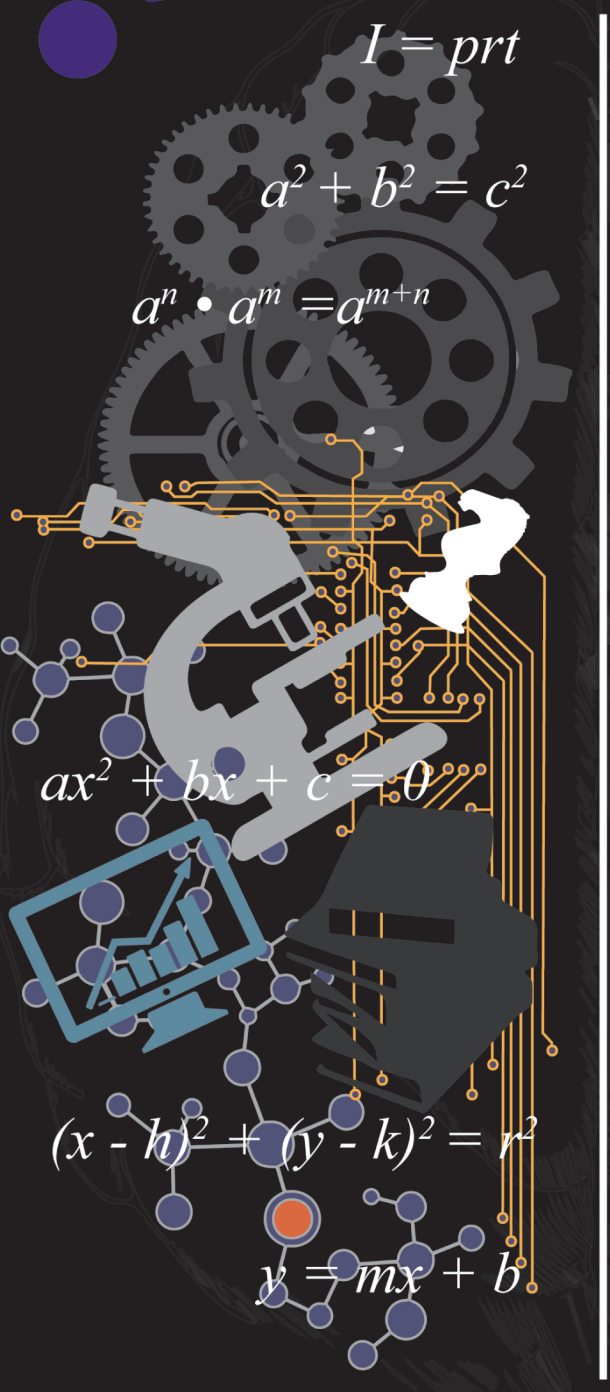
2016

High-PURCS



URCW
HIGH POINT UNIVERSITY

-Welcome from the-

DIRECTOR OF UNDERGRADUATE RESEARCH AND CREATIVE WORKS

Welcome to the 4th 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, writers, scientists, teachers and scholars. At this 4th symposium, we have 137 students mentored by 48 faculty from 19 departments showcasing 122 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 2016 High Point University Research and Creativity Symposium.

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

THE 4TH HIGH POINT UNIVERSITY RESEARCH AND CREATIVITY SYMPOSIUM

(High-PURCS)

|APRIL 13, 2016 |

12:45-1:20 p.m. **Welcome, Opening Remarks, Presentation Awards, and Research Apprentice Recognition**
Phillips Hall Room 120

1:30-2:30 p.m. **Oral Session I** Phillips Hall 2nd floor
Dance Performance I The Empty Space Theatre

2:30-3:30 p.m. **Oral Session II** Phillips Hall 2nd floor

3:30-5:00 p.m. **Poster Session and Art Exhibit with Reception**
Slane Basketball Court

Congratulations to our 2015-2016 Research Apprentices

Research Rookies is a program for freshman 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 students are committed to independent work which will give them an edge later in job interviews or application for graduate or professional schools.

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

Recognized in a fall ceremony

Helen Barker

Haleigh Mana'o

Molly Lowry

Melanie Maldonado

Rebecca Ulrich

Recognized this spring

Ryan Casey

Summer Sipprell

Olivia Tornow

ORAL PRESENTATION SCHEDULE

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

	Phillips 215	Phillips 216	Phillips 217	Phillips 218	Phillips 220	Phillips 221	Phillips 222	Phillips 223
Session 1	**Nonprofit Leader-ship**	**Exercise Science**	**Biology I**	**English I**	**Modern Language I**	**Psychology I**	**Chemistry /Physics**	**Human Relations I**
1:30-1:45	Taylor Coakley	Connor Whicker	Gabrielle Hayes	Kingsley Floyd	Morgan Ellis	Tyler Cook	Calla Telzrow	Johanna Platt
1:50-2:05	Elyse Stoner	Hailey Parry	Samia Ladner	Nicole Forman	Olivia Scarboro	Abbie Starns	Matthew Iczkowski	Anne Dillon
2:10-2:25	Tomeshia Spriggs	Jamie Schnuck	Tyler Wilson	Jose San Miguel	Christina Rickert	Jessie Drew	Hallie Stidham	Bridgett Hess

Session 1	Dance – The Empty Space Theater
1:30-1:45	Madeleine Casadonte, Shelby Desmarais, Nicole Drinkwater, Peyton Senning
1:50-2:05	Danielle Criss, Madeleine Casadonte, Cydney Hamilton, Deja Ross, Amanda Rossi, Paige Unni
2:10-2:25	Peyton Senning, Madeleine Casadonte, Alanna Meek, Paige Unni

Session 2	**Anthropology**	**Philosophy**	**Biology II**	**English II**	**Modern Language II**	**Psychology II**	**Human Relations II**	**Human Relations III**
2:30-2:45	Natalie Ward	George Malonoukos	Nicole Wright	Noah Coates	Carla Rosas	Lauren Rubenstein	Grace Giberson	Annie Johnson
2:50-3:05	Anne Dillon	Mary Kyner	Ivy Cocklereece	Mollie McKinley	Griffin Spencer	Rebecca Dornan	Manuela Moreno	Hannah Hewitt
3:10-3:25			Harris Coley	Megan Painter	Liz Polowczyk	Nicole Bayeur		Greta Hilberts

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

POSTER PRESENTATIONS

Space	Presenter(s)	Topic
1	Haley Richter	Anthropology/Sociology
2	Maria Schur	Anthropology/Sociology
3	Natalie Ward	Anthropology/Sociology
4	Kimo Manning	Anthropology/Sociology
5	Katherine Van Wert	Athletic Training
6	Emma Zuk	Athletic Training
7	Joshua Baulch	Biology
8	Nicole Bayeur	Biology
9	Jeff Berwager & Sarah Ebersold	Biology
10	Nick Bittner & Alexandria Cendrone	Biology
11	Micah Branscomb	Biology
12	Rodrigo Catalan-Hurtado	Biology
13	Zoey Chittick	Biology
14	Taylor Cunningham	Biology
15	Edem Dzotefe	Biology
16	Sarah Edmark	Biology
17	Margaret Essepian & Allyson Kane	Biology
18	Lucas Fogaca	Biology
19	Casey Garr, Hillary Wilson & Christina Budzinski	Biology
20	Michael Gladhill & Mackenzie Jarvis	Biology
21	J. Melissa Hernandez-Moreno	Biology
22	Kristina Jansen & Harrison Seitz	Biology
23	Mary Clare McGinn	Biology
24	Thomas Moss	Biology
25	Elesa Poteres	Biology
26	Jimmy Rager	Biology
27	Steven Safille & Carter Lohman	Biology
28	Matt Slitzky	Biology
29	Maria Trujillo	Biology
30	Maria Valverde	Biology
31	Halley Watson	Biology
32	Matthew Beck	Chemistry
33	Eliana Betzios	Chemistry
34	Sarah Colbert	Chemistry
35	Jennifer Marshall	Chemistry
36	Luis Royo Romero	Chemistry
37	Rebecca Ulrich	Chemistry
38	Jacquie Cafasso	English
39	Rosana Filingeri	English
40	Mary Torres	English

41	Kathryn Farina	Exercise Science
42	Lacey Gould	Exercise Science
43	Michele Johnson	Exercise Science
44	Rolonda Kelly	Exercise Science
45	Lauren Mantikas	Exercise Science
46	Scott Morin	Exercise Science
47	Colleen Mulrey	Exercise Science
48	Hailey Parry	Exercise Science
49	Matthew Siegmund	Exercise Science
50	Lindsey Siska	Exercise Science
51	Mandy Szymanski	Exercise Science
52	Lindsay Tiberi	Exercise Science
53	Kaitlyn Wright	Exercise Science
54	Allie Zambito	Exercise Science
55	Shakira Ramsey	Marketing
56	Emily Dwyer & Alicia Wingate	Marketing
57	Catherine Bakewell	Modern Languages
58	Hannah Shaheen	Nonprofit Leadership
59	Abbie Dorfman & Allie Herrmann	Nonprofit Leadership
60	Olivia Dineen	Physical Therapy
61	Samantha Tripp	Physical Therapy
62	Allison Townsend	Physical Therapy
63	Thomas Boudreaux	Physics
64	Nick Kasle	Physics
65	Amiras Simeonides	Physics
66	Alan Vasquez	Physics
67	Sarah Bishop	Psychology
68	Abbie Starns	Psychology
69	Elizabeth Ezzell	Psychology
70	Jordan Izzo	Psychology
71	Brittany Vose	Psychology
72	Mitchell Lawhorn	Religion/Philosophy
73	Alexandra Mauch	Theatre

ART EXHIBIT

Space	Presenter(s)
74	Molly Couick

PERFORMANCES

Session I • 1:30pm – 2:30pm

Performance Session I

The Empty Space Theater

1:30-1:45

Daylight

Madeleine Casadonte (choreographer and performer), Shelby Desmarais, Nicole Drinkwater, and Peyton Senning (performers) High Point University

Mentor: Ms. Lindsey Howie, Department of Theatre and Dance

I find comfort in daylight; in its warmth and peace and happiness, its positivity. Searching for daylight when lost in the dark can be frustrating, lonely at times, and finding your path again can feel like a directionless dirt road. This dance work reflects a journey to finding that light.

1:50-2:05

Do You See Me?

Danielle Criss (choreographer and performer), Madeleine Casadonte, Cydney Hamilton, Deja Ross, Amanda Rossi, and Paige Unni (performers) High Point University

Mentor: Ms. Lindsey Howie, Department of Theatre and Dance

Colorblindness is a dangerous construct to use. Not enough time is taken to appreciate our unique individual aspects. How can we truly love one another if we choose not to recognize the things that make us who we are?

2:10-2:25

Trois Trésors

Peyton Senning (choreographer), Madeleine Casadonte, Alanna Meek, and Paige Unni (performers) High Point University

Mentor: Ms. Lindsey Howie, Theatre and Dance

This dance is an expression of growth. Frightened by simple touch, the dancers fear their world. Bodies collide, they ease into a world of peace and uplift and support each other. Strength in numbers enables them to overcome adversity. This experience allowed me to embrace my future with more courage.

ORAL PRESENTATIONS

Oral Session I • 1:30-2:30 p.m.

Nonprofit Leadership
Phillips 215

1:30-1:45
Perspectives on Language Diversity in the American Workplace
Taylor Coakley, High Point University
Mentor: Ms. Molly Jordan, Human Relations

It is undeniable that America's global economy and multicultural work environment are here to stay. This thesis explores the positive and negative effects of language diversity in the workplace from a leadership and managerial perspective A analysis of existing literature serves as the foundation recommendations for a cohesive and effective work environment in the future.

1:50-2:05
Bridging the Gender Equality Gap in the Workplace
Elyse Stoner, High Point University
Mentor: Ms. Molly Jordan, Human Relations

The gender equality gap is a universal issue across professions and various areas of work, regardless of equal education and training among genders. This presentation will review the gender equality gap within the workplace, factors that contribute to its continued existence, and suggestions to move towards bridging it.

2:10-2:25
A Change is Going to Come: Looking at Racism Then and Now
Tomeshia Spriggs, High Point University
Mentor: Ms. Molly Jordan, Human Relations

This paper looks at racism over the years. Advancements have been made in the African American community through the civil rights movement but there are still many barriers they must overcome. This presentation will look at the rights that minorities have legally been given but do not always receive.

Exercise Science
Phillips 216

1:30-1:45
The Influence of Hip Strength on Landing Kinematics Across Functional Tasks in Adolescent Athletes
Connor Whicker*, Emma Zuk, Katherine Van Wert, Andrea Baellow, Michelle Boling, Kevin Ford, Jeff Taylor, Kate Pfile, Lindsey DiStefano, Mark Williams, and Yum Nguyen, High Point University, University of North Florida, University of Connecticut, College of Charleston, Wilmington Hammerheads.
Mentor: Dr. Yum Nguyen, Athletic Training

Decreased hip strength may contribute to altered landing patterns known to increase risk of knee injuries. We found that hip strength influences lower extremity motion in both single and double leg landing tasks in female youth athletes. In the future, these landing tasks should be included during screening.

*****denotes presenting authors when non-presenting authors are listed

1:50-2:05
Midsole Stiffness Influences Plantar Loading During Double Leg Landings in Basketball Players
Hailey A. Parry*, Anh-Dung Nguyen, Jeffrey B. Taylor, and Kevin R. Ford, High Point University
Mentor: Dr. Kevin Ford

Basketball players have greater risk of fifth metatarsal injury. This research determines if a carbon insole in basketball shoes decreases loading on the lateral part of the foot. Decreased loading on the lateral side of the foot would provide a possible intervention for decrease injury risk.

2:10-2:25
Leucine Stimulates PPAR Signaling Promoting Mitochondrial Biogenesis, Oxidative Metabolism, and GLUT4-Mediated Glucose Uptake in Myotubes
Jamie K. Schnuck*, Kyle L. Sunderland, Nicholas P. Gannon, Matthew R. Kuennen, and Roger A. Vaughan
Department of Exercise Science, High Point University, School of Medicine, Medical College of Wisconsin
Mentor: Dr. Roger A. Vaughan, Department of Exercise Science

Leucine stimulates anabolic and catabolic processes in skeletal muscle, however little is known about the effects of leucine on PPAR activity (required for normal oxidative metabolism). Leucine-treated cells exhibited increased oxidative metabolism in a PPAR-dependent fashion, and improved glucose uptake, suggesting leucine may have benefits for athletes and diseased populations.

Biology I
Phillips 217

1:30-1:45
Methylglyoxal Potentiates the Effect of Linezolid Against Staphylococcus aureus
Gabrielle Hayes*, Nicole Wright, Calla Telzrow, Andrew Wommack and Patrick Vigueira, High Point University
Mentor Name: Dr. Patrick Vigueira, Biology

Antibiotic resistance has become a major public health crisis, with the rise in cases of methicillin resistant *Staphylococcus aureus* (MRSA) and other resistant bacterial infections. As a possible solution to increasing rates of antibiotic resistance, we investigated linezolid and methylglyoxal in an attempt to identify synergistic activity.

1:50-2:05
Excess Power Index: A Sexually Dimorphic Trait in Bees
Samia Ladner*, Gabrielle Hayes, Kristen Korankyi, Josh Campbell, Cindy Vigueira, and Patrick Vigueira, High Point University
Mentor: Dr. Patrick Vigueira, Biology

Sexually dimorphic traits vary between the sexes of many hymenopteran species and those differences can reflect selection for specialized biological roles. Excess Power Index (EPI) - an insect's capacity for flight - was studied to infer basic ecological knowledge about bee and wasp species.

2:10-2:25
Amoxapine: A Novel Beta-lactamase Inhibitor
Tyler Wilson*, and Patrick Vigueira, High Point University
Mentor: Dr. Patrick Vigueira, Department of Biology

Bacterial resistance to antibiotics is a growing concern in the field of healthcare today. The antibiotics that we currently use are becoming less effective due to the ability of bacteria to develop resistance. We determined that amoxapine, a tetracyclic antidepressant, acts synergistically with β-lactam antibiotics against methicillin-resistant Staphylococcus *aureus (*MRSA*).*

English I
Phillips 218

1:30-1:45
The Enfreakment of Disability: An Examination of Disability Narrative in American Society
Kingsley Floyd, High Point University
Mentor: Dr. Jenn Brandt, English & Women's and Gender Studies

This paper examines representations of disability in popular culture in order
to better understand how to close the gap of the narrative "Other" and encourage society to rethink the boundaries that
the labels "disabled" and "non-disabled" create.

1:50-2:05
#RapeCultureIsWhen: The Role of Popular Media in Normalizing Rape Culture
Nicole Forman, High Point University
Mentor: Dr. Jenn Brandt, Women's and Gender Studies

The work examines how popular media romanticizes and normalizes rape through constantly portraying sexual violence as desirable. The purpose of the research is to empower men and women to be more responsible consumers of media in order to combat the normalization and romanticizing of rape in popular media.

2:10-2:25
Beautiful Terror: Negative Capability and the Burkean Sublime
Jose San Miguel, High Point University
Mentor: Dr. Matthew Carlson, English

Situating John Keats' idea of Negative Capability alongside Edmund Burke's theory of sublimity affords a fuller understanding of Keats' aesthetic project as one grounded in both the physiological sublime and the sublime as an effect of language.

Modern Language I
Phillips 220

1:30-1:45
Recuperación de espacio: implicaciones políticas de Festival Internacional Santiago a Mil
Morgan Ellis, High Point University
Mentor: Ms. Claudia Femenias, Modern Foreign Languages

Santiago a Mil, Chile's international theatre festival, is a project in recuperating the public space of the city which was confiscated during Pinochet's repressive dictatorship. Two themes—the literal occupation of public space and the metaphoric discussion of recuperation—inform both individual works and the structure of the festival itself. (Presentation in Spanish)

1:50-2:05
Urban Art, Graffiti, and Politics in Valparaíso, Chile
Olivia Scarboro, High Point University
Mentor: Dr. Claudia Femenias, Modern Foreign Languages
During the dictatorship of Augusto Pinochet in Chile public space was no longer public. Due to censorship graffiti and urban art became a method of protesting the government. This presentation explores how urban art in Valparaíso has evolved since Pinochet's time and its role in shaping the city's identity. (Presentation in Spanish)

2:10-2:25
San Juan y los Espacios Prohibidos para la Mujer
Christine Rickert, High Point University
Mentor: Dr. Claudia Femenias, Modern Foreign Languages

This study explores the novel Any Wednesday I'm Yours and its depiction of problems that exist in San Juan, Puerto Rico, especially for women at night. Sex, drugs and prostitution fill the nights of motel manager, Julián. The novel's events show women in cities lack the same opportunities as men. (Presentation in Spanish)

Psychology I
Phillips 221

1:30-1:45
L2 Reading Anxiety, Working Memory, and Reading Comprehension in College Spanish Students
Tyler Cook, High Point University
Mentor: Dr. Kimberly Wear, Psychology

Reading in a foreign language is a cognitively taxing activity, and poor working memory may either cause or mitigate foreign language anxiety (FLA) effects. If reading comprehension of a Spanish passage correlates with working memory, regardless of anxiety, then high working memory may diminish the negative effects of FLA.

1:50-2:05
Effect of Generalized Anxiety and Social Anxiety on Sensitivity to the Universal Facial Expressions
Abbie Starns,* and Kimberly Wear, High Point University
Mentor: Dr. Kimberly Wear, Psychology

This study examined anxiety's impact on recognition of expressions. Participants were predominantly Caucasian and female undergraduates. They completed generalized and social anxiety scales before being asked to identify emotional facial expressions. An own-gender bias was found, and socially anxious participants were more sensitive to disgust and surprise.

2:10-2:25
The Effects of Narrative Medicine on Anxiety
Jessie Drew, High Point University
Mentor: Dr. Allison Walker

Residents with dementia at an assisted living home participate in narrative medicine workshops, which have a focus in poetry. The residents are given an anxiety screener. The intention of the research is to discover if the effects of narrative medicine lower anxiety in adults with dementia.

Chemistry/Physics
Phillips 222

1:30-1:45
Solid-Phase Peptide Synthesis and Antimicrobial Assessment of a Plant-Derived Cyclic Peptide
Calla Telzrow* and Andrew Wommack, High Point University
Mentor: Dr. Andrew Wommack, Chemistry

Peptides isolated from *Jatropha* species exhibit diverse biological activity, including purgative, wound-healing, antimalarial, and antifungal effects. Cyclogossine A, a cyclic heptapeptide isolated from *J. gossypiifolia*, was synthesized utilizing a semi-automated method of solid-phase peptide synthesis. In future experiments, the antimicrobial effects of Cyclogossine A will be tested.

1:50-2:05
HPU's Chip 'n' Ship and NASA Micro-g NExT Program Experience
Matthew Iczkowski* and Hallie Stidham, High Point University
Mentor: Dr. Brad Barlow, Physics

The NASA Micro-G NExT Program is a selective undergraduate engineering program that challenges students to design, build, and test an original space tool. Last January, a team of five High Point University students successfully submitted a design proposal of a tool that chips rock samples from asteroids.

2:10-2:25
The Macrorheological Properties of Agarose as Compared to Human Lung Mucus
Hallie Stidham, High Point University
Mentor: Dr. Briana Fiser, Department of Physics

We have characterized the viscoelastic properties of varying concentrations of agarose, a potential mucus simulant, using a cone and plate rheometer. This simulant will be used in an artificial cilia system that replicates the biological system in the lung to study the cilia-driven flow of mucus.

Human Relations I
Phillips 220

1:30-1:45
Five Generations Co-existing In The Workplace For The First Time in History
Johanna Platt, High Point University
Mentor: Dr. Bergen, Human Relations

Today, for the first time in global history, five generations of workers will be simultaneously part of the same workforce and marketplace. This research will focus on the most relevant and impactful factors to be considered in a multi-generational workforce.

1:50-2:05
Workplace aggression: Preventing, Managing, and Minimizing Its Effects
Anne Dillon, High Point University
Mentor: Dr. David Bergen, Human Relations

Workplace aggression is increasingly widespread throughout organizations. The impact of workplace aggression causes decreased employee productivity and lower retention rates, and is often related to the work climate. This study is an exploratory literature review that examines the causes of aggression and strategies to prevent, manage, and minimize its effects.

2:10-2:25
Intercultural Negotiation: The Israeli-Palestinian Conflict as a case study
Bridgett Hess, High Point University
Mentor: Dr. David Bergen, Human Relations

Intercultural Negotiation is an evolving technique implemented in environments from business to foreign policy. Despite its popularity, its variant frameworks, implementations, and successes are still considered controversial and contested. This study delves into the literature in order to gain a better understanding of what may be the most effective form of Intercultural Negotiation.

Oral Session II
2:30-3:30 p.m.

Anthropology II
Phillips 215

2:30-2:45
Black Narrativity: Expressions of Black Womanhood
Natalie Ward, High Point University
Mentor: Dr. Joshua Fisher, Anthropology/Sociology

This presentation demonstrates how narrative can enable and challenge the dominant oppression against African American women. Building upon Patricia Hill Collins' scholarship on "black feminist thought," this presentation argues that narrativity in many forms, for African American women, is essential for positive self-definition and self-valuation.

2:50-3:05
Mirror, Mirror on the Wall: Reflections of Gender in Disney's Animated Feature Films
Anne Dillon, High Point University
Mentor: Dr. Joshua Fisher, Anthropology

The Walt Disney Company has powerful influence over popular culture. Disney animated films are instruments for, not only influencing, but learning about society. This presentation explores how Disney has been reflecting, and sometimes challenging, gender and family concepts and what that teaches children about gender roles.

Philosophy
Phillips 216

2:30-2:45
Waves and Radiation
George Malonoukos, High Point University
Mentor: Dr. Jennifer Brandt, English

Don DeLillo incorporates the philosophy of Jean Baudrillard in his postmodern novel *White Noise.* This paper focuses on consumerism and propaganda in the novel, drawing a connection between DeLillo's world and our own, demonstrating how postmodern theory and literature are useful in realizing and understanding human tendencies.

2:50-3:05
Understanding the Cry of Dereliction: Jewish Lament In Mark's Passion Narrative
Mary Kyner, High Point University
Mentor: Dr. Robert Moses, Religion

The tradition of Jewish lament in the Hebrew Bible provides a lens through which to understand Jesus' cry of dereliction on the cross, thus allowing a better understanding of Mark's Passion Narrative as showing Jesus as the Jewish Righteous Sufferer who was vindicated by his death.

Biology II
Phillips 217

2:30-2:45
Combinatorial Effects of Manuka Honey and Fosfomycin on Escherichia coli and Staphylococcus aureus
Nicole Wright* and Gabrielle Hayes, High Point University
Mentor: Dr. Patrick Vigueira, Biology

Disc diffusion was used as a possible strategy to overcome antibiotic resistance by combining various antibiotics with Manuka honey to determine if the combination increases sensitivity of Escherichia coli and Staphylococcus aureus to the drugs.

2:50-3:05
Cloning, Expression and Analysis of SpoIIID from Clostridium sporogenes
Ivy Cocklereece, High Point University
Mentor: Dr. Dinene Crater, Department of Biology

The focus of this research is on the expression of SpoIIID in *Clostridium sporogenes*. We wish to determine if SpoIIID from *Clostridium* functions the same during sporulation as compared to *B. subtilis*. Current research concentrates on cloning *spoIIID* into pET28a for the purpose of over expression in *Escherichia coli*.

3:10-3:25
Xanthophyll De-epoxidation and Shade Acclimation in Leaf Tissues with Abaxial Versus Adaxial Anthocyanins
Harris Coley, High Point University
Mentor: Dr. Nicole Hughes, Biology

We measured xanthophyll de-epoxidation (AZ/VAZ) in leaves with the following pigmentation patterns before and after 20 min high-light exposure: no anthocyanin (GG), adaxial anthocyanins only (RG), abaxial anthocyanins only (GR), and adaxial+abaxial anthocyanins (RR). AZ/VAZ increased in the order: RR<RG<GR<GG, indicating adaxial anthocyanins mitigate high-light stress more effectively than abaxial.

English II
Phillips 218

2:30-2:45
The Effects of Narrative Medicine on Mental and Emotional Health on Geriatric and Pediatric Patients
Noah Coates, High Point University
Mentor: Ms. Allison Walker, English

Narrative Medicine is a revolutionary form of medicine that is beginning to be implemented in many healthcare facilities. Research has suggested that Narrative Medicine can decrease blood pressure, stabilize heart rate, and improves memory function. I have studied the emotional health benefits of Narrative Medicine on Geriatric and Pediatric patients.

2:50-3:05
Soul and Body: Katherine Philips and the Divided Self
Mollie McKinley, High Point University
Mentor: Dr. Laura Alexander, English

This paper considers Katherine Philips's literary androgyny, relationship to the figure of Lucasia in her works, and the complex nature of the soul that we see in her poetry. It will look at Philips's relationship to other women writers and to the gendered models then available in the seventeenth century. Her model of the soul ultimately accommodates both stereotypically masculine and feminine attributes and physical and spiritual qualities.

3:10-3:25
Homoeroticism in the Male versus Female Gothic
Megan Painter, High Point University
Mentor: Dr. Laura Alexander, English

Within the space of Gothic literature there has always been a distinction between the Male and Female Gothic when considering the usage of typical Gothic spaces and tropes. Homoeroticism is no exception to this when explored through the female gothic, *Frankenstein*, and the male gothic, *The Picture of Dorian Gray*.

Modern Language II
Phillips 220

2:30-2:45
***They Smile Just Like Us: Images of the City and Ordinary Lives in* Suite Havana**
Carla Rosas, High Point Point University
Mentor: Ms. Claudia Femenias, Modern Languages

The documentary *Suite Havana* follows ten ordinary individuals through their daily lives in Havana, Cuba. This presentation will analyze different filming techniques and the intimate connection that each individual has with their city to discuss how the film challenges Western conceptions of happiness, necessity, desire, and contempt. (Presentation will be in Spanish)

2:50-3:05
Mexico City and Those th at Fight Without a Ring
Griffin Spencer, High Point University
Mentor: Claudia Femenias, Modern Languages

This presentation will follow and analyze the representation of Mexico City throughout the documentary film *Super Amigos* (2007). Its aim is to highlight the issues that define the city and analyze the effectiveness of some of the "social professional wrestlers," around whom the film centers, in bringing about legitimate social change. (Presentation will be in Spanish)

3:10-3:25
La Nueva Ola Fronteriza: Art and Music as a Way to Transform the Culture of Violence and the Use of Public Space in Juarez, Mexico
Liz Polowczyk, High Point University
Mentor: Ms. Claudia Femenias, Modern Foreign Languages

After decades of violence the musical movement 'La Nueva Ola Fronteriza' seeks to reestablish cultural life and safe public spaces in Juarez, Mexico through music. This presentation will analyze four songs to discuss the image of the city they portray and how music and art can help transform public space. (Presentation will be in Spanish)

Psychology II
Phillips 221

2:30-2:45
Who is Blamed the Most? An Investigation into the Factors that Affect Amount of Blame Attributed to Victims of Crime
Lauren Rubenstein, High Point University
Mentor: Dr. Deborah Danzis, Psychology

The two studies examined whether the type of crime and gender of perpetrator/victim had an effect on victim blame. Results indicated that type of crime significantly affects victim blame as well as the gender of the perpetrator when the victim is male. In rape cases, victims of marital rape were blamed more than other rape victims.

2:50-3:05
Perception of Schizophrenia among college age students
Rebecca Dornan, High Point University
Mentor: Dr. Li-Barber, Psychology

The purose of the current study was to examine the impact of media exposure on changing attitudes indiviudals with mental illness. Participants' existing biases against the mentally ill were assessed before and after exposure to visual or print mediea featuring a highly steroetyped, or non-stereotypical person diagnosed with schizophreia.

3:10-3:25
The Immediate Impact of Dance Activity on Stress, Self-Esteem and Self-Efficacy
Nicole Bayeur, High Point University
Mentor**:** Dr. Kirsten Li-Barber, Psychology

We examined the impact of participation in dance classes on changes in self-efficacy, self-esteem and stress levels in college students. Findings revealed that while students *believed* dance would have a positive impact, no significant changes were observed. Implications for the utilization of dance as possible stress reduction alternative is discussed.

Human Relations II
Phillips 222

2:30-2:45
A Review of the Comparative Study of Domestic and International Adoption
Grace Giberson, High Point University
Mentor: Ms. Molly Jordan, Human Relations

Adoption is a complex topic where many different aspects play a role in deciding which route to take when considering adoption. The processes, history, and regulations all differ in both types of adoption. This presentation reviews the literature around domestic and international adoption to see the various similarities and difference.

2:50-3:05
A Review of the Psychological Implications of International Adoptions on: Birth Parents, Adoptive Parents, and Child
Manuela Moreno, High Point University
Mentor: Dr. David Bergen, Human Relations

Trying to minimize the number of orphaned children post World War II, the United States created a system where international adoption was prevalent, and feasible. This study brings understanding to the long-term effects of international adoption on the birth parents, the adopted child, and the adoptive parents.

Human Relations III
Phillips 223

2:30-2:45
Utilizing Psychological and Motivational Factors of Volunteers to Increase Retention of Volunteers
Annie Johnson, High Point University
Mentor: Dr. David Bergen, Human Relations

Volunteers offer an abundant and invaluable amount of time and effort to nonprofits. These individuals are often considered to be the foundation and heart of nonprofit organizations. This study discusses the primary personality traits and motives that impact an individual's desire to give back through volunteering.

2:50-3:05
A Cross-Cultural Comparative Research Study on Education and the Workplace
Hannah Hewitt, High Point University
Mentor: Ms. Molly Jordan, Human Relations

Education is a universal concept that is different among cultures. In addition to being a culturally-based social institution, education guides students in motivation, leadership, and employment. This research will compare and contrast education, motivation, leadership, job satisfaction, and work in the United States, United Kingdom, Japan, China, and India.

3:10-3:25
If Charter Schools Or Public Schools Have A Greater Impact In Socioeconomically Challenged Areas
Greta Hilberts, High Point University
Mentor: Dr. Pamela Palmer

Comparative study will be done to investigate the effectiveness of charter schools versus public schools. Specifically researching the effectiveness of them in depressed socioeconomic areas. This presentation will review the findings and after the research is done, a conclusion will be made on which school is more affective.

POSTER PRESENTATIONS

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

Anthropology/Sociology

(1) ***The Burmese Refugee Community in High Point North Carolina: An examination of Employment, Familial Structure, and Acculturation***
Haley Richter, High Point University
Mentor: Dr. Chelsea Wentworth, Sociology Anthropology

This ethnographic study examines the challenges and triumphs of the Burmese refugee community working to become self-sufficient individuals with the help of World Relief, a Nonprofit Faith-Based resettlement organization. This research also evaluates the phenomenon of culture shock as the refugees integrate into High Point, North Carolina.

(2) ***How Does Having A Smaller Work Environment of 50 Employees Affect Internal Communications?***
Maria Schur, High Point University
Mentor: Dr. Chelsea Wentworth, Ethnography

There are many aspects of communication within a company, and this research will explore how employees of Sales Factory Worldwide (SFW), a marketing agency in Greensboro, North Carolina, handle internal communications while working in a small work environment of 50 people.

(3) ***Modern Mindfulness: An Exploration of Mindfulness at the Deep River Sangha***
Natalie Ward, High Point University
Mentor: Dr. Chelsea Wentworth, Anthropology/Sociology

This project is a qualitative study of the fast-growing pop culture trend of "mindfulness" as interpreted by the multi-denominational members of Deep River Sangha, a Buddhist mindfulness community in High Point, North Carolina. This case-study shows how people re-conceptualize "mindfulness" as they adopt an Americanized version of Buddhist tradition.

(4) ***Understanding Complications to Childhood Literacy Development***
Kimo Manning, High Point University
Mentor: Dr. Chelsea Wentworth, Anthropology

This study investigates how negative lifestyle factors play a role in the developing literacy of children ages seven to twelve. With pre-adolescence being important time for growth and education for children, identifying and understanding how to combat these facets of education can play a pivotal role in a child's development.

Athletic Training

(5) ***Relationship Between Navicular Drop and Lower Extremity Kinematics During Functional Tasks Across Sex and Maturation***
Katherine M. Van Wert*, Emma F. Zuk, Andrea L. Baellow, Michelle C. Boling, Kevin R. Ford, Jeffery B. Taylor, Kate R. Pfile, Lindsey J. DiStefano, Mark J. Williams, and Yum Nguyen, High Point University
Mentor: Dr. Yum Nguyen, Athletic Training

The purpose of this study was to examine the relationship between a clinical measure of pronation and lower extremity motion during functional tasks across sex and maturation stage in youth athletes. Navicular drop was associated with knee motion across maturation in males. However, it was not associated with in females.

(6) ***Sex Specific Influence of Hip Strength and Range of Motion on Landing Kinematics Across Maturation***
Emma Zuk*, Andrea Baellow, Michelle Boling, Kevin Ford, Jeff Taylor, Kate Pfile, Lindsey DiStefano, Mark Williams and Yum Nguyen, High Point University
Mentor: Dr. Yum Nguyen, Athletic Training

Changes in hip strength and alignment may influence landing patterns, increasing knee injury risk in youth athletes. The influence of hip strength and alignment on landing is specific to sex and maturation in youth soccer athletes. These sex specific relationships across maturation should be considered when developing injury prevention programs.

Biology

(7) ***The Identification and Sequencing of Ichneumonids in Local North Carolina***
Joshua Baulch* and Cindy Vigueira, High Point University
Mentor: Dr. Cindy Vigueira, Biology

Ichnuemonids are parasitic wasps with around 24,000 morphologically identified species. Only around 400 species have been genetically characterized, most of which are not found in North Carolina. My research consists of collecting ichneumonids from N.C., identifying, and genotyping the different species and using phylogenetics to infer their evolutionary relationships.

(8) ***The Effects Of Clouds and Canopy Shade On Photosynthetic Carbon Gain In Nothofagus menziesii and Nothofagus solandri var. cliffortioides***
Nicole M. Bayeur*, Kaylyn L. Carpenter, and Nicole M. Hughes, High Point University
Mentor: Dr. Nicole Hughes, Biology

Two tree species tend to dominate sunny versus cloudy regions of New Zealand. We hypothesized that greater shade-tolerance and lower thermal-optimum for photosynthesis in *N. menziesii* would correspond with greater photosynthesis relative to *N. solandri* under cloud cover and canopy shade, and that this might account for geographic range disparities.

(9) ***Potential Estrogenic Effect of Epigallocatechin Gallate's on Early Zebra Fish Development***
Jeff Berwager*, Sarah Ebersold* and Jimmy Rager, High Point University
Mentor: Dr. Neil Coffield and Dr. Angela Bauer, Biology

Our study examined the effects of Epigallocatechin Gallate (EGCG), a substance commonly found in green tea, on vertebrate bone development. We are interested in changes induced by EGCG that alter the rate of bone calcification, since consumption of green tea is correlated with a decrease in the effects of osteoporosis.

(10) ***The Exploration of DNA Binding Proteins in Clostridium Species using iChIP***
Nick Bittner and Alexandria Cedrone, High Point University
Mentor: Dr. Dinene Crater, Biology

Sporulation in bacteria is regulated at the level of transcription by an alternating pattern of sigma factors and their coordinating transcription factors. The purpose of our study is to use the iChIP method to identify unknown transcription factors in *Clostridium* that assist the sigma factors in the regulation of sporulation.

(11**)** ***Intra- and Inter-rater Reliability of Proximal, Shaft, Distal, and Total Metatarsal Bone Mineral Density***
Micah Branscomb*, Nicholas Pritchard, James Smoliga, Anh-Dung Nguyen, Jeffrey Taylor, David Sinacore, and Kevin Ford, High Point University
Mentor: Dr. Kevin Ford, Physical Therapy

Fifth metatarsal fractures occur in a young athletic population and are common injuries of the foot. The results indicate that BMD of total and regional components of the second and fifth metatarsals are reliable between analyses, raters, and days with the exception of the distal regions.

(12) ***Analysis of the DNA Binding Characteristics of GerE from Geobacillus stearothermophilus***
Rodrigo Catalan-Hurtado, High Point University
Mentor: Dr. Dinene Crater, Biology

Geobacillus stearothermophilus is a thermophilic bacteria that is able to sporulate and contains a GerE homologue of *Bacillus subtilis*. We have overexpressed GerE from *G. stearothermophilus* in *Escherichia coli* and purified the protein using standard techniques. Preliminary experiments indicate successful *in vitro* binding to promoter DNA using a non-radioactive assay.

(13) ***Genetic Traits behind Pericarp Pigmentation in Weedy Rice***
Zoey Chittick, High Point University
Mentor: Dr. Cynthia Vigueira, Biology

Red Rice is a fast growing, invasive weedy rice that reduces crop productivity in fields. Weedy rice populations in the U.S. and Korea have involved independently, and can be studied for genetic mechanisms behind the de-domestication of weeds.

(14) ***Characterization of a Newly-recognized Mannose-6-phosphate Receptor Domain in Atg27 and Its Role in Autophagy***
Taylor Cunningham, High Point University
Mentor: Dr. Veronica Segarra, Biology

Atg27 is a single-pass transmembrane protein that coordinates autophagy. While the function of its cytoplasmic domain is known, that of its large luminal domain remains unknown. This domain resembles the mannose-6-phosphate receptor homology (MRH) domain family. Alanine-scanning mutagenesis assessed whether key conserved MRH residues in Atg27 are required for autophagy.

(15) ***The Interaction of Antimicrobial Therapeutics with Amoxapine, a Commonly Prescribed Medication***
Edem Dzotefe, High Point University
Mentor: Dr. Patrick Vigueira, Biology

The misuse and over-prescription of antibiotics has led to a rise of resistant strains of bacteria. Because developing newer, more powerful drugs is time-consuming and expensive, we took amoxapine and coupled it with antibiotics in hopes of identifying novel synergistic interactions.

(16) ***Methylglyoxal Sensitizes Bacillus oleronius to Topical Antibiotics***
Sarah Edmark, High Point University
Mentor: Dr. Patrick Vigueira, Biology

A suboptimal concentration of methylglyoxal was added to Müller-Hinton agar plates to explore the potential for methylglyoxal to alter *B. oleronius'*s sensitivity to a variety of antibiotics. Statistically significant increases in the zones of inhibition were produced by 3 topical antibiotics: clindamycin, neomycin, and polymyxin B.

(17) ***Morphological and Ecological Study of the Crane-Fly Orchid* (Tipularia discolor)**
Margaret Essepian and Ally Kane, High Point University
Mentor: Dr. Nicole Hughes, Biology

This study examines *Tipularia discolor*, which is a native, semi-evergreen terrestrial orchid. We are specifically interested in the ecological function of conspicuous presence/absence of purple spots on some leaves, and the biophysical and/or ecological functions of prostrate leaf orientation during winter.

(18) ***Digit Ratio Is Unrelated To One Mile Running Performance In Males And Females***
Lucas K. Fogaca*, Eric J. Hegedus, James M. Smoliga, High Point University
Mentor: Dr. James Smoliga, Physical Therapy

"Digit ratio" is the ratio between the second and fourth fingers of the hand, and has been explored in relation to various biologic phenomena, including physical fitness. However, the weak relationships between digit ratio and human performance suggest further research is needed to better characterize its biological relevance.

(19) ***Exploring Methods in Art-Driven Science Outreach***
Hillary Wilson*, Casey Garr*, Christina Budzinski*, Tawannah Allen, Theresa Hegedus, Verónica A. Segarra, High Point University
Mentors: Dr. Verónica Segarra, Dr. Tawannah Allen, & Dr. Theresa Hegedus, Biology and Education

We created and implemented a program that aims to improve scientific literacy through the use of the arts. Following a day of experiments at HPU Biology, and under the mentorship of undergraduate students, high school students created works of art that represent important scientific principles in biology.

(20) ***An Investigation Into the Effects of Genistein and Estradiol on the Proliferation of Breast Cancer Cells.***
Michael Gladhill*, Mackenzie Jarvis* and Hannah Tardiff, High Point University
Mentor: Dr. Angela Bauer and Dr. Kristen Bowey, Biology

Endocrine disrupting chemicals (EDCs) are compounds that interfere with typical endocrine function. In this study, we look at the effects of multiple concentrations of 17β-estradiol on proliferation of MCF7-BOS cells, a line of breast cancer cells. Additionally, the effects of genistein, a phytoestrogen, were investigated.

(21) ***The Effects of Cloud Cover on Microclimate and Plant Physiological Processes***
J. Melissa Hernandez, High Point University
Mentor: Dr. Nicole Hughes, Biology

It is known that clouds increase diffuse light, resulting in greater light penetration into otherwise shaded microhabitats in the forest canopy. In this study we compare leaf temperature, photosynthesis, and water loss at various spatial locations within individual *Abies fraseri* on sunny versus overcast days. Our results showed that overcast conditions homogenized microclimate and physiological processes.

(22) ***Classification of <u>Mahonia</u> Plants from the Mariana Qubein Arboretum Using DNA Barcoding***
Kristina Jansen*, Harrison Seitz*, Greg Allen, Caroline Copeland, Kaitlyn Coppetti, Jasmine Eccles, Madison Hinson., and Alex Sprouse, High Point University
Mentor: Dr. Dinene L. Crater, Biology

DNA barcoding is a modern technique that is used to determine the classification of an unknown organism. The purpose of this BIO 1399 Honors Project was to classify plants from the genus *Mahonia*, from the Mariana Qubein Arboretum at High Point University using DNA barcoding of the *rbcL* chloroplast gene.

(23) ***Investigation of the UV Sensitivity and Photoenzymatic Repair Capabilities of Daphnia magna and Daphnia lumholtzi***
Mary Clare McGinn, High Point University
Mentor: Dr. Sandra Cooke, Biology

This study examined cladoceran use of photoenzymatic repair to mitigate ultraviolet radiation damage. Daphnia lumholtzi and Daphnia magna were exposed to UV-B radiation and then received either UV-A and visible photorepair radiation (+PRR) or no photorepair radiation (-PRR). The comparative survival results further our understanding of Daphnia UV response strategies.

(24) ***Identification Of A Mammalian Equivalent For The Autophagy-Related Yeast Protein Atg27***
Thomas Moss, High Point University
Mentor: Dr. Veronica Segarra, Biology

In the eukaryote *Saccharomyces cerevisiae* (baker's yeast) the transmembrane protein Atg27 is important for the formation of autophagic transport vesicles essential for efficient autophagic processes. Our lab is interested in engineering strains of yeast cells to express human Lysosomal-associated Membrane Proteins in hopes of uncovering a functional human ortholog.

(25) ***Use of Power Line Corridors By Flower Visiting Beetles and Bees***
Elesa Poteres*, Dr. Charles Smith, Dr. Patrick Vigueira, Dr. Cindy Vigueira, Dr. Josh Campbell, High Point University
Mentor: Dr. Charles Smith, Biology

In this study, we examine the use of a power-line corridor passing through a forested area by flower-visiting beetles and bees in the Piedmont of central North Carolina.

(26) ***17β-estradiol increases the rate of skeletal calcium incorporation during early development in Danio rerio***
Jimmy Rager*, Matt Slitzky, Cailyn Scanlan, High Point University
Mentor: Dr. Neil Coffield and Dr. Angela Bauer, Biology
Estrogen is known to play a significant role in bone development and ossification in mammals. To date, however, little is known about the sex hormone's role in bone ossification in the zebrafish model, *Danio rerio*.

(27) ***An Occurrence of Ectopic Intrathoracic Liver in a Cat***
Steven Safille*, Carter Lohman*, and Heather Ahrens, High Point University
Mentor: Dr. Heather Ahrens, Biology

In the dissection of a female cat, a mass surrounded in fatty tissue was discovered adjacent to the heart in the right pleural cavity. Based on gross morphology, the pathology was identified as ectopic liver tissue. Our case provides an important example of a rare ectopic intrathoracic liver.

(28) ***Resveratrol alters the rate of calcium incorporation during early bone development in Danio rerio***
Matt Slitzky*, Cailyn Scanlan, Jimmy Rager, High Point University
Mentors: Dr. Neil Coffield and Dr. Angela Bauer, Biology

Resveratrol, a naturally occurring phytochemical found in grapes and red wine has been shown to have many health benefits as well as increase bone growth in some mammalian species. Little is known, however, about the effects of resveratrol on bone ossification in *Danio rerio* (zebrafish).

(29) ***Mapping the sorting signals of the cytoplasmic domain of Atg27***
Maria Trujillo, High Point University
Mentor: Dr. Veronica Segarra, Biology

Protein transport is carried out with the help of sorting signals. Autophagy, a type of membrane trafficking, is observed in yeast. Atg27, a membrane protein with a single cytoplasmic domain, allows us to further understand irregularities in autophagy, which can lead to human diseases like cancer and neurodegenerative disease.

(30) ***In Vitro Analysis of Transcription Repression by GerE during Sporulation in Bacillus subtilis***
Maria Valverde, High Point University
Mentor: Dr. Dinene Crater, Biology

We have identified GerE binding sites on the promoter region of *sigK*, *cotA*, *cotE* and *cotH*, and hypothesize it binds to repress transcription. Preliminary results indicate successful binding conditions of GerE to the *sigK* promoter, and future directions include *in vitro* analyses of binding of GerE to these promoters.

(31) ***Comparison of Ambystoma maculatum and Ambystoma opacum Population Genetics in the Uwharrie Mountains of North Carolina***
Halley Watson, High Point University
Mentor: Dr. Cindy Vigueira, Dr. Chuck Smith, and Dr. Patrick Vigueira, Biology

Vernal pools provide isolated breeding habitats for amphibians, specifically the Spotted Salamander (*Ambystoma maculatum*) and its relative, the Marbled Salamander (*Ambystoma opacum*). In this study, we used Nested PCR and population genetics programs to assess the genetic variation between and within these species collected from the Uwharrie National Forest.

Chemistry

(32) ***Role of Rac1 on Cell Migration in ATM Deficient Cells***
Matthew Beck, High Point University
Mentor: Dr. Melissa Srougi, Biochemistry

We hypothesize that an increase in activated Rac1 protein causes greater cell motility and migration in cells lacking ATM kinase activity. In order to test this hypothesis, siRNA was used to knockdown Rac1 in ATM inhibited cells to determine its effects on cell motility using a chemotaxis assay.

(33) ***The Role of Tat-SF1 in the Insulin Signaling Pathway***
Eliana Betzios* and Julia Zautcke, High Point University
Mentor: Dr. Heather Miller, Chemistry

The human transcription-splicing factor Tat-specific factor 1 (Tat-SF1) has been shown to target genes belonging to the insulin signaling pathway. If Tat-SF1 is knocked down in human cell lines, then there will be decreased glucose uptake. Preliminary results showed altered glucose uptake in Tat-SF1 knockdown cells.

(34) ***Novel Patterning Techniques of Vapor-Deposited Au Thin Films onto Polymeric Substrates***
Sarah Colbert, High Point University
Mentor: Dr. Brian Augustine, Chemistry

This project examines nanoporous surface features in thin films of PMMA dissolved in tetrahydrofuran (THF) and spun-cast. To determine if molecular weight effects the features observed, thin films were spun-cast from solutions prepared with varying molecular weights of 996000, 550000, 120000, and 15000 g/mol. Surface topography was characterized by AFM.

(35) ***Extending the Substrate Scope of the Chan-Lam Cross-Coupling Reaction Using Photoredox Catalysis***
Jennifer R. Marshall, High Point University
Mentor: Dr. Andrew J. Wommack, Chemistry

In this study, the scope of the photoredox-catalyzed Chan-Lam coupling reaction has been extended to include electron-poor arylboronic acids in coupling to both aryl- and alkylamines. Alternative reaction conditions utilizing a ruthenium catalyst and an appropriate choice of a copper(II) catalyst were investigated and reaction yields were validated.

(36) ***The Functionality of Chloroform to Improve the Adhesion of Au Thin Films onto PMMA***
Luis Royo Romero, High Point University
Mentor: Dr. Brian Augustine, Chemistry

Investigating the use of chloroform to improve adhesion of Au onto poly(methyl methacrylate) (PMMA). The deposition of Au is done via electron-beam evaporator. Substrates are either vapor exposure to chloroform pre- or post-depositing Au. The adhesion of Au is quantified by its degree of removal in terms of applied force.

(37) ***Probing the Structure-Activity Relationship of Escherichia Coli Extracellular Death Factor***
Rebecca Ulrich*, Lisa Nguyen, and Nickolle Baker, High Point University
Mentor: Dr. Meghan S. Blackledge, Chemistry

Bacteria use peptides and chemical signals to communicate with each other and respond to their environment. My research focuses on understanding these chemical signals and "conversations" to create methods to modify bacterial intercellular communication. This could lead to new antibiotics and therapeutics which specifically targets certain cellular "conversations."

English

(38) ***Understanding Undergraduates' Writing and Research Longitudinally***
Jacquie Cafasso, High Point University
Mentor: Dr. Donna Scheidt, English

This study investigates mindset and research confidence among High Point University seniors persisting since their freshman year. Analysis provides an overview of these attributes among seniors, possible relationships among them, and longitudinal changes in research confidence. The study contributes to research on mindset and has implications for university stakeholders.

(39) ***The Role Of Emotion In Memory***
Rosana Filingeri, High Point University
Mentor: Dr. Laura Alexander, English

This poster will focus on individuals and their reaction to the aging of their companion as well as their own, specifically focusing on the effects memory loss in literature. I plan to examine how certain emotions play a role in a person's memory loss and medical humanities in literature.

(40) ***Stevenson's The Strange Case of Dr. Jekyll and Mr. Hyde As A Colonial Text***
Mary Torres, High Point University
Mentor: Dr. Matthew Carlson, English Literature

The following paper will explore Jekyll's divided self as representative of the UK's divided identity. The story was written during British expansion into new territories with "savage" beings. As members of a wavering addition to the UK, Scots were similarly looked down upon. After citing postcolonial, these connections become clear.

Exercise Science

(41) ***Physiological Responses to Lower-Body Positive-Pressure Treadmill Running– A Systematic Review and Meta-Analysis***
Kathryn A. Farina*, Alexis A. Wright, Kevin R. Ford, Leah Anne Wirfel, and James M. Smoliga, High Point University
Mentor: Dr. James Smoliga, Physical Therapy

Lower body positive pressure treadmills (LBPPT) have been shown to reduce loading on the musculoskeletal system during walking/running by providing vertical lifting force to an individual. Within a given running speed, each ten percent decrease in LBPPT body weight setting is associated with ~3.4 ml O_2/kg/min reduction in VO_2.

(42) ***Effects of Intrinsic Foot Strength and Step Rate Manipulation on In-Shoe Maximum Force in Recreational Runners***
Lacey Gould*, Michelle Aube, Anh-Dung Nguyen, Jeffrey B. Taylor, James M. Smoliga, and Kevin R. Ford, High Point University
Mentor: Dr. Kevin Ford, Physical Therapy

Runners with varying intrinsic foot strengths (IFS) may adapt differently to step rate modifications. Runners with greater IFS had lower maximum in-shoe force while running, and increased cadence resulted in lower maximum forces at the heel. Cadence-induced changes in maximum in-shoe regional forces were not influenced by IFS.

(43) ***B-Hydroxy-B-Methyl Butyrate Stimulates Anabolic Signaling With Suppressed Markers Of Lipid Oxidation In Skeletal Muscle***
Michele A. Johnson*, Jamie K. Schnuck, and Dr. Roger A. Vaughan, High Point University
Mentor: Dr. Roger Vaughan, Exercise Science

Athletes routinely use HMB to preserve lean body mass, however little was previously known about the effects of HMB on cellular energetics. HMB decreased markers of lipid oxidation and increased markers of carbohydrate, lipid, and protein storage, suggesting HMB may be beneficial for populations interested in stimulating anabolic cellular processes.

(44) ***Plantar Loading During Gait Significantly Correlates To Metatarsal Bone Density***
Rolonda Kelly*, Nicholas Pritchard, Anh-Dung Nguyen, James M. Smoliga, Jeffery B. Taylor, and David R. Sinacore, High Point University, Washington University School of Medicine
Mentor: Dr. Kevin Ford, Physical Therapy

An important characteristic of bone is its ability to adapt to applied loads (Wolff's Law). The magnitude and number of loading cycles influence site-specific bone mineral density (BMD), that may relate to acute and overuse metatarsal fracture risk. However, limited research has examined the relationship between loading and metatarsal BMD.

(45) ***Validation Of A Wearable Jump Sensor During Live Volleyball Competition.***
Lauren B. Mantikas*, Steven L. Dischiavi and Jeffrey B. Taylor, High Point University
Mentor: Dr. Jeffrey Taylor, Physical Therapy

This study attempted to validate a commercially available, wearable jump sensor that can measure the frequency of jumps during a volleyball game or practice. While this technology may help clinicians assess and prevent injuries in the future, the jump sensor tested in this study significantly underestimated jump frequency.

(46) ***Forefoot Loading With Step Rate Changes in Recreational Runners***
Scott. D. Morin*, Anh-Dung Nguyen, Jeffrey B. Taylor, James M. Smoliga, and Kevin R., High Point University
Mentor: Dr. Kevin Ford, Physical Therapy

Runners benefit from increased physical activity but often sustain lower extremity injuries. To reduce risk of injury, gait-retraining techniques have been developed. Individuals ran at a self-selected speed while three cadence levels were randomly assigned. A 10% increase in cadence was show to reduced medial and central forefoot loading.

(47) ***The Relationship Between Limb Dominance Determination During Jumping***
Colleen Mulrey*, Kevin R. Ford, Sandra J. Shultz, Anh-Dung Nguyen, Jeffrey B. Taylor, High Point University
Mentor: Dr. Jeffrey Taylor, Physical Therapy

This study aimed to identify the relationships between subjective (self-reported) and objective (performance tests) methods of determining limb dominance. While the relationship between self-reported preferred kicking and jumping legs was highly significant, there was no significant relationships found when comparing self-reported measures to performance measures.

(48) ***Osteocalcin does not Induce Regulators of Insulin Signaling or Mitochondrial Biogenesis in Vitro***
Hailey A. Parry*, Roger A. Vaughan, Matthew R. Kuennen, and Kyle L. Sunderland, High Point University
Mentor: Dr. Kyle Sunderland, Exercise Science

Osteocalcin is produced by osteoblasts in the body and has previously been shown to increase glucose uptake, decrease serum insulin, and increase insulin sensitivity. This research looks at protein markers in the insulin signaling pathway and mitochondrial biogenesis pathway to determine the mechanism which these responses occur.

(49) ***Normative Values and Asymmetries in the Agility T-test in High School Soccer Players***
Matthew C. Siegmund*, Kevin R. Ford FACSM, Anh-Dung Nguyen, Jeffrey B. Taylor, High Point University
Mentor: Dr. Jeffrey Taylor, Physical Therapy

This study aimed to determine the most influential phases of the agility T-test and its ability to identify lower limb asymmetries in athletes. Results indicate that the agility T-test promotes relatively large distributions of both sagittal and frontal plane movements and that the side-shuffling component best identifies side-to-side asymmetries.

(50) ***Do pregnancy and childbirth improve elite marathon performance? An analysis of available evidence***
Lindsey J. Siska*, Gerald S. Zavorsky, James M. Smoliga, High Point University
Mentor: Dr. James Smoliga, Physical Therapy

It has been reported that pregnancy and childbirth lead to improved athletic performance in women, often referred to as "pregnancy doping". While anecdotal evidence is commonly used to support expert opinion that pregnancy has an ergogenic effect on marathon performance, actual performance outcome data are currently insufficient to support this theory.

(51) ***Repeated Mild Heat Stress Reduces Inflammatory Signals and Carbohydrate Metabolism Bias in C2C12 Myotubes***
Mandy Szymanski*, Meghan Patton, Kyle Sunderland, Roger Vaughan, and Matthew Kuennen, High Point University
Mentor: Dr. Matthew Kuennen, Exercise Science

This work explored the effect of repeated mild heat stress (2hr/d at 40^0C for 6d) on heat shock, inflammatory, and metabolic parameters in C2C12 myotubes. Changes in protein content (western blot) suggested activation of the heat shock response, reduced inflammation, and cellular bias away from glycogen towards lipid storage.

(52) ***Sex Differences in Metatarsal Bone Density and In-Shoe Load Distribution in Recreational Runners***
Lindsay Tiberi*, James M. Smoliga, Anh-Dung Nguyen, Jeffrey B. Taylor, Kevin R. Ford FACSM, High Point University
Mentor: Dr. Kevin Ford, Physical Therapy

To examine sex differences between the bone mineral density (BMD) of the second and fifth metatarsal and in-shoe loading of the foot during running. A difference in BMD of the fifth metatarsals was found between males and females.

(53) ***Relationship between Intrinsic Foot Muscle Strength and Standing Broad Jump Performance Across Stages of Maturation***
Kaitlyn E. Wright*, Emma F. Zuk, Kevin R. Ford, Jeffrey B. Taylor, and Anh-Dung Nguyen, High Point University
Mentor: Dr. Kevin Ford, Physical Therapy

Maturational groups of youth soccer athletes were compared to determine if differences existed in intrinsic foot muscle strength (IFS) and standing broad jump (SBJ). Pre-pubertal athletes had greater IFS than both pubertal and post-pubertal. SBJ was greater in males and post-pubertal athletes. This contrasts previous literature.

(54) ***Relationships Between Leg Body Composition and Mass Distribution to Running Economy in Male Distance Runners***
Allie Zambito* and James M. Smoliga, High Point University
Mentor: Dr. James Smoliga, Physical Therapy

Eighteen elite male runners (age 18-29) received a whole body dual energy x-ray absorptiometry (DXA) scan and completed an incremental treadmill running protocol. A stepwise linear regression was performed to determine if any absolute or normalized regional body composition or mass distribution variables were associated with running economy.

Marketing

(55) ***Do Actively Participating Members in High Point University's Sales Club Gain Soft Skills in Conjunction with Selling?***
Shakira Ramsey, High Point University
Mentor: Dr. Chelsea Wentworth, Sociology

Hope to uncover whether through the teachings of sales techniques and practices, members unintentional gain and improve additional useful soft skills such as communication, problem solving, and, conflict resolution. Research investigates whether students participating in the High Point University professional selling program gain soft skill in conjunction with selling.

(56) ***The Effect Of Super Bowl Advertising On Purchase Intent***
Jennifer Burton, Emily Dwyer* & Alicia Wingate* High Point University
Mentor: Dr. Jennifer Burton, Marketing

The purpose of this study is to observe the effect of television advertisements, along with the social media presence of a brand on consumer's purchase intent during the 2013 Super Bowl XLVII.

Modern Languages

(57) ***El Barberillo de Lavapiés: Zarzuela as the Spanish Voice***
Catherine Bakewell, High Point University
Mentor: Dr. Adam Winkel, Spanish

This presentation addresses Spain's answer to opera, the *zarzuela*, and how the writer-composer team of Luis Mariano de Larra and Francisco Asenjo Barbieri used this form of theater to respond to the appropriation of Spanish culture in their work *El barberillo de Lavapiés* (1874).

Nonprofit Leadership

(58) ***The Work Of Environmental Nonprofits: Their Struggles And Successes***
Hannah Shaheen, High Point University
Mentor: Dr. Pamela Palmer, Nonprofit Leadership

This research explores the work of environmental nonprofits. With climate change being such a significant threat to life as we know it, organizations working to combat this issue are needed now more than ever. These organizations frequently accomplish their missions and goals, but also face opposition by big industry and skepticism.

(59) ***A Post-Positivist Qualitative Study of Philanthropic Donors to Appalachian Ohio – Revisited***
Abbie Dorfman* and Allie Herrmann*, High Point University
Mentor: Dr. Christine Cugliari, Nonprofit Leadership

To revisit this research, a review of the literature over the past 10 years is imperative. The key areas include the relationship of philanthropy to: business, religion, government and economics. Initial findings indicate five emerging areas to include as the research progresses.

Physical Therapy

(60) ***Comparing is Performance and Side-To-Side Asymmetry of the Forward, Medial and Lateral Triple Hop Tests***
Olivia L. Dineen*, Kevin R. Ford, Anh-Dung Nguyen, Eric J. Hegedus, Steven L. Dischiavi, Jeffrey B. Taylor, High Point University
Mentor: Dr. Jeffrey Taylor, Physical Therapy

The purpose of this study was to examine side-to-side asymmetry in forward, medial and lateral triple hop performance tests, which are commonly used in return to play decisions. It was found that the forward and medial triple hop may provide different, yet complementary information for return to play decisions.

(61) ***Multi-Sport Athletes Exhibit Less Lower Extremity Valgus than Single-Sport Athletes***
Samantha G. Tripp*, Kevin R. Ford, Sandra J. Shultz, Anh-Dung Nguyen, and Jeffrey B. Taylor, High Point University
Mentor: Dr. Jeffrey Taylor, Physical Therapy

The purpose of this study was to identify biomechanical differences in multi-sport compared to single-sport athletes. Single-sport athletes may be at higher risk for injury because they exhibited higher levels of lower extremity valgus during single-leg landing tasks than multi-sport athletes.

(62) ***Performance Changes in Adolescent Soccer Players after an ACL Injury Prevention Program***
Allison Townsend*, Anh-Dung Nguyen, and Jeffrey B. Taylor, High Point University
Mentor: Dr. Jeffrey Taylor, Physical Therapy

Adolescent female soccer players completed a 6-week neuromuscular ACL injury prevention program and were assessed for any changes in speed and/or power. After training, participants showed no significant changes in power in both limbs for the intervention group, but a decrease in power in both limbs in the control group.

Physics

(63) ***New Long-Period Hot Subdwarf Binaries from the Hobby-Eberly Telescope***
Thomas Boudreaux, High Point University
Mentor: Dr. Brad N. Barlow, Physics

We analyze 3 sdB+F/G/K systems in order to determine the periodicity and eccentricity of the sdB and Main Sequence star in theses systems. We find that, contrary to the predictions of Binary Population Synthesis models (BPS), these systems tend to have long orbital periods, and non zero eccentricities.

(64) ***Motion of a Ball on a Board Tilted about Two Axes***
Nick Kasle, High Point University
Mentor: Dr. Aaron Titus, Physics

An Arduino microcontroller and 2-axis joystick are used to control an aluminum plate that can tilt about two perpendicular axes. Simultaneously, the system controls a virtual plate in a VPython simulation.

(65) ***Apparatus for Study of Coriolis Forces***
Amiras Simeonides* and Dr. Aaron Titus, High Point University
Mentor: Dr. Aaron Titus, Physics

The study of motion in non-inertial reference frames in the laboratory setting is limited by a lack of precise yet affordable apparatus for experiments. This presentation details the construction, programming, and testing of a computer-controlled apparatus that allows students to study motion in inertial and non-inertial reference frames.

(66) ***There And Back Again?: The Disappearing Pulsations Of CS 1246***
Alan Vasquez, High Point University
Mentor: Dr. Brad Barlow, Physics

Hot subdwarf stars were once main sequence stars, like the sun, that deviated from normal stellar evolution. Several of these stars exhibit rapid pulsations driven by iron opacity instabilities. Here we present six years of photometry for CS 1246 and discuss possible scenarios that might explain its interesting behavior.

Psychology

(67) ***Rekindling: Coming Back to the Good and the Bad***
Sarah Bishop, High Point University
Mentor: Dr. Sadie Leder-Elder, Psychology

"Rekindling" is a type of relationship in which couples undergo a cycle of breaking up and getting back together. This study aims to reveal why this occurs and if traits associated with Machiavellianism (i.e. propensity to manipulate) impact whether one chooses to rekindle or not.

(68) ***Perception of Mental Illness***
Abbie Starns*, and Kelly Curtis, High Point University
Mentor: Dr. Kelly Curtis, Psychology

Our society negatively stigmatizes mental illness compared to physical illness. This study will examine these differences in perceptions in undergraduates. Participants are expected to view those with physical illnesses more positively and be more sympathetic. However, participants with higher knowledge and more contact to mental illness may be more sympathetic

(69) ***The ICAB: Development and Validation of a Test for Oddity***
Elizabeth Ezzell, High Point University
Mentor: Dr. Christopher M. Lootens, Psychology

Research has found evidence for "oddity" as a dimension of personality, but existing measures of oddity are significantly limited. Therefore, the goal of the present study was to develop a new measure of oddity: the Inventory of Conventional Attitudes and Behavior (ICAB) and assess its psychometric properties.

(70) ***What Rekindling Says About the Self: How an Individual's Self-Concept Relates to On-Again/Off-Again Relationships***
Jordan M. Izzo, High Point University
Mentor: Dr. Sadie Leder-Elder, Psychology

Rekindling is when a romantic dyad dissolves and then later reunites. This work seeks to answer the question, "Who is likely to rekindle?" by examining the impact of self-concept. It is believed that the positivity or negativity of one's self-concept will influence whether or not one rekindles with an ex-partner

(71) ***An Examination of the Relationship between Metacognition and Mindset***
Brittany Vose* and Richard Byrd, High Point University
Mentor: Dr. Stacy Lipowski, Psychology

This study explored how metacognitive abilities are related to mindset. Undergraduates learned word pairs, completed a mindset questionnaire, predicted future recall and took a recall test. It was hypothesized that individuals with a growth mindset would study longer and make more accurate memory predictions than individuals with a fixed mindset.

Religion/Philosophy

(72) ***Gaskell's Vision of Empowering Women during the Salem Witch Trials***
Mitchell Lawhorn, High Point University
Mentor: Dr. Laura Alexander, English

In the late 17th century, a woman being considered a heroine wasn't something that occurred often, especially in historical Salem. In Elizabeth Gaskell's, Lois the Witch, a new hero takes rise by proving the women can stand their own ground without being outcast as a being of supernatural qualities.

Theatre

(73) ***United States Institute For Theatre Technology- Tech Olympics***
Alexandra Mauch, High Point University
Mentor: Mr. Ryan Hemsoth, 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 Salt Lake City, at the Annual Tech Olympics. These various events will challenge the students, putting all of their skills to the test.

ART EXHIBIT

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

(74) ***The Easily Forgotten***
Molly Couick, High Point University
Mentor: Ms. Cheryl Harrison, Art

"The Easily Forgotten" is a series of interviews and embroidered paintings done in Florence, Italy. The panels refer to the marginalized world of people with mental illnesses. The resulting series seeks to engage the viewer in a thoughtful dialogue on treating these people as equals, incorporating them into society.

STUDENT INDEX

(Includes page numbers for student abstracts)

MENTOR INDEX

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