SRD
student research day
2016

Celebrating research, scholarly and creative work of students

Friday, April 8, 2016

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.

This year we have included significant enhancements in the program by encouraging participation from a wider range of campus programs. Previously, this event centered around the research projects done by the Summer Scholar students, and their excellent work is again showcased in this year's 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)** Whitewater Hall Lobby
9:45 - 10 a.m.	**Formal Welcome** Jay Barbre, Interim Associate Vice Chancellor, Academic Affairs Whitewater Hall Room 132
10 - 11:30 a.m.	**Narrated Poster Session** Whitewater Hall Lobby
11:30 a.m.- 12:05 p.m.	**Scholars & Artists Luncheon** Community Room
12:10 -3 p.m.	**Afternoon Oral Presentations** Whitewater Hall Room 132
3 - 3:20 p.m.	**Desserts** Meijer Artway
3:20 p.m.	**Awards Ceremony** Chancellor Kathryn Cruz-Uribe 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 2015 and Spring semester of 2016. 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

Online Classrooms

Whitney Abbott, Psychology Major

This research looks into how online students view online instruction, how it can affect the students learning, and the motivation is takes to success in this classroom environment. The findings were that students and instructor presence, appearance, and communication affected the motivation of the online environment. Students that work has a factor in whether or not they are putting in the work for online classrooms, like face-to-face classrooms. Online students miss peer to peer interaction more than the classroom environment, and find that online course is more stressful.

Treating Children of Natural Disasters

Grace E. Allred, Psychology Major

This paper discusses children and adolescent victims of natural disasters. It clarifies how socioeconomic status is not always relevant to the trauma experienced from a natural disaster. It compares children with consistent trauma in their lives to those children who have been sheltered most of their lives. Findings reveal that sheltered children will experience greater trauma after a natural disaster. Therefore, counseling children after a natural disaster requires different approaches, and it needs to keep in mind the different levels of previous trauma before and after a natural disaster.

Memory in Motion

Huston Clark, Psychology Major

My research is about the working memory of athletes. The research I have done includes many different aspects that play a role in working memory. Some topics of working memory that I am exploring are long-term and short-term memory and how the three work together to form our memories. The working memory has a major role in people's lives and I will be researching some of the different ways it is used in sports. I also point out the relationship between working memory and performance of athletes.

Poverty and Single Mother Households

Christina Cost, Humanities & Social Sciences Major

Poverty is an ever-growing and pervasive social issue with multiple contributing factors such as a broken education system, social stigma, and a cycle of poverty ridden lives for continuous generations. While this project takes a look at the history of poverty in the most generalized sense reporting on findings such as when poverty was first documented, where the word came from, and how it has survived and sustained through the generations of expansion and revolution, the majority of the project will focus on the poverty that affects single women; particularly households that are headed by a single mother.

The Importance of International Exchange Students Learning Informal English

Amber Hall, Graduate Student in English

Should international exchange students learn informal English such as slang, euphemisms, and even profanity? International exchange students learn an academic English to enhance their educational experience when studying abroad in the United States. This academic English is essential in their quest to become a well-rounded student, but what about their experience in being an American teenager? Working thesis: International exchange students' fluency in English will increase and their social well-being will improve if they are given the opportunity

to learn informal English. Thus, their experience in their study abroad program will be more beneficial.

The Completion of Harry/Harriet

Amber Hall, Graduate Student in English

Michelle Cliff's novel No Telephone to Heaven is a story about two characters navigating their way through a difficult life in Jamaica and America during the 1960s. Among these characters is one in particular, Harry/Harriet. Harry/Harriet is special in that he (or she) is attempting to live a life which is not acceptable in Jamaican society. Harry/Harriet is a transvestite, a man living his life as a woman. In my research, I have discovered that even though Harry/Harriet may appear to be uncertain as to his intentions or placement in life, he actually is the most complete character in the book. His choices, education, political standing, and attitude have made him a main character in a secondary character role.

Human Trafficking: The 21st Century Slavery

Liza Hosbrook, Fine Arts Major

Human Trafficking is a worldwide problem just like hunger, homelessness, and poverty. However, human trafficking is a very different worldwide problem, separated from most in that it is a problem rarely discussed. Since it is rarely discussed, some people are completely ignorant of the fact that it even exists. I was someone who did not know human trafficking existed. When I did my research about it, I was completely horrified. I decided to do something effective about it; I want to educate people. This presentation will bring light to others about this problem that occurs everyday, and everywhere.

Science Writers: Bridging the Gap

Elizabeth Miller, Biochemistry Major

Science writers bridge the gap between the science community and general public by presenting complex advances in a way that can be understood by all. Sara Reardon, a reporter for Nature, writes mainly about biomedical research and policy, but also enjoys reporting on science's impact on society. This poster presents my

interview with Reardon about her life as a science writer, and the path that she's taken to achieve her dreams. Additionally, Reardon describes the qualities of a good science journalist and presents advice on how to prepare for a career in science writing.

Psychology Graduate Student Loan Debt and Salary by Type of Academic Institution

Jennie R. Newman, Psychology Major

The current study provides an analysis of psychology graduate student debt and salary by type of institution (i.e., public, private, etc.). 592 graduate students and 691 early career psychologists completed a survey over debt load, average costs per year for tuition and other expenses, sources of financial support, and the impact of debt on participants' personal and professional lives (See Doran et al., (2016) for full paper). We suspect that participants in private institutions will have more debt than those at other types of institutions. We do not expect to find differences in salary by institution type.

After Abstinence

Hope Peer, Psychology Major

Drug addiction is a pervasive disease affecting the brain and distortion of mental processes. Addiction continues to have potentially life long consequences, even after abstinence has been achieved. Memories associated with the ingestion of drugs and their effects bombard recovering addicts every day of their lives, and often these memories are so intense and inescapable they prompt relapse. Here it is discussed the effects of addictive drugs on different memory-associated areas of the brain, as well contemporary research findings discovering ways to combat the challenges of drug related memories, including cue extinction exercises and the disruption of memory reconsolidation.

Aging and Memory

Megan Reifeis, Psychology Major

Myths have clouded the truth about our understanding of the aging process. How much is the decline of memory is due to growing older or the medications people take? Alzheimer's, which is often associated with aging, is considered one of the most feared diseases of the 21st century. It is a subset of dementia that slowly consumes the brain. One of the first things it strikes is memory. Despite the complexity of the disease, new ways to slow the progression of dementia show promise for the future.

Lessening Your Chance of Overdose

Regina Thompson, Psychology Major

In a heroin filled society, the effects of overdose have touched many of us. Drug overdose has become the leading cause of injury deaths in Indiana and 36 other states (Groppe, M. 2015, June 20). Although the media is reporting the casualties of drug overdose, no one is reporting ways to avoid drug overdose. A form of classical conditioning can help the addict survive his addiction until he can overcome his addiction and regain control of his or her life.

Personality Factors in Successful Online Learning

Alicia Hazelwood, Psychology Major

As technology is growing and expanding, our way of every day life is transforming. Specifically in education, online learning changes the role of a traditional classroom into an easily accessible home setting. With the amount of students taking courses online, we are beginning to study the differences between a traditional student and an online learner. I was interested in what makes an online learning student successful. There are several personality factors that are said to lead to successful online learning. Items such as self-efficacy, effective communication and self-regulation are all contributors the online learners success.

ORAL PRESENTATIONS

12:10 p.m.

Saving Our Mascot!

Jenilee Braun, **Biology Major**

When the name of a university is brought up, immediately images of the school's colors and sports teams come to mind. Also in that train of thought is the school mascot, the representative and embodiment of the spirit of the campus. But how much do we know about that mascot's real life counterpart? Is our campus aware about the issues that surround the red wolf? This presentation illustrates the red wolf both in its past and present struggles in the hopes of enlightening the campus.

12:20 p.m.

Weighted

Sarah Baxter, **English Major**

Weighted is a collection of rangy, associative, lyric poems that imitate the immediacy and disorder of domestic, personal, and political responsibility. These poems explore the inevitable moments of contention inherent in the interrelation of society and the individual, and they reveal the tumultuous nature of the poet's effort to find her place within a culture obsessed with wealth, violence, and identity.

12:30 p.m.

Frankenstein's Place in the Dichotomous Key of Monsters

Alexandra Estes, Biology Major

An important aspect to note about creative writing and fiction - in particular horror fiction - is that there are many ideas and concepts out there that can be strung together. Vampires, zombies, ghosts, and poltergeists are all monsters, but how do they compare to Frankenstein's monster? Using scientific principles of taxonomy, it is possible to create a phylogenetic tree of monsters. Creating this dichotomous key can show the similarities and differences that separate monsters. Collaboration between sciences and other fields, like this, is important because it brings opportunities to provide education and new patterns of thinking.

12:40 p.m.

From Innocence to Chaos: Child Soldiers

Jorge Perez, Business Major

From the innocence of childhood to the chaos of the battlefield. A glimpse into the world of child soldiers through the understanding of what makes a child soldier, an introduction to legal child soldiers and indoctrination methods, a global view of where child soldiers are currently found, and the analysis of a heavily child fought conflict.

12:50 p.m.

Burial Practices of Ancient Egypt

Jordan Pugh, Education Major

Over winter break, another student and I had the opportunity to travel to Egypt. We were able to explore and study various sites in multiple cities, gathering research on the burial practices, culture, and much more. Sydney Schumacher and I would like the opportunity to share our research with the rest of the university and hopefully spark some excitement over a topic we are enthusiastic about.

1:00 p.m.

Burial Practices of Ancient Egypt

Sydney Schumacher, History Major

My fellow classmate, Jordan Pugh, and I would love to present our findings from our recent trip to Egypt for our Student Research field experience. We would focus on the different burial practices preformed by the ancient Egyptians from the Old Kingdom up until the New Kingdom. We are very passionate about the research we did, and we would love to share our experiences and findings. It would be an honor to be a part of this day.

1:10 p.m.

RFID in 3D Modeled Part

Robert Revalee, Engineering Technology Major

For this project we chose to combine the technology of RFID tags and 3D modeling. We will be taking a near field RFID tag (13.56 MgHZ) and placing it in a mold made by 3D modeling. Near field RFID tags require a reader to be close to the tag. 3D modeling allows you to 3D print a prototype part to cut cost on time and money. By placing the tag in the mold this will allow an operator to read the tag to determine errors during the manufacturing process such as date of processing.

1:20 p.m.

Crouzon Syndrome

Emilee Thorne, Biology Major

Crouzon syndrome is a rare genetic disorder which is characterized by craniosynostosis. Craniosynostosis is caused by an overstimulation of the FGFR2 gene resulting in a premature skull fusion. This prematurity creates a disfigured head and face of the individual. Due to this disfigurement, individuals with the syndrome are affected in many areas including, visual, audible, respiratory, dental and in some cases mental. Medical advancements in treating craniosynostosis have allowed relief of these symptoms and the individuals affected a more normal life. Studying Crouzon syndrome allows a

better understanding of the FGFR2 gene mutation related to craniosynostosis and possible treatment options.

1:40 p.m.

To Be or Not to Be: Remediation of Composition Skill at the College Level

Patrice Finn, **English Major**

In a perfect world, nearly all students should come to college with the basic literacy skills needed to succeed but this is not always the case-which begs the question "Should colleges be held accountable for the students they admit due to lower admission standards, and if so what what should be done about it?" This lecture addresses whether remediation has a place at the college level, and if it does what are the best methodologies and practices for making these programs successful.

1:50 p.m.

The Excited State Dynamics of Adenine Tract, Part 2

Trevor Boram, **Biochemistry and Mathematics Major**

This research investigates how input of energy excites DNA, which will return to the ground state immediately, or initiate charge transfer, causing the DNA to degrade. This study was conducted using computational chemistry techniques to create a model of the dynamics of DNA over 100 nanoseconds, where frames of the simulations were analyzed for charge transfer. Our results initially indicated that charge transfer was not occurring between bases, but rather, within one base alone.

2:00 p.m.

Salt Responses in Arabidopsis Thaliana

Savannah Davis, Biochemistry Major

Gravity is one environmental stimulus that influences growth in plants by using gravitropic responses. The gravity response is stimulated by a plant hormone that promotes growth, known as Auxin. The different levels of salt determine the different levels of auxin, which then changes the numbers in lateral root growth. The main purpose of this research was to study how roots are affected by salt stress and if/how amyloplasts were affected by halotropism, the roots' response to salts. We observed curvature that showed that the salt affected the roots by reducing gravitropic responses as well as lowering the number of amyloplasts.

2:10 p.m.

Revealing Cellular Mechanisms Affected by Environmental Toxins and Novel Chemicals Using the Fruit Fly Model

Steven E. Hensley, Biochemistry Major

As the population across the globe continually rose, the ability to plant, grow, and harvest key crops became increasingly important, skyrocketing the use of insecticides and herbicides. Using Drosophila melanogaster (fruit fly), we examined the effects of specific agrochemicals on gene expression. Using state-of-the art molecular biology techniques, we scanned for changes in gene expression profile. The goal was to identify cellular mechanisms affected by environmental toxins by targeting actively feeding third instar larvae. Using Endosulfan as the chemical of choice we studied its impact on larvae at the cellular level and found correlations to human expression profiles.

2:20 p.m.

Clinical Applications of Essential Oils

Elizabeth Miller, Biochemistry Major

Essential oils can be used in a number of different applications as they can be inhaled, ingested, or directly applied to the skin. The question is, do essential oils possess strong enough antibacterial and antifungal properties alone, and in combination, to fight pathogenic bacteria as well, if not better, than the commonly prescribed antibiotics? The goal of this research is to go above and beyond prior research to prove qualitatively and quantitatively that select essential oils possess strong antimicrobial activity against a variety of bacteria and fungal infections for topical use and thus can be used for clinical application.

2:40 p.m.

Thoreau's Individualism and Ideal Society

Caleb Warner, English Major

My research seeks to understand, through the writings of Thoreau, the connection between the transcendentalist's work and the "American" identity of literature, especially when Thoreau is often seen as a paradoxical figure that contradicts supposed American values. During this past summer I visited Concord to examine not only the stomping grounds of Thoreau but also to take a closer look at Thoreau's papers, notes, and book collection. Through this research I have formed a clearer image of how Thoreau's individualistic attitudes helped form his often paradoxical ideas of humanity and American society.

2:50 p.m.

TBA

Ryan Wysong, English Major

TBA

Special Thanks

Special thanks to Dean Ross Alexander and the School of Humanities and Social Sciences for providing all of the food and beverages served today. 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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Judges Panel

Dr. Rosalie Aldrich, Assistant Professor of Health Communications
Lora Baldwin, Associate Librarian, IU East Library
Bill Engel, member of HSS Advisory board
Dr. Evette Loshek, Lecturer in Psychology
Oniffe Grizzle, Director of Institutional Research and Effectiveness, Academic Affairs
Dr. Kris Rees, Assistant Professor of History
Dr. Natalia Rybas, Associate Professor of Speech Communication Studies
Donna Spears, Real Estate Professional, Lingle Real Estate

Council Members

Ange Cooksey - Chair, Philosophy, HSS
Amber Hall - Administrative Assistant, Academic Affairs
Dr. Renee Kauffman - Assistant Professor of Speech Communications
Ann Kim - Assistant Professor of Art
Dr. Amanda Kraha - Assistant Professor of Psychology
Sue McFadden - University Library
Tanya Perkins - Lecturer in English
Ed Thornburg - Senior Lecturer in Art and Curator, Art Museum