High-PURCS 2014

HIGH POINT UNIVERSITY RESEARCH AND CREATIVITY SYMPOSIUM

URCW
HIGH POINT UNIVERSITY

Welcome from the **Director of Undergraduate Research and Creative Works**

Welcome to the 2nd High Point University Research and Creativity Symposium (High-PURCS). High Point University is an institution which fosters intellectual and creative scholarship through student engagement and student-faculty collaboration. Our students do significant work mentored by faculty and regularly share their intellectual and creative contributions in their disciplines at professional national and regional conferences. However, High-PURCS is an opportunity for students to showcase their work here on campus so HPU students, faculty, and staff can witness our students' professional development and gain a glimpse of tomorrow's future leaders, artists, scientists, teachers, and scholars. At this 2nd symposium, we have 95 students mentored by 47 faculty from 16 departments showcasing 81 presentations. Our students' achievement is a reflection of HPU's holistic learning approach and the dedication of caring faculty. Thank you for being part of the 2014 High Point University Research and Creativity Symposium.

Dr. Joanne Altman
Director, Undergraduate Research and Creative Works

The 2nd High Point University Research and Creativity Symposium

(High-PURCS)

| April 24, 2014 |

1:45 pm	Welcome and Opening Remarks Phillips Hall Room 120
2:00-2:55 pm	Oral Session I and Theatre Performances Phillips Hall
3:00-3:55 pm	Oral Session II Phillips Hall
3:45-5:00 pm	Poster Session and Reception Slane Basketball Court

High-PURCS Schedule

1:45-1:55pm Opening Remarks from Dr. Dennis Carroll -Phillips Hall, Room 120

Oral Session 1

2:00-2:55 pm, Phillips Hall

	Room 215	Room 216	Room 217	Room 218	Room 220	Room 221	Room 222	Room 120
	Art	**Physics and Health Sciences**	**English**	**Animal and Consumer Behavior**	**Education**	**History I**	**History II**	**Theatre** (2:00-2:30)
2:00-2:15	Alexandra Glasure	Stephen Vultaggio	James Kizer	Kylie Foster	Kayla Dolan	Sam Mjalli	Lake Slabach	Courtney Feiman & Joshua Stein, Jamison Meyer, Nina Yasick, Rachel Garrett
2:20-2:35	Molly O'Keeffe	Allison Arpante	Devan Plyler	Katelyn Long, Jacqueline Simpson	Alyssa Springer	Elizabeth Fiddyment	James Walls	
2:40-2:55		Andrea Baellow	Alexandra Love	Zachary Molan		Ashley Quinn Hagen	Richard Warren	

Oral Session 2

3:00-3:55 pm, Phillips Hall

	Room 215	Room 216	Room 217	Room 218	Room 220	Room 221	Room 222
	Computer Science	**Athletic Training**	**English**	**Psychology**	**Spanish**	**History I**	**History II**
3:00-3:15	Thomas Langford & Christian Weigandt	Brenn Bolding	Shannon Curley	Jessica Coble	Morgan Falls	Ethan Winter	Rebecca Woodley-Oliver
3:20-3:35	Nick Zayatz & David Naylor	Jennifer Keith	Ashley Russell	Cameron Griffin	Stacie Sampson	Marcella Gibson	Shane Keene
3:40-3:55							Alex Palmer

Poster Session with Reception - Slane Basketball Court, 3:45-5:00 pm

Poster Session- 3:45-5:00 pm

Poster Slot	Name	Topic
1	Robert Rivera & Haley Ruehle	Education
2	Tayla Curran	English
3	Michelle Tarangelo	English
4	Carl Rugato, Alexandra Mauch, Matt McKone, & Chloe Kunar	Theatre
5	Jaimie Bartlett	Psychology
6	Emmie Doherty	Psychology
7	Elizabeth Ezzell	Psychology
8	Cameron Griffin	Psychology
9	Alex Ortowski	Psychology
10	Jacklyn Tonkovich, Kaila Tuccio, & Lindsey Anuzis	Psychology
11	Carlisa Warner	Psychology
12	Kathleen Kelley	Criminal Justice
13	Ryann Quigley	Criminal Justice
14	Andrea Perreault	Mathematics
15	Stephanie Pettit & Ben May	Mathematics
16	Anna Katherine Barker	Physical Therapy
17	Lauren Blackwell	Physical Therapy
18	Katherine Hahn	Physical Therapy
19	Lauren Terry	Physical Therapy
20	Stephen Walser	Physical Therapy
21	Paige Ward	Physical Therapy
22	Taylor Wimbish	Physical Therapy
23	Leah Anne Wirfel	Physical Therapy
24	Lindsay Jessy Brooks	Biology
25	William Fravel	Biology
26	Amanda Garrison	Biology
27	Alexander Hart	Biology
28	Haley Hegedus	Biology
29	Alyssa Heisler & Jasmine Jordan	Biology
30	Alexandra Louk	Biology
31	Chase Manuel	Biology
32	Danielle Miller	Biology
33	Kelsey Ortiz	Biology
34	Taylor Patzwahl	Biology
35	Jennifer Silk	Biology
36	Kim Winiker & John Vitello	Biology
37	Andrew Bosio	Chemistry
38	Caitlin Ferguson	Chemistry
39	Brea Hampton	Chemistry
40	Jennifer Pearson & Miranda Zupp	Chemistry
41	Jacob Brooks	Physics
42	Amiras Simeonides & Junjie Liao	Physics
43	Mia LeNoir	Interior Design

Oral Presentations

Oral Session I

(2:00pm – 2:55pm)
* Denotes Students Presenting

Art

Phillips 215

2:00- 2:15
Can You See Me Now?
Alexandra M. Glasure*
Mentor: Dr. Anna Piperato, Art & Design

This research will focus on how restrictive definitions of gender regulated artistic opportunities for 16th- and 17th- century women, and how, despite centuries of "progress," women face similar constraints today, notable in contemporary society's objectification of women in art and media and the trail-blazing responses from female street artists.

2:20-2:35
Gallery Show 101
Molly O'Keeffe*
Mentor: Ms. Benita VanWinkle, Art & Design

For the past two years I have had the incredible opportunity of photographing villages in the jungle of Guatemala as an aspiring photojournalist. For my presentation I intend to take the audience through my journey of learning how to present my photographs professionally in my first gallery show.

Physics and Health Sciences

Phillips 216

2:00-2:15
A Survey for Pulsating Hot Subdwarf Stars with SKYNET
Stephen Vultaggio* and Brad Barlow
Mentor: Dr. Brad Barlow, Physics

Hot subdwarf stars are one of the least understood stages of stellar evolution. Some show pulsations that help reveal their structure and future evolution. We are currently monitoring several subdwarfs with robotic telescopes in Chile to discover new variable stars. Here we present the new variables that we have found.

2:20-2:35
Reaction Time is Impaired on Large, but Not Small, Visual Field Activities in Athletes with a Self-Reported History of Concussion
Allison Arpante*, James M. Smoliga, Christina Giusto, Anh-Dung Nguyen and Kevin R. Ford
Mentor: Dr. Kevin Ford, Physical Therapy

Testing protocols used for baseline concussion screening and post-injury neurocognitive status utilize paper and computer methods that require focus on a small visual field. However, these tests may not be ecologically valid, given that many athletic tasks require athletes to respond to stimuli within a large visual field.

2:40-2:55
Landing Kinematics Differ Between Adolescents with High and Low Values of Asymmetrical Unilateral Hip Rotation
Andrea L. Baellow*, Michelle C. Boling, Lindsay J. DiStefano, Kate R. Pfile, and Yum Nguyen
Mentor: Dr. Yum Nguyen, Athletic Training

The purpose of this study was to compare lower extremity kinematics during landing in adolescent athletes with different magnitudes of asymmetries in hip range of motion. The findings suggest that adolescents with a more inwardly rotated femur land with hip and knee motions that increase the risk of knee injuries.

English
Phillips 217

2:00-2:15
Queer Cyberactivism and its Influence on North Carolina's Amendment One
James Kizer*
Mentor: Dr. Jenn Brandt, Women's and Gender Studies

This paper explores how social media activism influenced the debate surrounding North Carolina's Amendment One legislation due to its innovative rhetorical approach. I also propose that cyberactivism and traditional feminist activism are interdependent, arguing that both forms are required to create social change.

2:20-2:35
Virginia Woolf's Androgynous Ideal: The Procreative Mind in Mrs. Dalloway
Devan Plyler*
Mentor: Dr. Matthew Carlson, English

This study of Virginia Woolf gives attention to Woolf's interest in androgyny. It gives specific focus to Woolf's treatment of androgyny as a form of self-actualization and as a transcendence of subjective ego, which enables artistic characters to better imagine variant subjective conditions in their artistry.

2:40-2:55
Gender Roles and Stereotypes in Beauty and The Beast
Alexandra Love*
Mentor: Dr. Laura Linker, English

Angela Carter's "The Courtship of Mr. Lyon" and "The Tiger's Bride" are both a mastery of gender and sexuality. She demands attention to the female voice and gives them active subjectivity within the narrative versus the passive subjectivity of Madame De Beaumont's Beauty in Beauty and the Beast.

Animal and Consumer Behavior
Phillips 218

2:00-2:15
The Effect of Canine Personality on Pet Recovery from Anesthesia
Kylie Foster*, Dr. Joanne D. Altman, and Haley Hegedus
Mentor: Dr. Joanne D. Altman, URCW

Research shows personality factors influence wellness in humans. This study examined the connection between personality and wellness in an animal species that has validated personality measures. Specifically, this study investigated the effect dogs' personalities had on recovery from wellness surgery. We will discuss two personality factors that influenced recovery.

2:20-2:35
A Review of the Comparative Study of Human and Non-human Cognitive Ability
Katelyn Long*, Jacqueline Simpson*, and Dr. Joanne D. Altman
Mentor: Dr. Joanne D. Altman, URCW

Comparative psychologists investigate cognitive capabilities of human vs. non-human animals. Some cognitive capacities are common across species, but as tasks get more complex, fewer species are able to perform them. This presentation will review the animal cognition literature to determine if there are competencies that distinguish human from non-human animals.

2:40-2:55
Store Atmospherics
Zachary E. Molan*
Mentor: Dr. Cynthia B. Hanson, Marketing

This research describes the elements of store atmospherics and their impact on consumer behavior and store performance, then presents the results of a survey of 100 college students that examines their attitudes and preferences with respect to eight different elements of atmospherics.

Education
Phillips 220

2:00-2:15
Utilizing A RtI Service Learning Program to Train Pre-Service Teachers
Kayla Dolan*
Mentor: Dr. Sarah Vess, Education

This study examines the efficacy of four versions of a pilot program that aims to provide practical experience with Response to Intervention for pre-service teachers. A comparison will be made from field experiences with a classroom teacher versus field experiences with school psychologists and a curriculum facilitator.

2:20-2:35
A Globalized Education: A Comparative Study of the International Baccalaureate and Common Core State Standards Systems
Alyssa Springer*
Mentor: Dr. Leslie Cavendish, Education

The focus of this presentation is to examine reading standards of the International Baccalaureate Program and the United States Common Core State Standards. Examining the two more closely, there are notable differences and similarities that can inform curriculum building in schools aiming to be internationally benchmarked and globally competitive.

History I
Phillips 221

2:00-2:15
Employment Law and Lochner: The Legal Tale of an Evolving Society
Sam Mjalli*
Mentor: Dr. Paul Ringel, History

During the cases and years framing the infamous 'Lochner Era' of the early 20th Century, the decisions of the U.S. Supreme Court—informed by popular, political sentiment, practical economic necessity, and invariable institutional realities—laid the foundations of a debate that rages on to this very day

2:20-2:35
The Supreme Court and the Reconstruction Amendments
Elizabeth Fiddyment*
Mentor: Dr. Paul Ringel, History

The end of the Civil War ushered in a unique time period in American in which the south submitted to federal oversight. This era of Reconstruction began the expansion of civil rights, but with resistance. This can be seen in cases brought before the Supreme Court from the Southern states.

2:40-2:55
The Secret Stimulants: The U.S. vs. Coca-Cola's Impact on The Food and Drug Act of 1906
Ashley Quinn Hagen*
Mentor: Dr. Paul Ringel, History

In a time of morphine, cocaine, and heroin consumption as the norm in treatment of minor ailments, it was the iconic beverage of Coca-Cola's addition of caffeine that led to the true definition and abilities of the Pure Food and Drug Act of 1906.

History II
Phillips 222

2:00-2:15
Capital Punishment in the United States
Lake Slabach*
Mentor: Dr. Paul Ringel, History

The 1970's were a time period of great change in American history, and American Courts' stance on the death penalty was not immune to these changes. Furman v. Georgia and Gregg v. Georgia flipped the United States stance on capital punishment twice in a matter of 4 years. This change can be attributed to increased awareness of legal prejudices against African Americans.

2:20-2:35
The Destruction of Standard Oil and the Rise of Antitrust
James Walls*
Mentor: Dr. Paul Ringel, History

By analyzing the Sherman Act of 1890 and court proceedings that lead to the landmark decision of the Supreme Court to breakup of our countries' largest corporation, I will try to gain an understanding of the harm monopolies could cause to the U.S. economy and the federal government's ability to guard against these restrictions.

2:40-2:55
From Acceptable to Atrocious: The Evolution of North Carolina Domestic Violence Law
Richard Warren*
Mentor: Dr. Paul Ringel, History

Domestic violence law in North Carolina has evolved over the past 150 years to adapt to the cultural shifts and changing ideological beliefs of society. Since 1864, the role of women in North Carolina society has progressed dramatically; this progression demanded new protections for women under the law.

Theatre 2:00-2:30pm
Phillips 120

Kennedy Center American College Theatre Festival
Courtney Feiman* and Joshua Stein*
Mentor: Mr. Jay Putnam, Theatre

The Kennedy Center American College Theatre Festival is a series of competitions between universities to display their student's works. Two members from a school's production are nominated to attend the competition. The nominees are to select a scene partner and prepare a performance package. This includes a three-minute scene, a two-minute scene, and a one-minute monologue.

Kennedy Center American College Theatre Festival's Stage Management Fellowship
Rachel Garrett*
Mentor: Mr. Matthew Emerson, Theatre

Nominated for my work as the stage manager for *Picnic* and *Into the Woods*, I was assigned as the Production Stage Manager for the 10 Minute Play Festival at KC/ACTF. As a result of the work I presented, the interview process, and my assignment at the festival, I won the KC/ACTF National Stage Management Fellowship.

ACTF SDC Directing Fellowship Program
Jamison Meyer*
Mentor: Mr. Jay Putnam, Theatre

When Jamison Meyer was selected for the KCACTF SDC fellowship, he was given a list of scenes to choose from to cast and direct at High Point. He took that production to Virginia to the KCACTF Region IV conference where he competed in three rounds, preliminary, interview, and final performance.

"The What-Ifs That We Carry"
Nina Yasick*, DeAnna Hughes, Ashlee (Tree) Branch, Madison Jordan, and Chaz Duffy
Mentor: Mr. Jay Putnam, Theatre

An ensemble of five collaborated throughout an intense rehearsal process to create a twenty minute DEVISED theatre piece. The piece was completely original and was inspired by the festival prompt, "I'm Like You, I'm Not Like You." The students performed their work at the American College Theatre Festival Region IV in February 2014.

Oral Session II

(3:00pm – 3:55pm)

Computer Sciences

Phillips 215

3:00-3:15
Why MC Hammer Could Never be a Computer Scientist: Because You CAN Touch This: Building a Touchscreen Computer
Thomas Langford* and Christian Weigandt*
Mentor: Mr. Roger Shore, Mathematics

We will present our work on building a touchscreen table. Our presentation will cover the full development cycle, from creating the hardware specifications, to the construction of the table, to the development of the software that allows interaction with users.

3:20-3:35
Is Democracy a Total Train Wreck? An Exploration of Voting Anomalies in Real World Data
Nick Zayatz* and David Naylor*
Mentor: Dr. Adam Graham-Squire, Mathematics

In the Voting Theory mathematical research area, it has been proven mathematically that the Instant Runoff Voting (IRV) method violates criteria necessary for a fair vote. We have created software to compare voting systems such as Plurality, Pairwise Comparison, Borda Count, and IRV methods and check for anomalies in each.

Athletic Training

Phillips 216

3:00-3:15
Computerized Neurocognitive Performance Does Not Reflect Gross Visual-Motor Function During Concussion Baseline Assessments
Brenn A. Bolding*, Kevin R. Ford, James M. Smoliga, and Yum Nguyen
Mentor: Dr. Yum Nguyen, Athletic Training

The purpose of this study was to examine the relation between concussion baseline performance using a computerized neurocognitive testing method and a gross visual-motor testing method in collegiate athletes. The findings suggest that the addition of gross visual-motor assessments should be considered in the management of sport-related concussions.

3:20-3:35
Asymmetry in a Functional Hop Test Effectively Identifies Differences in Landing Kinematics
Jennifer Keith*, Kevin Ford, Taylor Wimbish, and Yum Nguyen
Mentor: Dr. Yum Nguyen, Athletic Training

Asymmetry in neuromuscular control of the lower extremity has been shown to result in asymmetrical landing patterns, which may increase the risk of ACL injuries. While functional hop tests are used to assess asymmetries, it's unknown whether asymmetries during functional hop tests result in different landing patterns during dynamic tasks.

English
Phillips 217

3:00-3:15
Dead Man Walking: Provoking Audiences to Reconsider the Legal and Moral Implications of the Death Penalty through Film Narrative
Shannon Curley*
Mentor: Dr. Donna Scheidt, English

Through its use of dialectical disorientation, the film Dead Man Walking challenges beliefs about the legality and morality of the death penalty, forcing viewers to reach individual conclusions regarding both the events in the film and in the legal system, and the relationship of both to legal and moral justice.

3:20-3:35
Face-To-Face With Technology
Ashley Russell*
Mentor: Dr. Cara Kozma, English

Based on my extensive research and observations on the High Point University campus and interviews with students, I believe and argue that technology is harming our face-to-face interaction with one another because people depend on technology to enhance conversations or use it to avoid uncomfortable situations.

Psychology
Phillips 2218

3:00-3:15
The Effects of Group Characteristic and Ostracism on Prosocial Behavior
Jessica Coble*
Mentor: Dr. Deborah Danzis, Psychology

Many studies have found mixed results concerning the impact ostracism has on prosocial behavior. We will examine the moderating effect group characteristic has on the likelihood of ostracized individuals completing prosocial behaviors.

3:20-3:35
Adjustment to College in Only-Children and Children with Siblings
Cameron Griffin*
Mentor: Dr. Deborah Danzis, Psychology

Many studies paint a bleak portrait of an only-child that has very few close relationships and is depressed, stressed, and homesick. We will examine potential differences between only-children and children with siblings as well as gender differences and how they may relate to depression, stress, homesickness, and developing friendships

Spanish
Phillips 220

3:00-3:15
Tres Lucías, Una Nación: La Importancia de una Identidad Cubana
Morgan Falls*
Mentor: Dr. Adam Winkel, Spanish Modern Foreign Language

The author examines the representation of nationalism in the Cuban film *Lucía* (1968) in order to demonstrate that the resurgence of a national identity was key in creating unity among the Cuban people at the during the early years of Fidel Castro's regime. *This presentation will be in Spanish.*

3:20-3:35
El Despertar de las Mujeres en la Guerra Civil de El Salvador
Stacie Sampson*
Mentor: Dr. Adam Winkel, Spanish Modern Foreign Language

In this paper, I study the representation of women and of socioeconomic difference in "Despierta, Mi Bien, Despierta" by Claribel Alegría, in order to examine the use of literature in El Salvador during their civil war. *This presentation will be in Spanish.*

History I
Phillips 221

3:00-3:15
The Curt Flood Case and the Birth Of Modern Free-Agency In Major League Baseball
Ethan Winter*
Mentor: Dr. Paul Ringel, History

This research will explore how and why modern free agency started in Major League Baseball and how the Curt Flood Case was the catalyst and the driving force behind the start of modern free agency.

3:20-3:35
Something Cool about Vincente Minnelli
Marcella Gibson*
Mentor: Dr. Paul Ringel, History

Vincente Minnelli's legacy has lasted through the decades. The art and beauty of his films, the seamless integration of music and plot, and the twisted beauty of the juxtaposition of despair and humor in his work, have all left a lasting impression on the film industry today.

History II
Phillips 222

3:00-3:15
Japanese Internment During World War II And Civil Rights
Rebecca Woodley-Oliver*
Mentor: Dr. Paul Ringel, History

Japanese Internment in the United States during World War II is an often forgotten piece of American history but was key in civil rights legislation of the time. This period had large implications for the United States, both legally and morally, as well as for civil rights.

3:20-3:35
Desegregation of Little Rock Central High School
Shane Keene*
Mentor: Dr. Paul Ringel, History

After the Brown v. Board case, Governor Faubus called the National Guard to prevent nine black students to enter the Little Rock Central High School. The Cooper v. Aaron case later declared Government officials are bound to comply with Supreme Court rulings based on what they think is constitutional.

3:40-3:55
American Slave Cases from 1818-1860
Alex Palmer*
Mentor: Dr. Paul Ringel, History

Slavery has long been a stain upon the history of the United States. Through this paper I will explore the reasons behind changing legal opinions on slavery through both state and Supreme Court cases and how society affected their outcome. This analysis will prove that slavery was a controversial issue that depended upon a number of social factors outside the legal realm from 1818-1860.

Poster Presentations

Slane Basketball Court

3:45pm-5:00pm

* Denotes Students Presenting

Education

(1) ***Technology in the Gym: Using Wii to Teach Bowling Skills***
Rob Rivera*, Haley Ruehle*, Martie Bell, Amber Hoots, and Rob Warrick
Mentor: Dr. Martie Bell, Education

Wii bowling is a popular way to expose and teach the game to children. This presentation will focus on a second study that compared the traditional method to the Wii for teaching bowling skills. It will include an overview of the study's methods results, and implications for teaching.

English

(2) ***The Healing Power of Narrative Medicine: Aiding Adults in Aging Creatively***
Tayla Curran*
Mentor: Ms. Allison Walker, English

HPU LifeLines serves as an integrated approach to healing through narrative medicine and allows students to gain an understanding that every individual's illness tells a story. The effects on both the students and the participants are intertwined, and the story of one cannot be told without incorporating the other.

(3) ***The Legal World of Moll Flanders: Crime and Deviance in The Eighteenth Century.***
Michelle Tarangelo*
Mentor: Dr. Laura Linker, English

This project re-examines criminality in Daniel Defoe's *Moll Flanders* by employing two theories: Neutralization and Anomie. These theories allow us to see Moll's social deviance in the context of eighteenth-century normative standards.

Theatre

(4) ***United States Institute for Theatre Technology, Technology Olympics***
Carl Rugato*, Matthew McKone*, Alexandra Mauch* and Chloe Kunar*.
Mentor: Ms. Ami Shupe, Theatre

Members of The High Point University, Student Chapter of USITT (United States Institute for Theatre Technology,) will be competing this March against many other national schools, in Fort Worth Texas, at the Annual Tech. Olympics. These events will challenge the students, putting all of their skills to the test.

Psychology

(5) ***The Role Of Personality In The Propensity To Deceive For Extrinsic/Intrinsic Reward***
Jaimie Bartlett*
Mentor: Dr. Kelly Curtis, Psychology

This study examines the relationships among personality traits, psychopathy (egocentricity, callousness, and antisocial behaviors) and a person's willingness to engage in dishonest behavior. This research also investigates whether different relationships emerge between specific personality traits and willingness to lie depending on the type of reward possible (intrinsic vs. extrinsic).

(6) ***Rekindling: The Effects of Risk Regulation and Need to Belong***
Emmaline Doherty*
Mentor: Dr. Sadie Leder Elder, Psychology

The current research examines the psychological models of risk regulation and need to belong in order to seek an understanding of how the theories work together to drive a person to rekindle a previously abandoned romantic relationship.

(7) ***Reducing Stigma for Mental Illness***
Elizabeth Ezzell*
Mentor: Dr. Deborah Danzis, Psychology

This study looked at the methods of reducing the publics' stigmatized views of mental illnesses, especially in perceptions of dangerousness that result in a desire for social distance. Research indicates videos and emotional messages are effective means of reducing stigma.

(8) ***Identifying Distinctions in Covert and Overt Narcissism: Links to Language Use, Self-Esteem, and Gender Differences***
Cameron Griffin*, Katerina Andrews, and Michael Dudley
Mentor: Dr. Jana Spain, Psychology

In an attempt to understand differences between two types of narcissism, we examined differences in the self-esteem and language use of covert and overt narcissists. We also expected to find gender differences in the use of certain word groups for these narcissism types. Implications of these results are discussed.

(9) ***Risk Regulation and Destiny vs. Growth Beliefs***
Alex Ortowski*
Mentor: Dr. Sadie Leder Elder, Psychology

This current work examines the relationship between risk regulation and the endorsement of destiny vs. growth beliefs within the context of romantic relationships.

(10) ***Parenting Connections to College Students and Their Academic Entitlement***
Lindsey Anuzis*, Jackie Tonkovich*, and Kaila Tuccio*
Mentor: Dr. Kirsten Li-Barber, Psychology

This study examined the relationship between Academic Entitlement (AE), parental care and personality factors among college students. Gender differences were observed in relation to AE. There was a strong relationship between fathers and children in terms of over-involvement and its positive correlation with particular AE factors.

(11) ***The Influence of Testing on Memory in Elementary School Children***
Carlisa Warner* and Lydia Monteiro
Mentor: Dr. Stacy Lipowski, Psychology

Research with children has shown that test plus restudy benefits memory more than restudy alone after a five minute delay. One goal of this experiment was to examine whether this benefit was even greater after a one week delay. A secondary goal was to examine explanations for this testing effect.

Criminal Justice

(12) ***Operationalizing Attempted Mass Murder***
Kathleen Kelley*
Mentor: Dr. Heather Ahn-Redding, Criminal Justice

The poster seeks to re-examine the traditional definition of mass murder by expanding it to include instances the intent to take at least three lives was evident. This research strives to achieve a clearer picture of the demographics of attempted and completed mass murderers are and the methods they use.

(13) ***Internet Hacktivism: Is it Worth the Effort?***
Ryann Quigley* and Dr. Scott Ingram
Mentor: Dr. R. Scott Ingram, Criminal Justice

Anonymous is the most well-known hactivist group, having claimed responsibility for cyber-attacks on both government and private companies. We conducted a case study to examine the attacks by Anonymous. We gathered information, analyzed their attacks and determine how successful they are.

Mathematics

(14) ***Steady State Dopamine in a Single Neuron***
Andrea Perreault*
Mentor: Dr. Erica Zuhr, Mathematics

Dopamine is a tyrosine-derived neurotransmitter. It plays a part in crucial functions such as cognition, regulation, and movement. This presentation will discuss a mathematical model of differential equations that explains the vesicular dopamine in a single neuron and how it is converted between vesicular and cytosolic dopamine.

(15) ***Emmy Noether Contributions as a Mathematician and Physicist***
Benjamin May* and Stephanie Pettit*
Mentor: Dr. Karen O'Hara, Mathematics

Emmy Noether has made considerable contributions to mathematics and physics through her research and theorems. By analyzing her life and work, we provide an in-depth look at developing theorems and making mathematical discoveries as well as look into the expansions that have been made beyond her work and describe how they affect mathematics today.

Physical Therapy

(16) ***The Effects of Neurocognitive Visual Reaction Training on Division I Athletes***
Anna Katherine Barker*
Mentor: Dr. Kevin Ford, Physical Therapy

Neurocognitive visual reaction training has been shown to improve athletic performance. The purpose of this study was to determine the effects of NVRT on reaction time and coordination. The intervention group significantly improved from their pre-test to post-test on the neurocognitive board while the control group did not show improvements.

(17) ***Do Track and Field Athletes Competing in Events with Asymmetric Movements Have Bilateral Differences in Hip Bone Mineral Density?***
Lauren Blackwell*
Mentor: Dr. James Smoliga, Physical Therapy

This study sought to determine whether track and field athletes competing in events with asymmetric loading had asymmetric bone mineral density. The results showed that there were no significant differences in bone mineral density for track and field athletes who competed in events with asymmetric loading.

(18)***Arch Height Index is Related to Peak Ground Reaction Force and Impulse During Maximal Sprinting***
Katherine A. Hahn,* Kevin R. Ford, Curry Williams, Chip Wintringham, and James M. Smoliga
Mentor: Dr. Kevin Ford, Physical Therapy

A greater arch height index is associated with decreased impulse and increased peak vertical ground reaction force. These results suggest that foot structure and function may be related to risk of lower extremity fraction.

(19) ***The Effectiveness Of Injury Prevention Programs In Reducing Lower Extremity Injury Risk In Basketball Players: A Systematic Review and Meta-analysis***
Lauren Terry*
Mentor: Dr. Jeffrey Taylor, Physical Therapy

The effectiveness of lower extremity injury prevention programs in basketball is unclear. Therefore, a systematic review was performed to analyze the effectiveness of these programs in reducing injury risk. Overall, prevention programs have not reduced injury risk, yet there is evidence that neuromuscular training may be beneficial.

(20) ***Reliability Of Knee Joint Threshold To Detect Passive Motion Across Multiple Angles And Angular Velocities***
Stephen Walser* and James Smoliga
Mentor: Dr. James Smoliga, Physical Therapy

This experiment was conducted to determine the reliability of knee flexion-extension threshold to detect passive motion (TDPM) across multiple joint angles and angular velocities. Our results suggest one familiarization session may enhance the reliability of TDPM and, in addition, demonstrate angular velocities below ¼ $°s^{-1}$ may be the most reliable.

(21) ***Comparison of Lower Extremity Landing Biomechanics of Collegiate Basketball and Soccer Players***
Paige Ward*
Mentor: Dr. Jeffrey Taylor, Physical Therapy

Anterior cruciate ligament injuries are prevalent in women's soccer (WSOC) and basketball (WBB) players, yet prevention programs reduce risk more effectively in WSOC than WBB. This study examined differences in landing biomechanics of collegiate WSOC and WBB players, with results indicating that the athletes exhibit similar biomechanical movement patterns.

(22) ***Hip Strategy During Landing Reduces Knee Abduction Moment in Collegiate Soccer Players***
Taylor Wimbish*
Mentor: Dr. Kevin Ford, Physical Therapy

Females have lower external hip flexion moment than males indicating that males tend to favor a hip strategy during landing. This may contribute to why females have a significantly higher incidence rate for non-contact anterior cruciate ligament (ACL) injuries than males. Understanding how differences in landing strategies influence biomechanics may help us better understand the risk factors for injury. We found that athletes that preferentially utilize a hip strategy during landing have lower knee abduction moments during DVJ. Targeting the hip extensor muscles, specifically the hamstrings and the gluteal muscle groups, may be useful in reducing risk of non-contact ACL injuries.

(23) ***Effects of Body Weight Unloading On In-Shoe Forces During Treadmill Running***
Leah Anne Wirfel*, James M. Smoliga, Danielle Paul, and Kevin R. Ford
Mentor: Dr. Kevin Ford, Physical Therapy

Our aim of this study was to determine if running at altered body weight percentages on PPT modifies in-shoe loading at three typical training speeds. A linear relationship was found between an increase in percent body weight and increased in-shoe maximum force and force-time integral.

Biology

(24) ***Bioaccumulation of Total Mercury in Wilson's Snipe (Gallinago delicata) from Alabama***
Lindsay Jessy Brooks*, Joshua W. Campbell, and Julie Murphy
Mentor: Dr. Josh Campbell, Biology

Mercury is a persistent toxic heavy metal that can bioaccumulate in birds causing diseases and other health problems. We tested Wilson's snipe (*Gallinago delicata*) feathers and muscle tissue for total mercury to determine whether Hg bioaccumulation could occur within this aquatic invertebrate predator.

(25) ***Thermogenic Effects of Anthocyanin Pigments in Evergreen Leaves***
W. Scotty Fravel*
Mentor: Dr. Nicole Hughes, Biology

We quantified the effects of environmental conditions on leaf temperature in similarly-sized red (anthocyanic) and green (acyanic) leaves of the evergreen herb, *Galax urceolata*. We demonstrate that anthocyanin pigments can significantly increase leaf temperatures, especially for large, non-transpiring leaves, and under low wind, high light conditions.

(26) ***Populational Investigation of Spider-lilies Distributed in the Atlantic Coastal Plain***
Amanda Garrison* and Gerald Smith
Mentor: Dr. Gerald Smith, Biology

Hymenocallis crassifolia Herb. and *H. pygmaea* Traub occur in the Atlantic Coastal Plain. Some taxonomists are of the opinion that *H. pygmaea* should only be recognized as an ecotype of *H. crassifolia*. We did a phylogenetic gene analysis of several populations of each species to help clarify the relationship between them. Our results support separate species status.

(27)***Phylogenetic Investigation Of Selected Species In* Habranthus *And* Zephyranthes**
Alex Hart* and Gerald Smith
Mentor: Dr. Gerald Smith, Biology

The taxonomic status of the rain-lilies in *Habranthus* and *Zephyranthes* is problematic. We conducted a phylogenetic gene analysis that indicates the distinctiveness of each genus. Additionally, we observed that *Zephyranthes* separates into a US southeastern clade and a Mexican clade and that each clade shows a sister relationship to *Habranthus*.

(28) ***Pollinator and Beneficial Insect Abundance and Diversity in Four Different Biofuel Treatments***
Haley Hegedus*, Joshua W. Campbell, and James Martin
Mentor: Dr. Josh Campbell, Biology

Despite the current prevalence of corn as a biofuel crop, pollinating insects rarely utilize corn fields. However, several types of grasses show potential as surrogates to corn and may encourage greater pollinator diversity. The effects on pollinator abundance and diversity in four different treatments of potential biofuel crops were examined.

(29) ***Effects of Regional Cloud Patterns on Microclimate and Shoot-level Photosynthetic Gas Exchange in Picea engelmannii and Abies lasiocarpa at Treeline, Medicine Bow Mountains, Wyoming, USA***
Alyssa A. Heisler*, Jasmine N. Jordan*, David K. Cook, and W. Scotty Fravel
Mentor: Dr. Nicole Hughes, Biology

The objective of this study was to quantify the effects of endemic cloud regimes on microclimate, plant water stress, and photosynthetic gas exchange in saplings of two conifer species at treeline, *Picea engelmannii* and *Abies lasiocarpa*.

(30) ***Triclosan's Estrogenic Effect on Early Zebra Fish Development***
Alexandra Louk*
Mentor: Dr. Neil Coffield, Biology

Triclosan is an antimicrobial commonly found in a variety of products including shampoos, cosmetics, trash bags, hand toothpaste, and hand lotion. Due to its widespread consumer use, increased concentrations of Triclosan has been found in lakes, streams, and municipal water sources, The goal of our research is to determine whether increasing levels of Triclosan exposure during vertebrate development can affect embryo survival and bone calcification.

(31) ***Determining if Alternative "Green" Cleaners are Effective Measures to Inhibit MRSA Growth***
Chase Manuel*
Mentor: Dr. Dinene Crater, Biology

To determine if homemade "green" cleaners were effective against bacteria, a select recipe was used using the disc diffusion method. Preliminary evidence showed susceptibility against *Staphylococcus aureus* and further testing was completed to see which properties were effective against *S. aureus* and MRSA.

(32) ***Potential Estrogenic Effect of Epigallocatechin Gallate's on Early Zebra Fish Development***
Danielle Miller*
Mentor: Dr. Neil Coffield, Biology

Epigallocatechin Gallate (ECGC), a substance found in green tea is correlated with increased bone calcification and a decrease in the effects of osteoporosis in women. We are particularly interested in any changes induced by ECGC that alter embryo survival rates and bone calcification during early vertebrate development.

(33) ***A Record Of Ecological/Anthropological Change From Bat Guano Deposits In Fern Cave, Jackson County-Alabama***
Kelsey B. Ortiz*, Joshua W. Campbell, Matthew N. Waters, and Frederick Rich
Mentor: Dr. Josh Campbell, Biology

Bat guano can accumulate in caves resulting in a stratigraphic record that may record anthropological/ecological change. Southeastern bats forage for insects and their feces build up beneath their roosting areas. A 104 cm bat guano core was taken from Fern Cave National Wildlife Refuge near Paint Rock, Alabama.

(34) ***Pollinating and Beneficial Insects Within Four Treatments of Switchgrass and Pine***
Taylor Patzwahl*, Joshua Campbell, and James Martin
Mentor: Dr. Josh Campbell, Biology

Biofuel crops have been increasingly utilized as sources of ethanol in recent years. We examined pollinating and other beneficial insect communities within different types of biofuel crops. Our goal was to determine if certain biofuel treatments were more ecologically friendly compared to other treatments.

(35) ***Resveratrol's Estrogenic Effect on Early Zebra Fish Development***
Jennifer Silk*
Mentor: Dr. Neil Coffield, Biology

Resveratrol is thought to be an estrogenic substance, which suggests that resveratrol can increase estrogen signaling in vertebrates. Estrogen signaling is furthermore directly linked to changes in bone mineral density. We are particularly interested in any changes induced by resveratrol that alter embryo survival rates and bone calcification during early development.

(36) ***Occurrence of the Red-eared Slider, a Non-native Pond Turtle, in Central North Carolina.***
Kim Winiker* and John Vitello*
Mentor: Dr. Charles Smith, Biology

We surveyed 5 ponds located in central North Carolina for the presence of the Red-ear Slider, a non-native pond turtle. We documented 5 species of turtles including the Red-ear Slider. We also documented putative hybrids between the Red-ear Slider and the native Yellow-bellied Slider.

Chemistry

(37) ***The Thermodynamic Properties of Recyclable Materials*.**
Andrew Bosio*
Mentor: Dr. Todd Knippenberg, Chemistry

The purpose of this experiment is to determine any differences in values of thermodynamic properties, such as melting point and enthalpy of fusion, between various plastics materials. The experiments were run through a Differential Scanning Calorimeter (DSC), which calculated the melting point and enthalpy of fusion of each sample.

(38) ***Spectroscopic and Microscopic Analysis of Chloroform Vapor Exposed Poly(methyl methacrylate) (PMMA) Surfaces***
Caitlin Ferguson*
Mentor: Dr. Brian Augustine, Chemistry

Recent research demonstrates that spin-coating poly(methyl methacrylate) (PMMA) with $CHCl_3$ improves adhesion of Au films onto PMMA. We exposed PMMA to $CHCl_3$ vapor instead of spin-coating and found that infrared spectroscopy (ATR-FTIR) yielded similar results. Surface interactions were also studied using micro-Raman spectroscopy and atomic force microscopy (AFM).

(39) ***Analyzing Human Tat-SF1 Binding to the HIV-1 Genome***
Brea K. Hampton*
Mentor: Dr. Heather Miller, Chemistry

HIV-1 uses numerous human proteins to aid in successful viral gene expression. One of these host factors is Tat-specific factor 1 (Tat-SF1). If Tat-SF1 regulates HIV-1 RNAs post-transcriptionally, it may interact with the HIV-1 genome. To test this hypothesis, we used RNA immunoprecipitations in human cell lines.

(40) ***Tat-Specific Factor 1's Role in Insulin Signaling***
Jennifer Pearson* and Miranda Zupp*
Mentor: Dr. Heather Miller, Chemistry

Tat-specific factor 1 (Tat-SF1) is a human transcription-splicing factor that has been suggested to up-regulate some genes in the insulin signaling pathway. To see if Tat-SF1 has a role in insulin signaling, we analyzed both insulin-related gene expression and insulin signaling in a human cell culture system.

Physics

(41) ***Using vPython Modeling to Design the Magnetics for an Artificial Cilia Platform***
Jacob Brooks* and Dr. Briana Fiser
Mentor: Dr. Briana Fiser, Physics

We developed a vPython computational model of a biomimetic cilia array in which magnetic cilia respond dynamically to the changing magnetic field generated by a moving magnet. This model was used to inform experimental setup for data collection using biomimetic cilia arrays and permanent magnets.

(42) ***Framed: Physics in Non-Inertial Reference Frames***
Junjie Liao* and Amiras Simeonides*
Mentor: Dr. Aaron Titus, Physics

This project demonstrates the concept of fictitious forces, which are apparent forces observed from an accelerating reference frame. We captured video from non-inertial reference frames and analyzed it to determine mathematical models for each fictitious force. We then used these models to write simulations of each force in VPython.

Interior Design

(43) ***Pinecone Chair***
Mia LeNoir*
Mentor: Mr. Brandon Jones, Interior Design

The Pinecone Chair's purpose is to forge a connection between the user and nature. The Fibonacci spiral, seen in many aspects of nature, inspired the original designs. Throughout the design process, this pattern was reworked using pinecone scales, while also taking some inspiration from a turtle's shell.

Student Index

Mentor Index

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Dr. Joshua Campbell
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NOTES

Thank you for joining us!