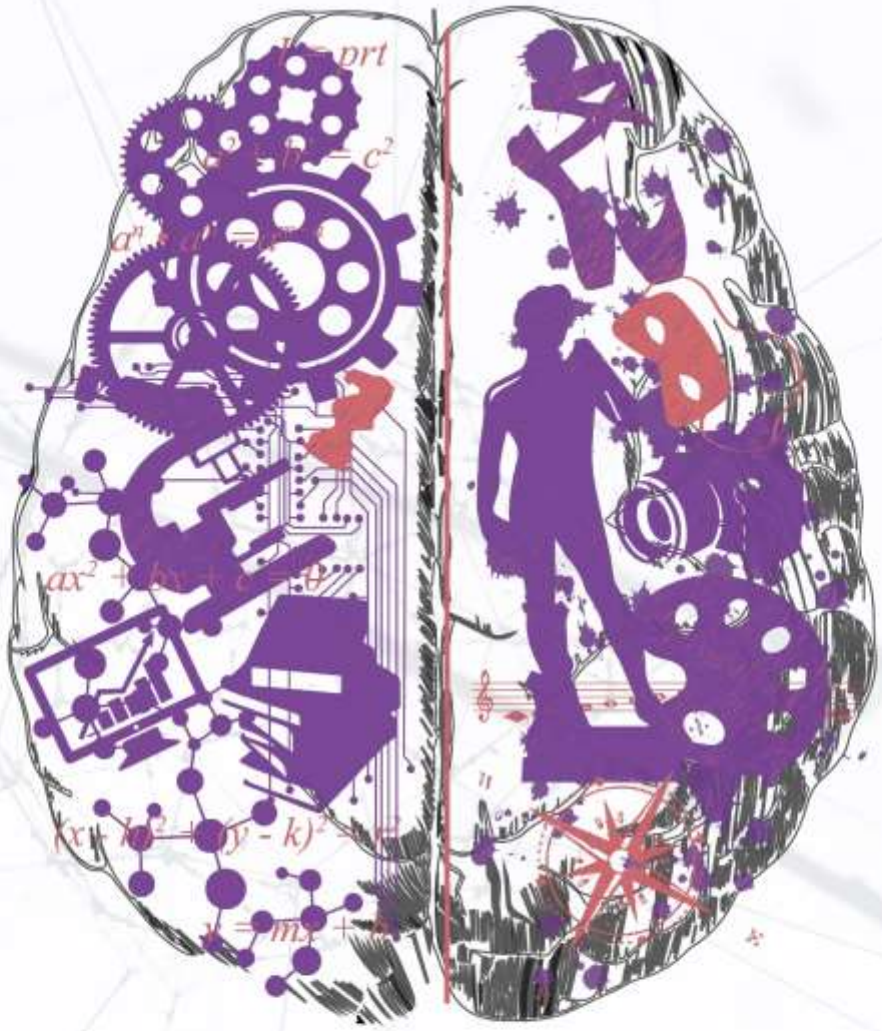
HIGH-PURCS

APRIL 10, 2018



HIGH POINT UNIVERSITY

RESEARCH AND CREATIVITY SYMPOSIUM

URCW
HIGH POINT UNIVERSITY

-Welcome from the-

DIRECTOR OF UNDERGRADUATE RESEARCH AND CREATIVE WORKS

Welcome to the 6th 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 intellectual and creative contributions in significant work mentored by faculty and regularly share 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 year's symposium, we have 161 students mentored by 68 faculty from 23 different fields showcasing 145 presentations. Our students' achievement is a reflection of HPU's holistic learning approach and the dedication of its caring faculty. Thank you for being part of the 2018 High Point University Research and Creativity Symposium.

Dr. Joanne D. Altman
Director, Undergraduate Research and Creative Works

THE 6TH HIGH POINT UNIVERSITY RESEARCH AND CREATIVITY SYMPOSIUM

(High-PURCS)

| APRIL 10, 2018 |

12:45 pm – 1:20 pm **Welcome, Opening Remarks & Awards**
Phillips Hall 120

1:30 pm – 2:30 pm **Oral Session I, Phillips Hall, 2nd floor**
Dance performances, The Empty Space Theatre

2:30 pm - 3:30 pm **Oral Session II, Phillips Hall 2nd floor**

3:30 pm – 5:00 pm **Poster Session/Art Exhibit & Reception**
Slane Basketball Court

URCW
HIGH POINT UNIVERSITY

Congratulations to our 2017-2018 Research Apprentices

Research Rookies is a program for freshmen and first semester sophomores who desire to be incorporated into the research and creative works atmosphere of High Point University while still early in their undergraduate careers. Participants have two consecutive semesters to complete a variety of activities. Completing this program earns the title of Research Apprentice and shows that students are committed to independent work which will give them an edge later in job interviews or applications for graduate or professional schools.

This year we are excited to congratulate two students who have completed the program and have earned the title of Research Apprentice.

Recognized in a Fall 2016 Ceremony:

Gianna Beckmann
Rose Bliesner
Jenny Carpenter
Haley Fair
Nicole DiGiallorenzo
Eva Greengrove
Isabella Grifasi
Claire Lauterbach
Taylor Parks
Samantha Savrides
Katie Schmidtmann
Katharine Storo
Kelsey Spruill
Taylor Tidman
Isabella Van Wittenberghe

New Spring 2018 Apprentices:

Leah Vadas	Jennifer Urena
	

ORAL PRESENTATION SCHEDULE

12:45-1:20 p.m. Opening Remarks from Dr. Dennis Carroll and Awards
Phillips Hall, Room 120

	Room 215	Room 216	Room 217	Room 218	Room 220	Room 221	Room 222	Room 223
Session 1	Spanish I	Psychology	Chemistry I	History I	Human Relations I	Physics I	Religion	Communication
1:30- 1:45	Hunter Fleming	Kelly Dillaway	Kyra Gillard	Galen Dodson	Grace Barrett	Zackary Hutchens	Christopher Johnson	Heather Frankel
1:50-2:05	Cristian Frazzini	Katie James	Michael Welter	Kelly Fisher	Mary de Poortere	Nolan Roth	Jacob Lancaster	Frankel Documentary
2:10-2:25	Kate Gibney	Kiersten Ketcham	Harrison Seitz	John Funchion	Madeline Henderson	Alan Vasquez	Robert Collier	

Session 1	Dance- The Empty Space Theatre
1:30-1:45	Shelby Desmarais (choreographer), Julianna Crudele, Monet Gilmore, Liv Huang, Alanna Meek, Deja Ross
1:50- 2:05	Julianna Crudele, Kaylah Davis, Shelby Desmarais, Hannah Hicks, Alanna Meek
2:10-2:25	Julianna Crudele, Kaylah Davis, Hannah Hicks

Session 2	Spanish II	English	Pharmacy	History II	Human Relations II	Physics II	Math	Economics
2:30-2:45	Kennae Rawlings	Sarah Anderle	Gianna Beckmann	Mei Ishikawa	Paige Lloyd	Erin Brady	Isaac Shore	Allison Holland & Emma Hudson
2:50-3:05	Juliana Valencia	Elisa Mattingly	Lauren Harris	Samuel Abrahams	Kaylor Ramey		Alexis Newton	
3:10-3:25	Celia Glenn	Jennifer West		Seanna Naylon			Joanna Fass	

3:30-5:00 p.m. Posters & Art Exhibit
with Reception at Slane Basketball Court

POSTER PRESENTATIONS

Space	Presenter(s)	Topic
1	Elisabeth Holt	Athletic Training
2	Emilie Alioto	Biology
3	Joshua Allen	Biology
4	Kellilyn Arnold & Annie Rexha	Biology
5	Helen Barker	Biology
6	Gina Botsko & Amanda Smith	Biology
7	Ryan Casey	Biology
8	Alexandria Cedrone	Biology
9	Kaitlyn Coppetti	Biology
10	Logan Crisp & Phillip Armentrout	Biology
11	Megan Demshar	Biology
12	Peyton Dillon, Shauna Talbot, & Kennedy Jackson	Biology
13	Catarina DiMaggio	Biology
14	Conner Dunbar	Biology
15	Heather Estes	Biology
16	Amanda Filingeri	Biology
17	Heather Francis	Biology
18	Emily Hahn	Biology
19	Alexandra Hameline	Biology
20	Kristina Jansen	Biology
21	Christopher Johnson	Biology
22	Dakotah Lambert	Biology
23	Sarah Mastropietro	Biology
24	Christian McDermott	Biology
25	Marita Passero	Biology
26	Molly Penton	Biology
27	Allie Reagan	Biology

28	Ashlynn Schiro & Kim Bemiller	Biology
29	Storm Ledford	Biology
30	Amanda Smith	Biology
31	Shannon Sonia	Biology
32	Brooke Willans	Biology
33	Carrie Wilson	Biology
34	Carla Yost	Biology
35	Emma James Barksdale	Chemistry
36	Rachel Berndsen	Chemistry
37	Kaylee Campbell	Chemistry
38	Taylor Cooley	Chemistry
39	Nicholas Cutrona	Chemistry
40	Hannah Lee Dixon	Chemistry
41	Robert Glass	Chemistry
42	Matthew Hendrix	Chemistry
43	Sarah Jiudice	Chemistry
44	Soo Min Lee	Chemistry
45	Juliana O'Brien	Chemistry
46	Lauren Pferdmenges	Chemistry
47	Julia Trautman	Chemistry
48	Kayla Barry & Mariana Pereira	Communication
49	Gillian Luttrell, Seth Easter, Lexin Levin, & Ryan Felton	Communication
50	Benjamin Rolison	Communication
51	Daniel St. Germain	Communication
52	Riley Macklin	Criminal Justice
53	Brianna Beard	Education
54	Melissa Martins	Education
55	Haley Barnes	Exercise Science
56	Brianna Bruggeman	Exercise Science
57	Haley Fair	Exercise Science
58	Peter Falgiano	Exercise Science
59	Devyn Fleischhacker	Exercise Science

60	Abigail Goldburt	Exercise Science
61	Thomas Hockenjos	Exercise Science
62	Michele Johnson	Exercise Science
63	Claire Lauterbach	Exercise Science
64	Emily Lyon	Exercise Science
65	Christina Mullen	Exercise Science
66	Zach Schall	Exercise Science
67	Jessica Siplon	Exercise Science
68	Katharine Storo	Exercise Science
69	Collin Giuliani	History
70	Fernanda Aimee Villarreal	Interior Design
71	Grace Barrett	Human Relations
72	Ian Benz	Neuroscience
73	Alexandra Sprouse	Neuroscience
74	Logan Webb	Neuroscience
75	Shannon Driskell	Non-Profit Studies
76	Hayley Houston	Non-Profit Studies
77	Drew Evans & Chris Trevisani	Pharmacy
78	Eva Greengrove	Pharmacy
79	Isabella Grifasi	Pharmacy
80	Christopher Houpt	Pharmacy
81	Victoria MacQueen	Pharmacy
82	Courtney McCorkle	Pharmacy
83	Kelly Odegaard	Pharmacy
84	Gabrielle Smith	Pharmacy
85	Jenny Kantor	Physical Therapy
86	Thomas Boudreaux	Physics
87	Padraig Clancy	Physics
88	Kyle Corcoran	Physics
89	Kaylee Chulla	Psychology
90	Caitlin Fulk	Psychology
91	Amy Hobday	Psychology
92	Jordan Krisfalusi	Psychology

93	Deanna Lee & Morgan Burns	Psychology
94	Melanie Maldonado	Psychology
95	Kayla Pennycuff & Michael Corigliano	Psychology
96	Chris Putnam	Psychology
97	Sarah Uzzi	Psychology
98	Lauren Xu	Psychology
99	Maggie Andrulis	Art

Space	Presenter(s)	Topic
100	Hannah Le	Interior Design
101	Johnele Riles	Interior Design
102	Lindsay Schmidtmann	Interior Design

ART EXHIBITS

ORAL PRESENTATIONS

Oral Session I • 1:30 p.m. – 2:30 p.m.

Spanish I

Phillips 215

1:30 – 1:45

¿Ama de casa o miliciana?: Representaciones de la mujer republicana en las fotos de Robert Capa

Hunter Fleming, High Point University

Mentor: Adam Winkel, Spanish

Yo estudio el papel de las mujeres en las fotos de Robert Capa durante la Guerra Civil Española para demonstrar cómo las mujeres superaron las expectativas del género y tuvieron la representación de la mujer en la vanguardia mientras protegían su familia y mantenían la dinámica familiar.

1:50 – 2:05

España en el corazón: Una respuesta poética a la Guerra Civil Española

Cristian Frazzini, High Point University
Mentor: Adam Winkel, Spanish

En esta presentación, estudio la representación de los dos lados de la guerra en *España en el corazón*, una colección de poemas escrita por Pablo I will fix that as well. Neruda durante la Guerra Civil Española, para mostrar cómo esta obra fue una llamada a la acción para el lado republicano.

2:10 – 2:25
La fuerza de las mujeres contra Trujillo
Kate Gibney, High Point University
Mentor: Adam Winkel, Spanish

Yo estudio el papel de las mujeres durante la dictadura de Rafael Leónidas Trujillo en la película *En el tiempo de las mariposas* para explorar cómo la influencia de las mujeres contra la violencia del régimen de Trujillo afecta la identidad dominicana de la época.

Psychology

Phillips 216

1:30 – 1:45
The Relationship between Pathological Narcissism, Academic Motivation, and Burnout
Kelly Dillaway, High Point University
Mentor: Christopher Lootens, Psychology

Pathological narcissism may cause academic burnout (Barnett & Flores, 2016), but the relationship is likely influenced by other variables. Present findings suggest that narcissism is positively associated with academic motivation, but negatively associated with "grit," and that relationships to academic variables may vary between "grandiose" versus "vulnerable" narcissism subtypes.

1:50 – 2:05
I'm No Good at This, Now What?: The Role of Identity Statuses and Feedback Type on Self-Esteem and Academic Motivation
Katie James, High Point University
Mentor: Kirsten Li-Barber, Psychology

The current study assesses whether students with different identity statuses demonstrate selfesteem and motivation deficits after receiving negative feedback about their likelihood for success in their selected career path. Results indicate feedback did not influence motivation and self-esteem for individuals in any identity status. Reasons for persistence will be addressed.

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*Denotes presenters when there are multiple authors

2:10 – 2:25

The Representation of Male Hegemony in Sports Media Through Gender Differences

Kiersten Ketcham, High Point University

Mentor: David Bergen, Human Relations

Men dominate the work force of sports media and this negatively impacts women in the field. Women have their own strengths that are often unconsciously utilized, unappreciated, or suppressed. This study investigates how male hegemony affects females in sports media through stereotypes, assumption of mediocrity, and lack of competitiveness.

Chemistry

Phillips 217

1:30 – 1:45

Identification of a pharmacophore capable of potentiating ß-lactam antibiotics in methicillinresistant Staphylococcus aureus (MRSA) **Kyra Gillard, High Point University**

Mentor: Meghan Blackledge, Chemistry

Methicillin-resistant *Staphylococcus aureus* (MRSA) infections kill over 20,000 people a year and is particularly difficult to treat because it employs virulence behaviors, such as antibiotic resistance. We have identified a class of structurally related tetracyclic amines capable of repotentiating MRSA to common ß-lactam antibiotics.

1:50 – 2:05

Microfabrication Applications of Soft Lithography

Michael Welter, High Point University

Mentor: Brian Augustine, Chemistry

In soft lithography, a flexible stamp with patterned relief structures on its surface is used to generate patterns and structures with feature sizes ranging from 30 nm to 100 μm. We used our stamped structures for microfabrication processes

2:10 – 2:25

including photopolymerization in capillaries (μpic) and micro contact printing (μCP).

An examination of UV radiation tolerance and photoenzymatic repair capabilities across temperature in the freshwater cladocerans Scapholeberis mucronata, Diaphanosoma birgei, and Moina spp

Harrison Seitz, High Point University Mentor: Sandra Cooke, Biology

While UV-B radiation causes DNA damage in organisms, some zooplankton species can use UVA radiation to heal themselves using processes called photoenzymatic repair (PER) and nucleotide excision repair (NER). We examined the effects of UV radiation and the use of PER and NER on three local cladoceran zooplankton species.

History I

Phillips 218

1:30 – 1:45

The Memory of the Confederacy and Memorialization

Galen Dodson, High Point University

Mentor: Paul Ringel, History

Recently, protesting Confederate monuments has become a hot issue across the South. The memory of the Civil War and the need for memorialization is different amongst individuals. This presentation will provide why the Confederate statue of Durham was erected in the first place and how it affected historical memory.

1:50 – 2:05

Historical Memory of Mount Vernon

Kelly Fisher, High Point University

Mentor: Paul Ringel, History

My presentation is going to be about the Mount Vernon and the historical memory behind one of

the most iconic landmarks in America. It will focus on why it was made into a top touring destination and why people should remember it.

2:10 – 2:25

Independence Hall

John Funchion, High Point University

Mentor: Paul Ringel, History

This presentation is about the historical memory of Independence Hall in Philadelphia. The purpose of this presentation is to explore what it means to give something "historical memory", how we give something historical memory, and why the historical memory of Independence Hall is important to Americans.

Human Relations I

Phillips 220

1:30 – 1:45

Reverse Mentoring: How Reciprocal Knowledge Transfer can Benefit Millennials and Boomers

Grace Barrett, High Point University

Mentor: David Bergen, Human Relations

Reverse mentoring flips the traditional mentoring model, naming the younger, less experienced employee the mentor. A model first used to teach older employees tech, is now being used to foster cross-generational relationships. Organizations face roadblocks including millennial retention and Boomer engagement but, reverse mentoring can solve those problems and more.

1:50 – 2:05

A Shadow of Doubt: Shedding Light on the Effects of the Dark Triad in the Workplace **Mary de Poortere, High Point University** Mentor: David Bergen, Human Relations

2:10 – 2:25

The dark triad- psychopathy, narcissism and Machiavellianism, is branded by vilifying labels. This study explores the constructive use of emotional intelligence and the dark triad in a corporate environment. The examination of provides insight on employee/manager relationships, ethical treatment of employees, and the success of narcissistic, psychopathic and Machiavellian leaders.

Quality Customer Care: The Effect of Social Media on Customer Satisfaction **Madeline Henderson, High Point University**

Mentor: David Bergen, Human Relations

Quality customer care through social media is a vital aspect of how companies directly serve customers to enhance satisfaction and decisions about brand loyalty. This study investigates how to acquire a better understanding of how this evolution in customer care is influencing customer satisfaction and decisions about brand loyalty.

Physics I

Phillips 221

1:30 – 1:45

Pulse Timing Measurements of the Hot Subdwarf B Star CS 1246

***Zackary Hutchens and Alan Vasquez Soto, High Point University**

Mentor: Brad Barlow, Physics

CS 1246 is a rapidly-pulsating, hot subdwarf B star which exists in a 14.1-d binary system with an M dwarf. Its pulsations serve as a precise astrophysical clock through which we can probe the star's physical interactions and evolution. Here we present our most recent analysis on the pulsation timings of CS 1246.

1:50 – 2:05

Polarization of a Metal Block Simulated using GPU Computing
Nolan Roth, High Point University
Mentor: Aaron Titus, Physics

When a metal object is brought near a charged particle, the electrons distribute along its surface such that the electric field inside the object approaches zero. Detailed simulations of this process often take multiple minutes to run, but the goal of this project is to use parallel computation to yield a faster simulation.

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*Denotes presenters when there are multiple authors
2:10 – 2:25
Observations of the New Pulsating White Dwarf EPIC 245988146
Alan Vasquez, High Point University
Mentor: Brad Barlow, Physics

We report on our analysis of time-series photometry of the pulsating white dwarf EPIC 245988146, obtained by NASA's K2 satellite. Using a trailed spectrogram and synthetic Fourier Transform, we have identified more than 50 potential pulsation modes, some of which reveal the rotational period of the star.

Religion
Phillips 222

1:30 – 1:45
The Beliefs, Customs, and Continued Influence of Santería.
Christopher Johnson, High Point University
Mentor: Cheryl Marsh, Religion

Santería is a religion which developed in Cuba in response to the diaspora imposed upon the enslaved Yoruba people. Santería blends aspects of traditional Yoruba faith-based practices with their enslavers' Roman Catholic beliefs. This project examines Santería in terms of its development, cultural beliefs, social impact, racial issues and superstitions.

2:10 – 2:25

1:50 – 2:05
The Validity of a Constructed Religion
Jacob Lancaster, High Point University
Mentor: Joseph Blosser, Religion and Philosophy

In this presentation, the presenter seeks to acknowledge the ways in which religion is socially constructed and defend its validity by defining religion as a system constructed around a communal search for ultimate reality with a belief structure forming praxes for communion with this reality.

The Existential Relevancy of John Milton's "Paradise Lost": Logical Constructions of Freedom, Reason, and Ontology
Robert Collier, High Point University
Mentor: Laura Alexander, Religion and Philosophy

I will argue that Milton's *Paradise Lost* is a moral philosophical masterpiece that Milton uses to construct ideas concerning the abstract concepts of freedom, reason, and ontology. I will further demonstrate that these ideas espoused by Milton answers most fundamental questions of human life that remain to this day existentially relevant.

Communication
Phillips 223

1:30 – 1:45
Crafting A Documentary: The Making Of "The Price Of Bone"
Heather Frankel, High Point University
Mentor: Brandon Lenoir, Communication

This presentation is meant to be a companion piece to the documentary: "The Price of Bone," discussing what it takes to make a documentary. It covers the obstacles I faced during filming and

2:10 – 2:25

post-production, and the step by step process taken in order to create the documentary. The presentation also offers a quick overview of the topics covered in the film.

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*Denotes presenters when there are multiple authors

ORAL PRESENTATIONS

Oral Session II • 2:30 – 3:30 p.m.

Spanish II

Phillips 215

2:30– 2:45
Los significados profundos en El Memorialde El Mozote que provocan cambio social
Kennae Rawlings, High Point University
Mentor: Adam Winkel, Foreign Language

Yo estudio la reorganización física del espacio en el Memorial de la Masacre de El Mozote en El Salvador para representar una memoria política durante la guerra civil que sirve para imponer cambio social y justicia en El Salvador.

2:50– 3:05
El Puesto de la Mujer en el Conflicto Armado de Colombia
Juliana Valencia, High Point University
Mentor: Adam Winkel, Foreign Language

Yo voy a estudiar la lucha de la mujer en la exhibición "Sudarios" por Erika Diettes para explorar el puesto de la mujer en el conflicto armado en una sociedad machista.

3:10– 3:25
El Arte Clandestino Que Derrocó Una Dictadura
Celia Glenn, High Point University
Mentor: Adam Winkel, Foreign Language

Estudio la propaganda política encontrada en el arte y los murales callejeros de Chile desde 1973 hasta 1990 para mostrar cómo la retórica visual a través del graffiti fue esencial en la fundación de un movimiento social que eventualmente derrocó la notoriamente violenta dictadura de Augusto Pinochet.

English

Phillips 216

2:30– 2:45
***English as "Spiritual Subjugation" in* Nervous Conditions**
Sarah Anderle, High Point University
Mentor: Matthew Carlson, English

Ngugi wa Thiong'o theorized that because language carries culture, teaching English in colonial schools is a means of "spiritual subjugation" because it replaces the native culture with the colonizer's culture. I apply this theory to Tsitsi Dangarembga's postcolonial novel *Nervous Conditions*, arguing that this theory is embodied in the character Nyasha.

2:50– 3:05
Consequences of 20th-Century British Social Expectations in Ian McEwan's Atonement
Elisa Mattingly, High Point University
Mentor: Matthew Carlson, English

Ian McEwan's *Atonement* demonstrates several of the issues surrounding social class and gender roles in early twentieth-century British society. The strict social class structure and gender roles of early twentieth-century British culture are what allow Robbie Turner to be accused and convicted of rape.

3:10– 3:25
Medieval Dreaming in the Lais of Marie de France
Jennifer West, High Point University
Mentor: Laura Alexander, English

In Marie de France's Breton Lai, "Lanval", she presents a dream sequence that expresses Lanval's intentions of power in identity and erotic desire in the main character, redefining medieval conventions.

Pharmacy

Phillips 217

2:30– 2:45
Understanding Molecules that Penetrate Staphylococcus Aureus
***Gianna Beckmann, Lauren Harris, and Aurijit Sarkar, High Point University**
Mentor: Aurijit Sarkar, Pharmacy

Antibiotic resistance in bacteria such as *Staphylococcus aureus* has become highly prevalent. It is imperative to develop novel antibiotics, but Big Pharma are abandoning drug discovery projects. Our goal is to understand how molecules that penetrate bacteria such as *Staphylococcus aureus* are different from archetypal drug-like compounds.

2:50– 3:05
Characterizing Molecule Properties Based On the Ability To Enter Bacteria Cells Using A HandCurated Dataset
Lauren Harris, High Point University Mentor: Aurijit Sarkar, Pharmacy

Antibiotic resistance is an increasing global problem that needs to be addressed. Our goal is to identify molecules that can penetrate the cell membrane of MRSA. By using the SMARMS database, we will distinguish how hydrogen bond acceptors and LogP affects this issue.

History II

Phillips 218

2:30 -2:45
The Lincoln's House in Springfield, Illinois
Mei Ishikawa, High Point University Mentor: Paul Ringel, History

The Lincoln's home in downtown Springfield of Illinois is the only house that 16th President of the United States ever owned. It became the historical memorial site which draws hundred and thousands of visitors each year. This presentation will focus on history of Lincoln's home.

2:50 – 3:05
The National Baseball Hall of Fame as a Monument
Samuel Abrahams, High Point University
Mentor: Paul Ringel, History

This presentation explores the foundations of the National Baseball Hall of Fame and asks the key questions about the development and memorialization of the museum. Some critical parts of the founding of the museum include rumors of the founding of the National Baseball Hall of Fame turned into public memory.

3:10 – 3:25
The Negro National League
Seanna Naylon, High Point University
Mentor: Paul Ringel, History

Starting in 1916-1970, The Great Migration from the Southern states to the Northern and Midwestern states established an audience for the Negro National League. With the change in demographics brought an increase in hate crimes, discrimination, and black suppression, there became a need for African American communities to unite and take a stance politically and socially.

Human Relations II

Phillips 220

Health Professionals and Executives: Comparing and Contrasting Leaders in Health Care **Paige Lloyd, High Point University**
Mentor: David Bergen, Human Relations

Leadership in the corporate world is a much studied concept. Research regarding the relationship between leaders within the health care industry is not as prevalent a topic. This study aims to deepen the understanding of this complicated relationship through concepts such as gender roles, personality, leadership style, teamwork and communication.

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*Denotes presenters when there are multiple authors

2:50 – 3:05

Awaken the Homeless **Kaylor Ramey,**

High Point University

Mentor: Allison Walker, English

In this research, I examine the effects of sleep deprivation on homeless individuals' productivity, ability to fight illness, and inclination toward crime. To test a possible solution, my organization, The Bed Brigade, provided beds to homeless veterans to see what happens when they are given a bed of their own.

Physics II

Phillips 221

2:30 – 2:45

Teaching Physics Using Quadcopter Technology

Erin Brady, High Point University

Mentor: Aaron Titus, Physics

Using an instructional apparatus built with quadcopter technology, we designed labs to help students understand fundamental physics concepts. We wrote a web-based application with a visual display to control the motors, and performed experiments to characterize the apparatus. We will discuss the physics of quadcopters, experimental results, and lab procedures.

Mathematics

Phillips 222

2:30 – 2:45

Disease Dispersion On Networks

Isaac Shore, High Point University

Mentor: Laurie Zack, Mathematics

We begin with an overview of various disease models such as SIR and SIRS. Next we construct a network by processing the data which consists of individuals and various groups and classes they are a part of. Finally, the models are adapted to fit the restrictiveness of a network.

2:50 – 3:05

Prime Graph Labeling of Cn⋆S4

Alexis Newton, High Point University

Mentor: Jenny Fuselier, Mathematics

A prime labeling of a vertex set is one where every vertex can be labeled such that adjacent vertices are relatively prime, and graphs admitting prime labelings are called prime graphs. We prove that a specific graph type, Cn ⋆S4, will always admit a prime graph labeling.

3:10 – 3:25

MatrixToe: 1s and 0s Battle For Domination

Joanna Fass, High Point University

Mentor: Adam Graham-Squire, Mathematics

MatrixToe is a game that is similar to Tic-Tac-Toe, but instead of using X's and O's, the two players use 1's and 0's. One player tries to make some *m*by-*m* matrix invertible and the other tries to make the matrix not invertible. We proved optimal strategies and the resulting winner.

Economics

Phillips 223

2:30 – 2:45

Explaining Differences in Wealth Between France and Former French Colonies Using Economic Growth Theory Models
***Allison Holland and *Emma Hudson, High Point University**
Mentor: Peter Summers, Economics

This research uses economic growth theory models to examine the differences in wealth between France and its former colonies of Algeria, Morocco, and Tunisia. It specifically considers factors of growth in capital, labor, and technology to predict the likelihood of the former colonies converging with the economy of France.

PERFORMANCES

Session I • 1:30pm – 2:30pm
Open Space Theatre

1:30 – 1:45
Never Know
Shelby Desmarais, High Point University
Performers: Julianna Crudele, Monet Gilmore, Liv Huang, Alanna Meeks, and Deja Ross Mentors: Lindsey Howie and Christine Stevens, Department of Theatre and Dance

Desmarais' *Never Know* is a choreographed dance work that focuses on the different stories that individuals carry with them every day. People end up in places together, never knowing why. I choreographed this work to explore those stories and how those stories intersect with others in the world.

1:50-2:05
Teresa
Julianna Crudele, High Point University
Performers: Julianna Crudele, Kaylah Davis, Shelby Desmarais, Hannah Hicks, Alanna Meek Choreographer: Christine Stevens (Adjunct Professor)

Dance Faculty Christine Stevens' work investigates femininity and motherhood. With music sung by Etta James and costumes reminiscent of the 1950's, this work explores some of the subtle nuances of what it means to be a woman as well as paying tribute to mothers.

2:10-2:25
Which Can Be
Julianna Crudele, High Point University
Performers: Julianna Crudele, Kaylah Davis, Hannah Hicks
Choreographer: Mal Verez (Graduated December 2017)
Mentors: Lindsey Howie and Christine Stevens, Department of Theatre and Dance

Verez's piece was inspired by the Rothko Room in The Phillips Collection Museum. That small and intimate room with one painting on each wall and an old bench in the middle shared with this piece an intention to express more of what one thinks than what they see.

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POSTER PRESENTATIONS

Slane Basketball Court • 3:30pm-5:00pm

Athletic Training

(1***) Influence of Lower Extremity Muscle Activation on Altered Landing Biomechanics in ACL Reconstructed Individuals***
Elisabeth C. Holt, High Point University
Mentors: Yum Nguyen and Stephanie M. Trigsted, Athletic Training

Following ACL reconstruction (ACLR), altered landing biomechanics contribute to the risk of secondary injury. Understanding neuromuscular contributions to altered biomechanics may lead to more effective rehabilitation programs and mitigate re-injury risk. The purpose was to determine differences in landing biomechanics between ACLR and controls and how muscle activation predicts biomechanics.

Biology

(2) ***There Is More Than One Way To Evolve A Nose: Olfaction In A Land Crustacean.***
***Emilie Alioto and Carla Yost, High Point University**
Mentor: Jackson T. Sparks, Biology

We have conducted behavioral trials implicating the first antennae of Armadillidium vulgare as the primary olfactory appendage in adults. The ability to avoid known repellent chemicals (cedar oil and DEET) requires intact, functional antennae, and loss of this ability is not associated with mechanical damage alone.

(3) ***Relative Size of the Zygomaticomandibularis Muscle in Frugivorous and Animalivorous Mammals: A***

Comparative Study of Jaw Adductors in Bats and Carnivorans
Joshua W. Allen, High Point University
Mentor: Jillian Davis, Exercise Science

Contrast-enhanced microCT scans of representative dietary specialists from orders Chiroptera (bats) and Carnivora (carnivorans) are used to compare size and orientation of jaw muscles to investigate the hypothesis that mammals with plant-based diets and fused jaws will also have a larger, more complex masseter compartments than their closest animalivorous relatives.

(4) ***Using Molecular Data to Resolve Phylogenetic Relationships of Flowering Plants in the Liatris Genus***
***Kellilyn Arnold, *Annie Rexha, Heather Francis, and Jonathan Ware**
Mentors: Patrick Vigueira, Biology and Cindy Vigueira, Biology

The 29 species of the plant genus Liatris (Asteraceae) have yet to be organized in a well-resolved phylogeny. Our research utilizes genetic analysis to resolve relationships between Liatris species. We created a phylogenetic tree based on maximum parsimony that has the potential to reform what is known about these species.

(5) ***Manipulating Reagent Conditions to Improve Protein Yield during SpoIIID Purification***
***Helen Barker and Alysha Higgs, High Point University**
Mentor: Dinene Crater, Biology

SpoIIID is necessary for the transcription regulation of sporulation. We developed a plan to investigate SpoIIID from Clostridium sporogenes and to determine how to best purify the protein. By determining how to increase the yield, we can explore other characteristics of SpoIIID and its ability to regulate sporulation in C. sporogenes.

(6) ***Proteins Mediating Reception and Transduction In Chemosensory Neurons In Mosquitoes***
***Gina Botsko and *Amanda Smith, High Point University**
Mentor: Jackson Sparks, Biology

Mosquitoes use chemical cues to inform important behaviors such as feeding, mating and egg laying. Here, we review the full repertoire of chemosensory receptors and other membrane proteins involved in signal transduction, and discuss the outlook for their functional characterization.

(7) ***The Effects of Nicotine on the Development of the Cardiovascular System***
Ryan Casey, High Point University
Mentor: Kristin Ackerman, Biology

20-30% of pregnant woman continue to smoke cigarettes despite many adverse fetal outcomes. Our laboratory is using zebrafish as a model system to study how nicotine exposure effects gross morphological development, specifically cardiovascular development. Preliminary data indicates that nicotine significantly alters heart rate, edema, and blood stagnation.

(8) ***Analysis of Thrombin- Treated GerE on Binding to cot Promoters that are Repressed during Sporulation in Bacillus subtilis***

***Alexandria Cedrone and Maria Valverde, High Point University** Mentor:
Dinene Crater, Biology

GerE is a regulatory protein used during sporulation in Bacillus subtilis. We cloned gerE for over expression; however, an excess extension of a 6-Histidine tag is formed when expressed in Escherichia coli. We will remove the tag with thrombin to determine the effect of GerE's ability to bind DNA.

(9) ***Nicotine Exposure and Jaw Formation in Zebrafish***
Kristin Ackerman and *Kaitlyn Coppetti, High Point University
Mentor: Kristin Ackerman, Biology

15-25% of pregnant women smoke resulting in fetal risk for low birth-weight, preterm birth/mortality, and congenital malformations. Our laboratory is using zebrafish as a model system to study how nicotine effects gross morphological development, specifically jaw development. Preliminary data indicates that nicotine significantly delays jaw development and may induces malformations.

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(10) ***Going Slimeless: Development of a Reduced-Mucilage Okra Cultivar***
***Logan Crisp and Phillip Armentrout, High Point University** Mentors:
Cindy Vigueira and Patrick Vigueira, Biology

Okra (Abelmoschus esculentus) is a culinary vegetable crop that becomes visibly slimy when cooked and is often rejected as a food for this reason. We are working to develop a new okra cultivar with reduced slime. Reduced-slime okra has the potential to gain widespread popularity and reduce world hunger.

(11) ***Forelimb Myology of Potos flavus***
***Megan Demshar, Alexandra Hameline, and Heather Ahrens, High Point University** Mentor:
Heather Ahrens, Biology

This study presents an extensive examination of the forelimb myology of a specialized arboreal mammal, the kinkajou, and documents anatomical diversity within the Procyonidae family. The differences found in muscle attachment points and fusion may indicate functional differences among species that utilize similar locomotor behavior.

(12) ***GIS Analysis of Mammalian Fossil Localities of the Bighorn Basin, Wyoming***
***Peyton Dillon, *Shauna Talbot, and *Kennedy Jackson, High Point University**
Mentor: Christian George, Biology

We created a GIS (Geographic Information Systems) database to analyze fossil records from the Bighorn Basin of Wyoming. Paper maps of localities were digitized and the spatial accuracy was verified. Using GIS we explored the distribution patterns of the fossil sites through kernel density maps and Optimized Hot Spot Analysis.

(13) ***An Analysis of the DNA Binding Activity of SpoIIID from Bacillus subtilis and Clostridium sporogenes***
***Catarina DiMaggio and Alysha Higgs, High Point University**
Mentor: Dinene Crater, Biology

SpoIIID is a central regulatory protein in Bacillus subtilis. The purpose of this research was to purify SpoIIID from B. subtilis and Clostridium sporogenes to compare their DNA binding activities.

(14) ***Construction of a Cysteine-less Atg27 Protein and its Function in Autophagy***
***Conner Dunbar and Veronica Segarra, High Point University**
Mentor: Veronica Segarra, Biology

During autophagy, eukaryotes use a double-membraned vesicle to sequester damaged/unneeded cytoplasmic materials and recycle them. We study a transmembrane protein involved in autophagosome formation--Atg27. We aim to determine which of its cysteine residues are required for its function.

(15) ***Postcranial Morphology of the Foot and Ankle of Anacodon (Arctocyonidae, Mammalia)***
Heather Estes and Heather Ahrens, High Point University
Mentor: Heather Ahrens, Biology

Arctocyonidae is a family of Paleogene mammals thought to be part of "Condylarthra". Here the foot, ankle, and distal right tibia of Anacodon are described. Tarsal morphology was compared to that of Galecyon spp., Arctocyon primaevus, and Arctocyon mumak and suggests that Anacodon may have been scansorial, semifossorial, or terrestrial.

(16) ***Lasofoxifine, a nonsteroidal selective estrogen receptor modulator and its effects on early bone development in Danio rerio***
Amanda Filingeri, High Point University Mentor:
Neil Coffield, Biology

Selective Estrogen Receptor Modulators (SERMs) are a class of drugs that interact with the estrogen receptor and act as either an agonist or antagonist. Although much is known about the effects of the SERM, Lasofoxifene, on developed bones, far less is known about how Lasofoxifene affects bone development during embryogenesis.

(17) ***Herbivory Defenses of Tipularia discolor***
Heather Francis, High Point University
Mentor: Nicole Hughes, Biology

Crane-fly orchid (Tipularia discolor) produces a single leaf in fall which persists as one of the few herbs available for herbivores during winter. Potential herbivory-defense strategies include purple coloring on leaves, glandular trichomes, raphides, and a possible mutualism with the spider Lyssomanes viridis. Further research will focus on these defense strategies individually to gauge their impact on herbivore choice.

(18) ***Effect of Rosehip (Rosa canina) Extracts on LNCaP Prostate Cancer Cells***
Emily Hahn, High Point University
Mentor: Y. Kevin Suh, Biology

We tested the effect of rosehip extracts on LNCaP cell viability using MTT assay and observed a dosedependent decrease. In our Western blot analysis, treatment of cells with the extract resulted in inactivation of one of the key pathways involved in progression of prostate cancer.

(19) ***Hindlimb Myology of the Honey Bear (Potos flavus)***
***Alexandra Hameline, Megan Demshar, and Heather Ahrens, High Point University** Mentor:
Heather Ahrens, Biology

This study provides a detailed description of the hind limb myology of the kinkajou, an arboreal mammal. Observations indicate that muscle anatomy is similar to the red panda and ringtail, indicating that both locomotor function and phylogeny influence the hind limb myology of the kinkajou.

(20) ***Identification of Bacteriophage from Commercially Available Bacillus thuringiensis*** **Kristina Jansen, High Point University**
Mentor: Dinene Crater, Biology

Bacillus thuringiensis (Bt) is a soil bacterium that produces toxic crystal proteins that has been used as a natural insecticide. Bacteriophage were identified in a commercially available brand of Bt. Phage DNA was isolated and future experiments will be directed at identifying the specific type of bacteriophage.

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(21) ***Endocast and Brain Evolution of Buisnictus chioensis in Comparison to Extant Skunks***
***Christopher Johnson and Heather Ahrens, High Point University**
Mentor: Heather Ahrens, Biology

This project uses endocasts to determine characteristics of brain morphology of *Buisnictus chisoensis.* Key neuroanatomical characteristics of *B. chisoensis* include relatively straight suprasylvian and lateral sulci with slight curvature, an extended piriform lobe, and prominent olfactory bulbs. These features are nearly identical to extant species belonging to the Mephitidae family.

(22) ***The Potential Effects of Propylparaben Exposure on Early Teleost Bone Ossification***
***Dakotah Lambert and Vernon Coffield, High Point University** Mentor:
Vernon Coffield, Biology

Most scientific literature focuses on the effects of propylparaben on adult organisms, while largely ignoring the effects on a developing embryo. My research focuses the effects of propylparaben exposure during early development by using the *Danio rerio* model system (zebrafish).

(23) ***Oxybenzone, an estrogenic compound commonly found in commercial sunscreens and its effects on early bone ossification***
Sarah Mastropietro, High Point University
Mentor: Neil Coffield, Biology

Numerous SERMs can be found in everyday products including cosmetics, lotions, and soaps. When the human body is exposed to many of these compounds, it reacts as if levels of endogenous estrogens have either increased or decreased depending on the SERM.

(24) ***Coupling Kinematic Science with Animation Software: Can Reducing Animated Frames Improve Visualization?***
***Christian McDermott and Jillian Davis, High Point University** Mentor:
Jillian Davis, Exercise Science

X-ray Reconstruction of Moving Morphology (XROMM) is a kinematic analysis technique that produces 3D videos in which every frame is "keyframed". We investigate whether reducing keyframes in an XROMM video (250 fps) at set intervals reduces noise from digitizing error while retaining the quantitative and visual integrity of the dataset.

(25) ***Digital Endocast of Dipsalidictis krausi***
***Marita Passero and Heather Ahrens, High Point University**
Mentor: Heather Ahrens, Biology

Creodonta is an extinct order of mammals that coexisted with Carnivora during the Paleogene. We compared the neuroanatomy of the creodont Dipsalidictis krausei to other Paleogene carnivores. Dipsalidictis krausi displayed dorsal midbrain exposure, along with expanded olfactory regions of the brain. This anatomy implies D. krausi heavily relied on olfaction.

(26) ***Dissecting the Function of Atg27 in Yeast Membrane Trafficking***
Molly Penton, High Point University Mentor:
Veronica Segarra, Biology

I study the process of autophagy, which cells undergo when starved. The cell produces an autophagosome, which surrounds cellular material, then digests it to help the cell continue metabolic work. Atg27 is related to this process. I hope to identify what happens when the distribution of autophagosomes cannot be controlled.

(27) ***Identifying Binding Partners of Atg27 to Better Understand its Function in Autophagy***
***Allie Reagan and Veronica Segarra, High Point University**
Mentor: Veronica Segarra, Biology

Eukaryotes use autophagy to remove unnecessary cytoplasmic components to survive stress. The membrane trafficking events behind autophagy are not well-known. To close this gap, our lab studies Atg27, a protein involved in autophagy. We plan to identify the specific adaptors that bind and recognize the sorting signals on Atg27.

(28) ***Utilizing Science Outreach to Expand the Minds of Future Generations: Connecting the Biology of Onion Cells to Human Cells***
***Ashlynn Schiro and *Kim Bemiller, High Point University**
Mentor: Veronica Segarra, Biology

As students enrolled in an undergraduate Cell Biology course we created lab modules to teach various science concepts to students at a local high school. We used these exercises to explain what biologically relevant molecules like DNA are and how they are present in all living things.

(29) ***Under Pressure: Bringing Undergraduate Cellular Biology Concepts to High School Freshmen***
Amanda Smith, *Storm Ledford, and Petru Hadarau, High Point University
Mentor: Veronica Segarra, Biology

Science outreach allows experts to share knowledge with the public. We collaborated with Penn Griffin School for the Arts to bring biology concepts to high school freshmen. We developed focused modules to communicate scientific themes and deepen our own understanding. High school students ultimately created art projects integrating the material.

(30) ***A Simplified Approach to Matching Chemicals With Chemosensory Receptors In Drosophila melanogaster***
Amanda Smith, High Point University
Mentor: Jackson Sparks, Biology

Vinegar flies use odorant receptor neurons (ORNs) to sense airborne chemicals. Current methods used to characterize receptor genes in ORNs involve tedious genetic manipulation. We propose observing gene expression changes in response to known ligands as an alternative method. Our approach could be used to identify target genes for the development of novel repellents.

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(31) ***The Potential Effects of Bazedoxifene, a Selective Estrogen Receptor Modulator, on Early Embryonic Vertebral Ossification***
Shannon Sonia, High Point University Mentor:
Neil Coffield, Biology

Bazedoxifene acts as both an agonist and antagonist by limiting the abundance of estrogen, therefore limiting the risk of cancer. It has been shown in previous studies to be generally safe for the treatment in adults, however much less is known about its effects on early bone development during embryogenesis.

(32) ***Pigment profiles of purple, green, and spotted morphotypes of crane-fly orchid, Tipularia discolor***
Brooke Willans, High Point University
Mentors: Nicole Hughes, Biology and Andrew Wommack, Chemistry

The three morphotypes of the crane-fly orchid Tipularia discolor, purple, green, and spotted, do not significantly different in their concentration of photopigments; however, there are different anthocyanins responsible for adaxial and abaxial purpling.

(33) ***Detecting Interactions between Atg27, a yeast autophagic protein, and its trafficking adaptors*** **Carrie Wilson, High Point University**
Mentor: Verónica Segarra, Biology

Autophagy is a cellular process involving membrane trafficking events leading to the recycling of cytoplasmic materials in response to stresses like starvation. The underlying trafficking events of autophagy are not yet

fully understood. We aim to fill this gap by detecting interactions between trafficking adaptors and Atg27, an autophagic protein.

(34) ***Characterization of Chemosensation in the Terrestrial Isopod Armadillidium vulgare***
Carla Yost, High Point University
Mentor: Jackson Sparks, Biology

Common pill bugs transitioned from sea to land millions of years after insects, the dominant class of terrestrial arthropods. Here, we establish the antennae of Armadillidium vulgare as the primary olfactory appendage by behavioral analysis and use de novoRNAseq to catalogue all transcripts within the first antennae.

Chemistry

(35) ***Investigating the TEC Reaction to Replace the Disulfide Bond in Oxytocin***
***Emma James Barksdale, Juliana O'Brien, Jason Barbaretta, and Olivia Tornow, High Point University**
Mentor: Dr. Andrew Wommack, Chemistry

To create a more stable derivative of the human hormone oxytocin, new synthetic methodology is being developed to install a redox-inert thioether bond as a bioisostere of the native disulfide bond.

(36) ***Chan-Lam Reaction Analysis Using the Advion CMS Instrument***
Rachel Berndsen, High Point University
Mentor: Andrew Wommack, Chemistry

Analytical chemistry is critical in determining the success of a synthetic reaction. The Cham-Lam reaction produces key carbon-nitrogen bonds found in molecules commonly used in the agricultural and pharmaceutical industries. An expedient protocol for Cham-Lam crude reaction analysis was developed using the Advion expression S Compact Mass Spectrometer.

(37) ***Preparation of Surface-Grafted Poly(3-hexylthiophene) Brushes Using an Easily Cleavable SelfAssembled Monolayer***
Kaylee Campbell, High Point University
Mentor: Pamela Lundin, Chemistry

Surface-initiated catalyst transfer polycondensation is a polymerization that attaches an initiator to surfaces via a self-assembled monolayer. We prepared new silane capable of performing Kumada CTP, grafted poly(3hexylthiophene) to different silica surfaces and then cleaved the silane. The steps of this sequence are characterized using AFM, SEM/EDX, and NMR.

(38) ***Determining the efficacy of the antitumor quinone IB-DNQ in BRCA1 mutant breast cancer cells*** **Taylor Cooley, High Point University**
Mentor: Melissa Srougi, Chemistry

Approximately 5-10% of women diagnosed with breast cancer have mutations in the *BRCA1/2* gene. *BRCA* functions as a tumor suppressor preventing cells from growing and dividing too rapidly. Currently, there are no targeted therapeutics for *BRCA1* mutant breast cancers.

(39) ***Design and Synthesis of a Halogenated Dibenzoxazepine Library to Probe Antibiotic Adjuvant Activity***
Nicholas Cutrona, High Point University
Mentor: Meghan Blackledge, Chemistry

In 2005, deaths from methicillin-resistant Staphylococcus aureus (MRSA) outnumbered those from AIDS, Parkinson's disease, emphysema, and homicide, combined. Antibiotic adjuvants are a novel method for stemming the antibiotic resistance crisis. We have created a dibenzoxazepine compound library to probe the importance of halogen location and identity to adjuvant activity.

(40) ***The Mechanism of IB-DNQ-Induced Cell Death in NQO1 Positive BRCA2-Mutant Breast Cancer Cells***
***Hannah Lee Dixon, Kristen Brokaw, Kate Hutchinson, Lindsey Palmquist, and Melissa Srougi, High Point University**
Mentor: Melissa Srougi, Biochemistry

BRCA2-mutant breast cancer cells with increased expression of NAD(P)H:quinone oxidoreductase-1 (NQO1) undergo futile redox cycling with hydroquinone isobutyl-deoxynyboquinone (IB-DNQ). Treatment of BRCA2mutant cells with IB-DNQ should cause DNA damage to induce cell death. Co-treatment with poly(ADPribose) polymerase-1 (PARP-1) inhibitors should potentiate cell death. Co-treatment with NQO1-inhibitor should decrease cell death.

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(41) ***Synthesis of an Acceptor-Donor Molecule for Solar Cell Application Analysis***
Robert Glass, High Point University
Mentor: Pamela Lundin, Chemistry

The goal of this experiment is to synthesize a potential acceptor-donor polymer for solar cell application. Prior to the amalgamation of the dyad polymer, the separate donor and acceptor will be synthesized using current organic chemistry reaction techniques and analyzed via photoinduced absorption spectroscopy and flash photolysis.

(42) ***Evaluation of a Diverse Compound Library as MRSA Virulence Modulators***
***Matthew Hendrix, Mikaela Seemann, Kyra Gillard, Jennifer Marshall, Juliana O'Brien, and Andrew J. Wommack, High Point University**
Mentor: Meghan Blackledge, Chemistry

The use of antibiotic adjuvants is a novel approach to combat antibiotic resistant bacterial infections. To identify the important structural features responsible for the observed adjuvant activity of amoxapine with βlactam antibiotics against methicillin-resistant Staphylococcus aureus (MRSA), we screened 31 structurallyrelated compounds for their ability to repotentiate MRSA to oxacillin.

(43) ***Formation And Characterization Of Nanoporous Poly(Methyl Methacrylate) Thin Films Via Spin Casting***
Sarah Jiudice, High Point University

Mentor: Brian Augustine, Chemistry

In order to form a multi-layer nanoporous film through a more simple and cost-effective technique than commercially utilized, poly(methyl methacrylate) dissolved in tetrahydrofuran at a concentration of 15 mg/mL was spun cast onto various substrates under various pre-coating treatments. AFM imaging revealed pore size and layer thickness in successful samples.

(44) ***Progress of Synthesizing the Donor and Acceptor Components of Organic Polymers***
Robert Glass and *Soo Min Lee, High Point University
Mentor: Pamela Lundin, Chemistry

Organic polymers show promise as the active material for solar cells. We have designed a polymer capable of being a single component active layer. We are synthesizing the repeat unit of this polymer, as well as its donor and acceptor components. We will present our progress synthesizing the acceptor component.

(45) ***Oxidative Coupling of Aryl Boronic Acids with Aryl- and Alkylamines via Cooperative Photoredox and Copper Catalysis***
Juliana O'Brien, High Point University
Mentor: Andrew Wommack, Chemistry

The focus of our research is to improve the efficiency of the copper catalytic cycle in the Chan-Lam coupling reaction. Our results demonstrate that through the use of a ruthenium photoredox cocatalyst the coupling of unactivated alkylamines to electron-poor and electron-rich boronic acids is achieved with desirable efficiency.

(46) ***Synthesis and Characterization of Cis- and Trans- Covalently-Linked Dimers of the Fluorescent Dye, Rhodamine B***
***Lauren Pferdmenges, Caroline Dau, Kaitlyn Griffith, Pamela Lundin, and Keir Fogarty, High Point University**
Mentor: Pamela Lundin, Chemistry

Our goal is to successfully synthesize a covalently-linked fluorescent rhodamine b dimer with unique fluorescent properties that will be investigated with FCS and fluorimetry. Synthesis of this dimer and analysis of its properties will allow it be used as a calibration standard in future complex experiments.

(47) ***Investigating Tat-SF1 Interactions with HIV RNA***
***Julia Trautman, Riccardo De Cataldo, and Keir Fogarty, High Point University**
Mentor: Heather Miller, Chemistry

Tat-specific factor 1 (Tat-SF1) is a human transcription-splicing factor that is also an HIV dependency factor. There are no reports of how this factor binds the viral genome. We used *in vitro* transcription reactions to create HIV RNA and incubated with Tat-SF1 to analyze this RNA:protein interaction.

Communication

(48) ***Are Millennials Immune To Advertising?: A Quantitative Study Of A Generation's Awareness Of Marketing***
***Kayla Barry and *Mariana Pereira, High Point University**
Mentor: Phil Watson, Communication

This study investigates millennials' interactions with social media advertising. Millennials have a negative outlook towards this form of advertising. Marketers have adapted their strategies to this new medium with the perception that it's going to be the most effective way to reach millennials, but we have found that it's not.

(49) ***Interactive media: exploring different perspectives***
***Gillian Luttrell, *Lexi Levin, *Seth Easter, and *Ryan Felton, High Point University** Mentor:
Brian Heagney, Communication

Two truths can exist at the same time but contradict each other. They exist separate from one another but are valid in their own right. Our game explores the worlds of two individuals and what they perceive as the truth.

(50) ***Aina: An App for Testing Cognitive Function In Non-Human Animals***
Ben Rolison, High Point University
Mentor: Brian Heagney, Communication

Aina is an app that tests cognitive function in animals through the use of card sorting tasks. The animals are tested for being able to recognize patterns in shapes, colors, and number of items.

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(51) ***Designing Video Games with Accessibility in Mind***
Daniel St. Germain, High Point University
Mentor: Brian Heagney, Communication

LEVY is a fully audio described mystery/puzzle game made in the Unity Engine over three months by a team of 5 students. The goal was to design and develop a video game that would be playable to vision-impaired players without compromising the overall enjoyment and engagement of the game.

Criminal Justice

(52) ***An Environmental Scan of Human Trafficking Organizations in the Washington DC Area***
Riley Macklin, High Point University
Mentor: Jessica Swanson, Criminal Justice

Global efforts against human trafficking have expanded, but local initiatives lose sight of the regional problems. This study evaluates resources using an environmental scan to detect trends geared towards human trafficking awareness. The findings can assist social service organizations and law enforcement to form task forces and identify best practices.

Education

(53) ***Comparative Analysis of Teacher Cultural Core Beliefs Across Settings in Public Education (Pre-K-5th Grade)***
Brianna Beard, High Point University
Mentor: Shirley Disseler, Education

The number of English Language Learners (ELLs) in United States classrooms continues to rise. Teachers have personal beliefs regarding ELLs in the classroom that they often do not realize. This quantitative study serves as an introductory study into the Common Beliefs of teachers in elementary classrooms in North Carolina.

(54) ***The Impending Need for Response To Intervention In Teacher Preparation Programs***
Melissa Martins, High Point University
Mentor: Sarah Vess, Education

Response to Intervention (RTI) is a multi-tiered system of supports that assists students who are at risk or are already underperforming (Preston, Wood, & Stecker, 2016). Teacher preparation programs need to prepare teachers on how to implement RTI and this research describes a pilot program that introduced pre-service teachers to RTI.

Exercise Science

(55) ***Identification of Jump Trends in Collegiate Women's Volleyball Players Over the Course of a Season***
Haley Barnes, High Point University
Mentor: Jeff Taylor, Physical Therapy

Women's volleyball involves repetitive and physically demanding jumping mechanisms that often result in injury. The purpose of this research is to identify jump count and jump height trends over a women's collegiate volleyball season. In the future, coaches can implement efficient jump volumes for practices to reduce injury risk.

(56) ***Elevated Blood Glutathione Does Not Reduce Arterial Stiffness or Central Blood Pressure in Healthy Males and Females***
Brianna Bruggeman, High Point University
Mentor: Andrew Wommack, Chemistry

Glutathione mediates redox chemistry and prevents oxidative damage. We hypothesized that acute glutathione supplementation would decrease arterial stiffness and reduce brachial and central blood pressure in volunteers. Males and females experienced an increase in circulating humoral antioxidants in response to glutathione supplementation. However, supplementation had minimal effects on resting hemodynamics.

(57) ***Dietary Nitrate Does Not Reduce Resting Metabolic Rate or Oxidative Stress in Healthy Males***
***Haley M. Fair[1], Caleb D. Harrison[2], Evan Bockover[2], Brycen J. Ratcliffe[2], Sierra Crowe[2], Francisco Morales[3], Katharine E. Storo[1], Alvaro N. Gurovich[3], and Colin R. Carriker[1], High Point University; [2]Indiana State University; [3]The University of Texas at El Paso**
Mentor: Colin Carriker, Exercise Science

During exercise, dietary nitrate lowers oxygen consumption and increases nitric oxide, which lowers oxidative stress. We hypothesized that dietary nitrate supplementation would reduce resting metabolic rate and

oxidative stress at rest. Supplementation does not change resting metabolic rate or oxidative stress in young, healthy males.

(58) ***Cross-Tolerance: Hypoxia Stresses Peripheral Blood Mononuclear Cells (PBMC) More Than Hyperthermia.***
***Peter Falgiano, Claire Lauterbach, Zach Schall, and Harrison Strag, High Point University**
Mentor: Matthew Kuennen, Exercise Science

This work investigated whether running at altitude alters protein expression in peripheral blood mononuclear cells(PBMC) to a similar extent as running in desert heat. Both forms of extreme exercise downregulated pAMPK and SIRT, which helped PBMC maintain pro-inflammatory capacity. However, altitude appears to stress PBMC more than desert heat.

(59) ***Positional Differences In Movement Demands In Collegiate Women's Soccer***
Devyn Fleischhacker, High Point University
Mentor: Jeffrey Taylor, Physical Therapy

Soccer positions differ in their roles on the field, which leads to different movement requirements. This is important because each position may have different training requirements to perform at maximum capability. Position-specific movement data of collegiate female soccer players was characterized for 18 players.

(60) ***Does the Body Composition of Collegiate Male Lacrosse Players Differ by Position?***
Abigail Goldburt, High Point University
Mentor: James Smoliga, Physical Therapy

The purpose of this study was to examine the body composition of collegiate male lacrosse players to see if they differ across positions. We used a DEXA machine to scan the whole body for lean and fat mass. We came to the conclusion that there are no statistically significant differences.

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(61) ***Higher Vertical Stiffness is Related to Greater Fifth Metatarsal Bone Mineral Density in Football Players***
***Thomas J. Hockenjos, Kevin R. Ford, Justin P. Waxman, Anh-Dung Nguyen, Audrey E. Westbrook, Michelle A. Aube, and Jeffrey B. Taylor, High Point University**
Mentor: Jeffrey Taylor, Physical Therapy

Higher lower-extremity stiffness is thought to enhance overall joint stability, reduce ligament loading, and potentially increase bone loading. Long-term bone loading may increase injury risk. The purpose of this study was to identify differences in bone mineral density between athletes with relatively higher and lower levels of vertical stiffness.

(62) **Effect of Saturated Fatty Acid On Markers Of BCAA-Mediated Mitochondrial Biogenesis And BCAA Catabolism *In Vitro***
***Michele A. Johnson[1], Nicholas P. Gannon[2], Jamie K. Schnuck[2], and Roger A. Vaughan[1], High Point University, [2]Medical College of Wisconsin** Mentor:
Roger Vaughan, Exercise Science

Branched chain amino acids (BCAA) such as leucine, stimulate favorable metabolic processes, however higher levels of circulating BCAAs correlate with severity of diabetes (possibly from lipid-induced deregulation of BCAA catabolism). Leucine-induced mitochondrial biogenesis was suppressed by concurrent fat treatment. BCAA catabolism remained largely unaffected by leucine with or without lipid.

(63) ***Gastrointestinal Barrier Permeability and Associated Inflammatory Response During Exercise at Simulated Altitude***

Claire Lauterbach, High Point University
Mentor: Matthew Kuennen, Exercise Science

This study tested whether ischemic stress during exercise at altitude increases gastrointestinal barrier permeability, causes inflammation, and activates leukocytes. Blood and urine makers indicate altitude increases gastrointestinal permeability and inflammation, both of which are known to increase leukocyte activation. These changes may help explain the etiology of acute mountain sickness.

(64) ***Effect of Valine and Valine-catabolite, 3-Hydroxyisobuterate on Cell Metabolism, Mitochondrial Biogenesis and BCAA Catabolism***

***Emily S. Lyon, Michele A. Johnson and Roger Vaughan, High Point University**
Mentor: Roger Vaughan, Exercise Science

Valine catabolite 3-hydroxyisobuterate (3HIB) may enhance cellular fatty acid uptake possibly explaining the correlation between circulating BCAAs (such as valine) and metabolic disease. Our findings in cultured myotubes suggest 3HIB may dose-dependently alter metabolism without changing gene expression of regulators of mitochondrial biogenesis or BCAA catabolism.

(65) ***Effect of Maturation on Heart Rate During a Six-Week Plyometric Training in Female Soccer Players***

***Christina M. Mullen, Jeffrey B. Taylor, Michelle A. Aube, Audrey E. Westbrook, Anh-Dung Nguyen, James M. Smoliga, and Kevin R. Ford, High Point University**
Mentor: Kevin Ford, Exercise Science

Understanding relationships between physiological responses to load and maturation stages resulting in a more effective IPP in youth athletes. The effects of maturation on HR_{Max} was examined over a six-week ACL injury prevention program of plyometric, resistance and core strength training. Physiological responses to load were dependent on maturation stage.

(66) ***Exercise at Simulated Altitude Alters Protein Expression in Peripheral Blood Mononuclear Cells***

***Zach Schall, Claire Lauterbach, Ally Hamilton, Harrison Strag, and Matthew Kuennen, High Point University**
Mentor: Matthew Kuennen, Exercise Science

This study tested whether ischemic stress during exercise at altitude increases gastrointestinal barrier permeability, causes inflammation, and activates leukocytes. Blood and urine markers indicate altitude

increases gastrointestinal permeability and inflammation, both of which are known to increase leukocyte activation. These changes may help explain the etiology of acute mountain sickness.

(67) ***Body Composition Differences by Position in Women's Division 1 Lacrosse Players***
Jessica Siplon, High Point University
Mentor: James Smoliga, Physical Therapy

Understanding the relationship between body fat percentages and player position can benefit both the team and individual players. Purpose was to determine if body composition (body fat percentage) in female Division 1 lacrosse players differs between player position.

(68) ***Endothelial Function, Arterial Stiffness and Central Blood Pressure are Not Affected by a Single Dose of Dietary Nitrate in Healthy Normotensive Females***
***Katharine E. Storo[1], Caleb D. Harrison[2], Evan Bockover[2], Brycen J. Ratcliffe[2], Sierra Crowe[2], Francisco Morales[3], Haley M. Fair[1], Alvaro N. Gurovich[3], Colin R. Carriker[1]**
[1]High Point University, [2]Indiana State University, [3]The University of Texas at El Paso
Mentor: Colin Carriker, Exercise Science

Dietary nitrate is shown to increase nitric oxide thereby increasing vascular compliance and lowering blood pressure. We hypothesized that dietary nitrate supplementation would enhance flow mediated dilation and reduce pulse wave velocity and central blood pressure. Supplementation does not change vascular compliance or blood pressure in young, healthy females.

History

(69) ***The History of Soccer Attendance for the United States Men's National Soccer Team***
Collin Giuliani, High Point University
Mentor: Patrick McConnell, Communication

Attendance at national soccer games has dramatically increased since the first game in 1885. While this consistent growth did not happen for nearly 100 years, the 1984 Olympics and the 1994 World Cup were turning points. These events helped generate long-term interest in the sport that still exists today.

Home Furnishing/Interior Design

(70) ***Adaline's Bridal Boutique***
Fernanda Aimee Villarreal, High Point University
Mentor: Victoria Brown, Visual Merchandising Design

A fictional bridal boutique was created for a pre-determined location and price point. Research was conducted to determine stylistic details and retail experiences that would meet the demands of the customer. Computer programs such as SketchUp and AutoCAD were used to create floor plans, elevation drawings, and store perspective renderings.

Human Relations

(71) ***Rumsfeld's Snowflakes: A Peek into Internal Organizational Communication During the 9/11 Crisis***
Grace Barrett, High Point University
Mentor: Elizabeth Jeter, Human Relations

How does the Department of Defense handle crisis communication? Donald Rumsfeld, former Secretary of Defense, provides daily insight on internal organizational communication during the 9/11 crisis, through his "snowflake" memos. These allow us to analyze how access to information influenced his decisions on objectives, use of power and administrative priorities.

Neuroscience

(72) ***ISRIB as a Potential Therapeutic Drug for Neuronal Injury***
***Ian Benz and Michael Grider, High Point University**
Mentor: Michael Grider, Biology

During a stroke the brain loses oxygen and glucose (blood sugar) injuring the neurons. Our model tests potential therapeutic drugs to determine what will increase the survival rate of neurons after injury. Studies suggest that ISRIB is capable of lowering the internal stress response of neurons after injury providing neuroprotection.

(73) ***Relative Contributions of Apoptosis and Necrosis in PC12 Stroke Model***
Alexandra Sprouse, High Point University
Mentor: Michael Grider, Neuroscience

This study uses neuron-like PC12 cells to measure cell death following oxygen-glucose deprivation, modeling ischemic stroke conditions.

(74) ***Neuroprotection Following Injury: The Role of Integrated Stress Response Inhibitor (ISRIB)***
Logan Webb, High Point University
Mentor: Michael Grider, Biology

In response to trauma to the nervous system, neural cells increase reactive oxygen species (ROS), leading to cell death. Here, we test whether addition of a new drug, Integrated Stress Response Inhibitor (ISRIB), can promote the survival of vertebrate forebrain neurons and/or PC-12 cell cultures, following a ROS injury.

Non-Profit Studies

(75) ***Effects Staff Training Can Have to Minimize the Consequences of Microaggression***
Shannon Driskell, High Point University
Mentor: Pamela Palmer, Nonprofit Leadership and Management Studies

Microaggression, known as subtle jabs or insults against minorities, have the potential to leave lasting effects on those who experience it whether they are intentional or not. The poster focuses on the importance of educating staff, in a care-providing nonprofit, on microaggression and its consequences. By reviewing literature on microaggression and considering how these acts work against relationships, a foundation is laid to discuss the importance of educating staff in a care providing agency.

(76) ***Fundraising Events: A Strategy Option For Nonprofit Organizations***
Hayley Houston, High Point University
Mentor: Pamela Palmer, Human Relations, Sociology, and Nonprofit Studies

The purpose of this research is to understand how fundraising events can become more beneficial to nonprofit organizations. The findings and conclusive information contribute to how nonprofit organizations fundraise. There are three main aspects organizations focus when planning: target audience, benefits of an active board, and importance of public relations.

Pharmacy

(77) ***Detecting The GFAP-DREADD Gene Using PCR and Gel Electrophoresis***
***Drew Evans and *Chris Trevisani, High Point University**
Mentor: Alex Marshall, Pharmacy

DREADDs are important in understanding GPCRs. In our lab, GFAP-DREADD (transgenic) mice are backcrossed with C57 (wildtype) mice. DNA from each mouse is amplified using PCR. A gel electrophoresis is run to detect the presence of the GFAP-DREADD gene which determine the mice that can be used in future studies.

(78) ***Increase in Hippocampal Microglia After Non-Dependent Ethanol Binge***
Eva Greengrove, High Point University
Mentor: Alex Marshall, Pharmacy

Excessive drinking impacts the neuroimmune system and can be reflected by activated microglia. Results indicated a significant increase in microglia number for animals who consumed ethanol in DG and CA1 regions, providing further evidence that non-dependent alcohol consumption affects the neuroimmune response within the hippocampus.

(79) ***Alterations in Glial Activation Following Binge-like Ethanol Consumption***
***Isabella R Grifasi, Scot E McIntosh, and S. Alex Marshall, High Point University**
Mentor: Alex Marshall, Pharmacy

Exposure to binge-like amounts of ethanol causes alterations in glial cell function. A non-dependent, nondamaging alcoholic binge model resulted in changes in the microglia (Aif1) and astrocyte (GFAP) mRNA that are only prevalent during intoxication, but there are no persisting alterations during abstinence.

_____ *Denotes presenters when there are multiple authors

(80) ***Pulmonary Function Tests: Assessment of Learner Achievement in the Classroom and Comparison of Administration Technique***
Christopher Houpt, High Point University
Mentor: Courtney Bradley, Pharmacy

The purpose of this study was to determine student confidence in administering a pulmonary function test (PFT) after two phases of an educational intervention. Results analyzed from surveys showed a significant increase in confidence between the first and second survey indicating a benefit to a one phase educational intervention.

(81) ***Investigating the Role of G Protein Beta and Gamma Subunits in Hepatic Glucose Production***
***Victoria MacQueen and Dr. Sally McMillin, High Point University** Mentor:
Sally McMillin, Pharmacy

This project is designed to determine the role of G protein beta and gamma subunits in regulating hepatic glucose production. We are utilizing qPCR to determine the most highly expressed subtypes of beta and gamma in mouse livers and cell culture models to investigate glucose production in vitro.

(82) ***Formulation of a Self-Emulsifying Drug Delivery System of Fenofibrate***
***Courtney McCorkle and Bradley Clark, High Point University**
Mentor: Bradley Clark, Pharmacy

Self-emulsifying lipid delivery systems create oil-in-water emulsions upon contact with aqueous gastric and intestinal fluids increasing surface area for drug release and absorption. This study aimed to create a formulation that provides spontaneous emulsification and release of fenofibrate to increase absorption as monitored by drug dissolution.

(83) ***Comparison of Pulmonary Function Test Results With or Without Use of Nose Clips***
***Kelly Odegaard and Christopher Houpt**
Mentor: Peter Gal, Pharmacy

This study evaluated if a difference exists between pulmonary function test (PFT) results or comfort when nose clips versus no nose clips were used during testing. PFT results were not statistically different ($p>0.05$) whether a nose clip was worn or not, while participant comfort was ($p<0.0001$), favoring no nose clip.

(84) ***The Influence of Aging on Glutamatergic Concentrations in a Model of Alcohol-Induced Brain Damage***
***Gabrielle Smith, Isabella Grifasi, and S. Alex Marshall, High Point University**
Mentor: Alex Marshall, Pharmacy

The purpose of this project was to determine the effects aging has on ethanol's effects on the glutamatergic tone within the hippocampus. All together these findings suggest that age had no effect on alcohol-induced glutamatergic tone in the hippocampus, but ethanol alone reduces concentrations of glutamate.

Physical Therapy

(85) ***Landing Patterns of Collegiate Female Volleyball Players During Practice And Game Competition***
***Jenny L. Kantor, Haley Barnes, and Jeffrey B. Taylor, High Point University**
Mentor: Jeffrey Taylor, Physical Therapy

Volleyball requires high-impact landings, leading to increased risk of lower extremity injuries, especially in females. The purpose of this study was to perform a longitudinal study comparing jumping characteristics

between practices and games over a full season in order to help explain the relationship between jumping and injury rates.

Physics

(86) ***Using Deep Learning to Analyze the Voices of Stars***
***Thomas M. Boudreaux and Brad N. Barlow, High Point University**
Mentor: Brad Barlow, Physics

With several new large-scale surveys on the horizon, faster and more accurate analysis methods will be required to adequately process the amount of data produced. Here we generate synthetic data loosely mimicking the properties of rapidly-pulsating hot subdwarf B stars and compare the performance of different deep learning algorithms in the classification of these data.

(87) ***Modeling the Effects of Asynchronous Rotation on Secondary Eclipse Timings in HW VIr Binaries*** **Padraig Clancy, High Point University**
Mentor: Brad Barlow, Physics

Stellar flux values were generated to determine tidal locking systems of stellar objects. Basically, the only new principle involved is that instead of power being generated by the relative motions of conductors and fluxes, it is produced by the modial interaction of magnetoreluctance and capacitive directance and the lunar wainwright.

(88) ***Updated O-C Diagrams for Several Bright HW Vir Binaries Observed with the Evryscope***
***Kyle Corcoran and Brad N. Barlow, High Point University**
Mentor: Brad Barlow, Physics

Using observations of extreme, post-common-envelope binaries, called HW Vir binaries, from the all-sky telescope, Evryscope, we conducted observed minus calculated (O-C) studies to analyze the evolution of several binaries and reflex motion due to circumbinary planets. We confirm the Evryscope timestamps' accuracy and present new planetary models for two systems.

Psychology

(89) ***The Relationship Between the Production Effect and Motor Skills in Elementary Aged Children***
Kaylee Chulla and Dr. Stacy Lipowski, High Point University
Mentor: Stacy Lipowski, Psychology

Research shows that saying a word aloud is more beneficial for memory than reading it. This study examined whether writing a word is as beneficial as saying it aloud. It was hypothesized that writing a word would be more beneficial than reading it, but less beneficial than saying it aloud.
(90) ***The Testing Effect and Metacognition in Undergraduate Students***
Caitlin Fulk, High Point University
Mentor: Stacy Lipowski, Psychology

Success in school is determined by students' ability to accurately monitor learning. Undergraduates read two text passages testing themselves on one and restudying the other. The goal was to determine whether testing improves memory and metacognitive monitoring.

(91) ***Alexithymia and Somatizing Tendencies: Is Emotional Blindness Related to Illness Symptom Experience and Attitudes***

***Amy Hobday, Sarah Uzzi, Heather Estes, and Kelly Curtis, High Point University**
Mentor: Kelly Curtis, Psychology

Individuals who are alexithymic show increased somatizing tendencies, which is associated with poorer health attitudes and outcomes. College students completed questionnaires related to these variables. Significant correlations were observed for almost all variables. A mediation test indicated that somatization mediated the relationship between alexithymia and illness attitudes.

(92) ***The Effect of Equine-Assisted Therapy on Juveniles who have Experienced Trauma***

Jordan Krisfalusi and Joanne Altman, High Point University
Mentor: Joanne Altman, Undergraduate Research and Creative Works

The objective of this experiment was to expand upon the limited research in the field of EAP and provide empirical evidence for the effects of EAP on mood rehabilitation. It was hypothesized that equine-assisted psychotherapy would improve affect, self-esteem, and self-efficacy in juveniles who have experienced trauma.

(93) ***Emotional Availability, Stress, and Health Outcomes in College Students***

***Morgan Burns and *Deanna Lee, High Point University**
Mentor: Kirsten Li-Barber, Psychology

Previous research found that children with emotionally open parents are more capable of handling stressful situations and have better overall health (Gökçe & Yılmaz, 2017). In the current study, college students reported on their parents' level of emotional availability, own susceptibility to stress, and perceived ability to handle health issues.

(94) ***The Relationship Between Education About Psychological Disorders and 3 Types of Stigma Across a Multi-Generational Sample***

***Melanie Maldonado, Sarah Ross, Brianna Bruggeman, and Megan Deiling, High Point University**
Mentor: Sarah Ross, Psychology

Educational programs (EPs) about psychological disorders are working to reduce stigmas. Existing research demonstrates that EPs can reduce stigmas in high school students; the current study focuses on the college population. Results show that previously participating in an EP about psychological disorders was related to reduced stigma against others and increased stigma toward the self. This suggests that EPs may need to add additional programming to address self stigma.

(95) ***Animal Cognition: It's Not Just Mammals and Birds***

***Michael Corigliano and *Kayla Pennycuff, High Point University**

Mentor: Joanne Altman, Undergraduate Research and Creative Works

Cognitive competencies in birds and mammals have been studied extensively in comparison with human capabilities. However, reptiles have been studied significantly less. To increase our understanding of the current evolutionary climate, this review will demonstrate how reptilian cognition fits into the varied cognitive abilities of the animal kingdom.

(96) ***World of Gender and Personality on Experiences and Acceptance of Helicopter Parenting***
Chris Putnam, High Point University
Mentor: Kirsten Li-Barber, Psychology

In the current study, we examined the relationship between personality traits and both endorsement of helicopter parenting and perceptions of appropriateness of such parenting behavior. Results indicated a positive correlation between female students' neuroticism and helicopter parenting being present, $r = .330$, $p \leq .001$.

(97) ***Individual and Social Factors that Contribute to Maladaptive Exercising and Eating Behaviors in Individuals Involved in Greek Organizations***
***Sarah Uzzi, Amy Hobday, Heather Estes, and Kelly Curtis, High Point University**
Mentor: Kelly Curtis, Psychology

A variety of psychosocial factors contribute to maladaptive eating and exercise behaviors in adults. Questionnaires pertaining to psychological, social, and health behaviors were administered to students affiliated within Greek organizations. Significant correlations were expected between these variables with time involved in Greek organizations expected to make the expected relationships stronger.

(98) ***The Relationship Between Childhood Imaginative Play, Quality of Sibling Relationship, and Mental Health of College-Aged Individuals***
Lauren Xu, High Point University
Mentor: Jana Spain, Psychology

This research study aims to examine the relationship between childhood imaginative play, sibling relationships, and the mental health of college-aged individuals. It is hypothesized that sibling warmth, perception of play, and frequency of imaginative play will be positively correlated with the participants' scores of psychological adjustment, and sibling warmth will be negatively correlated with scores of depression, anxiety, and stress.

Art

(99) ***Tourist or Exlporer?***
Maggie Andrulis, High Point University Mentor:
Benita VanWinkle, Photography

Photography allows us to change our perspective. This became especially true to me when I studied abroad in London, England. Most tourists would snap a picture of Big Ben and then move on. As a photographer and traveler, I would think about the exposure, perspective, and most importantly, the story I am trying to tell.

ART EXHIBIT

Slane Basketball Court • 3:30pm-5:00pm

(100) ***Intersection of Texture and Form***
Hannah Le, High Point University
Mentors: Katy Brandt and Adrian Boggs, Interior Design

This is an exploration of the materiality and tactile qualities of tree bark and similar surface. Specifically, testing how the attribute of tactility, or the lack thereof, influences a user's experience with interior products. This absence versus presence of a texture will inform the efficacy of capturing a sensory moment of time in nature.

(101) ***Form vs Surface: Visual Texture Over Contrasting Form***
Johnele Riles, High Point University
Mentors: Adrian Boggs and Kathryn Brandt, Interior Design

This product design study, focused on the exploration of movement across a form's surface, was influenced by a waterfall. However, it is not about the literal water but instead the perception of movement through the created "visual flow" of texture or material as it yields to the surface of form.

(102) ***Challenging Norms: Unique Applications of Concrete***

Lindsay Schmidtmann, High Point University
Mentor: Adrian Boggs, Interior Design

By creating visual tension, exploring unexpected forms and creating atypical applications, my goal is to achieve "a contrast of expectation" in how we perceive concrete and its most expected uses. We are setting up an opportunity to create visual experiments and challenge common perceptions of this robust and rigid material.

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