SRD

student research day

2017

Celebrating students' research, scholarly, and creative work.

March 31, 2017

9 a.m.- 3:30 p.m.

INDIANA UNIVERSITY EAST

Welcome
to Student Research Day!

Student Research Day is a special event for students to showcase their work and for the campus to celebrate their achievements. By recognizing the hard work of our student scholars, we hope to validate their extraordinary efforts and to inspire others to follow in their path of excellence in research, academic, and creative work. Likewise, we hope Student Research Day will provide an excellent opportunity for parents and family members to come to campus and participate in the celebration of their student's success and scholarly growth.

Student Research Day began nearly two decades ago as an afternoon of presentations of the Summer Research Scholars work only. Over the years, significant enhancements have been made to the program. We have also joined with others to expand the breadth of student presentations, and this year, we are proud to be including art, music, professional development and the applied sciences. In total, the event will be the culmination of a celebration of student scholarly works throughout the campus, and we are glad you are here to experience the day with us!

Thank you for attending this year's excellent event, and thank you again for supporting the research and work of our student scholars.

Sincerely,
Ange Cooksey, Senior Lecturer in Humanities
Student Research Day Committee, Chair
School of Humanities and Social Sciences

Schedule of Events

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9 - 9:45 a.m.	**Participant Check-In & Poster Set-Up** **(Breakfast Provided)**
9:45 - 10 a.m.	**Formal Welcome and Introductions** **Ange Cooksey, SRD Chair** **Whitewater Hall Lobby**
10 - 10:45 a.m.	**Narrated Poster Session** **Whitewater Hall Lobby**
10:45 a.m. - 12:15 p.m.	**Summer Research Scholars Presentations** **Whitewater Hall 132**
12:15-1:10 p.m.	**Artists and Scholars Luncheon Sue McFadden, SRD Publication Chair** **Community Room**
1:10-2:30 p.m.	**Oral Presentations** **Whitewater Hall Room 132**
2:30-2:45 p.m.	**Scrumptious Dessert Bar** **The Den**
2:45-3:10 p.m.	**Awards Ceremony** **T.J. Rivard, Associate Vice Chancellor for Academic Affairs** **Whitewater Hall Room 132**

Selected Research Opportunities at Indiana University East

Art Student Showcase

The annual Student Showcase includes works of art from Summer and Fall semesters of 2016 and Spring semester of 2017. Art pieces are produced by students in courses, including Painting, Drawing, Sculpture, 2-D and 3-D Design, Ceramics, Art & Design, and Metalsmithing. In addition to the individual entries, Senior Capstone exhibits are included. Merit monetary awards are given annually through the sponsorship of Stagg Safety of Richmond, Robert Warfel, President.

Honors Program & MEHA Conference

Students in the IU East Honors Program complete at least 15 hours of Honors Option courses, as well as a Honors Senior Thesis. This capstone experience requires a scholarly, creative, or service learning project completed under the guidance of a faculty mentor. Students also have the option to present at the Mid-East Honors Association (MEHA) Conference.

Student Research Day

Student Research Day is an opportunity for all undergraduate students to present their research to the campus and larger community. In developing this year's ambitious program, we have included Summer Scholar students, the Honors Program scholars, and presentations from course projects from all campus disciplines. We have also invited our growing online population to participate.

Summer Scholars

The Summer Research Scholars Program provides support for students to make a substantial commitment to research and scholarly activity. Students work closely with a faculty mentor to develop a project which they will complete independently. This program is open to students in all disciplines, and the potential projects may take on many forms.

POSTER PRESENTATIONS

10-10:45 a.m., Whitewater Hall Lobby

Parent Training to Gain Compliance and Increase Effective Instruction Delivery

Sunnie Allen, Psychology

The purpose of this study was to examine whether or not parent training has an effect on effective instruction delivery and compliance in children. My presentation will explain what the parent training consists of, data before and after parent training, effects of parent training, and also questions I have for further research.

Self-referenced pushing and pulling forces in response to emotional stimuli

Zachary Catron, Psychology

Previous studies have demonstrated that reaction times are quickest for approach movements towards positive stimuli and for avoidance movements away from negative stimuli that presented visually in spatial reference to participants. Here, we present the results from a study where we exposed participants to emotional auditory stimuli that are not localized in space with reference to the movements made. We found that the arousal ratings of the stimuli explain twice the variance of the force of movements than valence ratings even when the stimuli are presented with headphones and are not localized in space with reference to the movements.

Stigma, Illness and Society

Karen Friend, Sociology

My senior project has focused on the stigma of those with illness, particularly invisible illnesses. Research provides information on how the afflicted individual is impacted by society's response/reaction. I have come to realize this as an important topic that applies to so many in society. Education is a key aspect to help reduce the stigma.

The Effectiveness of a Parent Training Program: Insights and Future Directions

Jennie Newman, Psychology

We aimed to develop a cost-effective model for parent training to help parents increase compliance in their children. For the current study, parents participated in a parenting workshop once a month for three months. Results from the training will be discussed.

Measuring implicit bias in approach-avoidance movements

Nathaniel Rose, Psychology and Business Administration

Pushing and pulling are important movements. Previous research found decreased reaction times for both pulling positive stimuli and pushing aversive stimuli. Implicit bias has been measured from the reaction times during the categorization of faces. Approach and avoidance behaviors have not been used to investigate implicit bias. Here, we are measuring the reaction time and force of pulling and pushing away face stimuli that vary in gender, ethnicity and attractiveness. We hypothesize that participants will show decreased reaction times and increased force for approach movements with in-group and attractive faces and for avoidance behaviors towards out-group and unattractive faces.

Spare the Rod

Michael Smith, Secondary Education

The correct response to any situation is never violence. Corporal punishment in our public schools should be something found only in history, but unfortunately that is not the case. 21 States still practice this outdated and antiquated form of reprimand. This project will look at the damage created from the use of violence against students, perpetrated by the people that we entrust to protect and educate them.

SUMMER RESEARCH SCHOLARS PRESENTATIONS

10:45 a.m. – 12:15 p.m, Whitewater Hall Room 132

10:45 a.m.

Subject, Voice, and Form: Poetry in the 21st Century

Sara Baxter, English

Contemporary poetry is an engaging and relevant outlet for artistic expression which demands rigorous study and critical thinking. It encourages writers to be innovative, bold, passionate, and competitive. Through the study of twelve books of contemporary poetry, bi-weekly discussions with published poet, Dr. Brian Brodeur, and the construction of twelve new poems; I attempt to develop a better understanding of what contemporary poetry is and to determine how my own writing style and topics can contribute to the discourse of this extraordinary literary genre.

11:00 a.m.

Estimating Sex from Bones of the Hands and Feet: A Bioarchaeological Study of the Ancient Maya Site of Blue Creek, Belize

Seth W. Winstead, Sociology

For bioarchaeologists, biological sex estimation based off of skeletal indicators is a crucial element when creating a biological profile for human remains. While there are several ways for estimating sex, one useful method that remains underutilized is metric analysis of bones from the hands and feet. Since males and females are sexually dimorphic, the ability to discriminate biological sex from hand and foot bones is possible and is shown to be valid. Skeletal metric

data drawn from the hands and feet have successfully discriminated between male and female (bio)archaeological remains in Europe and throughout North America. The results of osteometric data for a Maya population from Nojol Nah in the Blue Creek region of Belize are presented to demonstrate the utility of such metrics in estimating sex.

11:15 a.m.

The Impact of Interest Groups on the Polarization of the United States Congress

Hope Alexander, Political Science

Polarization, or the increasing divergence between political parties and their supporters, is undoubtedly on the rise. As a result of this increased polarization, political scientists have turned their attention to both the causes and consequences of this phenomenon. In general, scholars have argued that polarization is impacted by a myriad of factors, including a polarized media, a polarized electorate, the growth of parties and their sorting, the current primary system, and finally, campaign contributions, including individual donors and interest groups. I argue that the primary cause of polarization in the United States Congress is the growing influence of interest groups.

11:30 a.m.

Effect of Methomyl on Gene Expression Profile in "Drosophila melanogaster"

John Lackey, Biochemistry

Methomyl is a carbamate insecticide that inhibits acetylcholinesterase enzymes, leading to acetylcholine accumulation at nerve terminals. Carbamate toxicity causes excessive nicotinic and muscarinic neurostimulation, which is known to cause serious heart arrythmia. The toxic effects from carbamates differ with respect to reversibility, subacute, and chronic properties. There are many instances in which suicide or self-harm was attempted using methomyl. Although acetylcholinesterase inhibition is highly toxic, its damage can be reversed (Berg et al., 2015). Less known than methomys

effect on acetylcholine is its potentially irreversible effect on gene expression. To better understand this effect we applied several pesticides to Drosophila media that were in a critical stage of growth, where the effect on gene expression would be the greatest. If a particular gene were to be affected by methomyl, its fold expression will be altered, which we can analyze using the microarray. References Berg, J. Tymoczko, J.L., Gatto Jr., G.J., Stryer, L. (2015). Biochemistry. Eighth edition. New York (NY). W.H. Freeman and Company.

11:45 a.m.

Fear and Trembling, Indiana

Gregg Sells, Secondary English Education

In the pursuit of a deeper understanding of poetry and the process of creating it, I wrote a proposal for the Summer Research Scholars Program through Indiana University East to write a manuscript over the summer. I was awarded the scholarship and worked with Dr. Brian Brodeur to draft, revise, and finalize a manuscript of poems about adolescence in Indiana. I plan to present my work in the form of a poetry reading at Indiana University East's Student Research Day.

12:00 p.m.

Implementation of e-portfolios and the use of VALUE Rubrics in a Capstone Course to Assess Student Learning

Alexandra Estes, Biology

The goal of my research was to create an e-portfolio for the School of Natural Science and Mathematics' Biology capstone course. As a part of the creation of this e-portfolio, I attended the SABER (Society for the Advancement of Biology Education Research) conference to gain more experience and knowledge for this form of research. From working with faculty to gain information needed on NSM programs to listening to presentations at SABER, I gained insight into the world of educational research, and learned how something as simple as wording can affect all of the results obtained through this form of research.

ORAL PRESENTATIONS

1:10 – 2:30 p.m, Whitewater Hall Room 132

1:10 p.m.

The Effects of Dicrotophos on Drosophila melanogaster

Trevor Boram, Biochemistry & Mathematics

For many years, pesticides have been the key to protecting crops from insect damage. This research investigates the effects of the pesticide dicrotophos on gene regulation in Drosophila melanogaster (fruit flies) on genes of interest. Fruit flies share around 75% of genes linked to disease with humans, making them an easy organism to evaluate the harmful pesticide effects on. By using microarray analysis and quantitative reverse transcriptase polymerase chain reaction (q-RT-PCR), I measured differences in gene expression, particularly in developmental and stress related genes. These results allow us to understand how dicrotophos affects humans working in fields around the chemical.

1:20 p.m.

Is Beer Beauty in the Eye of the Beholder? Ratings of Professionals and Nonprofessionals

Grace Allred and Nini Filippini, Psychology

This archival study investigated appraisers of a wide variety of beers from all over the world. We randomly selected over 700 beers from all existing beer critic books and websites that contained quantitative ratings, and analyzed professionals and nonprofessionals ratings. Preliminary results suggest that most raters showed small to moderate significant positive correlations in their ratings, implying that agreement about beer quality was more likely than disagree-

ment. Individuals beer rating distributions were mound-shaped and approaching normality in many cases, but some raters showed non-normal distributions. Potential differences between professionals and nonprofessionals will be considered.

1:30 p.m.

Motivating self-referenced approach and avoidance movements with emotional images

Cassidy Clouse, Psychology & Human Life Science

The movements of pushing away and pulling towards oneself are important approach-avoidance behaviors. A review of the literature has shown that reaction times are fastest for pushing away highly arousing unpleasant stimuli. Here we measured the sustained forces of pushing and pulling while eliciting emotions with images selected from the International Affective Pictures System; images varied in emotional arousal (calming or exciting) and emotional valence (unpleasant or pleasant) as determined by subjective ratings from the database. Our results show that unlike reaction times, the force of approach-avoidance movements is determined primarily by the arousal of stimuli regardless of movement orientation.

1:40 p.m.

The Effect of Genetic Variation in the Gravity Response of Plants

Kaylee Cox, Biology

Plant growth is highly affected by gravity. This plant response to gravity, gravitropism, is controlled by amyloplasts. These cells sense the pull of gravity and allow the roots of plants to grow with gravity and the stems to grow against gravity. Amyloplast formation is controlled though the genetics. Genetic variation in plants can affect the amyloplast formation and therefore the plants response to gravity. This was observed through the growth of Arabidopsis thaliana plants and their altered gene counterpart, Arg 1 plants. We compared the plants in growth and amyloplast formation.

1:50 p.m.

Forging Romantic Relationships via Twitter

Morgan Gard, Communication

The objective of this paper is to see if the social media site Twitter is capable of forging and maintaining romantic relationships. This project uses the Social Information Processing Theory (SIP) as a theoretical framework to better understand how romantic relationships develop on Twitter. The information discussed includes topics such as: how people maintain relationships on Twitter, if there are repercussions on the relationship, and what impact social media has on the face-to-face relationship. Twitter is one of the most popular social media sites, ranking in the top five of most actively used; however little study has been done on the intimacy of relationships and Twitter. The method used was a multiple choice survey that also included three short answer questions.

2:00 p.m.

The Effects of Icing on Sports' Injuries

Breanna Nowak, Biochemistry

Icing is a very common practice for treating many sports injuries, but recent studies have found this treatment ineffective and can delay healing. Studies have been conducted on both mice and humans with soft tissue injuries. These studies consisted of creating the injury and then either treating it with ice or leaving it to heal on its own. In both studies, the non-icing group healed faster than their icing counterparts. There are certain situations where ice treatment is appropriate, like for extreme pain reduction, but this should be avoided when possible. Warming and compressing injuries are more effective alternatives.

2:10 p.m.

The Voice of the Euphonium

Nichole Roman, HSS/Music

The euphonium was invented in 1843 and is considered a relatively newer instrument. It is often described as having a tone color similar to a cello or having a singing quality similar that of a tenor voice. These qualities make the euphonium very versatile in style and to the type of music it traditionally plays. Vocal pieces like Vocalise by Rachmaninoff or Songs of a Wayfarer by Mahler have become standards in euphonium repertoire because of those singing qualities they hold. The importance of versatility, tradition, and adaptation in music have been vital to the growth of the euphonium.

2:20 p.m.

The Devil In the Music

Marshall Moberly, Humanities Music Concentration

The research day project I will be presenting will be on my created piece My Dear Wormwood and a short review of my accompanying research paper The Devil In My Music. My Dear Wormwood is a piece of music inspired by The Screwtape Letters a fictional work by C.S. Lewis. The presentation will be a series of descriptions, and explanations, of sounds associated with the Devil, then we will listen to exerts from my created piece to show how those ideas have influenced my own interpretation of the devil in my music.

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Judges Panel

Ed DeLaPaz, Wayne County Area Chamber of Commerce
Van Temple
Donna Spears, Real Estate Professional, Lingle Real Estate
Lora Baldwin, Associate Librarian, IU East Library
Dr. Eevett Loshek, Lecturer, Psychology
Tim Scales, Senior Lecturer, Business Administration
Dr. Daron Olson, Associate Professor, History
Dr. Robert Mulligan, Dean, School of Business & Economics

Planning Committe

Ange Cooksey - Chair, Philosophy, HSS
Elizabeth Miller - Student Chairperson
Ann Kim - Assistant Professor of Art
Dr. Amanda Kraha - Assistant Professor of Psychology
Sue McFadden - University Library
Tanya Perkins - Lecturer in Englis
Dr. Steven Petersheim - Assistant Professor, English
Ed Thornburg - Senior Lecturer in Art and Curator,
Art Museum

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Special Thanks

Special thanks to Dean Ross Alexander and the School of Humanities and Social Sciences for providing funding for the Student Chairperson Position. Thank you also to the Office of Academic Affairs that has provided the funding for our program and cash awards. Thank you to the Planning Committee, the Physical Facilities staff and The Den for all their hard work in making this event successful.

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