices: A Look Into The Women Of Warren And Allen County, Kentucky (Darlene Shearer)
 - 51 **Hamilton Brindley**, Adopting Palladian Principles In The Design Of A Contemporary Villa (Shahnaz Aly)
 - 52 **Leland Jones II**, Growing Awareness, (Shahnaz Aly)
 - 53 **Michael Roberts**, Sustainability Incorporated Into Education (Shahnaz Aly)
 - 54 **Eric Dennison**, IEEE Robot Tools (Stacy Wilson)
 - 55 **Zachary Lancaster**, Making Quadrotor Research Affordable (Joel Lenoir)

Poster Presentations

1:30 – 3:00

- 1 **Wade Weatherholt**, Effects Of Static And Dynamic Stretching On Vertical Jump Performance (Jason Crandall)
- 2 **Hannah Ruggles**, Evaluating The Effectiveness Of The 'teach-back' Method In Achieving Geriatric Patients' Understanding Of Their Discharge Instructions From An Acute Care Setting (Dana Bradley)
- 3 **Brooke Duke**, The Effects Of Leaving Ligands On Potential Anticancer Drugs (Blairanne Williams)
- 4 **Justin Bunch**, Altering Size And Shape Of Novel Platinum Compounds Affect Cellular Toxicity (Blairanne Williams)
- 5 **Dana Biechele-Speziale**, Thermogravimetric Characteristics Of Coal-derived Graphene Oxide Composites Via Ball-milling (Yan Cao)
- 6 **Julia Gensheimer**, Unusual Reactivity Of A Platinum(ii) Triamine Complex (Kevin Williams)
- 7 **Kathryn Price**, Isolation And Characterization Of Gansey, A New Member Of The Cluster K Mycobacteriophages (Claire Rinehart)
- 8 **Barrett Rogers**, The Unique Inner Ear Anatomy Of *Semaprochilodus insignis* (Michael Smith)
- 9 **NaKeya Owens**, Effects Of Chronic Sleep Fragmentation On Corticosterone Levels In Mice (Noah Ashley)
- 10 **Millicent Ronkainen**, Exploring Bacteriophage Diversity By Comparison Of Novel Specimen (Naomi Rowland)
- 11 **Rohan Deshpande**, An Analysis Of *M.smeigmatis* Bacteriophages Comets And Deshpanda (Rodney King)
- 12 **Valerie Richmond**, A Method For Measuring Contact Pressure (Chris Byrne)
- 13 **Kelly Mckenna**, Preparation Of Core-shell Nanoparticles Using A Hydrophilic-hydrophobic Approach (Hemali Rathnayake)
- 14 **Andrew Davis**, A Logistic Version Of Leslie Matrices For Population Modeling (Bruce Kessler)
- 15 **Anna Braun**, Donor-acceptor Core-shell Nanoparticles For Organic-based Solar Cells (Hemali Rathnayake)
- 16 **Harsh Moolani**, Single Step Synthesis Of Kanamycin Capped Gold Nanoparticles And Evaluation Of Its Antibacterial Activity (Rajalingam Dakshinamurthy)
- 17 **Casey Fortney**, Self-explanation And Practice Retrieval: A Comparison Of Study Methods (Jenni Redifer)
- 18 **Joanna Chang**, Evaluate Me: Effects Of Expecting Rapid Feedback And Beliefs About Ability On Task Performance (Qin Zhao)
- 19 **Alexandra Oldham**, Examination Of Attributions As Moderators Of The Impact Of Past Performance On Self-efficacy Estimates (Steven Wininger)
- 20 **Paige Harrison**, Baby Names And Cultural Assimilation (David Beckworth)
- 21 **Chandler Clark**, Three-dimensional Printing Of Transradial Prosthetics (Joel Lenoir)

- 22 **Haleh Jeddi**, Biomimetic Studies Of Cytochrome P450 Enzymes: Synthesis Of Porphyrin Ligands And Their Metal Complexes (Rui Zhang)
- 23 **Dat Thinh Ha**, Detection Of Bacterial DNA Sequences Utilizing Engineered Zinc Finger Proteins (Moon-Soo Kim)
- 24 **Cody Meservy**, Investigation Of Apatite And Zircon Minerals For Thermochronologic Dating: A Case Study From The Siwalik Sandstones, Central Nepal, Himalaya (Nahid Gani)
- 25 **Paulina Littlefield**, Hydrogeology Of Cold River Cave, Warren County, Kentucky (Christopher Groves)

- 26 **Ryne McMullen**, Title: Vo2 Max And Time To Volitional Failure Improved Following Bike Ride Across The United States (Don Hoover)
- 27 **Kristin Nash**, Demographics and Health Status of Rural Kentucky Population Served By The Institute Of Rural Health From 2011-2013 (Jill Maples)
- 28 **Trevor Davis**, Challenges of Living with HIV/AIDS: Photo Analysis of Patient Perception of Needs (William Mkanta)
- 29 **Laura Duncan**, Determining Associations Between Paternal Involvement And Infant Temperament On Paternal Sensitivity (Diane Lickenbrock)
- 30 **Victoria Daugherty**, Working Memory And Creativity (Jennifer Redifer)
- 31 **Richard Arnold**, Ir Moisture Assessment Of Common Construction Materials (Robert Choate)
- 32 **Phillip Butler**, Poaching Prevention Through Personnel Detection (Mark Cambron)
- 33 **Charleston Durbin**, CNC Router Design (Joel Lenoir)
- 34 **Seth Prince**, The Krantz Crystal Collection In 3d (Joel Lenoir)
- 35 **Sara Botero**, Graphene-inorganic "hybrids" With Cobalt Oxides Polymorphs For Electrochemical Energy And Electrocatalysis Applications (Sanju Gupta)
- 36 **John Bertram**, Shaping Porous Pdms Beads With Various Chloride Salts (Matthew Nee)
- 37 **Danielle Chavis**, Small Molecular Donor-acceptor Dyads As Additives For Organic Photovoltaics (Hemali Rathnayake)
- 38 **Alexandra Wright**, Reaction Of Platinum Complexes With A Methionine Analog (Kevin Williams)
- 39 **Allyson King**, Phloridzin Gold Nanoparticles - An Attempt To Regain Its Lost Charm (Rajalingam Dakshinamurthy)
- 40 **Johnny England**, Sleep deprivation increases the sensitivity of the hypothalamic-pituitary-adrenal axis to dexamethasone treatment In C57bl/6j mice (Noah Ashley)
- 41 **Saadia Akhtar**, Diversity Of Mycobacteriophages In Hydrologic Regions (Claire Rinehart)
- 42 **Vir Patel**, Examining Mycobacteriophage Evolution Through Secondary Structure (Claire Rinehart)
- 43 **Steven King**, Functional Recovery Of Axolotl (*Ambystoma mexicanum*) Hearing Following Sound Exposure (Michael Smith)
- 44 **Konnor Jones**, Temperature And Electric Field Dependency Of Asymmetric Stretching Of Nitrate Ion (Matthew Nee)
- 45 **Kyle Weller**, Sound Production In Three Prochilodontid Fish Species From Brazil (Michael Smith)
- 46 **Amber Daniel**, Assessment Of Competitiveness And Legal Framework Of Farmers Market (Dominique Gumirakiza)
- 47 **Benjamin McDonald**, Investigating Structural And Physical Properties Of Graphene-conducting Polymer Functional Hybrids For Aerospace Applications (Sanju Gupta)
- 48 **Stacy Hancock**, A Photometric Study Of Two Variable Stars In The Constellation Draco (Michael Carini)
- 49 **Mitchell Harmon**, The Homotopy Analysis Method And Technicolor Vector Potential Interactions For Quarks (Keith Andrew)
- 50 **Jody Owen**, How to Influence Technology Use in the Classroom (Jennifer Cribbs)
- 51 **Cody Kirk**, Who Wants My Product? Affinity-based Marketing (Leyla Zhuhadar)
- 52 **Katherine Queen**, Ghanaian (akan) Widows' Oral History: Identity Narratives (Rose Korang-Okrah)
- 53 **Sarah Martins**, Breastfeeding And Dental Plaque Acidogenicity (Becky Tabor)
- 54 **Kailey Anderson**, Stratigraphic Controls On Cave Passage Development Of Dogwood Cave, Hart County, Kentucky (Patricia Kambesis)
- 55 **Shepherd Kalyn**, An Examination of Pacing Training for a Two Mile Run in ROTC Cadets (Steve Winingger)

Index

A

Aaron Celestian	16, 22
Aaron Whitehead	19
Aaron Wichman	11, 19, 24
Abby Flynn	26
Abdulhameed Dawood	13
Adam Haynes	24
Ajay Srivastava	13
Alexander Gelderman	7, 25
Alexander Olson	18
Alexandra Hunter	26
Alexandra Oldham	27
Alexandra Wright	7, 28
Alexis Hickerson	25
Allen Clark	24
Allison McCutchen	25
Allison Sklenar	23
Ally King	7
Allyson King	28
Amber Daniel	28
Amber Langston	18
Amber Schroeder	11, 24, 26
Amy Brausch	10, 13
Amy Fehrenbach	13
Amy Zenthoefer	6, 20
Anais Norman	21
Ananya Sharma	7, 23
Andrea Dunnaway	25
Andrew Davis	7, 27
Andrew Mienaltowski	11, 23, 24
Angela Arvizu	21
Ann Ferrell	10, 18, 19, 21
Anna Braun	7, 27
Anna Shelton	6, 20
Anthony	17
Anthony Harkins	19, 20
Anthony Stellaccio	19
Anthony Thorn	25
April Murphy	11, 17, 22
Armin Smailhodzic	24
Ashley Avery	24
Audie Wood	21
Audra Jennings	11
Audrey Anton	18
Audrey Brown	6, 14
Autumn Smith	6, 14
Azadeh Vantanpour	21

B

Bangbo Yan	14
Barbara Brindle	10, 18
Barbara Bush	25
Barrett Rogers	27

Becky Gilfillen	25
Becky Tabor	22, 28
Behraz Alipoorabedi	24
Ben Guthrie	7
Ben Lee	9, 26
Ben Riley	7
Benjamin Guthrie	17
Benjamin McDonald	28
Benjamin Riley	6, 20
Benjamin Robin	15
Berenice Anaya	13
Beth Norris	11, 22, 23
Beth Plummer	18, 19
Beth Taylor	6, 15
Betsy	24
Blairanne Williams)	27
Blake Perkins	8, 23
Brad Pfranger	15, 17
Bradley Logsdon	17
Bradley Pfranger	18
Brandon Coffey	23
Brandon Farmer	6, 14
Brandon Nguyen	18
Brandy Tiernan	11, 13, 22
Brant Goble	23
Brent Bjorkman	10, 18
Brian Carlson	7, 24
Brian Luna	24
Brittany Austin	6, 14
Brittany Groh	24
Brittany Moore	25
Brooke Barber	6, 14
Brooke Duke	27
Bruce Schulte	13, 14
Bryan Carson	10, 18, 19
Bryan Knowles	21

C

Caitlyn Clark	16
Caleb Chevalier	19
Caleb Ernst	21
Caleb Peyman	15
Callie Allison	17
Carolyn Evans	6, 18
Carson Price	24
Casey Fortney	27
Casey Taylor	19
Cayla Baughn	25
Cecile Garmon	10, 13, 19
Celeste Happeny	19
Chad Brode	16
Chandler Clark	27
Chandra Emani	11
Charles Gregory	23
Charlotte Hacker	13
Chase Bolton	24

Chase Thomas	6, 20
Chelsea Howell	25
Cheryl Stevens	11, 15
Chi Fai Wong	16
Chika Ejike	23
Chris Byrne	27
Chris Groves	10, 16, 19, 25
Christian Williams	17
Christina Guthrie	26
Christina Noel	18
Christopher Fields	13
Christopher Hart	19
Cicely Walters	18
Claire Rinehart	11, 13, 23, 27, 28
Claire Warren	25
Clarissa Roe	24
Clifton Brown	18
Cody Duncum	6, 15
Cody Kirk	28
Cody Meservy	27
Cole Manning	25
Colette Chelf	11
Colton Lindsey	16
Colton Ramos	6, 20
Connor Brooks	25
Courtney Goodwin	24
Courtney Hamilton	23
Courtney Inabnitt	25
Cristina Macke	23
Cynthia Tope	6, 15
Cyrus Johnson	18
Cyrus Sadrinia	6, 14
Cytokine Gene	13

D

Dale Rigby	8, 21
DaMario Walker-Brown	25
Dana Biechele-Speziale	7, 27
Dana Bradley	10, 17, 27
Daniel Curry	10, 18, 21
Daniel Jackson	13
Danielle Berkshire	24
Danielle Chavis	28
Darlene	23
Darlene Applegate	10, 11, 20
Darlene Shearer	23, 26
Dat Thinh Ha	27
David Beckworth	27
David Bell	15, 25
David Cheser	17
David DiMeo	20
Debadrita Sarkar	21
Debbie LaMastus	11, 15, 18
Deborah Logan	21
Del Cox	16
Denis Hodzic	23
Derek Scott	6, 18

Derick Strode	11, 12
Diane Lickenbrock	11, 24, 28
Dick Taylor	11, 15
D'lee Babb	18
Dominique Gumirakiza	28
Dominique Walker	23
Don Hoover	8, 23, 26, 28
Donald Elmi	18
Donielle Lovell	20, 21
Douglas Kaiser	16
Dylan Jones	17
Dylan Nonweiler	25

E

Edward Kintzel	24
Eleanor Hasken	19
Elizabeth Gish	18
Elmer Gray	23, 24
Emily Hubbuch	23
Emily Potter	18
Emily Potts	6, 18
Emma Fleming	26
Eric Dennison	26
Ericka Hardin	6, 17
Erik Smith	6, 14
Erika Brown	6, 18
Evan Daniels	15

F

Faith Boldt	23
Farhad Ashrafzadeh	10, 16
Farshid Alavi	13
Ferhan Atici	26
Forrest Deacon	6, 18
Frank Fan	13, 23
Frankie Wallace	6, 15
Fred Carter	20
Frederick Flynn	19

G

Gabriel Garcia de Carvalho	6
Gary Hutchinson	21
Gaungming Xing	21
Glenn LaFantasie	19
Grace Hunt	18
Greg Austin	6, 17
Gregory	14
Gregory Ellis-Griffith	23
Gretchen Macy	23, 24
Guangming Xing	21

H

Haleh Jeddi	27
Haley Garrison	6, 20
Haley Quinton	17
Hamilton Brindley	26
Hana Nezirovic	26
Hannah Keith	25
Hannah Pennington	6, 20
Hannah Ruggles	27
Harinivesh Donepudi	21
Harsh Moolani	7, 27
Harvey Wallmann	23
Hayden Hickey	24
Hayley Lambert	24
Helen Sterk	17
Hemali Rathnayake	14, 27, 28
Hope Jackson	18
Huanjing Wang	20

I

Ian Dowty	17
Indu Bhattarai	24
Ingrid Cartwright	18

J

Jace Lux	18
Jack Wassom	7, 22
Jacob Thomas	25
Jacob Wilkins	16
Jade Primicias	6, 18
Jamaque Newberry	18
James Humphrey,	25
James Soper	6, 20
Jared Walden	26
Jason Crandall	10, 14, 26, 27
Jason Polk	25
Jean-Luc Houle	10, 15, 18, 19, 22
Jeffrey Rice	15
Jenni Redifer	11, 27
Jennifer Cribbs	10, 20, 28
Jennifer Dumaine	13
Jennifer Gaiko	22, 25
Jennifer Joe	10, 21
Jennifer Ottersbach	18
Jennifer Phillips	17
Jerod	15, 17
Jerod Hollyfield	15, 17, 18, 20
Jess Holler	19
Jesse Reesor	9
Jessica Anderson	16
Jessica Furgerson	18
Jie Zhang	11, 14, 23
Jill Maples	11, 17, 28
Jimmy Shah	23

Jinglin Li	6, 17
Joanna Chang	27
Jody Owen	28
Joel Lenoir	9, 16, 26, 27, 28
John All	14, 16
John Corum	6, 15
John Hagaman	20
John Houryieh	10, 13, 14
John Stone	6, 15
John Thomas	16
Johnny England	28
Jon Warren,	26
Jonathon Grebe	25
Jonathon Wurth	6, 20
Jordan Smith	17
Joseph Evans	26
Joseph W. Evans	25
Josh	16
Josh Durkee	14, 16, 19
Josh Dye	16
Joshua Brunstad	21
Joshua Durkee	14, 22
Joshua Holland	15
Joshua Williams	17
Joy Fan	26
Juan Romero	11, 17
Julia Gensheimer	7, 27
Juliana Pace	23
Julie Scott	24
Julio Hogue	25
Justin Bunch	7, 27
Justin Piercy	17

K

Kailey Anderson,	28
Kaitlin Oliver Butler	26
Karen Mason	17
Kate Hudepohl	22, 26
Katherine Knight	6, 18
Katherine Queen	28
Kathryn "Rachel" Price	7
Kathryn Price	27
Katie DiTommaso	23
Katie Meek	6, 20
Kawai Kwong	6, 15
Keith Andrew	24, 28
Kelly Fussman	6, 17
Kelly McKenna	7
Kelly Mckenna,	27
Ken Crawford	14
Kendra Whitaker	6, 14
Kerrie McDaniel)	25
Kevin Williams	15, 24, 27, 28
Kianoosh Ebrahimi	13
Kimberly Walker	24
Kirsti Vittitow	23
Konnor Jones	28

Kreable Young	8
Kristen Pedersen.....	7
Kristi Branham.....	18
Kristin Nash	28
Krstina Medero.....	6, 15
Kumi Ishii	10, 16
Kusa Gelin.....	21
Kyle Mann.....	6, 15
Kyle Sewell.....	6, 20
Kyle Weller	28
Kyndall Hudson,	25

L

Laketta Graves,	25
Lance Hahn.....	11
Larkin Heintzman	26
Laura Duncan	28
Laura Harper.....	6, 18
Lauren Bailes,	24
Lauren Bland	17
Lauren Cunningham	10, 20
Lauren Pedersen.....	7
Lee Ann Smith	11, 17
Lee Anne Bledsoe	19
Leila Watkins.....	11, 15, 20
Leland Jones II	26
Leslie Baylis.....	11
Leslie Ford	23
Leslie North.....	13, 22
Lester Pesterfield.....	26
Leyla Zhuhadar.....	12, 24, 28
Lindsey Houchin	21
Linyue "Joy" Fan.....	7
Lisa Duffin).....	22, 25
Logan Mitchell	25
Long Tran	25
Lorena Barnes	24
Lorraine Bormann	10, 13
Lucas Somers	19
Lynn Austin.....	10, 25

M

Madison Hayden	25
Mallory Schnell.....	6, 14
Mara Muccigrosso,	25
Marilyn Gardner.....	23
Marko Dumancic.....	19
Martin Stone.....	13
Mary.....	17
Mary Spraggs	24
Matthew Nee.....	15, 28
Matthew Shake	11, 14, 17
Mckinze Vowels	26
Meagan Luttrell	13
Megan Fuller	23

Megan Siers,	25
Meghan Althausen.....	6, 20
Meghan McGuirk.....	6, 18
Meghan Ryckley.....	6, 14
Merrall Price.....	11, 12
Michael Ann Williams.....	19
Michael Belcher.....	7, 26
Michael Blankenship.....	6, 20
Michael Carini.....	17
Michael Collyer.....	23
Michael Galloway.....	21, 24, 25
Michael Harruff	17
Michael Kallstrom.....	9, 18, 26
Michael May.....	19
Michael Roberts	26
Michael Shannon	15
Michael Smith.....	13, 23, 27, 28
Michael Stokes.....	14, 15
Millicent Ronkainen,	27
Mitchell Harmon	28
Mitchell Schooler	23
Mohammed Adnan Yousuf	23
Mollie Berger	26
Molly Kerby	10, 21
Molly Shircliff	16
Moon-Soo Kim	14, 27
Morgan Duff.....	6, 18
Morteza Nurcheshmeh.....	16
Muhammad Jahan.....	10, 13, 16, 17, 19, 22

N

Nahid Gani	10, 14, 24, 25, 27
NaKeya Owens.....	7, 27
Nancy Mager	11, 16, 17
Naomi Rowland.....	27
Natalie Hayden	17
Neal Downing.....	25
Nezam Iraniparast	10, 13
Nicholas Schaedig	19
Nick Sivek	24
Niharika Neerudu Sreeramulu	14
Noah Ashley.....	13, 14, 27, 28
Nohammed Adnan Yousofi	13
Nolan Calhoun	26

O

Omega Buckner	18
----------------------------	----

P

Paige Harrison	27
Palpasha Jonchhe	23
Parker Hanna	20
Parker Hanna.....	6

Patricia Desrosiers -----	10, 18
Patricia Kambesis-----	28
Patricia Minter-----	18
Patrick Cassin -----	17
Paul Correa -----	17
Paul Hudson-----	7
Paula Upright-----	26
Paulina Littlefield -----	27
Pavan Kumar Chityala -----	14
Pegah Kakavand -----	13
Peter Agaba-----	6, 20
Pezhman Sheinidashtegol, -----	24
Phillip Womble-----	17

Q

Qian Dong -----	13
Qin Zhao-----	24, 27
Qin Zhao)-----	24, 27
Qinchuan Du -----	13
Qinglong Sun -----	21

R

Rachel Sudbeck -----	8
Rachell Bailey -----	23
Rajalingam Dakshinamurthy-----	14, 15, 22, 27, 28
Randy Capps-----	23
Rebecca Center-----	6, 17
Rebecca Garrison -----	25
Rena Ryumae-----	7
Rezaul Mahmood-----	14
Richard Arnold -----	28
Richard Schugart-----	20
Rippa Sehgal -----	24
Ritchie Taylor-----	17, 26
Rob Hale-----	17, 25
Robert Choate-----	16, 28
Robert Davis -----	10, 15
Rodney King-----	23, 26, 27
Roger Dennis-----	24
Rohan Deshpande-----	7, 27
Ronald Waterbury -----	16
Rosemary Meszaros-----	11
Rui Zhang-----	14, 15, 27
Ryan Coleman -----	26
Ryan Mahoney -----	26
Ryan Pait-----	6, 20
Ryne McMullen -----	28

S

Saadia Akhtar-----	7, 28
Samuel Cherry -----	18
Samuel Dong-----	6, 20
Samuel Rosenthal-----	6, 18

Sandra Hughes-----	21
Sandy Hughes-----	21
Sanju Gupta-----	10, 24, 26, 28
Sara Brown -----	26
Sara McCaslin -----	11, 13
Sarah Goodyear -----	13
Sarah Herricks-----	7
Sarah Jameson -----	19
Sarah Martins -----	28
Sarah Wilson -----	13
Scott Bonham-----	24
Scott Grubbs-----	14
Scott Lyons-----	11
Sean Hurd -----	26
Shahnaz Aly-----	14, 17, 22, 25
Sharon Mutter-----	13
Shelbi Broeking-----	7
Shepherd Kalyn -----	28
Siera Bramschreiber -----	24
Stacy Hancock -----	28
Stacy Wilson-----	11, 26
Stephanie Fusting -----	24
Stephen-----	13
Stephen O'Connor-----	24
Steve-----	28
Steven Devine -----	19
Steven Fernandez-----	24
Steven Gibson-----	24
Steven King -----	28
Steven Wininger-----	27
Summer Abston -----	17, 25
Svetlana Ter-Grigoryan -----	19
Swapnil Sahare -----	14
Sydney Varajon -----	19

T

Tara Watkins -----	25
Ted Hovet-----	20
Teresa Stidham -----	11, 14, 19
Terry Dean-----	26
Thomas Burden -----	21
Tiffany Hughes-----	6, 15
Tim Broekema-----	9, 20
Tim Evans -----	10, 21
Tim Hawkins -----	10, 18
Timothy Rich-----	20
Ting-Hui Lee-----	20
Tori Hampton-----	6, 14
Travis Brummett -----	21
Trevor Davis -----	28
Tulsi Modi -----	14
Tyler Bodine -----	19
Tyler Keeton -----	15

V

Valerie Richmond	7, 27
Venkata Sravani Seethi	23
Vicki Bagwell	20
Victoria Daugherty	28
Victoria LaPoe	17
Vir Patel	7, 28

W

Wade Weatherholt	26, 27
Walker Rutledge	17
Wanda Chandler	10, 21
Weilong Luo	14
Wendi Hulse	25
Wes Berry	10, 15
Wes Manakee	17
Whitney Walker	6, 15
Wieb VanDerMeer)	24
William Corley	24
William Hamilton	6, 15
William Johnson	9
William Linder	6, 18
William Mkanta	23, 28

Wolfgang Brauner	18, 20
-------------------------	--------

X

Xiaoxia Silvie Huang	21
Xin Liu	14
Xingang Fan	10, 16, 17, 19
Xingya Xu	24

Y

Yan Cao	27
Yao Xue	24

Z

Zach Lancaster	9
Zach Vincent	13
Zachary Lancaster,	26
Zachary Leasor	6, 14
Zachary Sullivan	19
Zehra Yousofi	21
Zhonghang Xia	21
Zona Ascensio	23