

EXPLORATIONS

Research, Scholarship, and Creative Expression

April 1 to April 30, 2020

Events Campus-Wide

WILLIAM PATERSON UNIVERSITY

Final Edition, May 1, 2020

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Poster and Cover Art
Liam Garcia, Undergraduate Student,
Prof. Matt Finn, Art Department



EXPLORATIONS will not be presented in-person in 2020 because of COVID-19 (Coronavirus Disease) Pandemic.

The is the result of William Paterson University’s decision to prevent person-to-person transmission by closing campus, moving all courses online, and having all but the most essential employees work from home. This followed directives of the Governor of New Jersey, Phil Murphy, as well as recommendations and directives from Federal agencies.

Since William Paterson University closed itself to in-person contact came only weeks before our activities were to begin, we chose to move online using the EXPLORATIONS webpage to list presenters by session, posting presentations that were submitted, and encouraging email-based dialog on those presentations, and to publish the abstracts that had been received in this booklet. The webpage is www.wpunj.edu/osp/explorations.

The College of Education elected to present its sponsored session online on April 21.

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BRING EXPLORATIONS ART TO LIFE

1. Install the Artvive App on your smartphone.
2. Open the App and point your phone at the poster.

Office of Sponsored Programs

Promoting Ideas Into Knowledge

The Office of Sponsored Programs (OSP) provides assistance and support to William Paterson University faculty and staff who seek external grant or contract support for research, teaching, service, public programs, creative endeavors, conferences and other types of projects from federal, state, and other government sponsors, grantmaking public charities, professional associations, and some commercial sponsors. The OSP concentrates its activities in three areas:

- Proposal development, submission and finalization of contracts (Pre-Award)
- Award set-up, management, and reporting (Post-Award)
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Mission and Services

The mission of the Office of Sponsored Programs is to provide value-added assistance to encourage, develop, and support the research, scholarship, education, creative and community service aspirations of William Paterson University's faculty, staff, and students.

The Office of Sponsored Programs accomplishes its mission by:

- Collaborating in the development of projects and leading the submission of proposals to Federal, State, and other government sponsors, grantmaking public charities, professional associations, and some commercial sponsors.
- Securing and initiating awards, supporting stewardship and compliance requirements, and assisting in closing-out individual awards.
- Developing, monitoring and implementing policies to ensure compliance with sponsor expectations and related regulatory requirements.

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- ◆ Increases impact of research activities that create new knowledge
- ◆ Encourages artistic activity that creates and shares culture
- ◆ Promotes teacher professional development that enables excellent educational practices
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- ◆ Supports business development that strengthens the economy
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If you are interested in seeking external funding to support a new or ongoing project or activity, contact the OSP:

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Kate Boscert

Assistant Director, Research

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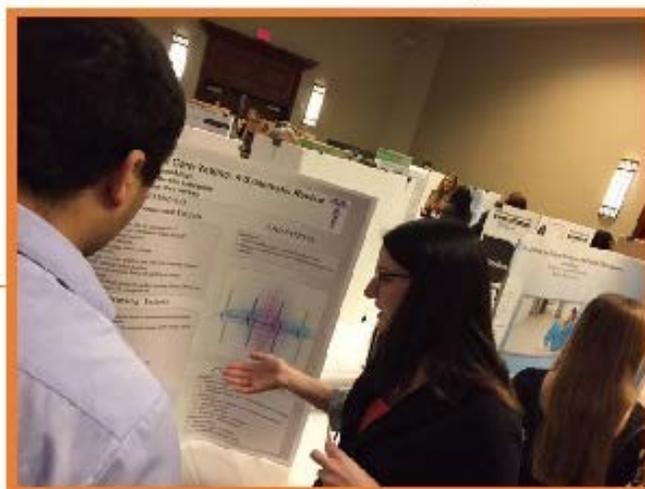
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309 Raubinger Hall

WILLIAM PATERSON UNIVERSITY



Honors College



The University Honors College at William Paterson University is a place where academically gifted students explore new ideas and engage in intellectual and creative collaborations with experienced and dedicated members of the faculty. It offers a rigorous curriculum with a challenging array of courses, seminars, and co-curricular activities. The University Honors College provides a comprehensive educational experience that brings together the academic, residential, social, and cultural experiences of its students. It is open to students in all colleges and majors. Over 400 students are currently enrolled in the Honors College.

Honors College students participate in a first-year program of Honors courses in the University Core Curriculum. Subsequently, they pursue an interest through one of the 11 Honors research or creative tracks, in addition to the disciplinary major. The tracks prepare the student for independent research and result in a senior-level thesis or creative project.

Raubinger Hall
Room 154
973.720.3657
honors@wpunj.edu



Find us on Facebook!
William Paterson University Honors College

www.wpunj.edu/honors

Presentation List

Organized by Session

Titles with embedded links open the presentation.

Names with links open an email to the presenter for questions or comments.

Interdisciplinary Poster Session

Discrete Childhood Maltreatment Types (CMs) versus Multiple CMs in Binge Drinking, Elisheva Adler, Rachel Harris, Megan Chesin, and Michele Cascardi, Psychology

The Knowledge, Attitude, and Behavior in Regards to Concussion Among College Students: Implications for Benefits of Educational Intervention and Student Accommodation, Soomin Ahn, Dr. Kollia, Dr. Basch, Public Health

Cultural definitions of mental health: Are they help-seeking? Shazna Ali, Psychology

The Undocumented Community's Inaccessibility to Medical Services, Chantal Almanzar, Rosemary Arrieta, Faculty Sponsor Lilian Luisa Milanés, Psychology/Anthropology

[A Comparative Study on Machine Learning Techniques for Weather Prediction](#), Oliver Alvarado, Oliver Nuñez, Dev Dave, Faculty Sponsor Kiho Lim, Computer Science

The Twisted Tempo: A New Musical Illusion, Allison Aranda, Michael S. Gordon, Communication Disorders

Investigation of Enhanced Recovery after Surgery (ERAS) Protocol Outcome on Post Colectomy Patients, Sharon Baoas, Nursing

Structure of Language -- LANG 3050, Judy Bernstein's class: Frank Domanico, Edward Greco, Antonio Latorre, Jimmy Peck, and Salma Reyad, Languages and Cultures

Stigmatized Englishes -- LANG/PHIL 3010, Judy Bernstein's class: Iala Callis Fritzes, Brooke Decker, Yusri Ibrahim, Antonio Latorre, Frank Matias, Celso Nunes, Humberto Nuñez, Darren Sampson, Cassandra Soto, Jordan Williams, and Tamia Williams, Languages and Cultures

Applications of Noether's Theorem in General Relativity and Quantum Mechanics, Aneft Budhai, Madeleine Rosar, Mathematics

The Depiction and Evolution of Female Characters in the Video Games Industry: An Exploratory Comparative Case Study, Michele Ciz, Communication

The Relationship between Self-Esteem and Filtering Photos among Millennial's, Jada Clark, Communication

Religious Groups Vary in Their Degree of Moral Objectivism, Yomary Collazo, Psychology

The role of early experiences in the development of concepts about the natural world, Megan Conrad, Aryleida Espinal, Psychology

Lessons from Storybook Animals: Understanding the Influence of Anthropomorphic Media on Children's Learning, Megan Conrad, Emily Trachtenberg, Sabrina Ramos, Victoria Vlassakis, Psychology

Instrument Assisted Soft Tissue Mobilization and Dry Cupping: Do They Effect Passive Range of Motion in Young Adults?, Paul Diorio, Michael Figueroa, Kinesiology

A Biomechanical Analysis Of The Different Squatting Methods, Anthony Duncan, Jason Wicke, Sara Haller, Sarah Myers, Kinesiology

Exploration of the Photocatalytic Activity of Eosin Y in Benzylic Peroxidation Reactions, Reem Eldabagh, Jay Foley and Yalan Xing, Chemistry

Climate Change Study, Alison Cosgrove, Public Health

The Impact of Stroop Task in Monolingual and Bilingual College Students, Kirsten Fernandez, Psychology

The Uses and Gratifications of Instagram and VSCO: A Comparative Analysis, Donea Gomez, Professional Communication

Virtual Play Room, Julienn Guzman, Psychology

Single-Dose Beet Root Juice vs Caffeine: Which is More Effective at Enhancing Cognitive Function?, Edin Hadzovic, Racine Emmons-Hindelong, Lydia Hwang, Christopher Santana, Kinesiology

Musical Tempo Affects the Experience of Time, Matthew Johnson, Michael S. Gordon, Psychology

Peak Fat Oxidation Rates in Deconditioned Normal Weight Compared to Obese Individuals on a Lower Body Positive Pressure Treadmill, Toni LaSala, Jordan Cola, Michael Figueroa, Racine Emmons, Kinesiology

Vertical Jump: Do Different Types of Tape Enhance Jump Height?, Courtney Lawler, Michael Figueroa, Kinesiology

Search task learning not evident during learning trials influences behavior at test, Amy Learmonth, Shazna Ali, Kirsten Fernandez, Julienn Guzman, Victoria Hanks, Tatiana Charles, Irena Curanovic, Christina Lagomarsino, Psychology

Using Machine Learning Techniques for DSP Software Performance Prediction at Source Code Level, Weihua Liu, Bogong Su, Erh-Wen Hu, Jian Wang, Computer Science

An investigation between Python and SPSS in Software Performance Prediction, Weihua Liu, Bogong Su, Natalia Zaytseva, Dev Dave, Oliver Alvarado, Oliver Nunez, Computer Science

A Biochemistry Approach to Understanding Aging Processes Involving Effects of Proteins on the

Production of Lipofuscin, Jennifer Louis, Chemistry

[Millennials' Usage of Social Media and Online Platforms for Healthcare-Related Information](#), [Peter Mari](#), Communication

Trends in Retention at Peter Ho Clinic among HIV-diagnosed patients, 2013-2017, Debbie Mohammed, Monica Mutyula, Lisa Marie, Koumoulos Jihad Slim, Nursing

[A Web-based Platform for Mining and Analyzing Social Media Data](#), [Daniel Novikov](#), Cyril S. Ku, Computer Science, Jin-A Choi, Communication

The Influence of Postpartum Fatigue on Exclusive Breastfeeding Rates at Discharge, Karen Phillips, Lisa DePue, Nursing

[The Extinction of Otodus megalodon: Insights from Nitrogen, Calcium, and Clumped Isotope Ratios](#), [Kayden Rivera](#), Alexandria Beilman, Faculty Sponsor Michael Griffiths, Environmental Science

[The Impact of Influencers on Consumers' Purchase Intentions](#), Andrew Rogolino, Faculty Sponsor Jin-A Choi, Communication

[The Effect of a 7-week Progressive Yoga Intervention on Hamstrings Flexibility](#), [Trayer Run-Kowzun](#), Toni LaSala, Michael Figueroa, Kinesiology

#celiacdisease: The Use of Instagram in Contending with Chronic Illness, Bonnie Smith, Faculty Sponsors Zoe Meleo Erwin and Corey Basch, Public Health

[Time to Peak Muscle Activation and the Effect of Different Training Intensities](#), [Tim Stiroh](#), Jordan Cola, Kinesiology

Comparison of the US and Australian civilian internment camps during the Second World War, Anthony Sudol, History

[Vulnerability Testing of Contactless NFC Mobile Payments](#), Jesus Toxtle, Igor Lyebyedyev, Faculty Sponsor Kiho Lim, Computer Science

[Analytical Study of Web Application Vulnerabilities](#), Jesus Toxtle, Faculty Sponsor Kiho Lim, Computer Science

Functionalization of C sp³-H Bonds via Copper Catalyzed Electrochemistry, Leslie Trigoura, Chemistry

Pioneering Materials for Solar Energy Conversion, James Varner, Chemistry

Analysis of Bacteria on Microfiber and Scrubs Using Scanning Electron Microscopy, Miryam Wahrman, Catherine Coffaro, Biology

The re-examination of Packanack Lake: Effects of Non-point Source Pollution, Zachary Winkler, Nicole Szubart, Brittney Christie, Troy Perry, Jennifer Callanan, Michael DaSilva, Environmental Science

Interdisciplinary Podium Sessions

Mental Health, Social Capital & Academic Success in First Generation College Students, [Marsha Akoto](#), Sumithra Raghavan, Danfei Hu, and Kassandra Rendon, Psychology

A Cultural Adjustment Group for Recently Arrived Immigrant Youth: The Involvement of University Students, Marsha Akoto, Melissa Henao, Angelica Briggs, Sydney Cheron, Osairys Billini, Kuku Sekinat, Bryan Alava, Fernanda Moura, Esther Lee, Aileen Torres, and Pei Wen Ma, Psychology

Hill-Rom's bed exit system with audible alarm, used in conjunction with falls protocol: Reduces falls on a medical -surgical inpatient unit: A Process Improvement Project, [Lydia Albuquerque](#), Nursing

Real Estate and Tax Credits: How Can Tax Credits be used to Make Affordable Housing More Feasible? Valeriya Avdeev, Accounting and Law

Investigation of Enhanced Recovery after Surgery (ERAS) Protocol Outcome on Post Colectomy Patients, Sharon Baoas, Nursing

The Relationship of Health Literacy and Self-Care Behaviors among Patients with Heart Failure, [Helen Bloomer](#), Nursing

Exploration of the Photocatalytic Activity of Eosin Y in Benzylic Peroxidation Reactions, [Reem Eldabagh](#), Faculty Sponsor Jonathan Foley, Chemistry

Contributors to the Development of Fears: The Influence of Individual Characteristics and Parental Disposition on Learned Animal Fears, [Raghad Hassabelnaby](#) and Megan Conrad, Psychology

An Examination of a Nurse Practitioner-Led Individualized Pain Plan Management Upon Length of Stay, Hospital 30-Day Readmission, and Quality of Care for African American Adults with Sickle Cell Disease, Karen Macey-Stewart, Nursing

Identification of CB2R Neuro-Immune Crosstalk in Alcohol Preference, Emmanuel Onaivi, Biology

Defining and Promoting Student Wellbeing, Lynne Orr and Brianne Reyes, College of Education, Dean's Office

Testing Whether Belief in a Just World Mediates the Relationship Between Childhood Emotional Abuse and Self-Esteem, [Samantha Smith](#), Megan Chesin, and Michele Cascardi, Psychology

A Model Reaction System: CIS/TRANS Isomerization of Azo-Benzene in Nanosized Optical Cavities, [Figen Suchanek](#), Panayiota Antoniou, James Varner, Jonathan Foley, Chemistry

Comparison of the US and Australian civilian internment camps during the Second World War, Anthony Sudol, Faculty Sponsor Lucia McMahon, History

Memorial and Education of Military Comfort Women an issue of modern Japan from its Imperial Past, Anthony Sudol, Faculty Sponsor Lucia McMahon, History

Functionalization of C sp³-H Bonds via Copper Catalyzed Electrochemistry, Leslie Trigoura,
Faculty Sponsor Yalan Xing, Chemistry

Pioneering Materials for Solar Energy Conversion, James Varner, Faculty Sponsor Jonathan
Foley, Chemistry

College or Committee Sponsored Sessions

College of Arts and Communication

Detecting Themes of Conversation on Twitter: Text Mining Approach, Jin-A Choi,
Communication

The Search for Musical Identity, Karen Demsey, Music Department

High School Music Decisions, Carol Frierson-Campbell, Music, Gideon Forbes, Adjunct
Faculty, Music, Xavier Bonilla, Undergraduate Student, Music, Leon Pooran,
Undergraduate Student, Music

Noticing Musical Becomings in Palestine, Carol Frierson-Campbell, Music

*Who Let the Authors Out? Musical Composition, Authorship, and Intellectual Property: A
Comparison Between Music of Colonial Pennsylvania and Late-Twentieth-Century America*,
Christopher Herbert, Music

*The Creation of a Spectator Sport in Television's Emergent Years: "Bowling Headliners" (1948-
1950)*, [Nick Hirshon](#), Communication

African Pattern and Identity in Contemporary Surface, Textile and Fashion Design, Leslie Nobler,
Art

*International Travelers' Social Media Use and Impacts during 2018 PyeongChang
Olympics*, [Kyung-Hyan \(Angie\) Yoo](#), Communication

Sanjo Caster: A Case Study on Modernization of World Traditional Musical Instruments, HyukJae
Henry Yoo, Art

*Knotted Carpets from the Taklamakan: A Medium of Ideological and Aesthetic Exchange on the Silk
Road, 700 BCE-700 CE*, He Zhang, Art

College of Education:

[Recording of the Live Zoom Session on April 21.](#)

*Incorporating Innovative Instructional Strategies to Enhance Learner Engagement in Online College
Course*, Lynne Orr, College of Education, Dean's Office, Brianna Reyes, Master's Student,
English

Learning to Enact Effective interactions in a Practice Based course for Pre-service Early Childhood Teachers, Anita Kumar, College of Education

[*Translating Global to Local/Local to Global Learning and Teaching Practices*](#), [Laura Fattal](#), Elementary and Early Childhood Education, Sandra Alon, Educational Leadership and Professional Studies

Finding Your Cultural Opposite: Making Culture Live Through Podcasting, Ronald Verdicchio, EdD, Department of Elementary/Early Childhood Education

Teaching Online through Podcasting, Cynthia Northington-Purdie, Secondary and Middle School Education

Creating a "Third Space" to Advance Teacher Candidates' Practice and Children's Learning, Julie Rosenthal, Elizabeth Brown, Alison Dobrick, Laura Fattal, Anissa Conyers, Courtney Moran, Serena Pearson, Elementary and Early Childhood Education

Leadership Development: A Case Study on How Creating and Sharing Online Resources to Children/Families Influences their Perceived Leadership Competencies, Renee Whelan and Jill Patterson, Elementary & Early Childhood Education

From Collaboration to Class Book Publication: How Students Became Authors in an English Methods Course, Darlene Russell, Faculty Secondary and Middle School Education, Mark Stack, Kathryn Hathaway, Jonah Balagtas, Hayley Gazzara, Nikki Sisco, Cassandra Soto, Jacqueline Lovett, Maritza Mieles, and Justine Webb, Undergraduate Students Secondary and Middle School Education

Dyslexia knowledge, self-efficacy, and professional development needs of in-service educators, Michelle Gonzalez, Special Education & Counseling/Educational Leadership & Professional Studies

College of Humanities and Social Sciences

The Dynamite Express, David Borkowski, English

The White Lotus War: Rebellion and Suppression in Late Imperial China, Yingcong Dai, History

Center for Research, College of Science and Health

Cardiac rehabilitation program adherence among patients with Cardiac diseases and its relationship with Heart-Health behavior and Health status, Lydia Albuquerque and Greey Thomas, Nursing

*The Co-Expression of Functionally Related, Clustered Genes Requires Chromatin Remodeling and the Mediator Complex for Proper Regulation in *Saccharomyces cerevisiae**, James Arnone, Biology

Cobalt Catalyzed C-P Bond Formation by Cross-Coupling of Boronic Acids with P(O)H Compounds in Presence of Zinc, Parminder Kaur, Ian Hicks, Jonathan McTague, Tatiana Hapatsha, Rania Teriak, Chemistry

Machine Learning Techniques for Software Performance Prediction, Weihua Liu, Computer Science

The Power of Padovan, David Nacin, Mathematics

Exploring the Effects of Tyrosinase on Lipofuscin Formation, David Snyder, Chemistry

Foraging in grass spiders: construction of, and prey-capture on, a dry, flat web, Joseph Spagna, Biology

*Resistance profiling of medically-relevant FKS1 mutations expressed from plasmid in the human fungal pathogen *Candida glabrata**, Kelley Healey, Geselle Cancino-Prado, Indira Sawh, Cassie Girardin, Cristina Jimenez Ortigosa, Biology

Business Policy and Practice Research Forum , Cotsakos College of Business

Lease Accounting: New Standard, Avinash Arya, Accounting and Law

[*The Nonprofit Selling and Fundraising Challenges and Opportunities: An Exploratory Study of Nonprofit Organizations*](#), Bahar Ashnai and Saeed Shekari, Professional Sales

Why Has the US Failed to Recognize the Strategic Importance of Apprenticeships to its Economy and Society? Giuliana Campanelli Andreopoulos & Alexandros Panayides

Academia in the Non-Profit Sector: A Comparative Analysis of Education Programs and Stakeholder Needs, Jorge Arevalo

Transparency versus Performance in Financial Markets: The Role of CSR Communications. Rajiv Kashyap, Jim Samuel, Peter Caiazzo

HP's Restructuring Charges of the Past Two Decades, Lianzan Xu and Francis Cai

Paterson's Business Incubating Analysis, Ge Zhang, Steven Digirolamo and Peter Caiazzo

A Framework for Understanding the Disproportionate Impact of Student Debt on African Americans in the US, Ali Mir and Raza Mir

City of Paterson Economic Development Needs, Solomon Nyaanga and Andrew Nyaboga

An Evaluation of Tax Amnesty Programs with Special Emphasis on the Effects of the 2018/19 New Jersey Tax Amnesty Program on the City of Paterson, Elizabeth Ekmekjian and Martin Gritsch

Comparing Innovation Performance and Economic Development of Turkey and Egypt, Mahmoud Mahmoud Watad

Costs and Benefits of Outsourcing Online MBA Programs: A Case Study, Siamack Shojai

Deep integration for the success of trade agreements, Priya Nagaraj

Real Estate and Tax Credits: How Can Tax Credits be used to Make Affordable Housing More Feasible? Valeriya Avdeev and Sia Nassiripour

The Conflict of Interests between Stockholders and Debtholders: Exploring a Reverse Wealth Transfer at Sears, Yoel Beniluz

Exploring the Antecedents of Corporate Social Entrepreneurship, Robert Laud, Andrey Kretinin, and Stephen C. Betts

Effect of Cannabis Policies on Cannabis Use Among Youths and Young Adults, Rahi Abouk

The Social Supply Chain: Leveraging Social Media Analytics for Supply Chain Strategy, Myles Garvey and Jim Samuel

Debt Financing and Learning Curve Investment, Chuanqian Zhang

The Existence and Hedging of Transactions Foreign Exchange Exposure, John Malindretos and Lawrence Verzani

Technology Across the Curriculum

Spatial Variation in Community-Level Predictors of Hate Crime, Andrew Gladfelter, Sociology and Criminal Justice

DIY Cognitive Neuroscience, Jamie Reulbach, Undergraduate Student, Biology, and David Freestone, Psychology

Open Education Resources

Panel Discussion on Open Education Resources, Priya Nagaraj, Economics and Global Business, Wendy Christensen, Sociology & Criminal Justice, Phoebe Jackson, English, and Kendall Martin, Biology

Panel Discussion on Open Education Resources, Emine Erdogan and Rajiv Kashyap, Marketing and Management Sciences, Ellen Pozzi, Educational Leadership and Professional Studies, and Robert Harris, Center for Teaching with Technology

The Office of Sponsored Programs:

Promoting Ideas Into Knowledge



WILLIAM PATERSON UNIVERSITY



HONORS RESEARCH WEEK 2020

in conjunction with

EXPLORATIONS 2020

Research, Scholarship, and Creative Expression

Honors Research Week 2020 on Blackboard

Every spring the Honors College seniors present their Honors thesis work. The students have done a fantastic job of completing their research and have posted video presentations of their work on a special Blackboard page. Please explore the videos! You don't have to download the videos to watch them. The videos are available via YouTube links.

Many in the WP community were added to the organization, *Honors Research Week April 2020*, when it was created. If you were, directions to access the presentations are below. If you were not, or you know someone that would like to be added to the organization, please email Honors@wpunj.edu to request to be added to the organization.

Accessing *Honors Research Week April 2020*

Open Blackboard, click on "Courses and Organizations" in the top bar

Choose *Honors Research Week April 2020* in the column on the right

When you are in the BlackBoard page, you'll see tabs on the left:

"Information" holds the program

"About the Presenters" holds the abstracts

"Presentation Links" holds the presentations

"Discussions" holds discussion forums by tracks; this is where you can post comments, questions or kudos to the students

Information on all the students involved in Honors Research Week is included on the following pages.



WILLIAM PATERSON UNIVERSITY



HONORS RESEARCH WEEK 2020

in conjunction with

EXPLORATIONS 2020

Research, Scholarship, and Creative Expression

ABOUT HONORS WEEK AND EXPLORATIONS

Each spring, the Honors College showcases the work of students who are completing one of the Honors College tracks, and recognizes the faculty and staff members who have contributed to their success. Congratulations to all of the outstanding individuals who are participating in Honors Week/Explorations 2020! For more information please visit: <http://www.wpunj.edu/osp/explorations/>.

WILLIAM PATERSON UNIVERSITY

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Student Assistant

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Independent

Dr. Amy Learmonth
Cognitive Science

Dr. Chen-Ho (Mike) Chao
Business

Dr. Jill Nocella
Nursing

Dr. Philip Cioffari
Performing and Literary Arts

Dr. K. Molly O'Donnell
Humanities

Dr. Bruce Diamond
Clinical Psychology
and Neuropsychology

Dr. Joseph Spagna
Biology

Dr. Lauren Fowler-Calisto
Music

Dr. Marianne Sullivan
Global Public Health

Dr. Neil Kressel
Social Sciences



ALAN ABOUD
Honors Track: Biology
Major: Biology
Thesis Title: *Characterization of New Blue-Light Photoreceptors in the Dinoflagellate *Karenia Brevis**
Thesis Advisors: Dr. Emily A. Monroe and Dr. Joseph Spagna



OLIVER ANDRES ALVARADO RODRIGUEZ
Honors Track: Independent
Major: Computer Science
Thesis Title: *A Study of Security Issues and Measures in Fog and Edge Computing*
Thesis Advisors: Dr. Weihua Liu, Dr. Kiho Lim, and Dr. Barbara Andrew



SAUL ABREU
Honors Track: Biology
Major: Biology
Thesis Title: *Neuroprotective Effects of KCNQ Potassium Channels after Traumatic Brain Injury with Acute and Chronic Alcohol Use*
Thesis Advisors: Dr. Sonya M. Bierbower and Dr. Joseph Spagna



DIANA BAE
Honors Track: Clinical Psychology and Neuropsychology
Major: Psychology
Thesis Title: *It's All in the Risk: The Effect of Creativity on Risk-Taking*
Thesis Advisors: Dr. Randi Ona and Dr. Bruce Diamond



KATRINA CAMILLE C. ADAP
Honors Track: Nursing
Major: Nursing
Thesis Title: *Exploring Undergraduate Nursing Students' Knowledge and Attitudes toward Providing Care to the Older Adult Population*



ALRIZ BENZON
Honors Track: Nursing
Major: Nursing
Thesis Title: *An Analysis of Caffeine Consumption, Perceived Stress, and Sleep Quality Amongst Undergraduate Nursing Students*
Thesis Advisor: Dr. Jill Nocella



HEIDI AHMED
Honors Track: Performing and Literary Arts
Majors: English (Writing) and Political Science
Thesis Title: *Framework: A Collection of Poems*
Thesis Advisor: Dr. Philip Cioffari



NASIM BIBI
Honors Track: Nursing
Major: Nursing
Thesis Title: *Male Nurses' Lived Experiences with Perceived Prejudice & Social Stigma in the Profession: Implications for Recruitment & Retention*
Thesis Advisor: Dr. Jill Nocella



SOOMIN AHN
Honors Track: Clinical Psychology and Neuropsychology
Major: Public Health
Thesis Title: *Effects of mindfulness based on personality profile among college students*
Thesis Advisor: Dr. Bruce Diamond



HASAN BICI
Honors Track: Business
Major: Accounting
Thesis Title: *Preparation for Blockchain in Business*
Thesis Advisor: Dr. Sia Nassiripour and Dr. Mike Chao



SHAZNA ALI
Honors Track: Cognitive Science
Major: Psychology
Thesis Title: *Cultural Definitions of Mental Health and Depression: Are They Help-Seeking?*
Thesis Advisor: Dr. Amy Learmonth



MARK BODNAR II
Honors Track: Biology
Major: Biology
Thesis Title: *Stress Induced Alcohol Preference Following Deletion of CB2 Cannabinoid Receptors in Microglia and Dopamine Neurons*
Thesis Advisors: Dr. Emmanuel Onaivi and Dr. Joseph Spagna



ZACHARY BOUNASSI
Honors Track: Humanities
Major: Criminology & Criminal Justice
Thesis Title: *To Create Freedom for Itself the Lion is Needed: Nietzsche's Rejection of German Idealism*
Thesis Advisor: Dr. K. Molly O'Donnell



GRACE KAWASE BURNS
Honors Track: Cognitive Science
Major: Psychology
Thesis Title: *Does Serving Others Decrease Depression?*
Thesis Advisor: Dr. Amy Learmonth



CORINNE BOWE
Honors Track: Cognitive Science
Major: Athletic Training
Thesis Title: *Analysis of Athletic Personalities and Competitiveness*
Thesis Advisor: Dr. Amy Learmonth



VANESSA LOUISE B. CAJES
Honors Track: Social Sciences
Major: Sociology (Work & Community Engagement)
Thesis Title: *Ethnic Identification and Assimilation Among 2nd Generation Filipino American College Students*
Thesis Advisor: Dr. Neil Kressel



KRISTEN BOWE
Honors Track: Humanities
Major: Exercise Science
Thesis Title: *My Evil Twin: Doppelgangers in Horror Films*
Thesis Advisor: Dr. K. Molly O'Donnell



BRIDGET A. CHARLTON
Honors Track: Cognitive Science
Major: Communication Disorders & Sciences
Thesis Title: *Radio Rhythms: Do Prosodic Changes in DJ Talk Breaks Affect Listening Comprehension?*
Thesis Advisor: Dr. Amy Learmonth



KAYLA BOWLING
Honors Track: Social Sciences
Major: Psychology
Thesis Title: *Assessment of Generation Z Attitudes Toward Marriage and Family Life*
Thesis Advisor: Dr. Neil Kressel



ELIJAH COOK
Honors Track: Independent
Major: Chemistry
Thesis Title: *Gold Nanoparticles with Mercaptan Drugs*
Thesis Advisors: Dr. Bhanu P. S. Chauhan and Dr. Barbara Andrew



ANNA BOYTON
Honors Track: Nursing
Major: Nursing
Thesis Title: *The Relationship between Anxiety and Exercise in Nursing Students*
Thesis Advisor: Dr. Jill Nocella



EUNICE CRISOSTOMO
Honors Track: Clinical Psychology and Neuropsychology
Major: Psychology
Thesis Title: *Self Reported Language Proficiencies of Introverted and Extraverted Students*
Thesis Advisor: Dr. Bruce Diamond



KADESHA BRYAN
Honors Track: Nursing
Major: Nursing
Thesis Title: *African American Maternal Mortality*
Thesis Advisor: Dr. Jill Nocella



DEV DAVE
Honors Track: Independent
Major: Computer Science
Thesis Title: *Machine Learning Techniques for Software Performance Prediction*
Thesis Advisors: Dr. Bogong Su and Dr. Barbara Andrew



JOELA S. DIAZ
Honors Track: Performing and Literary Arts
Major: English (Writing)
Thesis Title: *"Without Hope, What is Left?": A Discussion About Suicide*
Thesis Advisor: Dr. Philip Cioffari



NADIA GANI
Honors Track: Nursing
Majors: Nursing
Thesis Title: *Mental Health Stigmas and Help-Seeking Behaviors in Nursing & Non-Nursing Majors: A Quantitative Study*
Thesis Advisor: Dr. Jill Nocella



STEVEN M. DIGIROLAMO
Honors Track: Business
Major: Finance
Thesis Title: *Paterson's Option to Incubate: Business Incubating Analysis and Economic Sustainability*
Thesis Advisors: Dr. Ge Zhang and Dr. Mike (Chen-Ho) Chao



MALVINA GIANNOULIS
Honors Track: Business
Majors: Management
Thesis Title: *Vegan Diet Change: An Analysis of Consumer Behavior*
Thesis Advisor: Dr. Mike (Chen-Ho) Chao



KRISTEN DITUCCI
Honors Track: Performing and Literary Arts
Majors: Elementary Education (Teacher of Students with Disabilities) and English (Writing)
Thesis Title: *A Collection of Poems*
Thesis Advisor: Dr. Philip Cioffari



NICOLE GOITANDIA
Honors Track: Cognitive Science
Majors: Psychology, Sociology, and Disability Studies
Thesis Title: *The Effects of Dietary Intake on Gut Microbiome and Depression*
Thesis Advisor: Dr. Amy Learmonth



TAYLOR DOUGLAS
Honors Track: Performing and Literary Arts
Majors: English (Writing)
Thesis Title: *Silent Spring*
Thesis Advisor: Dr. Philip Cioffari



GILLIAN GRAHAME
Honors Track: Cognitive Science
Major: Athletic Training
Thesis Title: *Examination of Social Anxiety in Athletics*
Thesis Advisor: Dr. Amy Learmonth



MFON ESSIET
Honors Track: Humanities
Majors: Communication Disorders & Sciences and Africana World Studies
Thesis Title: *Perception and Reality: An Exploration of Black Double Consciousness in Contemporary U.S. Society*
Thesis Advisors: Dr. Ian Marshall and Dr. K. Molly O'Donnell



TYLER GREENGARD
Honors Track: Performing and Literary Arts
Major: Music (Jazz Performance)
Thesis Title: *Quartet*
Thesis Advisor: Dr. Philip Cioffari



KRISTEN CLAIRE FERNANDEZ
Honors Track: Cognitive Science
Major: Psychology
Thesis Title: *Monolingual and Bilingual College Students in Stroop Task*
Thesis Advisor: Dr. Amy Learmonth



EMMA GRITSCH
Honors Track: Social Sciences
Major: Psychology
Thesis Title: *The continuing impact of racism on the health of Black mothers and babies*
Thesis Advisor: Dr. Neil Kressel



KIARA GUERRA
Honors Track: Cognitive Science
Major: Communication Disorders & Sciences
Thesis Title: *The Effect Accent Perception Has on Employability*
Thesis Advisors: Dr. David Freestone and Dr. Amy Learmonth



MA VERONICA HOLGANZA
Honors Track: Biology
Major: Biology (Pre-Med)
Thesis Title: *Plasma Exposure Impacts ROS Generation and Gene Expression in Regenerate of Xenopus Laevis Tadpoles*
Thesis Advisors: Dr. Jaishri Menon and Dr. Joseph Spagna



ZACHARY GUIDA
Honors Track: Performing and Literary Arts
Majors: Communication (Theater & Comedy) and English (Writing)
Thesis Title: *The Two Sides of Theater: Comedy and Tragedy*
Thesis Advisor: Dr. Philip Cioffari



SEONGHO (TERRY) JEONG
Honors Track: Music
Major: Music (Popular Music)
Thesis Title: *Social Media's Influence on the Relationship of an Artist, Fan, and Music Label*
Thesis Advisors: Dr. Christopher Herbert and Dr. Lauren Fowler-Calisto



HANNACY GURBISZ
Honors Track: Cognitive Science
Majors: Elementary & Middle School Education and Integrated Math & Science (Environmental Science)
Thesis Title: *Growing Mindsets and Persistence: Exploring the Relationship between Mindset and Persistence in College Students*



ABIGAIL JONES
Honors Track: Humanities
Majors: Japanese Language and History
Thesis Title: *Kawaii! The Cute Monster Rears its Many Heads*
Thesis Advisor: Dr. K. Molly O'Donnell



VICTORIA HANKS
Honors Track: Cognitive Science
Majors: Communication Disorders & Sciences and Psychology
Thesis Title: *Body Image in Connection with Relationship and Sexual Satisfaction in College Students*
Thesis Advisors: Dr. David Freestone and Dr. Amy Learmonth



CAYLEIGH KEENAN
Honors Track: Cognitive Science
Majors: Elementary Education K-6 (5-8 Endorsement) and Mathematics
Thesis Title: *Does Private Or Public School Promote Higher Student Achievement?*
Thesis Advisor: Dr. Amy Learmonth



ABRYANNA HERNANDEZ
Honors Track: Cognitive Science
Majors: Education (K-12) with Teacher of Students with Disabilities and Mathematics
Thesis Title: *Math Anxiety, Procrastination, and Mindset in Relation to Math Performance*
Thesis Advisors: Dr. David Freestone and Dr. Amy Learmonth



ROXANNE KLOSS
Honors Track: Nursing
Major: Nursing
Thesis Title: *"The Unaffected": Experiences of College Students with a Neuro-Atypical Sibling*
Thesis Advisor: Dr. Jill Nocella



RYAN HERNANDEZ
Honors Track: Music
Major: Music (Jazz Performance)
Thesis Title: *The Influence of Charlie Parker on Jack Kerouac and Allan Ginsberg: The Effects of Interdisciplinary Research on the Personal Growth of an Artist*
Thesis Advisor: Dr. Lauren Fowler-Calisto



SAMANTHA KOPROWSKI
Honors Track: Social Sciences
Majors: Political Science and Philosophy
Thesis Title: *The Impact of Gender Quotas on Women's Descriptive and Substantive Representation in the G7 Nations*
Thesis Advisors: Dr. Stephen Shalom



CHRISTA LATORRE
Honors Track: Humanities
Major: History
Thesis Title: *From “Glee” to “Euphoria”:
 Adolescent Representation on Television*
Thesis Advisor: Dr. K. Molly O’Donnell



KATHERINE MARTINEZ
Honors Track: Performing and Literary Arts
Majors: Elementary & Early Childhood
 Education (ESL Bilingual) and Spanish
Thesis Title: *Life Lessons from Around
 the World*
Thesis Advisor: Dr. Philip Cioffari



ASHLEY LAWLER
Honors Track: Nursing
Major: Nursing
Thesis Title: *Concussion and Recovery
 Time: A Qualitative Study*
Thesis Advisors: Dr. Jill Nocella



**JOSEPH ALOYSIUS
 MCCAFFREY II**
Honors Track: Performing and Literary Arts
Major: Music (Jazz Studies and
 Performance-Drums)
Thesis Title: *Conversations in Jazz*
Thesis Advisor: Dr. Philip Cioffari



CORINNE LENZINGER
Honors Track: Clinical Psychology and
 Neuropsychology
Major: Psychology
Thesis Title: *Sensation Seeking and Other
 Measures: Comparing College Athletes and Non
 Athletes*
Thesis Advisors: Dr. Randi Ona
 and Dr. Bruce Diamond



ASHLEY MERCHANT
Honors Track: Independent
Major: Political Science
Thesis Title: *Violence and Security
 in Mexico*
Thesis Advisors: Dr. Richard Huizar
 and Dr. Barbara Andrew



BENJAMIN LIEGNER
Honors Track: Social Sciences
Major: Psychology
Thesis Title: *Perceived Authenticity*
Thesis Advisors: Dr. SoYon Rim
 and Dr. Neil Kressel



ELIKA Z. MOALLEM
Honors Track: Biology
Major: Biology
Thesis Title: *Investigating Therapeutic
 Targets and the Cellular Processes
 in Traumatic Brain Injury*
Thesis Advisors: Dr. Sonya M. Bierbower
 and Dr. Joseph Spagna



MELANIE LIPTAK
Honors Track: Clinical Psychology
 and Neuropsychology
Major: Psychology
Thesis Title: *Evaluating Patterns
 of Preserved and Impaired Memory in a
 Geriatric Patient Diagnosed with disease
 of the Alzheimer’s type*
Thesis Advisor: Dr. Bruce Diamond



ANDREW NAZARENO
Honors Track: Nursing
Major: Nursing
Thesis Title: *The Relationship Between
 Breakfast Consumption and Self-Reported
 Cognition and Mood*
Thesis Advisor: Dr. Jill Nocella



HASMIN M. LLAMOCA
Honors Track: Clinical Psychology and
 Neuropsychology
Major: Psychology
Thesis Title: *Neurobehavioral and Neurogenetic
 Correlates of Information Processing in Children
 and Young Adults*
Thesis Advisor: Dr. Bruce Diamond



JESSE NORMAN
Honors Track: Performing and Literary Arts
Major: Communication (Broadcast
 Journalism)
Thesis Title: *Could the Brooklyn Nets
 Rebuild/Change the NBA?*
Thesis Advisor: Dr. Philip Cioffari



KATE PANITZ

Honors Track: Social Sciences
Major: Legal Studies
Thesis Title: *Misconceptions About Immigrants in America: A Review of the Literature and Data*
Thesis Advisor: Dr. Fanny Lauby and Dr. Neil Kressel



MONIKA RYBAK

Honors Track: Clinical Psychology and Neuropsychology
Major: Psychology
Thesis Title: *Art Therapy Intervention Program: Exploring the Relationship between Art Therapy and Alzheimer's Disease*
Thesis Advisors: Dr. Randi Ona and Dr. Bruce Diamond



PETER PAWLOWSKI

Honors Track: Clinical Psychology and Neuropsychology
Major: Communication Disorders & Sciences
Thesis Title: Face Processing in Autism
Thesis Advisor: Dr. Bruce Diamond



DEVIN SAVOIE

Honors Track: Social Sciences
Major: Criminology & Criminal Justice
Thesis Title: *The First Amendment & Video Games: Brown v Entertainment Merchants Association 2010 to Today*
Thesis Advisor: Dr. Neil Kressel



SERENA PEARSON

Honors Track: Cognitive Science
Majors: Elementary Education (Teacher of Students with Disabilities) and History
Thesis Title: *Career Aspirations and College Awareness of K-6 Elementary-Aged Students*
Thesis Advisor: Dr. Amy Learmonth



RACHEL EUNJIN SEO

Honors Track: Cognitive Science
Major: Communication Disorders & Sciences
Thesis Title: *Effects of Tonal Language Experience and Musicianship on Pitch Perception*



EMILIA R. PIRRO

Honors Track: Cognitive Science
Major: Communication Disorders & Sciences
Thesis Title: *Profanity and its Effect on Human Perceptions of Offensiveness*
Thesis Advisor: Dr. Amy Learmonth



NICHOLAS SERPICO

Honors Track: Clinical Psychology and Neuropsychology
Major: Psychology
Thesis Title: *Antidepressants Compared to Psychotherapy and Alternative Treatments*
Thesis Advisor: Dr. Bruce Diamond



GABRIELLA RAPISARDI

Honors Track: Cognitive Science
Major: Communication Disorders & Sciences
Thesis Title: *Self-Esteem, Mindfulness, and Social Anxiety*
Thesis Advisors: Dr. David Freestone and Dr. Amy Learmonth



JAMES WILLIAM SHARKEY

Honors Track: Performing and Literary Arts
Majors: English (Writing) and Communication (Media Studies)
Thesis Title: *Collection of Short Stories*
Thesis Advisor: Dr. Philip Cioffari



MAXIMILIAN ROHRER

Honors Track: Independent
Major: Mathematics
Thesis Title: *Using a Numerical Baseball Simulator to Analyze Batting Lineups and Hitter Streakiness*
Thesis Advisors: Dr. Paul von Dohlen and Dr. Barbara Andrew



SAMANTHA SHORTINO

Honors Track: Independent
Major: Mathematics
Thesis Title: *A Mathematical Mystery: An In-Depth Analysis of the Trisection Problem*
Thesis Advisors: Dr. Donna Fengya and Dr. Barbara Andrew



JAKE SIMON

Honors Track: Social Sciences
Major: Communication (Media Studies)
Thesis Title: *Japanese Anime: Factors Leading to Acceptance or Rejection*
Thesis Advisor: Dr. Neil Kressel



DOMINICK WOOD

Honors Track: Music
Majors: Music (Jazz Studies) and Music Education
Thesis Title: *A Comparison of Vocal and Brass Pedagogy: A Multidisciplinary Approach to Music Education*
Thesis Advisor: Dr. Lauren Fowler-Calisto



SHANNON SUPER

Honors Track: Business
Major: Management
Thesis Title: *The Effect of Physical Activity on Mental Health and Academic Performance in College Aged Adults*
Thesis Advisors: Dr. Bela Florenthal and Dr. Mike (Chen-Ho) Chao



ABDULWAHHAAB (HABI) YANES

Honors Track: Biology
Major: Biology
Thesis Title: *The Role of the Cannabinoid Receptor in Microglia and Dopamine Neurons After Repetitive Traumatic Brain Injury*
Thesis Advisors: Dr. Sonya M. Bierbower and Dr. Joseph Spagna



EMMA TANG

Honors Track: Social Sciences
Major: Communication Disorders & Sciences
Thesis Title: *The Impact of Cochlear Implants*
Thesis Advisor: Dr. Neil Kressel



JOSEPH ZAZZARA

Honors Track: Performing and Literary Arts
Major: Communication (Media Production)
Thesis Title: *Walk Among Us: A Feature Length Screenplay*
Thesis Advisor: Dr. Philip Cioffari



REBECCA TEMPLE

Honors Track: Cognitive Science
Majors: Psychology and Sociology (Social Services)
Thesis Title: *The Effect of Political Orientation on Political Memories*
Thesis Advisor: Dr. Amy Learmonth



ABBEY ZOLLO

Honors Track: Performing and Literary Arts
Major: Communication (Public Relations)
Thesis Title: *All The Lonely People: A Collection of Short Stories Based on Music by The Beatles*
Thesis Advisor: Dr. Philip Cioffari



KEIRA R. WHITE

Honors Track: Social Sciences
Major: Athletic Training
Thesis Title: *Gait Patterns in Relation to Leg Length Discrepancies: A Randomized Control Study*
Thesis Advisors: Dr. Jason Wicke and Dr. Neil Kressel

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EXPLORATIONS

Research, Scholarship, and Creative Expression

April 1 to April 30, 2020
Events Campus-Wide

Abstracts

Alphabetical Listing by First Author

Part I: Honor's Week Presenters

Part II: Explorations Presenters

HONORS WEEK Presenters

Abstracts are presented in alphabetical order base on the primary author's last name.

Alan Abboud, Biology

*Characterization of New Blue-Light Photoreceptors in the Dinoflagellate *Karenia Brevis**

Karenia brevis is the photosynthetic dinoflagellate responsible for the annual red tides in the Gulf of Mexico, which cause extensive marine life mortalities and human illnesses. Various photoresponses have been observed in *K. brevis*, but only one plastid localized blue-light photoreceptor, the cryptochrome DASH (CRY DASH), has been characterized to date. Using *K. brevis*' newly expanded transcriptomic library, I have identified new blue-light photoreceptor sequences in addition to *K. brevis*' cryptochrome DASH protein. To further characterize the newly identified photoreceptors, I have been examining gene expression of these candidates over a 24-hour light/dark cycle using qPCR to test the hypothesis that maximal gene expression of these photoreceptors will occur during the day. Identifying new photoreceptors and characterizing their activity will help our understanding of *K. brevis*' cell cycle and possible control mechanisms during bloom proliferation.

Saul Abreu, Biology

Neuroprotective Effects of KCNQ Potassium Channels after Traumatic Brain Injury with Acute and Chronic Alcohol Use

Traumatic Brain Injury (TBI) is the result of a sudden or violent blunt impact to the head, which is commonly caused by car accidents, assaults, falls, or even war. Injury to the brain can bring about a varied range of cognitive, sensory, and behavioral symptoms, which in severe cases can be fatal. The use of a KCNQ channel opener, retigabine, upregulates the opening of KNCQ channels indicating a neuroprotective role, mitigating the damage caused by the metabolic cascades associated with TBI. Alcohol intoxication has been shown to affect the recovery of TBI, but the exact mechanism is unknown. Limited studies on this topic suggest that acute alcohol administration has a neuroprotective effect, while chronic ethanol exposure has a neuro-degenerative effect. We therefore analyzed the effects of acute (AC) and chronic (CR) ethanol administration on the recovery of mice that received a TBI. Specifically, can modulation of KCNQ channels decrease the secondary effects of TBI such as excitotoxicity? We observed the levels of anxiety, fear, and locomotor activity of mice using the open field and null maze models. AC TBI mice that received the channel opener displayed control levels of anxiety by day 14, showing no significant difference compared to non-TBI-treated mice in time spent in closed areas. In contrast, AC TBI mice not receiving the channel opener did not show behavior seen in control groups indicated by the time spent in closed spaces. CR TBI mice that received the channel opener also showed behavior not typical of control groups, thus they spend a significantly longer amount of time in the closed areas. Our findings do not suggest that acute alcohol administration provides a neuroprotective effect, but they do indicate that chronic administration impedes the recovery of mice, even possibly inhibiting the channel opener's neuroprotective effect.

Katrina Camille Adap, Nursing

Exploring Undergraduate Nursing Students' Knowledge and Attitudes toward Providing Care to the Older Adult Population

The older adult population in the United States is rapidly increasing. With many older adults living with one or more chronic condition, an adequate supply of nurses must be prepared with the knowledge and confidence to care for the needs of this growing population. Therefore, it is important to study the correlation between knowledge and attitudes toward providing care to the older adult population. This research study explores undergraduate nursing students' knowledge and attitudes

toward providing care to the older adult population using Palmore's Facts on Aging - Form 2 and the Geriatric Attitudes Scale. Data was collected through anonymous surveys distributed on the campus of a public university in New Jersey. 154 surveys were collected and analyzed, showing no correlation between age, knowledge, and attitude toward providing care to the geriatric population. Determining the effects of knowledge and experience on student attitudes towards geriatrics will help in determining what efforts can be made to help address the decreased number of nursing students interested in working within this particular field.

Heidi Ahmed, Performing and Literary Arts

Framework, A Collection of Poems

Heidi Ahmed has created a collection of poems that takes the reader through her various life experiences as an Egyptian American. Throughout her poems, themes of acceptance, loss, love and growth are intertwined within her passion for politics, social justice and travel. Framework is an authentic depiction of how literary art can capture the emotions and growth of an individual. The project was supervised by Dr. Phillip Cioffari of the English Department.

Soomin Ahn, Clinical Psychology and Neuropsychology

Mindfulness meditation is widely thought to increase one's ability to cope with stress. College students, who frequently experience stress, may benefit from practicing mindfulness meditation to manage high levels of psychological distress overall. The purpose of this study is to examine the benefits of mindfulness based on an individual's profile. The participants were assessed for fatigue, stress, and anxiety prior to and after completion of a brief mindfulness meditation. Participants' personality and mood were also assessed in the beginning of the experiment. It is expected that the results will indicate that individuals with certain traits of personality are more likely to benefit from a brief single mindfulness meditation.

Shazna Ali, Cognitive Science

Cultural Definitions of Mental Health and Depression: Are They Help-Seeking?

Participants from different cultures were asked to define mental health and one of its terms, depression, to determine whether the definitions given were help-seeking. Participants were all college students who came from seven different cultural backgrounds. They completed an open-ended questionnaire on their cultural and personal definitions of mental health and depression. Results were analyzed using qualitative evaluation of the text participants provided. The answers fell into two categories: cultures that did not acknowledge the existence of mental health (4/7) and cultures that did (3/7). More cultures had definitions of depression even if they did not have definitions of mental health. However, most cultures were not receptive of help-seeking. The answers provided indicated that help-seeking would not be acceptable in their cultures. Results from this study are currently being used to design and collect data for a second study to see differences in other cultures and if help-seeking is acceptable among those cultures as well.

Oliver Alvarado Rodriguez, Independent

A Study of Security Issues and Measures in Fog and Edge Computing

Cloud, fog, and edge computing are infrastructures that can handle the ever-growing need to store and process massive amounts of data. These computing paradigms may sound similar to each other on the surface, but they have key differences. Cloud computing is a centralized solution that relies on datacenters composed of many servers to perform the computing tasks needed by a client. On the

contrary, fog and edge computing are decentralized computing solutions that rely on fog nodes, micro-datacenters, or other technologies to extend the Cloud to nearby devices to reduce latency, accelerate data processing, connect Internet of Things (IoT) devices to the Cloud, among improving other functions. These new decentralized solutions are not free from security issues. They are plagued with the same security issues that affect cloud computing as well as new issues that arose from their creation. Due to their highly decentralized nature, fog and edge computing must ensure proper authorization of users, data integrity, safe communication, and other issues that will all be explored in this paper. Finally, examples will be given wherever further clarification is needed, along with a case scenario that demonstrates the importance of proper security and encryption in fog and edge computing ecosystems.

Diana Bae, Clinical Psychology and Neuropsychology

It's All in the Risk: The Effect of Creativity on Risk-Taking

There is a body of research that indicates a possible relationship between creativity and risk-taking behavior. These two bodies look at whether exposure to creativity stimuli is correlated with risk taking. The hypothesis is that primed creativity will increase an individual's hypothetical and actual risk-taking behavior. In Study 1, 135 participants were administered a sentence unscrambling task that either contained or did not contain words associated with creativity. Afterwards, they were asked to rate their likelihood of participating in risky activities. The results indicated that the participants in the creativity stimuli group had higher risk-taking ratings than those in the control group. In Study 2, the participants were administered the same sentence scrambling task. They were then given the CCT which measures risk-taking behavior. Although this study is on-going at this time, it is expected that the results will show a positive correlation between exposure to creativity stimuli and risk-taking behavior.

Alriz Benzon, Nursing

An Analysis of Caffeine Consumption, Perceived Stress, and Sleep Quality Amongst Undergraduate Nursing Students

Caffeine consumption has been a prevalent way for many people, especially college students, to compensate for their lack of sleep or energy throughout the day. Whether it is nursing students or registered nurses, the nursing profession is acknowledged as a career that challenges one's sleep schedule, inflicting inevitable stress on one's life. Therefore, it is important to study the effects of caffeine consumption on sleep quality and perceived stress in order to reduce stress, address sleep problems, improve students' academic achievements, and maintain a healthy lifestyle. The Perceived Stress Scale, Pittsburgh Sleep Quality Index (PSQI), and Caffeine Assessment Tool were used to examine correlations between perceived stress, sleep quality, and caffeine consumption amongst nursing students (N=138). Results found no correlation between caffeine consumption and stress, where $r=0.065$ and $p=0.445$. However, a weak positive correlation was found between caffeine consumption and PSQI scores, where $r=0.179$ and $p<0.05$. Another moderately positive correlation was found between PSQI scores and stress, where $r = 0.376$ and $p<0.05$. The results of this study serve to highlight the lack of sleep amongst undergraduate nursing students in relation to two measured factors: an increased amount of caffeine consumption and an increased amount of stress.

Nasim Bibi, Nursing

Male Nurses' Lived Experiences with Perceived Prejudice & Social Stigma in the Profession: Implications for Recruitment & Retention

Men in nursing continue to face many barriers and obstacles when trying to pursue a career that is traditionally viewed as a "woman's profession." Therefore, the purpose of this qualitative study was to explore male nurses' lived experiences with perceived prejudice and social stigma using the social role theory as the guiding theoretical framework as it helped to explain the challenges men face in nursing as

a result of societal expectations. Semi-structured, face-to-face interviews were used to capture the perspectives of male nurses at a hospital system in New Jersey. Data analysis produced eight themes which include economic demand for nurses, family influence, marginalization, gender stereotyping, limited choice of specialty, societal perception of nursing, need for male role models, and lack of professional support. The study findings have the potential to explore opportunities to recruit and retain men in the nursing profession as a viable way to address the impending nursing shortage and promote gender diversity.

Mark Bodnar, Biology

Stress Induced Alcohol Preference Following Deletion of CB2 Cannabinoid Receptors in Microglia and Dopamine Neurons

The endocannabinoid system (ECS) exerts an extensive effect on human physiology and is a key regulator of the immune system via cannabinoid type 2 (CB2R) receptors (Liu et al., 2017). The discovery of functional CB2 receptors in the brain has raised questions regarding their role in regulating neuroinflammation and behavior (Onaivi 2006). Emerging evidence supports the potential of CB2 receptors as targets to treat mental illness and neurodegenerative diseases. This study will evaluate the role of CB2Rs in stressed and non-stressed mice following the deletion of CB2Rs in microglia and dopamine neurons in comparison to wild-type mice. Using a series of behavioral tests, it was possible to evaluate any behavioral difference seen between the three mice strains. Evaluating the expression of proteins such as Tyrosine hydroxylase (TH) and Tumor necrosis factor alpha (Tnf α) through western blotting will allow for a better understanding of the key role CB2Rs have on modulating these specific proteins. Evaluating the gene expression of CB1R and CB2R was also achieved to determine changes in the endocannabinoid system following the specific CB2R conditional knockout in the microglia and dopamine neurons. The results of my experiment may express a difference in behavior as well as exhibit differential expression patterns in protein and gene expression between each strain of mice.

Zachary Bounassi, Humanities

To Create Freedom for Itself the Lion is Needed: Nietzsche's Rejection of German Idealism

My thesis explores Friedrich Nietzsche's reaction against idealism. German Idealists flirted with the idea that humans were essentially good, and that there was a metaphysical root for human morality and ethical behavior. For example, Immanuel Kant presented his ideas of the categorical imperative, an unconscious moral guideline. Georg Wilhelm Friedrich Hegel believed that over time humanity became progressively more moral and ethical through civilization. Arthur Schopenhauer believed compassion for others led to a universal ethic, stating that there is no cultural influence. Friedrich Nietzsche rejected these views, leading him to a personal search to understand how ethics and morals are constructed. My thesis examines philosophical works revealing this shift, where Nietzsche emphasizes how an individuals' experiences give meaning to their lives. I conclude that Nietzsche's rejection of idealism and counter arguments are pivotal to understanding his reappraisal of ethics.

Corrine Bowe, Cognitive Science

Analysis of Athletic Personalities and Competitiveness

The current study examined the differences in personality and competitiveness between offensive and defensive athletic positions. Previous research has mainly focused on differences of these factors between team sports and individual sports, or athletes versus nonathletes. Ilyasi and Salehian (2011) found differences in personality between individual and team athletes. They found significant differences in extraversion, openness, and conscientiousness, where individual athletes had higher scores in these dimensions than team athletes (Ilyasi & Salehian, 2011). There are few studies specifically looking at positions. Participants of this study were 163 student-athletes at an NCAA division III

university. Participants completed a survey containing demographic questions, a short version of the Big Five Inventory and the Multidimensional Competitive Orientation Inventory. Results showed the only significant difference in neuroticism, ($F(2, 160)=3.06, p=.05$) between solely offensive or defensive athletes and athletes who said they were both. Athletes who said they were both had significantly higher levels of neuroticism than offensive and defensive athletes.

Kristen Bowe, Humanities

My Evil Twin: Doppelgangers in Horror Films

The notion that you have a doppelganger, an evil self, lurking within you haunts many of us. I argue that eerie stories about doubles become even more frightening on the silver screen. My thesis traces the image of the doppelganger and its meaning within from the earliest horror films through contemporary works. It argues that the anxieties of each age shine through the use of this motif. *Invasion of the Body Snatchers* (1956), reveals the fear of soviet communism during the red scare as we see alien lifeforms stealing our identities and leaving empty and obedient shells in their wake. In the present era of racial tensions, director Jordon Peele's *Us* (2019) reimagines the doppelganger, focusing his work on an African American family taken over by a cryptic force that resides underneath the normal world. Each film in my study speaks to the different fears and anxieties of its period.

Kayla Bowling, Social Sciences

Assessment of Generation Z Attitudes toward Marriage and Family Life

Evidence from survey studies and analyses of mass media content suggest that Americans from generation Z - born between the mid-nineties and 2010 - hold different attitudes about marriage and family life than earlier cohorts. Over recent years, fewer people seem to be guided by traditional norms and expectations. The purpose of this study is to empirically assess the feelings and expectations of generation Z college students with regard to: 1) marriage in general, 2) the probable course of their lives with regard to family matters, and 3) the types of mates they most desire. We start with a review of the existing social scientific research literature. Then, we present the results of an empirical survey study conducted with an online sample located via Amazon Mechanical Turk and an in-person sample drawn from students on a state university campus in the northeastern United States. A goal of the study is to develop a typology of generation Z attitudes toward marriage and family life.

Anna Boyton, Nursing

The Relationship between Anxiety and Exercise in Nursing Students

Nursing students are likely to be stressed and anxious due to long clinical hours and heavy academic workload. This stress can negatively impact the students' well-being and quality of patient care. In order to improve patient care and well-being, it is important to investigate possible interventions to decrease stress in these students. This quantitative non-experimental correlational study examined the relationship between anxiety and exercise in undergraduate nursing students using the Appendix- A State-Trait Anxiety Inventory STAI Form Y-1 and Y-2, and the Godin-Shephard Leisure-Time Physical Activity Questionnaire. This study followed the Health Promotion model and data was collected using anonymous surveys that were distributed to 104 nursing students at a public university in New Jersey. Results showed that there was no correlation between exercise and anxiety levels among nursing students. Although the results of the study were inconclusive, exercise can be a possible intervention to reduce anxiety in individual nursing students and further studies should be completed.

Kadesha Bryan, Nursing

African American Maternal Mortality Rate (MMR)

African American women are more than three times more likely to die of pregnancy-related complications than their white counterparts. Without proper acknowledgement of the issues facing this population, the maternal outcome for African American women may remain dismal. The aim of this research was to review the existing literature on the drivers of racial disparities in maternal healthcare, and to evaluate the effectiveness of proposed methods aimed at combatting these disparities. A systematic review of the literature was conducted using TRIP, Cochrane Library, CINAHL and PubMed databases. Results revealed two promising methods for reducing disparities: First, the use of Healthcare Information Technology (HIT) increased the standardization of care, highlighted objective medical histories, and enabled clinical decision support systems. Second, health education programs increased maternal health literacy, and empowered greater self-care and self-advocacy. In these ways, HIT and maternal health education reduced racial disparities in maternal healthcare.

Grace Burns, Cognitive Science

Does Serving Others Decrease Depression?

This study is about discovering if helping others decreases depression and increases happiness. There is a questionnaire being used for the study that measures depression, happiness, and an individual's attitude toward helping to find an answer for this study. Through what has been gathered so far, it has been found that volunteering and not volunteering has no difference in any of these measures.

Vanessa Louise Cajés, Social Sciences

Ethnic Identification and Assimilation Among 2nd Generation Filipino American College Students

This study explores potential factors among second-generation college students that might influence the degree of cultural assimilation among Filipino Americans. Considering culture, history, and previous research on this group, it was hypothesized that ethnic identification is influenced by perceived sense of bilingualism, cultural participation, family dynamics, and self-identity. These matters were explored using in-depth, semi-structured interviews. Participants, recruited and pre-screened via social media, were born in the United States with Filipino-immigrant parents and were currently enrolled as an undergraduate student at an accredited four-year college or university. Each interview was approximately 40-60 minutes long and was transcribed using audio and video recordings, which were coded in order to find common themes among subjects' responses.

Bridget Charlton, Cognitive Science

Radio Rhythms: Do Prosodic Changes in DJ Talk Breaks Affect Listening Comprehension?

Prosody is the rhythmic backbone of spoken language, encompassing the various traits that shape how speech is perceived and understood. In this study, the relationship between radio prosody and listening comprehension is investigated to see if prosodic changes in DJ speech excerpts affect listening comprehension. According to Gasser, Ahn, Napoli, and Zhou's (2019) study, news broadcasters have a very specific – and recognizable – speech pattern which listeners associated with newscasts (Gasser et al. 2019). Therefore, instead of testing individual variables of prosody – such as speech rate, intonation, and stress – this study focused on the overall prosodic profile of different announcing styles.

Participants were randomly given one of five conditions, each including six demographic questions, five fake radio clips, and six questions per clip. The questions were half opinion-based and half content-based. Each clip was between fifteen and twenty-five seconds long, focused on a different topic, and

were read by a trained college radio broadcaster. Preliminary analyses found prosodic changes do affect listening comprehension.

Elijah Cook, Independent

Gold Nanoparticles with Mercaptan Drugs

Gold nanoparticles show great promise in vivo as diagnostic or therapeutic agents, and are known to possess anti-bacterial and anti-malarial properties. It has been shown that their small size, particularly their high surface area to volume ratio, offers unique physical and chemical properties that make them desirable as drug carriers. Recent cancer treatments have been effective in saving many lives, however, they can cause harsh side effects due to non-specificity in chemotherapeutic agents. Targeted delivery of drugs to the tumor site could largely reduce toxic side effects. The compound, 2-Thiocytosine, is a potential anti-cancer and anti-leukemic agent. Many of its derivatives have been synthesized and their antitumor activity has been studied. The enhancement of antiproliferative effects of other anti-cancer mercaptans has been shown by conjugation of the drug onto gold nanoparticles. The improved drug activity and nanoparticle carriers could make it possible to reduce the concentration of the drug and its side effects. Nanoparticles with the mercaptan drugs have also showed increased stability over time, without the loss of inhibitory activity. The novel metal nanoparticles form a very strong bond to the sulfur of the thiol drugs. It has been found that the bond can be spontaneously dissociated under certain conditions such as high pH, and high temperature. This dissociation of the Au-S bond is important for the release of the drug.

Eunice Crisostomo, Clinical Psychology and Neuropsychology

Self-reported Language Proficiencies of Introverted and Extroverted Students

This present study sought to investigate the relationship between introversion or extroversion personality traits and self-reported language proficiency. Individuals who report proficiency in linguistic expression, such as speaking and writing, tend to score higher in extroversion, and those who report proficiency in linguistic reception, such as listening and reading, tend to score higher in introversion. About 100 undergraduate students between the ages of 18 to 25 from a diverse mid-Atlantic university participated in this study. Through an online survey, each were asked to provide their basic information, linguistic background, and self-reported language proficiency. A brief introversion or extroversion scale was given to identify their dominant personality trait. These findings show that introversion and extroversion affect how an individual perceives their own linguistic abilities and performance. It is helpful to address this in classes where new languages are taught as this might help both students and teachers to adjust their behaviors or expectations. Future research may be conducted that includes assessments on self-efficacy that identify tendencies of overconfidence and self-deprecation.

Dev Dave, Independent

Machine Learning Techniques for Software Performance Prediction

Performance prediction at source code level is important in embedded system design for reducing the turnaround time of software development, especially when the source code is dependent upon the changes of the problem specification. CPU execution time is the major performance predictor of software applications running on embedded systems. Using simulation to measure the performance of the whole source code is often too slow, particularly after the modification of the source code, and tends to both under-predict the performance for certain testing samples and over-predict for some other samples. Based on our previous research of software performance prediction, we have created a new prediction model that uses various machine learning techniques such as Normalization, K-means

clustering, K-nearest neighbors, similarity, and attribute weighting with multiple linear regression techniques to predict the execution time of DSP software at source code level. The best predicted execution time was selected based on a new MAX/MIN algorithm. Compared to the computed performance on the new model to the actual measured execution time by benchmarking a set of functions on a TIC64 DSP processor, the average relative prediction error is less than 10%. Performance prediction at source code level can be used at the early stage of design and implementation.

Joela Diaz, Performing and Literary Arts

Without Hope, What is Left?: A Discussion About Suicide

“Without Hope, What is Left?: A Discussion About Suicide” seeks to analyze various factors that impact the risk of suicide among adolescents and adults. These factors include bullying, family situations, substance abuse, and more. This discussion utilizes the retelling of true suicide stories that involve these previously stated factors. It also includes the stories of suicide survivors and what helped them to persevere through their life’s circumstances. Because a common feeling among suicidal people is hopelessness, how does Christianity, which promises to provide hope, change the mental health conversation? In addition to these stories, this discussion presents conversations with counselors and Christian leaders in order to explore how the Christian church can advocate for mental health and how one’s beliefs influence the response to difficult circumstances.

Steven DiGirolamo, Business

Paterson’s Option to Incubate Business Incubating Analysis and Economic Stability

Despite being the third most populous city in New Jersey, Paterson, with nearly 30% of residents’ income below the poverty level, needs immediate economic growth and renewal. Business incubators provide services such as shared office-space, business training/mentoring assistance, links to capital, IP and social networks. We are trying to explore factors that will help to contribute to the success of the local business community.

To conduct this study, all business data of Paterson from 2015-2018 was collected and reviewed, focusing on the SIC data sourced from Info USA. It should be noted that Paterson, with numerous zip code areas, is unique, and the lack of business resources/education due to small size needs to be improved in the future. The Paterson, NJ economic data was analyzed, and we found several factors contributing to the local business success, (e.g., credit score and white-collar percentage contributed positively to the success of business sales volume).

Our analysis suggests local government needs to implement business incubators (BI) according to the feature of each zip code. We suggest different types of BI for individual zip codes. Setting up smaller incubators will help Paterson local business owners with better training in capital investment, technology skills development, legal education, and others. Lastly, BI will help the local community grow in a mutual business environment with an anticipated higher success rate.

Kristen Ditucci, Performing and Literary Arts

A Collection of Poems

For my honors track thesis project, I decided to write a collection of poems to showcase what I have learned as an English Writing major in college and what writing means to me. The poems I have written are about a variety of topics, including relationships I have had, positive and negative emotions I have felt, things that I find to be simply beautiful, and relevant issues in our society that I have resonated with. I took the knowledge that I gained about writing poetry from the courses I have taken in college and applied it to craft a variety of poems that mean a lot to me. Writing has always been something that

I enjoy and is a positive outlet for me when I am feeling happy, sad, stressed, anxious, or any other emotion. Overall, I love writing poetry because it is a way that I can express what I am feeling and put it down on paper instead of holding my emotions in. Writing has helped me to cope with some of the most difficult times I have had in my life and has helped me to celebrate some of the best times of my life.

Taylor Douglas, Performing and Literary Arts

Silent Spring

My thesis, *Silent Spring*, is a collection of short stories that focuses on the lives of women as well as on their relationship with the world, society, family, and friends. Many of the stories in this collection include themes of feminism and the natural world. For example, the story "Corona Borealis" delves into the topic of women in science, specifically astrophysics while incorporating nature symbolism through the use of constellations. I have taken inspiration from many classes I have taken here at William Paterson and incorporated topics such as superstition and health into my stories. An important element of writing I use in my stories is nature symbolism and motifs such as magpies, waterfalls, frogs, and herons. With this collection of short stories, I wanted to bring attention not only to the struggles women face throughout their lives but also to how they relate and connect with the natural world.

Mfon Essiet, Humanities

Perception and Reality: An Exploration of Black Double Consciousness in Contemporary U.S. Society

This research explores what W.E.B DuBois calls Double Consciousness as it relates to the socio-political reality of Black Americans. Double Consciousness captures the internal and external conflict Black Americans face in their identity and perceptions of humanity. In the study I analyze the evolution of Double Consciousness over time through four categories: criminal justice, language, education, and culture. The study culminates in a speculation about how Double Consciousness is in fact a socio-political communication disorder.

My study begins by defining Double Consciousness as the historical mechanism by which social and political realities are formed and informed by differing experiences between Blacks and Whites. I then frame my argument around the four topics: criminal justice, language, education, and culture. The study utilizes those four parameters to comparatively analyze Double Consciousness from the Civil Rights Movement until today despite changes in race relations.

Kirsten Fernandez, Cognitive Science

Monolingual and Bilingual College Students in Stroop Task

The purpose of this study is to investigate how monolingual and bilingual college students perform on the color Stroop Task. It was predicted that bilingual college students would outperform the monolingual college students. Findings supported this hypothesis. Overall, executive function is important for college students to help them manage life tasks of all types. Research has shown that being bilingual is a huge benefit because it allows people to work globally, increases job opportunities, and it opens the doors to a new culture.

Nadia Gani, Nursing

Mental Health Stigmas and Help-Seeking Behaviors in Nursing & Non-Nursing Majors: A Quantitative Study

Mental health stigmas have gained increased attention in recent years, especially among the college-aged population during a time period when mental health issues tend to emerge. These stigmas can place one at risk for poor academic performance, decreased help-seeking behaviors, self-harm, and suicide. Besides experience, education can have drastic implications on one's perception of mental health and willingness to seek help. Emphasis on this type of education may differ drastically across the curriculums of different college majors. Guided by the Health Stigma and Discrimination Framework, this quantitative study sought to discern the differences, if any, in the experiences and help-seeking behaviors among students of nursing and non-nursing majors through utilization of the Stigma Scale Survey. Responses from 205 surveys were collected and analyzed using SPSS software and resulted in a significance value of 0.049. Increasing education regarding mental health and the stigmas that tend to accompany it, along with increased training in identifying when a patient may be experiencing mental health issues, can help contribute to a drastic decrease, or perhaps an elimination, of mental health stigma and increase in help-seeking behaviors.

Malvina Giannoulis, Business

Vegan Diet Change: An Analysis of Consumer Behavior

The main purpose of researching the phenomenon of vegan diet change is to understand consumer behavior. Vegan diet change is a compelling topic to become educated about as food consumption affects individual people along with the rest of society. Consequences of typical dietary habits include animal abuse in factory farming, environmental devastation, and unhealthy lifestyles for individuals. The vegan diet is revolutionary as it could potentially solve or lessen these issues that the consumption of animal products cause. This research will be useful for any organizations that are a part of the food industry as well as those interested in learning about their own eating habits. This study will focus on independent variables such as the appearance of food, the taste of food, individual knowledge on animal agriculture, personal income, individual serious health issues, and television advertisements. The results of this study will include why or why not an individual would choose a vegan diet based on the variables listed.

Nicole Goitiandia, Cognitive Science

The Effects of Dietary Intake on Gut Microbiome and Depression

The gut microbiome and the brain engage in bidirectional communication through a pathway known as the gut-brain axis. The trillions of bacteria residing in the gastrointestinal tract makeup the gut microbiome which is crucial for overall human health. It contributes to the development of metabolism, the immune system, and central nervous system. Research has shown that the gut microbiome and its composition may play a role in depression. By examining fecal matter, studies have demonstrated that depressed patients have significantly less diverse and rich gut microbiome composition than their healthy counterparts (Jiang, Ling, Zhang, Mao, Ma, Yin, Wang, Tang, Tan, Shi, Li, & Ruan, 2015). Through the gut-brain axis, the brain becomes aware of the presence of pathogenic bacteria which causes inflammation in the gut, and proceeds to react (Liang, Wu, Hu, Wang, & Jin, 2018). This study examined the effects of dietary intake, as it is one of the main factors that alter microbiome makeup, and stress on depression. Chronic and acute stress also triggers rapid shifts in the gut microbiome as distress causes inflammation within the gut, which inhibits healthy bacteria from thriving (Madison and Kiecolt-Glaser, 2019). In an online survey limited to college students, participants documented their diet through a scale that included 10 foods that benefit and 10 foods that harm microbiome richness and diversity. Foods beneficial for the gut microbiome are largely prebiotics or probiotics, like bananas and cheese. Prebiotics feed pre existing bacteria while probiotics place new beneficial bacteria into the gut

(Lawrence and Hyde, 2017). Participants also completed the Undergraduate Sources of Stress Questionnaire (USSQ) and the Beck-Depression Inventory II (BDI II). Demographic questions such as age and ethnicity were excluded as other studies did not focus on these variables, however participants were asked to disclose their gender. Out of the 76 current responses, 53 were female and 16 were male, while 7 participants did not select a gender. A simple linear regression was used to examine the relationship between foods that are beneficial for the gut microbiome and depression. An almost significant relationship between these two variables was identified ($r=-.246$, $p=.052$). Analysis also conveyed a significant correlation between stress scores and depression levels ($r=.729$, $p<.01$). As other studies have demonstrated, results are beginning to indicate that the intake of foods that benefit or damage the gut microbiome are related to depression levels. Therefore, participants who report higher intakes of food harmful to the gut microbiome are likely to have higher depression scores, while lower BDI II scores correlate to those who consume more pre and probiotic foods. Similarly, elevated stress of the college students, gathered from the USSQ, related to higher depression scores.

Gillian Grahame, Cognitive Science

Examination of Social Anxiety in Athletics

Social anxiety has been defined as a profound fear of social interactions where embarrassment from performance and communication may arise (Dimech and Seiler, 2011). The first goal of this study was to examine the relationship between participation in organized sports and social anxiety. The second goal was to investigate whether the social aspect of team sports had any beneficial effects on social anxiety levels as compared to individual sports. Participants were young adults with the majority being college students. They were divided into the following four groups for analysis; team sport athletes, individual sport athletes, non-athlete individuals who were frequently physically active, and inactive non-athletes. Data was collected using an online survey distributed through emails, text messages, and other forms of social media. The survey consisted of demographic information, athletic background, and a measure of social anxiety-The Social Interaction Anxiety Scale. Regarding results, preliminary data showed no significant differences between active and inactive individuals.

Tyler Greengard, Performing and Literary Arts

"Quartet"

Quartet is to be an album comprised of original compositions and arrangements of standard jazz repertoire. The scope of the album is mainstream jazz, with a primary focus on post-bop and modern jazz. It features a maximalist sound concept full of dense arranging of three selections and four complex original compositions. The instrumentation for Quartet will be a standard jazz quartet: tenor saxophone, piano, bass, and drums. To aid with this project, I have studied with many great composers and arrangers, such as Aaron Diehl, Ted Nash, Dayna Stephens, Wynton Marsalis, Aaron Goldberg, Adam Kolker, Gary Wheat, Bill Charlap, Geoffrey Keezer, Pete McGuinness and more. Although Quartet will be a "straight ahead" jazz record, I want it to feel fresh and new. I have always enjoyed the stylings of the Modern Jazz Quartet and want my music to fall into a similar category, even if a little bit more experimental.

Emma Gritsch, Social Sciences

Black Maternal Health in 2020: How Racism Continues to Impact Black Mothers and Babies

The maternal mortality rate in the US is the highest among industrialized countries, and Black women are the racial/ethnic group with the highest rate of maternal death; in the US, Black women are three to four times more likely to die during/soon after childbirth than white women. This literature review analyzed studies that investigated Black maternal health in the US; three of the most influential factors

are higher rates of preterm birth, low birth weight, and preeclampsia. These factors correlate with higher rates of disease, disability, and death among Black infants. Stress and depression are significant factors in maternal health, and these factors contribute to the main theory that emerged: racism and discrimination against Black women correlate with higher Black maternal mortality rates. This “weathering” hypothesis argues that Black women age faster because of the discrimination they face, which creates a dangerous environment for a pregnant mother and her fetus.

Kiara Guerra, Cognitive Science

The Effect Accent Perception Has on Employability

Interpersonal evaluations are the beliefs and judgements interacting people form about each other in any social context. Not only can these evaluations be formed based on appearance, they can also be influenced by speech. A speaker's accent or dialect may elicit positive or negative reactions in the listener (Carlson & McHenry, 2006). As a result, these reactions can have negative effects on the speaker, such as impacting their employability. Research has shown that speakers without an accent are more likely to be hired over applicants with an accent. By creating a mock interview scenario, I was able to test my hypothesis that college students, because they attend such diverse institutions, will not rate speakers without an accent higher than speakers with an accent on the given scales and will rate all speakers equally. The study was administered through online surveys using Qualtrics with data still ongoing.

Zachary Guida, Performing and Literary Arts

The Two Sides of Theater: Comedy and Tragedy

My honors thesis, "The Two Sides of Theater: Comedy and Tragedy", was an opportunity for me to explore the comedic and dramatic writing skills I have learned through my studies at William Paterson University. My comedic piece, a one act murder mystery, gave me the opportunity to expand on my repertoire of sketch comedy. My dramatic piece, a one act play that focuses on tragedy in family, allowed me to explore a darker side of play writing that I have generally been deterred from throughout my college career. These plays are my first steps into the world of play writing. The pieces both contain dramatic and comedic elements. The murder mystery piece contains dramatic moments that cause tension and suspense in the audience, while the dramatic piece uses comedic lines and breaks to allow audiences a brief relief. Both embody the aspects of theater and present them as such.

Hannacy Gurbisz, Cognitive Science

Growing Mindsets and Persistence: Exploring the Relationship between Mindset and Persistence in College Students

This study explored the relationship between growth mindset and persistence in college students. Participants’ growth mindset was measured using the Dweck Theory of Intelligence Scale (1999). Participants’ persistence was measured using an impossible anagram task. Persistence was measured by the amount of time the participants spent on the impossible anagrams. Results found that there was a possible positive linear relationship, suggesting that persistence in college students may be enhanced by a stronger growth mindset.

Victoria Hanks, Cognitive Science

Body Image in Connection with Relationship and Sexual Satisfaction in College Students

The purpose of this study was to examine the connections between body image, self-consciousness, dating satisfaction, and sexual satisfaction in both male and female college students. Participants completed surveys on body image and self-consciousness during physical intimacy, as well as rating their satisfaction in their dating lives and their sex lives. The study ended with optional open ended questions on how body image and relationships affect each other. Data analysis shows that participants with higher body image scores have lower self-consciousness scores. Male participants showed higher body image scores than women, as well as lower self-consciousness scores than women. Relationship status was shown to have no significant effect on body image or self-consciousness scores. Results showed a positive correlation between Dating Satisfaction and Sexual Satisfaction. The results indicate that high degrees of the aforementioned factors in the average college student will likely affect their body image, as well as their Dating and Sexual life, supporting previous research that our body image impacts multiple aspects of our personal lives.

Ryan Hernandez, Music

The Influence of Charlie Parker on Jack Kerouac and Allan Ginsburg: The Effects of Interdisciplinary Research on the Personal Growth of an Artist

There are a variety of methods in which an individual can express themselves through the medium of art, including visual art, literature, and music. A muse is an essential aspect of the creative process and can help the artist discover their unique approach to self-expression. However, using a muse as inspiration within the same artistic discipline can cause the artist to imitate instead of self-express. For this reason, drawing upon other artistic disciplines to obtain inspiration is key to maintaining a unique and authentic style for the individual. This paper will explore interdisciplinary artists including musicians Miles Davis and Jim Hall, writers Jack Kerouac and Allan Ginsberg, and painters Willem DeKooning and Paul Klee who draw upon differing art forms for ingenuity and inventiveness. Form, attitude, finality, and artistic direction are common themes that can be directly observed in the work of these artists as a means to personal and artistic growth.

Abryanna Hernandez, Cognitive Science

Math Anxiety Procrastination, and Mindset in Relation to Math Performance

Are you a math person? Some people believe math ability is an innate quality granted to some but not to all. This belief has led to an increase in math anxiety and avoidance of math related situations. The current study aims to understand some of the reasons for this increase. Specifically, the study examines how the combination of procrastination, mindset, and math anxiety affects math performance in university students. Preliminary results from an online survey suggest that the correlations between procrastination, mindset, and math anxiety do not differ between males and females. Further statistical tests will examine how one factor mediates the other. Results from the study as well as previous literature will be used to suggest strategies for reducing the number of students avoiding math-based majors and careers.

Ma Veronica Holganza, Biology

*Plasma Exposure Impacts ROS Generation and Gene Expression in Regenerate of *Xenopus laevis* tadpoles*

Over the past decades, plasma technology has proven to have therapeutic applications in the treatment of various skin diseases, wound healing, tissue regeneration, and even cancer (Dobrynin et al. 2009). Because of the rapid growth of this emerging technology in the field of medicine, there is much

relevance in studying the effects of plasma on biological systems. The purpose of this study is to examine the effects of plasma on wound healing and tissue regeneration on a cellular and molecular level. Specifically, we investigated these effects in relation to presence of reactive oxygen species and nitric oxide, as well as alterations in gene expression of antioxidant enzymes, SOD and catalase, in *Xenopus laevis* tadpoles. Samples were taken from wound epithelial tail tissue, to represent the effects on wound healing, and from the tail regenerate, to represent the effects on tissue regeneration. The data has shown that gene expression of those antioxidant enzymes was different in the plasma-exposed groups compared to control. In addition, there were increased levels of ROS and NO in plasma-exposed tail tissue compared to control in both wound epithelium and blastema.

Seongho Jeong, Music

Social Media's Influence on the Relationship of an Artist, Fan, and Music Label

The influence of social media continues to grow exponentially, providing an outlet for consumers and businesses to communicate. This paper analyzes the influence of social media in the tripartite relationship consisting of the artist (provider), the music label (distributor), and fans (consumers). This analysis will assist artists in understanding the role of social media in business. It will also provide a how-to guide for artists so that they can effectively interact with their fan base. For this purpose, we study published articles and dissertations from 2012 to 2019 relating to how social media has changed the business environment of an artist. This change in environment creates a chain-reaction that influences how fans interact with artists and how music labels decide which artists to distribute as a product to fans. This research will then be cross-referenced with different social media guides in order to provide a checklist for artists. The checklist will emphasize the theme of consistency and why it is important for the artist to create a consistent self-image.

Abigail Jones, Humanities

Kawaii! The Cute Monster Rears its Many Heads

My research focuses on Hello Kitty, Pikachu, Gudetama, and Aggrestuko who demonstrate the evolution and the growing reach of kawaii as a cultural phenomenon. Kawaii is a Japanese term which means cute and delineates an entire culture focused on cuteness. My thesis traces kawaii as it emerged in Japan to become a billion-dollar global industry involved in marketing clothing, toys, art, television, etc. Cultural anthropologist Koichi Iwabuchi's argument is that kawaii is attractive due to its "cultural odorlessness." Moreover, he postulates that these characters are not recognizably Japanese, they are mukokoseki, which means without nationality. As my research explores, this universality allows Japanese culture to absorb qualities from American children's culture and translate them to other Asian markets, helping them become international icons. My findings highlight how these characters have shaped and are continuing to mold the identity of people globally who love and identify with them, creating a lasting emotional attachment to kawaii culture.

Cayleigh Keenan, Cognitive Science

Does Private or Public High School Promote Higher Student Achievement?

The current state of public education has initiated a debate over whether private or public high schools produce higher student achievement in college. Research thus far has provided mixed results from private schools having a positive significant effect on college GPA to private school having no effect. Furthermore, college GPA is affected by demographic factors such as socioeconomic status or characteristics of where a student lives, etc (Cohn, Cohn, Balch, and Bradley, 2004).

Roxanne Kloss, Nursing

The Unaffected: Experiences of College Students with a Neuro-Atypical Sibling

There is a great deal of research on people who have a lifelong neurologic disability and their experiences of stress—frequently overshadowed are siblings and their experience of stress. Recognizing experiences of siblings could potentially help the situation for all involved, and is an important aspect of holistic care. A semi-structured interview (in-person or phone call) format was used in the data collection to survey four currently enrolled college students who have a neuro-atypical sibling in the tri-state area. Some research questions included: How does having a sibling with atypical neurological development affect an individual? What feelings are associated with this stress? Are there common trends of success in the ‘unaffected’ siblings? Thematic analysis revealed patterns such as increased patience & understanding, family unity, and individual knowledge of the neuro-atypical population. This study has the potential to impact the understanding of the sibling population’s experiences which could help to better direct care for the affected person and family as a whole.

Samantha Koprowski, Social Sciences

The Impact of Gender Quotas on Women’s Descriptive and Substantive Representation in the G7 Nations

In recent years, de jure factors, such as legislation that prohibited women from running for office, have been eliminated in numerous countries, but women are still underrepresented in legislative bodies. Despite the percentage of women in parliament doubling in the past 25 years, women comprise an abysmal 25% of parliaments globally. Many countries have realized that the severe underrepresentation of women in government is a substantial threat to democracy and have taken steps to correct this problem by adopting gender quotas. This study demonstrates how the adoption of, or failure to adopt, gender quotas affects women’s descriptive and substantive representation in the G7 nations.

The countries are compared throughout four different time periods before, during, and after gender quotas in four areas: percentage of women in each country’s lower chamber of parliament, gender wage gap, weeks of paid maternity leave, and cash benefits given during maternity leave. The data shows that the non-quota countries generally performed worse than the quota countries throughout most time periods in substantive representation and descriptive representation. There were more than a few exceptions to this, thus partly undermining two hypotheses that predicted non-quota countries would perform worse than quota countries in all four indicators. Countries with both legislated quotas and voluntary party quotas generally performed better than all other countries at almost all points of comparison, which partially supports predictions that countries with legislated quotas would perform better than voluntary party quota countries and non-quota countries in all indicators of representation.

Christa LaTorre, Humanities

From “Glee” to “Euphoria”: Adolescent Representation on Television

My thesis studies current representations of adolescent relationships on television and teenagers’ responses. In 2009, the television show, *Glee*, and in 2019, *Euphoria*, have introduced sexually explicit characters and plotlines to better represent the complexities of teenagers’ relationships. How do teenagers view these shows, and do they see them as representing their desires, feelings, and identities? Both shows are more open to LGBTQ+ relationships and are less censored than shows in the past. In my research, I review television criticism, especially social media and fanfiction by teens and young adults responding to these shows. *Euphoria* is groundbreaking because it discusses the presence of fanfiction in teenagers’ lives for the first time on television. I uncover why young people become so attached to these characters and how these online stories reflect their own personal feelings, desires, and identities. My work suggests that television is changing its representation of adolescents, and through it, young peoples’ experiences of adolescence.

Ashley Lawler, Nursing

Concussion and Recovery Time: A Qualitative Study

Sports-related concussions impacting collegiate student-athletes is a concern in public health. Relatively few studies have taken a qualitative approach to understanding concussions from the student-athletes' perspective. The purpose of this study was to understand collegiate student-athletes' experiences post-concussion, and the link between self-reported concussions and cognition. Ten semi-structured interviews were conducted by surveying student-athletes from a public university in New Jersey who have suffered from at least one or more concussions while playing a contact sport. Five major themes have emerged from the interviews: 1) Symptomology; 2) Pressure to Return; 3) Formal and Informal Support; 4) Return to Play Protocol; and 5) Cognitive Impairment. Outcomes of this study showed that athletes did indeed feel that their cognition had been impaired and wished that there was a better way to treat concussions. This may assist healthcare professionals in understanding the importance of following concussion protocol.

Corinne Lenzinger, Clinical Psychology and Neuropsychology

Sensation Seeking and Other Measures: Comparing College Athletes and Non Athletes

This study sought to discover differences in personality between athletes and non-athletes, focusing primarily on aspects of the sensation seeking trait, which refers to factors including thrill and adventure seeking, experience seeking, disinhibition, and boredom susceptibility. It was hypothesized that athletes would score higher overall in sensation seeking but exhibit a unique profile separate from typical high sensation seekers. Target participants were William Paterson students and student athletes ages 18-23. Participants were issued self-reports including a Criminal Activity Intake, a Brief Sensation Seeking Scale (Zuckerman, 1978), the Depression, Anxiety, and Stress Scale (DASS-21), a Deep Triad Questionnaire, an Athletics Self Report, and a Resiliency Scale. Participants were then asked to complete two tests of word fluency. After, participants completed the Stroop Test and Forensic Implicit Program on the computer.

Benjamin Liegner, Social Sciences

Perceived Authenticity

The goal of this study is to examine the factors that affect perceptions of authenticity. Past work has found that people consider their positive (vs. negative) behaviors to be more authentic (Jongman-Sereno & Leary, 2016). We examined whether this is specific to perceptions of one's own authenticity or if it extends to perceptions of others' authenticity. It was hypothesized that the "authenticity bias" to see positive (vs. negative) behaviors as more authentic would be observed only for judgments of the self and not for judgments of others. We found that people have a strong tendency to perceive positive (vs. negative) characteristics, of the self and an acquaintance, as more authentic. In a following study, we examine whether this self-bias is an artifact of the way authenticity was defined and measured in Jongman-Sereno and Leary (2016). This study looks to yield clearer results in terms of a "redefinition" of the term authenticity.

Melanie Liptak, Clinical Psychology and Neuropsychology

This research provides a better understanding of the nature of Alzheimer's Disease (AD) while incorporating the therapeutic effects associated with preferred songs. The Musical, Autobiographical and History Assessment Scale (MAHAS) was administered to a single Alzheimer's patient in order to evaluate their ability to recall musical, autobiographical, and historical memories throughout their

lifetime. Each respective section initially consisted of an unstructured assessment focusing on visual recognition of iconic images including people and events of each decade. Anticipating possible anomia, a structured version of the assessment was administered if needed. The images, dates, and events comprised in the autobiographical section were kindly provided by relatives of the participant. For the musical portion of the MAHAS, a 45-second excerpt of a chart-topping song from the years 1948 to 2019 was played via computer. Following the auditory component, the participant was presented with an opportunity to freely recall any Musically Evoked Autobiographical Memories (MEAMs) as well as state their degree of preference to the artist and song. In doing this, it was possible to conceptually map out in which years the participant experienced best preserved memories along with time periods impaired by AD. Despite the onset of this disease, the individual was able to relay significant musical memories with a more intense clarity than if tried with alternative recall techniques. Due to the degenerative nature of this disease, it would be interesting to compare results in later stages and to visualize which years and specific events are conserved through preferred music.

Hasmin Llamoca, Clinical Psychology and Neuropsychology

Neurobehavioral and Neurogenetic Correlates of Information Processing in Children and Young Adults

The purpose of the study conducted is to understand the relation of the areas that encompass information-processing, which include the subsection of executive functioning and how it relates to the formation of anxiety, mood, and personality. The subjects tested were adults aged 18-25 who either had a known learning disorder or no known disorder. Different tasks were conducted within the study, such as the Controlled Oral Word Association Test (COWAT), and the Rey-Osterrieth Complex Figure Test (ROEM). The tasks that were given aided in the understanding of any positive or negative correlation between affect, mood, and personality to an individual's information processing that could be a result of or indicate a possible learning disorder. The benefits of conducting this research include having a better understanding of information processing within adults who have a learning disorder, and how this affects the distinct parts of an individual's personality, mood, and affect.

Katherine Martinez, Performing and Literary Arts

For as long as I can remember, I have had an incessant love for teaching, traveling, and performing. For this reason, I chose to create a thesis project that combines all three of my passions. I decided to challenge myself to try something new by writing a collection of spoken word pieces. Spoken word is writing that is full of words and phrases that are rich in imagery that projects onto the minds of the listeners. Spoken word pieces are meant to be performed and depend greatly on the aesthetics of word play. Inspired by phenomenal spoken word poets such as Sarah Kay, Shane Koyczan, Jesse Oliver, Nathan Ivey, and others who wrote about topics such as overcoming bullying or empowering women, I created a collection of spoken word pieces which entail a journey of self-reflection and discovery. I hope to offer a message that will inspire others to travel and, in doing so, discover more about themselves as they explore the world.

Joseph McCaffrey, Performing and Literary Arts

Conversations in Jazz

Original creation often acts as the lasting legacy of any artists' career. As a jazz musician, even when interpreting others' compositions, one strives to leave their inimitable, personal mark on the music, though it is original composition that can provide true insight into the artists' mind. For my Performing and Literary Arts thesis, I have both embarked my first expedition into jazz composition, as well as arranged select favorite works of mine by other composers. I have drawn from numerous influences in the writing of my own pieces, particularly pianists Bill Evans and McCoy Tyner. Being a percussionist, it was an exploratory process to find my voice on a different instrument, but one that made me all the

better a musician and composer. For the arrangements, I listened to all the recordings of my selected pieces that I could find, and took aspects of arrangements of other works that I enjoy in an attempt to create coherent and fresh arrangements that I feel capture the essence of the respective compositions.

Ashley Merchant, Independent

Violence and Security in Mexico

Mexico and the U.S. are the two nations that have, for the most part, established a relationship based on mutual trust and respect. The governments and citizens of both countries have played a vital role in shaping each other's political, economic, social, and cultural development. But there is a looming problem that is threatening Mexico and U.S. relations, which is drug trafficking and the corresponding violence. Over time, it has gotten drastically worse and has pushed both nations to find someone to blame. Since Mexico remains both a source and a transit point for drugs to fill the demand in the nearby U.S. market, it has been identified as the sole culprit. The question still remains: is Mexico the only country to blame, or is the U.S. equally responsible? The methodology I will use is qualitative and quantitative. My sources, i.e. data, will be acquired through mixed methods. In this research paper the following hypotheses will be tested: (1) Whether the demand side (U.S. market) that is worth about 20 billion dollars will help us provide an explanation to why it's difficult to get rid of criminal organizations (2) Whether the level of corruption in Mexico will help us understand why it is so difficult to get rid of the cartels (3) Whether or not a subculture that idolizes the drug trade help us understand why it's so difficult to eliminate the drug cartels (4) Finally, whether or not money laundering in the U.S. helps us understand why it is so difficult to get rid of organized crime. Alternative hypotheses will be measured as well.

Elika Moallem, Biology

Investigating Therapeutic Targets and the Cellular Processes in Traumatic Brain Injury

Traumatic brain injury is a common type of brain injury that involves a cascade of cellular processes. These processes include, but are not limited to hyperexcitability, excitotoxicity, and neuroinflammation, which ultimately leads to cellular death. There are currently no therapeutic treatments for TBI, only preventative measures. Neurons have M-channels which function to control neuronal excitability. Retigabine, which is an anticonvulsant, has been shown to open M-channels, reducing cell excitability. This study investigates the neuroprotective effect of retigabine during various cellular processes of TBI in order to identify therapeutic treatments. The effects of retigabine on brain injury was observed by histologic assays at various time points post-TBI.

Katheryn Morales, Humanities

The Mind of the Seductive Serial Killer

My thesis investigates films that represent the figure of the psychopathic and or sociopathic serial killer from the 1990s, and compares them with similar films of more recent production. I examine works including: American Psycho, Basic Instinct, Natural Born Killers, and The Silence of the Lambs from the 1990s, and then I draw comparisons with more recent films such as Gone Girl, Extremely Wicked, Shockingly Evil, and Vile. I argue that these films, by discussing extreme cases of serial homicide and the characters who commit them, offer audience compelling and complex characters who are by turns seductive and murderous, often by playing with the audience's expectations. I conclude that the more recent films offer deeper psychological insights into the killers' minds and that abnormal psychology is more integral to these newer films than those from earlier eras because popular interest and psychological discussion of serial murder has grown.

Andrew Nazareno, Nursing

The Relationship Between Breakfast Consumption and Self-Reported Cognition and Mood

With the introduction of new trend diets, like intermittent fasting and the 5:2 diet, the importance of breakfast has been overlooked by many, especially adolescents. Therefore, it is important to study the effect of breakfast consumption on mood and cognition in order to promote the importance of nutrition. This research study examined correlations between mood and cognition using the Visual Analog Scale, Cognitive Failures Questionnaire, and the Activation-Deactivation Check List. Data was collected using anonymous surveys distributed in nursing classrooms of a public university in northern New Jersey, which were analyzed using SPSS. Findings in the research proved that there is not a correlation between breakfast consumption on mood and cognition. The results of this study may provide insight into the importance of healthy breakfast habits in the healthcare setting.

Jesse Norman, Performing and Literary Arts

Could the Brooklyn Nets Rebuild Change the NBA?

For my honors presentation I wanted to use everything that I have gathered from my time as a broadcast journalism student at William Paterson University. I would like to put together a four or five-minute video to kick off my presentation. As a broadcast journalism student, I have been taught how to put together compelling packages that do not lose audience's attention and I would love to put that to the test. The video will cover the beginning of my research and streamline it to the end. My research begins with the draft day trade between the Boston Celtics and Brooklyn Nets in 2014 and follows the fall-out of the teams from there. As a lifelong Nets fan, this trade was the beginning of change in the organization. Basketball has always been a passion for me, something that when I am watching it or talking about it, it feels like home. That's the only way I can describe it. This thesis allows me to explore and write about something I am passionate about. I can honestly say I have never put so much hard work and love into something as much as this thesis.

Kate Panitz, Social Sciences

Misconceptions About Immigrants in America: A Review of the Literature and Data

The issue of immigration in the United States has continually been a subject of intense debate and has fluctuated throughout history, reflected in legislative trends, political rhetoric, and public opinion. This paper seeks to explore if there is any validity behind the many claims made against immigrants in political and cultural spheres with a focus on the idea that increased immigration causes an increase in unemployment, and why the government has been unable to enact comprehensive immigration reform since the 1980s. These issues have taken center stage in the wake of President Donald Trump's campaign and election into office. This analysis will examine various independent factors, such as rhetoric surrounding immigration, hate crimes, hate speech, historical patterns, immigrant statistics, national data, immigrant legislation, and more.

Peter Pawlowski, Clinical Psychology and Neuropsychology

Face Processing in Autism

This study of Case X evaluated a 21-year-old male diagnosed with Asperger's syndrome, a high-functioning autistic-spectrum disorder (ASD). ASD is characterized by difficulties with social interaction and face emotion recognition. The goal: determine if there are differences in ASD in differentiating fearful from neutral faces. Case X's processing speed for faces, fearful ($M = 972$ milliseconds, $sd = 331$) and neutral ($M = 1047$ ms, $sd = 524$) was similar. Compared to autism control (MA), X's speed in identifying fearful faces was faster than MA's ($M = 1490$ milliseconds, $sd = 990$),

while neutral face processing was similar ($M = 1071$ milliseconds, $sd = 787.3$). Typically-developing participants ($n = 8$) were faster ($M = 713$, $sd = 183$) than Case X and MA in processing fearful faces. Case X fell in-between MA and typical. These results support slower processing in differentiating fearful from neutral faces in autism, adversely impacting social communication.

Serena Pearson, Cognitive Science

Career Aspirations and College Awareness of K-6 Elementary-Aged Students

This study investigated the career aspirations and college awareness of students in Kindergarten, 2nd, 4th, and 6th grade. A 5-question survey based on previous research was developed. Results indicate that all students aspire to real versus fantasy careers at similar rates. Younger students selected careers that matched their gender. However, for older students, more males than females selected careers that matched their gender. Older students demonstrated more understanding of what college is than younger students.

Emilia Pirro, Cognitive Science

Profanity and its Effect on Human Perceptions of Offensiveness

The current study looks at words, either profanity or non-profanity, and the effect of perceived offensiveness of the sentences. Participants were presented with and rated the offensiveness of 20 lyrics, each having either the word bitch or girl in it, and it had either a positive (empowering or emphasizing strength) or negative (used as a slur or negative stereotype) connotation. Results showed that while both bitch and girl lyrics were rated about the same, linear regression showed that girl lyrics predict 43% of the variance of bitch lyrics ratings.

Gabriella Rapisardi, Cognitive Science

Self-Esteem, Mindfulness, and Social Anxiety

Mindfulness and self-esteem can have an effect on social anxiety disorder (Tan et al.

2016). Seema and Kumar (2017) conclude that self-esteem is negatively correlated with social anxiety in adolescents. Hjeltnes et al. (2017) found that mindfulness-based stress reduction is beneficial to lessen social anxiety symptoms in young adults. The correlation of these three variables all together has yet to be researched extensively. We hypothesize that participants with high self-esteem scores will have higher mindfulness scores and lower social anxiety scores, and participants with low self-esteem scores will have lower mindfulness scores and higher social anxiety scores.

In our Qualtrics survey, participants answered the Mindfulness Attention Awareness Scale (Brown & Ryan 2003), the Rosenberg Self-Esteem Scale (Rosenberg 1965), and the Social Phobia Inventory (Connor et al. 2000). Data collection is ongoing, but preliminary analysis suggests that mindfulness and self-esteem have a positive correlation, mindfulness and social anxiety have a negative correlation, and self-esteem and social anxiety have a negative correlation.

Maximilian Rohrer, Independent

Using a Numerical Baseball Simulator to Analyze Batting Lineups and Hitter Streakiness

Since the introduction of sabermetrics and baseball analytics, the formation of the “perfect” batting lineup has undergone changes and has been influenced by different philosophies. For example, the best hitter has found a home in just about every spot in the nine-man lineup. In constructing an optimal batting lineup, players may be shifted up and down based on their “streakiness,” or their tendency to be

more (or less) productive over given periods of time. With the help of a baseball simulator we created and modified in MATLAB, we were able to draw conclusions as to what spots in a batting lineup are most influential and how a given player's "streak" and a switching player's batting positions may affect the lineup as a whole.

Monika Rybak, Clinical Psychology and Neuropsychology

Art Therapy Intervention Program: Exploring the Relationship between Art Therapy and Alzheimer's Disease

The Art Therapy Intervention Program hoped to explore the relationship between comprehensive art therapy techniques and how they can be used to help individuals diagnosed with Alzheimer's Disease, a neurodegenerative disease. People suffering from the disease often experience poorer quality of life because of confusion, agitation, and feelings of depression. To alleviate the depressive and lethargic symptoms of a patient with Alzheimer's Disease, I met with Mrs. K across the course of a few months. Together, we would create art which would allow her to express herself in a way she was unable to before. Each session was another window into her life coping with the loss of memories and a loss of energy. This case study, along with related studies, is an important step for the future of elder care, and elder mental health.

Devin Savoie, Social Sciences

The First Amendment & Video Games: Brown v Entertainment Merchants Association 2010 to Today

Freedom of speech and expression has been a core part of American life since the Bill of Rights was adopted in 1791. This principal was applied to video games in the decision for the 2010-2011 Supreme Court case, *Brown v. Entertainment Merchants Association*. This case found that a previously imposed limit on who could buy "violent" video games was unconstitutional, as the violence found in video games does not violate the obscenity, incitement, or fighting words exceptions, while also saying that the violence in video games could not be classified as obscene. This paper summarizes the case and the Court's decision and explains the findings and opinions of 30 papers written on this subject. Topics covered include public opinion and criticism, what science says about violent media, the effects the case has on future rulings and attempts at regulation, and what possibilities are available in the future.

Rachel Seo, Cognitive Science

Effects of Tonal Language Experience and Musicianship on Pitch Perception

The relationships between tonal-language experience and musicianship on pitch perception was examined in college students. Tonal-language speakers were compared to non-tonal language speakers, and musicians to non-musicians. The hypothesis was that tonal language speakers would score higher in pitch relativity tasks than non-tonal language speakers, that musicians would score higher than non-musicians, and that musician tonal language speakers would have the highest pitch sensitivity. Differences in accuracy between the two groups could not be seen due to small sample sizes; however, participants' correct answers had higher confidence levels than their incorrect answers overall.

Nicholas Serpico, Clinical Psychology and Neuropsychology

Antidepressants Compared to Psychotherapy and Alternative Treatments

Depression is one of today's most prevalent mental health issues. Many individuals are treated with antidepressant medication, and there is a large body of research supporting the efficacy of these medications. However, research also shows other treatment options to be equally effective without the dependency, side effects, or other risks associated with medication. In light of the popularity of these

medications, the case for non-medication-based treatments can become overshadowed for a variety of reasons. The goal of this research is to explore the effectiveness of antidepressant medications compared to clinical treatments, such as Cognitive-Behavioral Therapy (CBT) and psychodynamic therapy, as well as alternative treatment options, such as exercise, diet, and mindfulness. Given the potential downsides of medication, including side effects, dependency, and cost, it is useful to gain a broader and clearer perspective of medical and non-medical treatment options available.

James Sharkey, Performing and Literary Arts

Collection of Short Stories

My thesis is a collection of short stories. The short stories are all genre fiction. The different genres in the collection include: science fiction, fantasy, folk tales, romance, and action adventure. Some stories teach the importance of respecting others; other stories teach the importance of loving moderately.

Samantha Shortino, Independent

A Mathematical Mystery: An In-Depth Analysis of the Trisection Problem

Over two thousand years ago, Greek mathematicians raised three classic problems now known as “The Three Problems of Antiquity.” These problems are trisecting an angle, duplicating a cube, and squaring a circle. Solutions to these geometric problems were sought using only two tools: a compass and an unmarked straightedge. The problem studied herein, angle trisection, is the construction of an angle equal to one-third of a given angle. In 1837, Pierre Wantzel proved that it is impossible to trisect an arbitrary angle using only a compass and unmarked straightedge, although some special angles can indeed be trisected. In this research, we study and develop various algebraic and geometric techniques for establishing the impossibility of angle trisection, and we analyze different approximation methods. We also research methods for trisecting an arbitrary angle with minimal additional tools, including trisection with a compass and marked straightedge and trisection using origami.

Jake Simon, Social Sciences

Japanese Anime: Factors Leading to Acceptance or Rejection

Anime has grown to be a worldwide cultural phenomenon over the past couple of decades. Social scientists have started to explore the growth and significance of anime as an aspect of culture that crosses borders. Various social scientific models enable us to conceptualize the extent of growth in popularity of anime in various cultures and subcultures. The goal of this study is to increase our understanding of the cultural perceptions of anime and also to identify the factors bearing on its popularity. The study examines the visual appeal of anime as well as cultural, sociological and historical perspectives. An empirical component of the study will assess how potential viewers think and feel about anime. We will use in-person interviews of students supplemented by an online sample of respondents. Based on the results of the survey, we hope to construct a preliminary model of how individuals decide whether to partake in anime.

Shannon Super, Business

The Effect of Physical Activity on Mental Health and Academic Performance in College Aged Adults

College students struggling with psychological problems have become a growing concern. Even though many college students struggle with mental illness, there is not sufficient research done on how to prevent or cope with mental illness during and following college. The purpose of this study is to look at the relationship between physical activity, mental illness, and academic performance. It is expected to

find that students who are physically active will struggle less with mental illness and perform better in school compared to students who live a sedentary lifestyle. The research will be done by administering a survey to 150 college students at William Paterson University that will measure physical activity, mental health and general demographics. The results of this study can be used to educate college administrations on how to help their students who struggle with mental illness, and inform college students on ways to cope or prevent mental illness.

Emma Tang, Social Sciences

The Impact of Cochlear Implants

Hailed as a miracle of modern medicine by some, while criticized as an attack on culture by others, cochlear implants have been a source of controversy since their inception. This study is interested in looking more at the individuals who are biologically profoundly deaf, but with the ability to hear through the assistance of technology. This will review the existing literature on cochlear implants and include in-depth interviews with different individuals who have received them. We will ask respondents to compare their lives before and after receiving their implants, paying special attention to: 1) identity in the deaf and hearing worlds, 2) interactions with the medical and deaf communities, and 3) how their social and family interactions have evolved. We also hope to better understand motivations behind the decisions to seek surgery. The research more generally hopes to learn more about the costs and benefits of cochlear implants.

Rebecca Temple, Cognitive Science

The Effect of Political Orientation on Political Memories

This study examines the relationship between political orientation, false memory of politicians' stances, and false memories of political events. In Study 1, the hypothesis is that liberals are more likely to falsely remember political events that negatively portray conservatives than those that negatively portray liberals, while conservatives are more likely to falsely remember political events that negatively portray liberals than those that negatively portray conservatives. In Study 2, the hypothesis is that liberals are more likely to falsely remember the political stances of a conservative than those of a liberal, while conservatives are more likely to falsely remember the political stances of liberals than those of conservatives. Preliminary analysis suggests that individuals tend to falsely remember a politician's stances on issues when the politician does not belong to the individual's political party and suggests that individuals tend to falsely remember political events that align with their own political beliefs.

Keira White, Social Sciences

Gait Patterns in Relation to Leg Length Discrepancies: A Randomized Control Study

Leg length discrepancies are classified as a difference in leg length of 1.27 centimeters or more. The true leg length, based on bone structure, and apparent leg length, based on musculature, for each leg are both measured with a tape measure. If one leg is longer than the other by more than 1.27 centimeters, it is hypothesized that the gait patterns will be abnormal. This study will show how leg length discrepancies relate to gait patterns by using an Optitrack and ground force reaction plates to record and evaluate the difference in kinetics between the right and left leg.

Dominick Wood, Music

A Comparison of Vocal and Brass Pedagogy: A Multidisciplinary Approach to Music Education

Of the most promising students in music programs in American schools, many are multidisciplinary musicians, participating in both instrumental and vocal ensembles. Most of these programs, however, provide choral and instrumental programs that operate separately from each other. This study analyzes this dichotomy, and provides insight for music educators in the pedagogy of students who study both brass and vocal instruments and what specific advantages and disadvantages these students may possess that educators should be made aware of in order to provide the best possible instruction. The results show which skills formed by these pedagogies are transferable and which skills are unique to each instrument. Specific difficulties are also identified for students who may learn one instrument after having studied the other. Topics compared in this study include breathing technique, pitch audiation, body awareness, rehearsal methodologies, and relevant pedagogical practices as they relate to both brass and vocal students and their teachers.

Abdulwahhaab Yanes, Biology

The Role of the Cannabinoid Receptor in Microglia and Dopamine Neurons After Repetitive Traumatic Brain Injury

Traumatic Brain Injury (TBI) is a common cause of brain damage often resulting after an excessive blunt impact on the brain. TBI's can be a single occurrence or multiple TBIs coming sequentially after the initial injury, termed repetitive TBI. Repetitive TBI effects resulting in long term damage is most often seen within individuals of two particular populations: athletes and military personnel. Although there is much research trying to understand the pathophysiology of TBI and many new discoveries, there is still much unknown about the progression of neurodegenerative diseases stemming from TBI. Currently there are no therapies to reduce the effects of traumatic brain injury, therefore more research is needed to assist in finding targets for treatment. My research focuses on understanding the role the Cannabinoid type 2 Receptor (CB2R), in both Microglia and dopamine neurons (DA) post repetitive TBI's (rTBI). This is possible by using transgenic mice with knockdown of the CB2R in microglia or dopamine neuron with results being compared to control mice. My study aims to establish whether there are functional changes in behavior and post-injury with the knockdown of the CB2R.

Joseph Zazzara, Performing and Literary Arts

Walk Among Us

"Walk Among Us" is a feature length screenplay created and written by Joe Zazzara. The film is primarily classified as horror, with some western influences throughout. "Walk Among Us" takes place in Utah during the mid to late 1860's. Largely inspired by Navajo Skinwalker legend, the film follows Cass Malcolm, a traumatized young woman, and her encounters with a mysterious, form-stealing killer that terrorizes her and her family. Some issues explored in the film are death, coping with loss, and dealing with a physical disability.

There are many films that inspired the writing and aesthetic of Walk Among Us. Some horror films that greatly inspired Walk Among Us are Ari Aster's Hereditary (2018), Robert Eggers' The Witch (2016), and The Lighthouse (2019). Some western films that also inspired Walk Among Us are Quentin Tarantino's The Hateful Eight (2015), George P. Cosmatos' Tombstone (1993), and the Coen Brothers' True Grit (2010).

Abbey Zollo, Performing and Literary Arts

All the Lonely People

The Beatles have always had a strong influence over the music industry. For years, other artists have based their pieces on works from The Beatles by studying their music. For this project, it was my intent to do the same but through literature. By the examination of lyrics, I discovered hidden meanings and undertones within their music through the years. Across almost every song I studied, it seemed there was one common theme: loneliness. Whether the tale being told was about love, hate or terror, there was seemingly always someone suffering from the feeling of being lonesome. Sticking to this theme and the newly discovered meanings, I developed a series of short stories to tell the tales of original characters and their struggles dealing with life, the world, and the unavoidable feeling of loneliness.



EXPLORATIONS Sessions

Abstracts are presented in alphabetical order base on the primary author's last name.

Elisheva Adler, Doctoral Student, Psychology

Rachel Harris, Doctoral Student, Psychology

Megan Chesin, Faculty, Psychology

Michele Cascardi, Faculty, Psychology

Discrete Childhood Maltreatment Types (CMs) versus Multiple CMs in Binge Drinking

Binge drinking (BD), defined as consuming five or more drinks for men and four or more drinks for women in one sitting (National Institute of Alcohol Abuse and Alcoholism, 2019), is a prevalent problem among emerging adults, particularly among those in college (Reckdenwald, Ford, & Murray, 2016). CM, which includes childhood sexual abuse (SA), physical abuse (PA), physical neglect (PN), emotional abuse (EA), and/or emotional neglect (EN), is usually associated with BD in emerging adulthood. However, the nature of this relation is not well understood. Some scholars suggest discrete types of CM are most strongly related to BD, though the specific type that is most important has not been consistently reported in the literature (Shin, Chung, & Rosenberg, 2016; Shin, Jiskrova, & Wills, 2019; Oshri, Sutton, Clay-Warner, & Miller, 2015). Others have shown a cumulative effect, such that a greater number of discrete types of CM is related to maladaptive outcomes (Duke & Borowsky, 2018; Evans, 2013; Ford & Delker, 2018). A threshold effect has also been observed, such that those experiencing a greater than average number of CM types report more BD and alcohol consumption (Charak, Ford, Modrowski, & Kerig, 2019; Davis et al., 2018; Pollock, 2015). No studies have compared discrete, cumulative and threshold models of CM in relation to BD in emerging adults. Comparison of these models holds importance for informing theory and practice to prevent BD in emerging adults. Given the mixed and limited findings regarding the relative strengths of associations among CM types, and limited tests of cumulative and threshold CM models of BD in emerging adults, the purpose of this study was to test each of these models.

Method: Four hundred and ninety-three emerging adults in college participated in this study. Participants completed surveys on-line and provided data on their current drinking behavior, CM, and demographics. CM was measured using the five childhood abuse and neglect subscales from the Childhood Trauma Questionnaire (CTQ) (Bernstein et al., 1994). We dichotomized scores on each subscale to capture whether a respondent reported each type of CM. Respondents who endorsed at least one item as greater than "never" on a CM subscale were scored as having experienced that type of CM. The discrete CM model treated each type of CM as a distinct variable. The cumulative model summed the number of discrete types of CM reported. The threshold model divided respondents into three groups: those who reported no CM, and high and low CM groups based on those above and below the average number of CM types reported among those reporting any CM. Those who experienced 2.7 or more types of CM were classed as high CM and the remainder who had experienced any CM as low CM. Multivariate regression analyses was conducted to test the three models: discrete CM, cumulative CM, or the threshold effect of CM. All participants provided informed consent prior to participating, and the study was approved by the local IRB.

Results: In our sample, 18% (n=89) of emerging adult college students reported BD. Seventy nine percent (n=389) reported at least one type of CM, and 41% (n=200) reported a greater than average number of CM types (threshold effect). In bivariate analysis comparing those with no, low and high CM, minority race and ethnicity was associated with CM and was thus controlled in the threshold CM model test. The test of the discrete model showed that PA was most strongly related to BD of the five CM types. Cumulative CM was not related to BD. In the threshold model, the odds of BD were 1.4 times greater among those who experienced CM but not CM at or above the threshold compared to those

without a history of CM. The odds of BD were 1.4 times higher again for those with high CM compared to those with low CM.

Discussion: This study tested 3 models of CM in relation to BD. BD was associated with PA, but not PN, EA, SA, or EN in the discrete model when all 5 types of CM were simultaneously considered.

Accumulation of multiple types of CM beyond the threshold was also associated with increased risk of BD in our emerging adult college student sample.

In most prior studies including emerging adults, CM above a set threshold, relative to less diverse CM, has been linked to BD and related outcomes, such as greater monthly alcohol consumption and clinically-significant alcohol use (Charak et al., 2019; Davis et al., 2018; Pollock, 2015). Our findings showing a threshold number of CMs was linked to BD extend such findings.

When discrete types of CM were considered, PA better explained BD than PN, EA, EN and SA. These findings most closely align with other findings suggesting PA is more strongly associated with BD in emerging adults than other CM types (Shin et al., 2016; Shin et al., 2019). Our findings thus add to available data and suggest that PA among CM types may instantiate particular risk for BD in emerging adult. Caution is warranted regarding the limited import of SA, however, given consistent evidence of the strong and multi-faceted deleterious effects of SA on psychosocial functioning (e.g., (Chen et al., 2010) and the low base rate of SA in our sample.

Our findings have implications for theory. They lend support to models positing and showing a more important role for the accumulation of multiple CMs (e.g., Duke & Borowsky, 2018). They also point to the import of discrete CMs, particularly PA, for BD in emerging adulthood. These findings point to a need to target emerging adults with PA and the accumulation of multiple CM types in BD prevention efforts for college students.

Session: Interdisciplinary Posters

Soomin Ahn, Undergraduate Student, Public Health

Betty Kollia, Faculty, Communication Disorders

Corey Basch, Faculty, Public Health

Faculty Sponsor: Professor Corey Basch

The Knowledge, Attitude, and Behavior in Regards to Concussion Among College Students: Implications for Benefits of Educational Intervention and Student Accommodation.

Background: Concussion is a form of mild Traumatic Brain Injury (mTBI) that is caused by an external force against the head. Concussion is common in all age groups and remains as one of the major health concerns.

Purpose: There is limited information focused on college students and concussion. The purpose of this study is to examine knowledge, attitude, and behavior among college students regarding concussion.

Participants: Participants were recruited in a classroom setting, in a university's Public Health core class. A total of 416 students participated and completed surveys.

Methods: The survey was conducted using a written questionnaire focused on college students and their knowledge, attitude, and behavior regarding concussion. The questionnaire consisted of 36 questions.

Conclusion: Athletes, students with previous concussion experience, and students majoring in health related fields had the highest knowledge of symptoms and treatments. However, many participants reported that they do not engage in preventive behaviors. It may be beneficial to implement educational sources for students to increase the knowledge which could lead to a positive attitude and behaviors regarding concussion.

Session: Interdisciplinary Posters

Marsha Akoto, Master's Student, Psychology

Melissa Hena, Master's Student, Psychology
Angelica Briggs, Master's Student, Psychology
Sydney Cheron, Undergraduate Student, Psychology
Osairys Billini, Undergraduate Student, Psychology
Kuku Sekinat, Doctoral Student, Psychology
Bryan Alava, Doctoral Student Psychology
Fernanda Moura, Doctoral Student Psychology
Esther Lee, Undergraduate Student, Psychology
Aileen, Torres Faculty, Psychology
Pei Wen Ma, Faculty, Psychology
Faculty Sponsor: Professor Pei Wen Ma

A Cultural Adjustment Group for Recently Arrived Immigrant Youth: The Involvement of University Students

Newly arrived immigrant children face many stressors, including, for example, transition into a new school, learning a new language, lack of social support, separation from primary caretakers, discrimination, and identity issues (Ma, Shea, & Yeh, 2013). Those challenges may create acculturative stress—psychosocial strain experienced by immigrants and their children in response to the stressors that they encounter as they adapt to life in a new country (Arbona et al., 2010). Earlier prevention efforts could reduce the chances of development of greater mental health concerns. A school-based cultural adjustment group for recently immigrated Latinx, Arabic, and Bangladeshi middle school students can provide support during their initial years of drastic transitions (Goh et al., 2007; Gokatun, 2012, Kataoka et al., 2003; Suarez-Orozco et al., 2012). This type of intervention aims to have participants process their experiences adapting to a new environment, build a community of peers with similar experiences, address psychosocial concerns that immigrants may be struggling with, and to create an accessible resource within a school system.

This presentation will highlight the structure and content of the group, culturally-responsive elements of our program, student participants' responses to the intervention, challenges encountered in the implementation process, and lessons learned from our university-community partnership and collaboration. In addition, presenters will discuss the experience for undergraduate and graduate students to engage in psychological services that benefit the underserved ethnic minority and immigrant communities.

Support for this study was provided by the Student Research and Creative Expression Program (SRCEP).

Session: Interdisciplinary Presentations

Marsha Akoto, Master's Student, Psychology

Sumithra Raghavan, Faculty, Psychology
Danfei Hu, Pennsylvania State University
Kassandra Rendon, Master's Student, Psychology
Faculty Sponsor: Professor Sumithra Raghavan

Mental Health, Social Capital & Academic Success in First Generation College Students

Social capital theory suggests that students benefit from building networks of support within the university. This mixed-methods study examines the relationship between mental health, social capital and academic success in undergraduate students. Results indicated that first generation college students have higher symptoms of depression than continuing generation college students, despite similarities in social capital. Qualitative analyses revealed themes unique to first generation students, but that overall students perceived social capital as having a positive impact.

Support for this study was provided by the Student Research and Creative Expression Program (SRCEP).

Session: Interdisciplinary Presentations

Lydia Albuquerque, Faculty, Nursing

Hill-Rom's bed exit system with audible alarm, used in conjunction with falls protocol: Reduces falls on a medical -surgical inpatient unit: A Process Improvement Project

Background: Research is limited regarding utilization of Hill-Rom bed exit system with audible alarms in conjunction with hospital falls protocol to reduce falls among patients admitted to inpatient units in the hospital.

Objective: Evaluate the effectiveness of an education program to improve knowledge and skills on setting and utilization of bed exit audible alarm system in conjunction with hospital fall protocol to reduce falls rate on a medical-surgical unit of an acute care hospital.

Method: A quantitative, descriptive correlational design (n=32) was used to examine the effect of an education program on the post test scores and post intervention skills evaluation on setting and utilization of bed alarms to fall rates on a medical-surgical unit.

Results: A sample t- test was used to examine the effectiveness of education on pre-test and post -test scores. The post-test mean was 2.65 greater, $t= 8.048$, $p=.000$. The results were highly significant with gain of knowledge and skills post intervention. This gain in knowledge and skill was directly related to a 55% decrease in fall rate from 5.8 to 3.2 per 1,000 patient days. A one-way ANOVA examined the difference in mean between the knowledge gained of the registered nurses and certified nursing assistant, there was no significant difference within and between groups.

Conclusion: Staff education and continued use of bed exit system with audible alarm along with hospital falls protocol was associated with decrease in falls rates on a medical surgical unit of a large academic medical center.

Session: Interdisciplinary Presentations

Lydia Albuquerque, Faculty, Nursing

Greedy Thomas, Undergraduate Student, Nursing

Cardiac rehabilitation program adherence among patients with Cardiac diseases and its relationship with Heart-Health behavior and Health status.

Background: Cardiac rehabilitation (CR) exercise training has shown to improve clinical outcomes among cardiac patient population (Ades et al., 2013). CR includes supervised training and self-care management recommended by the American Heart Association (AHA) and American College of Cardiology (ACC) (Yancy, Jessup, Bozkurt, Butler & Casey, 2013). Endurance type of exercise helps in improving the peak aerobic capacity (Peak VO₂) of heart failure patients (Downing & Balady, 2011). The HF- ACTION (Heart failure: A controlled Trial Investigating Outcomes of Exercise training) demonstrated a reduction in all-cause mortality rate and depression and improved quality of life (Ades et al., 2013). Patient post diagnosis of cardiac disease attend CR at least twice a week for over 4-6 months. Many patients will require Cardiac Rehabilitation (CR) to improve Heart- Health Behaviors (HHB) and Health Status (Ali, Chessex, Bassett-Gunter, & Grace, 2017). Patient adherence to prescribed cardiac rehabilitation is directly related to outcome (Grace et al., 2016). This project will examine the association between Cardiac Rehabilitation Adherence (CRA) and Heart Health Behavior (HHB) and Health Status among patients with cardiac disease.

Objectives: (1) To describe Cardiac patient adherence with Cardiac rehabilitation. (2) To assess the association between CR adherence and Health care behavior. (3) To assess the association between CR adherence and health Status.

Outcomes: Phase 1: Systematic review of literature was completed and a mini review paper published in November 2019. <https://irispublishers.com/ojcr/pdf/OJCR.MS.ID.000561.pdf>. Phase 2: Data collection pending IRB approval for human subjects at Newark Beth Israel Medical center.

Support for this study was provided by the Center for Research, College of Science and Health.

Session: Center for Research, College of Science and Health

Shazna Ali, Undergraduate Student, Psychology

Faculty Sponsor: Professor Amy Learmonth

Cultural definitions of mental health: are they help-seeking?

Past studies have demonstrated some interesting and useful information about how different ethnic groups view mental illness and whether these groups' views are help-seeking. However, the literature does not discuss definitions of mental health and its terms from different cultures which could be an important factor in determining if they are help-seeking or not. The current study investigated how different cultures define mental health and one of the mental health terms; depression, which was then used to determine if the definitions were help-seeking. Participants were all college students, who come from seven different countries. Participants were recruited to complete the open-ended questionnaire on their cultural and personal definitions of mental health and depression. Results were analyzed using qualitative evaluation of the text participants provided. The answers fell into two categories: cultures that did not acknowledge the existence of mental health (4/7) and cultures that did (3/7). More cultures had definitions of depression even if they did not have definitions of mental health. Since mental health is a more complex and broader umbrella term, which could explain why most cultures did not have a definite definition. All participants were able to provide definitions of mental health and depression when asked about their personal definitions of the terms. However, most cultures were not receptive to help-seeking. The answers provided indicated that help-seeking would not be acceptable in their cultures.

Session: Interdisciplinary Posters

Chantal Almanzar, Undergraduate Student, Psychology/Anthropology

Rosemary Arrieta, Undergraduate Student,

Faculty Sponsor: Professor Lilian Luisa Milanés

The Undocumented Community's Inaccessibility to Medical Services

There is a lot of stigma surrounding the undocumented community in the United States. Undocumented people contribute to the American economy and go through the same trials and tribulations we do, but don't have the liberty to be considered American or have all the luxuries that come with it. This notion is especially true when considering wide inaccessibility to health services that are accommodating of the needs of undocumented people. Statistically speaking, undocumented people often arrive to the United States in a healthier state than the average American person. But, due to lack of proper medical attention, their health deteriorates over time. New illnesses are formed, and pre-existent conditions worsen. Through our research, we acknowledge the seriousness of this issue and challenge the American health system to consider the needs of one of our most vulnerable populations, despite the stigma surrounding them.

To get to the root of this issue, we get right to the source – medical service providers. In the interviews we are currently conducting, we ask about confidentiality and the Notice of Privacy Practices which technically protects those in the undocumented community. Our objective is to find out how these medical service providers are protecting the identities of their undocumented patients, but also how they're accommodating of their other needs such as services offered, prices of these services, language barriers, etc. In addition to interviewing medical service providers, we are also interviewing undocumented people and encouraging them to share their past experiences, open up about deterrents (if any) when seeking medical attention, and getting their perspective on how medical services could be more hospitable. We hope that with this research, we could play a small role in the undocumented community's wider accessibility to medical services and perhaps even, the way people approach the issue of inaccessibility to medical services in general.

Session: Interdisciplinary Posters

Oliver Alvarado, Undergraduate Student, Computer Science

Oliver Nuñez, Undergraduate Student, Computer Science

Dev Dave, Undergraduate Student, Computer Science

Faculty Sponsor: Professor Kiho Lim

A Comparative Study on Machine Learning Techniques for Weather Prediction

Machine learning is a cross-section of Computer Science and Statistics that uses computational methods in order to make accurate predictions based off of data collected in the past. Machine learning algorithms are classified into three broad categories which are supervised learning, unsupervised learning and reinforcement learning. Regression analysis is a statistical method that tries to estimate the relationship between a dependent variable and the independent variables. It is a methodology to figure out what variables are statistically significant and have an impact on the dependent variable. Neural networks are powerful machine learning tools which when given a rich and sufficient amount of training data can be used to classify future events when provided with some of the data pertaining to the event. Using the above machine learning techniques, data models are built to predict weather events for the city of Austin. The dataset contains weather data such as temperature, precipitation, humidity, and windspeed for the city of Austin, Texas from February 21, 2013 to July 31, 2017. To begin, the data is split into the training and testing sets. The training includes weather data from 2013 to 2016 while the testing set includes data from 2017. After preprocessing and normalization takes place, the data is run through the machine learning techniques to predict and or classify the weather events for the 2017 dates. We then illustrate how many days were correct and how many were wrong for both of the models and draw a conclusion over which one is more accurate at predicting weather events.

Session: Interdisciplinary Posters

Allison Aranda, Undergraduate Student, Communication Disorders

Michael S Gordon, Faculty, Psychology

Faculty Sponsor: Professor Michael S Gordon

The Twisted Tempo: A New Musical Illusion

In the twisted tempo illusion the stimulus parameters of music were found to directly influence its experienced tempo. Over a series of experiments, musical tempo was experienced as speeding up when presented in more complex musical passages, and was experienced as changing in tempo consistent with shifts up or down in the harmonic structure and stimulus intensity -- even when those changes were in direct contrast to the actual shifts in tempo. For example, listeners would report that the music had slowed down if it lowered in pitch over time as the actual tempo sped up (and vice versa). Findings from this illusion are discussed in relation to the listening experience and with implications regarding the experience of time.

Support for this study was provided through Assigned Release Time for Research (ART) and the Student Research and Creative Expression Program (SRCEP).

Session: Interdisciplinary Posters

James Arnone, Faculty, Biology

The Co-Expression of Functionally Related, Clustered Genes Requires Chromatin Remodeling and the Mediator Complex for Proper Regulation in *Saccharomyces cerevisiae*

Proper gene expression occurs via the coordination of multiple, intersecting regulatory mechanisms allowing a cell to balance growth, homeostasis, and survival. An integral layer of this regulation occurs via spatial positioning – the linear arrangement of genes along the chromosome – which has a profound effect on transcription. Early work focused on the influence of heterochromatin to silence a gene through the telomere proximal effect and position effect variegation. Recent advances by many research groups has revealed that position effects, the ability of genes to effect transcription throughout a broader genomic region, are widespread throughout eukaryotic genomes. Our previous work revealed that as many as 25% of functionally related gene families exhibit a non-random distribution throughout the

genome of the budding yeast, *Saccharomyces cerevisiae*. The members of each gene family are found clustered together (predominantly as pairings) in parts of the genome that are more susceptible to position effects, which results in mediating their co-expression throughout the cell cycle via adjacent gene co-regulation. Our current work reveals the position effects coordinating the expression clustered family members vary during stress induction and nutrient deprivation. Furthermore, we computationally identify and characterize the role for chromatin remodeling and the activity of the Mediator complexes in mediating this transcriptional response.

Support for this study was provided through Assigned Release Time for Research (ART) and the Center for Research, College of Science and Health.

Session: Center for Research, College of Science and Health

Avinash Arya, Faculty, Accounting and Law

Lease Accounting: New Standard

The U.S. Financial Accounting Standards Board (FASB) recently issued a new standard for leases ASU 2016-02, Leases (Topic 842). The new standard significantly affects how lessees and lessors account for operating and capital lease transactions. This article summarizes the provisions of the new standard and provides examples of its application in order to help financial statement preparers, users and their independent accountants to effectively implement these provisions.

Support for this study was provided by the Cotsakos College of Business' Business Policy and Practice Research Forum.

Session: Cotsakos College of Business

Bahar Ashnai, Faculty, Professional Sales

Saeed Shekari, Faculty, Professional Sales

The Nonprofit Selling and Fundraising Challenges and Opportunities: An Exploratory Study of Nonprofit Organizations

We explore the fundraising challenges and opportunities in the nonprofit sector. Prior studies have primarily looked at improving nonprofit organizations management and have not covered a wide range of sales and marketing techniques, useful for nonprofit organizations fundraising. We highlight this gap by reviewing the literature for critical resources and strategies. Then, based on our qualitative fieldwork of 25 nonprofit organizations in the US, we contribute to both marketing and nonprofit literature, by identifying the key resources and communication strategies. We bridge the literature gap by offering a resource and strategy "fit" perspective. We propose that strategies to communicate and close a deal are different depending on the donor type. For small and individual donors, we suggest that low-impact communications such as newsletters and emails provide a more fruitful approach when dealing with a large donor base. For organizational donors, we propose that high-impact communication channels such as in-person communications supplement the critical resource of fundraising staff. We further suggest that vital sales-related skill sets are essential to make high-impact interpersonal relationships work.

We find evidence in our qualitative study that interpersonal communications in the nonprofit sector can benefit from conventional sales training to improve different aspects of the fundraising process by incorporating critical sales skill sets such as cold-calling, objection handling, and closing.

Support for this study was provided by the Cotsakos College of Business' Business Policy and Practice Research Forum.

Session: Cotsakos College of Business

Valeriya Avdeev, Faculty, Accounting and Law

Real Estate and Tax Credits: How Can Tax Credits be used to Make Affordable Housing More Feasible?

The study focused on real estate developments that are allowed to take losses on borrowed funds due to investments in specific renewal communities. Our paper focused on researching what credit opportunities are available to real estate ventures that invest in New York City. Specifically, our research focused on opportunities for renewal communities in Morrisania section of the Bronx in New York City.

Support for this study was provided by the Cotsakos College of Business.

Session: Interdisciplinary Presentations

Sharon Baoas, Doctoral Student, Nursing

Investigation of Enhanced Recovery after Surgery (ERAS) Protocol Outcome on Post Colectomy Patients

Introduction: The Enhanced Recovery after Surgery (ERAS) protocol has been developed to reduced hospital LOS and complications following colorectal surgery.

Methods: The prospective ERAS protocol was implemented from July 2018 and concluded July 2019 was compared retrospectively to patients who had elective colorectal surgical procedure from July 2017 to June 2018 at a single institution. Risk stratification was performed utilizing Clavien-Dindo classification and the ACS National Surgical Quality Improvement Program (NSQIP) database. The clinical outcomes include hospital LOS, SSI and the 30-day readmissions were compared. In this study, the financial impact was explored. The total cost of the hospitalization was calculated (summing up the cost room charges, ancillary charges and average balance).

Results: A total of 109 patients were included: 55 patients in Pre-ERAS and 54 in the Post-ERAS with no statistical differences in co-morbidities. For postoperative outcomes, there was no significant difference in surgical site infection (1.82% vs 0.0%, $p=1$) and organ space SSI (1.8% vs 3.7%, $p=0.987$). Mean hospital LOS, 5.89 ± 2.62 days in Pre-ERAS and 4.94 ± 2.269 days in Post-ERAS ($p=0.047$) was observed. The readmission within 30 days was similar in both cohorts ($p=0.785$). The ERAS implementation resulted in cost savings of \$2,800 per patient ($p=0.544$).

Conclusion: The implementation of ERAS protocol decreased the mean hospital LOS one day which was statistically significant. The ERAS protocol represents a possible improvement and cost savings of patients' surgical outcomes that resulted from reduced in LOS and surgical complications.

Session: Interdisciplinary Presentations

Sharon Baoas, Doctoral Student, Nursing

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Session: Interdisciplinary Posters

Judy Bernstein, Faculty, Languages and Cultures

Structure of Language -- LANG 3050

Consider the word 'grammar'. It may elicit dread or even a yawn. But, wait! What is grammar anyway? Are grammatical rules specific to individual languages, or are there underlying similarities across languages? How do children learn the grammar of their first language? How do adults learn the grammar of a second or third language? These and other fascinating issues will be explored in the posters of the students enrolled in LANG 3050 - Structure of Language.

Student presenters: Frank Domanico, Edward Greco, Antonio Latorre, Jimmy Peck, and Salma Reyad.

Session: Interdisciplinary Posters

Judy Bernstein, Faculty, Languages and Cultures

Stigmatized Englishes -- LANG/PHIL 3010

Is there something inherently wrong with double negatives or the word 'ain't'? Is a speaker of African American English less intelligent than a speaker of so-called standard English? Is Appalachian English less logical than the standard? Is a Chicano English speaker also fluent in Spanish? Is so-called Spanglish a form of 'broken English' or 'broken Spanish'? If you're in need of facts to debunk the myths, come learn about the research! Visit the posters of the students enrolled in LANG/PHIL 3010 - Stigmatized Englishes. They will set you straight.

Student presenters: Iala Callis Fritzes, Brooke Decker, Yusri Ibrahim, Antonio Latorre, Frank Matias, Celso Nunes, Humberto Nuñez, Darren Sampson, Cassandra Soto, Jordan Williams, and Tamia Williams.

Session: Interdisciplinary Posters

Helen Bloomer, Doctoral Student, Nursing

The Relationship of Health Literacy and Self-Care Behaviors Among Patients with Heart Failure

Heart Failure (HF) is a chronic disease which continues to be diagnosed in greater numbers annually in older adults. Elements which have been found to contribute to improved outcomes are HF self-care knowledge and behaviors. Health literacy, which is the ability to read and comprehend health information, is an essential component to patients being able to practice self-care.

The purpose of this study was to explore the relationship between health literacy and self-care among patients with heart failure. The hypothesis was that increased health literacy will be associated with increased self-care behaviors. Health literacy was evaluated using the Expanded Brief Patient Health Literacy Screen (EBHLS) tool; self-care behaviors of HF patients was evaluated using the Self-care of Heart Failure Index v.6 (SCHFI) tool. The reading level of "Living with HF" education material given to these patients was assessed using the Flesch-Kincaid Grade level tool, the New Dale-Chall Readability Tool and the Simplified Measure of Gobbledygook (SMOG) index.

Multiple Pearson Correlations and regression were used to examine the relationships between SCHFI v.6 measures of self-care behaviors and health literacy. Health literacy with a coefficient of .324, had a statistically significant impact on self-care confidence ($p=.003$) $F=4.183$, $R=0.049$. Independent Sample T-Tests were used to compare means between the two literacy groups; low and adequate health literacy. An independent Sample T-Test confirmed the difference to be statistically significant ($t=-2.359$, $p=.021$). This supports the hypothesis that those with low health literacy would have decreased self-care behaviors and those with adequate health literacy would have increased self-care behaviors.

Session: Interdisciplinary Presentations

David Borkowski, Faculty, English

The Dynamite Express

On April 30, 1899, over 1,000 silver miners in Idaho's Coeur d'Alene valley hijacked a Northern Pacific train bound for the commercial town of Wallace. They rerouted it and took the train to one of the world's largest silver mines, the Bunker Hill & Sullivan, the only mine among dozens in the region that refused to hire union labor. Along the way the striking miners loaded the train with two tons of dynamite. When they reached the Bunker Hill they blew up its mill and \$250,000 concentrator. Rockefeller and Carnegie were stockholders in the company. On their return trip, the miners dubbed the train "The Dynamite Express." The Dynamite Express is an historical novel that deals with that episode of labor unrest in the US, at a time in late 19th-century American history when labor sometimes violently clashed against capital's rising power, including an earlier bloody uprising in 1892 when silver miners first went on strike in the Coeur d'Alene.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: College of Humanities and Social Sciences

Aneft Budhai, Undergraduate Student, Mathematics

Madeleine Rosar, Faculty, Mathematics

Faculty Sponsor: Professor Madeleine Rosar

Applications of Noether's Theorem in General Relativity and Quantum Mechanics

Emmy Noether wrote one of the most profound and far reaching papers in 1918. In a single paper, Noether discovered the crucial relation between symmetries and conserved charges as well as the impact of gauge symmetries on the equations of motion. Symmetry is an operation, which when performed on a system, it leaves the system invariant, i.e. it transforms it into a configuration, which is indistinguishable from the original one. Noether's Theorem underlies much of modern theoretical physics and over fifteen Nobel Prizes have been awarded for work based on her theorems. Informally, Noether's theorem states that to every continuous symmetry of a physical system there corresponds a conserved quantity. That momentum and energy are conserved is often taken as physical law. Noether's theorem tells us that their conservation is actually a consequence of space translational symmetry and time translational symmetry respectively.

Our focus will be on proofs of some of the mathematical concepts leading up to her theorems, proof of Theorem I along with examples of conserved properties and symmetry. The breadth of the theorem will be demonstrated by applying it to two famous problems, the two body problem, and the particle in a magnetic field; one problem dealing with the very large, and the other dealing with the very small. The main three topics discussed are (i) global symmetries and conservation laws (ii) local symmetries and gauge structure of a theory leading to the discovery of the Higgs boson (iii) New and exciting applications of Noether's theorems. All three topics are discussed through examples.

Session: Interdisciplinary Posters

Jin-A Choi, Faculty, Communication

Detecting Themes of Conversation on Twitter: Text Mining Approach

The increasing availability and magnitude of unstructured digital data available on social media platforms such as Twitter, Facebook, and Instagram offer new opportunities for communication researchers to investigate social, cultural, and health issues. Today's digital technology affords user-generated content which creates an unprecedented feedback loop that gives instant insights into the public's conversations in real-time. Text mining gives valuable insight to researchers regarding emergency health crises (ie. Outbreaks of infectious diseases). Social media platforms allow health communicators to gather large samples of user-generated content to garner insights to inform early response strategies. This research examines a large corpus of social media data regarding the public's responses to the outbreak of the coronavirus. Text analysis allows the extraction of meaningful associations, trends, patterns and relationships from unstructured data. Therefore, textual analytics

method is employed to uncover meaningful topics regarding the 2020 outbreak of the coronavirus. The trending topics that the public has identified to be of utmost concern are presented.

Support for this study was provided through a grant from the College of Arts and Communication's Center for Creative Activity & Research Summer Grant Program.

Session: College of Arts and Communication

Michele Ciz, Master's Student, Communication

Faculty Sponsor: Professor Kyung-Hyan (Angie) Yoo

The Depiction and Evolution of Female Characters in the Video Games Industry: An Exploratory Comparative Case Study

Over the last decade, there has been an increase in attention regarding the portrayal of females in the media with numerous studies seeking to understand the type of pressure that women have to endure. While there are several published studies that discuss the over-sexualization of female video game characters, none observe whether or not the video game industry has made the strides to attempt to depict these characters in a more realistic light. With the growing importance of portraying more realistic female bodies in publications and other media outlets, this study will attempt to determine if the video game industry has also been more conscious of the characters they are releasing.

A content analysis was conducted comparing forty of the most popular female video game characters based on their first rendition to their most recent. The data was collected by a female and male content coder to eliminate any bias that may come from having two female coders. Categories were broken down into three sections: change in demographics (i.e. race and age), clothing (i.e. type and coverage), and body proportions (i.e. figure and body size). This data will be analyzed without judgment and/or bias to determine whether there has truly been an evolution in how video game developers portray female characters.

Session: Interdisciplinary Posters

Jada Clark, Master's Student, Communication

Faculty Sponsor: Professor Kyung-Hyan Yoo

The Relationship between Self-Esteem and Filtering Photos among Millennial's

This study will highlight the relationship between self-esteem/self-image among millennial's, and how it plays a role in the usage of Instagram filters. The main goal of this study is to understand millennial's usage of Instagram, and how filtering photos influence users' self-esteem. The Rosenberg self-esteem scale will be implemented to test the subjects level of self-esteem, as well as other in depth questions that hone in on the idea that filtering selfies can possibly be the root cause of self-esteem/self-image issues among this large population.

Session: Interdisciplinary Posters

Yomary Collazo, Undergraduate Student, Psychology

Faculty Sponsor: Professor Natalie Obrecht

Religious Groups Vary in Their Degree of Moral Objectivism

Goodwin and Darley (2008) asked participants to judge the objectiveness of a variety of moral statements (e.g., "Consciously discriminating against someone on the basis of race is morally wrong."), as well as the objectiveness of factual, conventional, and taste-based statements. Participants' views were coded as being objective when they indicated that another person would be mistaken if he/she disagreed with the participant's viewpoint, or if they felt there could be a correct answer regarding the truth of the statement. Overall participants treated moral statements to be less objective than factual statements, but more objective than statements of personal taste or convention. Goodwin and Darley also found that people who believe in God or who think that society would fail without moral rules tend to view moral rules as more objective.

We replicated Goodwin and Darley's study in order to test whether the extent to which people view moral rules as objective differs by religious background. A between subjects ANOVA showed a main effect of religious affiliation on overall moral objectiveness scores ($F(2,73)=6.61, p=.002, \eta^2=.15$) such that Catholics viewed moral issues to be more objective ($M=1.62, SE=.067$) than Protestants ($M=1.28, SE=.098$) and those religiously unaffiliated ($M=1.27, SE=.093$). These differences were driven by specific moral statements such that Catholics viewed some issues (e.g. assisted suicide, giving to charity) to be more objective than Protestants. These results show that the degree of moral objectivism people espouse is not merely predicted by their belief in God, but also by their particular religious affiliation.

Session: Interdisciplinary Posters

Megan Conrad, Faculty, Psychology

Emily Trachtenberg, Undergraduate Student, Psychology

Sabrina Ramos, Undergraduate Student, Psychology

Victoria Vlassakis, Undergraduate Student, Psychology

Lessons from Storybook Animals: Understanding the Influence of Anthropomorphic Media on Children's Learning

Storybooks are a popular form of media that parents can utilize in informal settings (such as their own homes) to teach their children about a variety of topics. Although not all children have the opportunity to interact directly with animals, many children begin to engage with the natural world through the language of storytelling. Thus, the current research utilizes the storybook to understand the impact of anthropomorphic representations of non-human animals on children's learning.

Thirty-six 4- and 5-year-old children were recruited through local preschools to participate in the current study. The Individual Differences in Anthropomorphism Questionnaire was administered as a baseline measure of children's anthropomorphic beliefs. Children were randomly assigned to one of three storybook conditions which varied in their level of anthropomorphism. After storybook reading, they participated in two posttest assessments: story comprehension measures (free recall and a camouflage knowledge task) and a property attribution task.

Children were significantly more likely to use anthropomorphic language during story recall in both of the anthropomorphic conditions than in the realistic condition, suggesting that children were sensitive to the manipulation. In line with previous research (Ganea et al., 2011; Geerds & Marcovitch, 2015; Geerds, et al., 2016), we did not find that anthropomorphism decreased factual learning nor did it increase anthropomorphism. Similarly, the number of anthropomorphic properties extended to animals and objects did not differ across the three conditions. The current study has important implications for the design of scientific educational media about animals as well as the provision of information within informal and formal learning contexts.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: Interdisciplinary Posters

Megan Conrad, Faculty, Psychology

Aryleida Espinal, Undergraduate Student, Psychology

The role of early experiences in the development of concepts about the natural world

Previous research has examined how differences in experiences with nature, such as physical environments, cultural beliefs, animal experience, relate to variability in children's biological concepts (Longbottom & Slaughter, 2016). These experiences also support early scientific interest (Crowley & Jacobs, 2002) and later achievement in formal scientific knowledge (Jacobs & Bleeker, 2004). Fewer studies have looked more broadly at individual's conceptualizations and perceptions of 'nature' as a result of early childhood experiences (Collado, Íñiguez-Rueda & Corraliza, 2016; Mausner, 1996). The current study looked at whether college students' early experiences accounted for variability in current conceptions of nature and animals using both qualitative and quantitative methodologies. Participants were asked about childhood experiences including geographical area, time spent in nature, frequency of

conversations with parents, and formal educational experiences. We then investigated which natural and non-natural elements constituted their definition of 'nature'. Finally, the Individual Differences in Anthropomorphism Questionnaire (Waytz, Cacioppo, and Epley, 2010) was used to measure conceptual reasoning about human-nature similarities. We found that both informal and formal educational experiences in childhood predicted current differences in definitions of nature and reasoning about the natural world. Geography alone does not fully account for all participants experiences with nature; there was no significant difference between participants from urban areas compared to non-urban environments in their reports for either time spent in nature, amount of nature learning in school, or frequency of talking with parents about nature, underscoring the need to consider a variety of experiences in future research.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: Interdisciplinary Posters

Alison Cosgrove, Public Health

Faculty Sponsor: Professor Corey Basch

Climate Change Study

This project was conducted in order to examine YouTube videos on climate change. A significant gap in the literature was found regarding YouTube content on the topic compared to similar social media sites. The videos that comprised this sample were selected by searching "climate change." Videos were sorted by view count, and the first one hundred videos in the search were included. Repeating or irrelevant videos were excluded. Each video was watched in its entirety. The results indicated that most of these widely viewed videos were posted by international news sources, deriving mainly from Canada and Australia. Adults were most often the target audience. The majority of the videos did not discuss how to prevent climate change, although most videos examined the results climate change has on the environment. Many videos do not cite current studies when explaining climate change in today's world. There is a need for content with reliable sources on widely-viewed social media sites such as YouTube. This study is appropriate for the Public Health Symposium because it directly addresses the topic of climate change by analyzing a very popular source of information. Adults and younger people alike regularly visit YouTube for a myriad of reasons but it is imperative to alert viewers of the quality of content being posted and viewed.

Support for this study was provided through the College of Science and Health for Student Research Assistance.

Session: Interdisciplinary Posters

Yingcong Dai, Faculty, History

The White Lotus War: Rebellion and Suppression in Late Imperial China

I will provide a brief introduction to my recently published book, *The White Lotus War: Rebellion and Suppression in Late Imperial China*. This book examines the suppression campaign waged by the Qing dynasty (1644-1912) against a sectarian rebellion in central China in 1796-1804. The book is the first comprehensive study of this milestone incident that marks the end of the last golden age in imperial China. More importantly, it challenges nearly all aspects of the conventional wisdom on this incident, and sheds new light on the decline of the once formidable Qing empire.

Session: College of Humanities and Social Sciences

Karen Demsey, Faculty, Music Department

The Search for Musical Identity

I have begun research of selected educators and curricula engaged in the active development of creativity, individuality, and musical identity in undergraduate performance students. The goal is to bring attention to a crucial and under-researched area of instrumental pedagogy.

Technical skills are frequently given disproportionate weight in instrumental teaching and performance evaluation, marginalizing creativity and individuality; however, excellent role models do exist – imaginative teachers equipped to actively encourage the development of a student’s individuality; innovative curricula designed to allow students to fully explore their creativity in the performance realm. My objective is to bring these examples of innovative teaching to a wider audience; my goal is to encourage educators to incorporate these activities into their own teaching and curricula.

I have observed at a wide variety of universities and music conservatories in the US, UK, and Europe. I have identified these institutions as having either innovate teaching in a particular teaching studio, or innovative teaching curriculum-wide. Through teaching observations and interviews with students, faculty, and administration at these institutions I have been able to identify the elements for successful and sustainable innovation in teaching, which allows students to explore their individual interests and develop their creativity. These elements are crucial in preparation for a professional life in the field of music: flexibility of curriculum to explore individual interests; experience with improvisation, composition, global music, and entrepreneurship; and opportunities for the student to teach. My research is focused on how these elements are successfully incorporated into a curriculum that includes the core skills necessary for a professional career in music.

My research has involved travel to universities and conservatories in the US, UK, and Europe. I am indebted to William Paterson University for its support of this ground-breaking research, making it possible for me to present the results of my research at national and international conferences.

Support for this study was provided through a Research & Travel Incentive Award.

Session: College of Arts and Communication

Paul Diorio, Master's Student, Kinesiology

Michael Figueroa, Faculty, Kinesiology

Faculty Sponsor: Professor Michael Figueroa

Instrument Assisted Soft Tissue Mobilization and Dry Cupping: Do They Effect Passive Range of Motion in Young Adults?

Introduction: The purpose of this study was to examine the effects of dry cupping (DC) and Instrument Assisted Soft Tissue Mobilization (IASTM) on passive range of motion (PROM) in order to examine the quantitative efficiency of these modalities in musculoskeletal rehabilitation.

Methods: Thirty-seven participants, male (n= 18) and female (n= 19), between the ages of 18-26, were randomly assigned into two groups, IASTM and DC. Two sessions were scheduled 3-5 days apart, where therapeutic intervention was applied for five minutes over the quadriceps muscles. Knee flexion PROM of the dominant leg was assessed using a goniometer before and after application.

Results: A Paired Sample T-Test comparing pre- and post- measurements showed a significant increase in PROM immediately after both IASTM and DC were applied. However, an ANOVA with Repeated Measures found that there was no significant difference between increases in PROM caused by IASTM vs DC. A T-Test revealed that on average the IASTM group retained more PROM between sessions.

Discussion: Previous studies have not compared these techniques to each other. Research has shown, both techniques cause increased localized blood flow and reduced muscle tension. Both techniques were effective for increasing knee flexion PROM. However, 3-5 days post intervention, PROM gains were no longer significant.

Conclusion: In conclusion, both therapeutic techniques were seen to acutely increase knee flexion PROM. Thus, helping support their use as therapeutic tools in musculoskeletal rehabilitation programs. Clinicians should use their own judgment on which technique would be most beneficial specifically for each case.

Session: Interdisciplinary Posters

Anthony Duncan, Master's Student, Kinesiology

Jason Wicke, Faculty, Kinesiology

Sara Haller, Undergraduate Student, Kinesiology

Sarah Myers, Undergraduate Student, Kinesiology

Faculty Sponsor: Professor Jason Wicke

A Biomechanical Analysis Of The Different Squatting Methods

Introduction: The purpose of this study was to examine the ground reaction forces between the right and left legs during the front and back squats. It was hypothesized that the dominant leg would generate larger forces than the nondominant leg.

Methods: Twenty experienced male lifters participated in the study. Participants completed three randomized squatting trials using 85% of their one repetition maximum (front squat, back squat, front load for back squat). The squats were broken down into three phases: initial decent, movement, and completion. Markers were used to determine the specific point in time.

Results: Significant differences in force were seen in the lateral direction (F_x) during the initial phase of the back squat using front load, and in the vertical direction (F_z) during the initial phase of the back squat using front load.

Discussion: The dominant leg from each participant tended to produce greater forces than the nondominant leg during the different phases of the squatting methods. The major contributing factor to significant differences in force from both legs is the stabilization and positioning of the load.

Conclusion: Previous research has demonstrated the benefits of squatting to increase athletic performance and decrease the risk of injury. The main kinetic change between the squatting methods came from the position of the bar relevant to the body's center of mass. By familiarizing and creating comfortable habits based on the different methods, stances, and grips, individuals will be able to remain safe and injury free while training.

Session: Interdisciplinary Posters

Reem Eldabagh, Master's Student, Chemistry

Faculty Sponsor: Professor Yalan Xing

Exploration of the Photocatalytic Activity of Eosin Y in Benzylic Peroxidation Reactions

The use of photoredox catalysis for functionalization reactions is a novel approach in synthetic organic chemistry. Synthetic efforts in our lab focus on halogenation and benzylic peroxidation reactions.

Peroxides are prevalent in drug molecules, commonly part of pharmacophores. Eosin Y is a low-cost, long-known dye molecule used for photocatalysis. Successful benzylic peroxidation reactions of 2-phenethylbromide, 3-methylacetophenone, and other phenylic compounds using the photocatalyst Eosin Y were confirmed via NMR analyses. The mechanism of photocatalysis by Eosin Y is being explored computationally using the General Atomic and Molecular Electronic Structure System (GAMESS) software. Through the application of several different levels of theory, ground- and excited-state potential energy surfaces may be investigated to uncover insights into the mechanistic action of Eosin Y as a photoredox catalyst.

Support for this study was provided by the College of Science and Health through a Graduate Student Research Assistant in Materials Chemistry.

Session: Interdisciplinary Posters

Reem Eldabagh, Master's Student, Chemistry

Faculty Sponsor: Professor Jonathan Foley

Exploration of the Photocatalytic Activity of Eosin Y in Benzylic Peroxidation Reactions

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phenethylbromide, 3-methylacetophenone, and other phenylic compounds using the photocatalyst Eosin Y were confirmed via NMR analyses. The mechanism of photocatalysis by Eosin Y is being explored computationally using the General Atomic and Molecular Electronic Structure System (GAMESS) software. Through the application of several different levels of theory, ground- and excited-state potential energy surfaces may be investigated to uncover insights into the mechanistic action of Eosin Y as a photoredox catalyst.

Support for this study was provided by the College of Science and Health through a Graduate Student Research Assistant in Materials Chemistry.

Session: Interdisciplinary Presentations

Emine Erdogan, Faculty, Marketing and Management Sciences

Ellen Pozzi, Faculty, Educational Leadership and Professional Studies

Rajiv Kashyap, Faculty, Marketing and Management Sciences

Robert Harris, Assistant Director, Center for Teaching with Technology

Panel Discussion on Open Education Resources

Use of Open Education Resources (OER) reduces the cost of study materials for students, which has many potential benefits, including helping students stay in school. The OER task force brings to you a panel discussion on Open Education Resources. Faculty members on the panel will discuss their experiences – the challenges and advantages - of using OER material. The discussion will address the need for OER, examples of various materials used, the resources that are currently available, and the support required going forward. This session is highly recommended for all faculty members, irrespective of whether they are currently using OER or not. Let's get ready for the future together.

Session: Open Educational Resources

Laura Fattal, Faculty, Elementary and Early Childhood Education

Sandra Alon, Faculty, Educational Leadership and Professional Studies

Translating Global to Local/Local to Global Learning and Teaching Practices

Exploring the evidence of the turn-key data through observations of taught lessons and post lesson discussions with study abroad participants from the four Fulbright-Hays study abroad programs has generated rich, nuanced insights into the impact of furthering global awareness in our increasingly interconnected world. Based on ten observations and post lesson discussions, the study abroad participants unanimously recalled their global experiential learning as transformative for their teaching and interdisciplinary understandings. Mark Salisbury (2015) suggests that study abroad may help students become more invested in learning and move students along the trajectory toward lifelong learning. The authors/researchers used inductive research techniques to collect, analyze and synthesize curricula and pedagogical tactical outcomes of evidence-based teaching and learning from the overseas experiential study. Augmenting the observational data of individual teachers, the research details the development and organization of professional development opportunities for teachers in global education. Professional Development programs are outlined providing opportunities for mentoring of colleagues to further a conceptualization of the scope of global education. The role of technology and the arts as a border-crossing medium to share polarities in understanding of global thinking. Embedded in the descriptions and reflections of the global inspired observed and discussed lesson plans is the creative implementation of the teachers while currently highlighting the potential of interdisciplinary curricula restructuring within schools. Concluding thoughts forward the need for a rethinking of standards-based instruction towards interdisciplinary coordination within grades and content areas in schools to address the complexity of urgent global issues such as climate change.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: College of Education

Kirsten Fernandez, Undergraduate Student, Psychology

Faculty Sponsor: Professor Amy Learmonth

The Impact of Stroop Task in Monolingual and Bilingual College Students

In this study, 81 college students were recruited to examine whether this advantage still persists. Questions from Ellen Bialystok's (2016) Language and Social Background Questionnaire were administered to 81 college students along with the color Stroop Task through an online survey on Qualtrics. The Language and Social Background Questionnaire included questions assessing the participants' language background along with a Likert Scale of 0 to 10, 0 being no proficiency and 10 as high proficiency in English and their other language. The participants were also asked what language they use when reading, emailing, texting, posting on social media, watching TV, listening to music, and writing shopping lists. And lastly, participants were asked how often they do "language switching" which is when people switch languages they know within a single conversation with their parents, friends, and on social media. After these set of questions, 10 congruent trials and incongruent trials of the color Stroop Task were administered, and reaction times were recorded. Bilinguals performed significantly better than monolinguals on the Stroop task, with no difference between groups on the other tasks. These results demonstrate that bilingual advantages in executive control is not only seen in children but also in college students.

Session: Interdisciplinary Posters

Carol Frierson-Campbell, Faculty, Music

Gideon Forbes, Adjunct Faculty, Music

Xavier Bonilla, Undergraduate Student, Music

Leon Pooran, Undergraduate Student, Music

High School Music Decisions

How do middle school students make decisions about advanced music study beyond middle school? This question was raised by an undergraduate music education major based on his first field experience in a Paterson middle school. The WPU student reported anecdotally that serious middle school music students where he was teaching either "felt there was no future" in advanced music study (based on family input) or felt that the music available in schools was not the kind of music they wanted to study. This presentation describes the process followed by a faculty member, two students, and an alumnus in trying to design research that responds to this question.

This question seems not to have been raised in the research literature despite its obvious application to three noted issues in the field of music education: 1) understanding high school students' decisions about school music participation, 2) diversifying the pool of students who choose to study music at the collegiate level, and 3) diversifying the music teaching field. The literature that does exist seems to examine the question from a psychological or motivational perspective (i.e., Smith, 2011) or in relation to career choice (i.e., Bonhard, 2012). Two important points are missing from these conversations: 1) How do expectations from families impact choices about advanced music study for their children, when music is seen by many as a poor career choice for bringing in income? 2) How do such expectations play into the myriad of issues under consideration by serious middle school music students from urban settings who are making choices about high schools?

Support for this study was provided through a grant from the College of Arts and Communication's Center for Creative Activity & Research Summer Grant Program.

Session: College of Arts and Communication

Carol Frierson-Campbell, Faculty, Music

Noticing Musical Becomings in Palestine

How do the places in which we teach, learn, and perform music impact the experience of musicking? How do these experiences, in turn, impact our interpretations of the music and of the places? And how do we become in the process? In this presentation I reflect on these questions in the context of the

Edward Said National Conservatory of Music in occupied Palestine. The presentation is based on analysis of qualitative data collected from Palestinian musickers during a 6-month residency. The presentation begins with visits to physical locations— places known not only as municipalities, but also as historic, religious, and political sites. Meeting musickers from these places, we veer from official interpretations into an assemblage of individual, collective, and political perspectives. A critical element of this presentation involves efforts to notice what Moisala, Leppänen, Tiainen, & Väättäinen (2011) have called musical becomings in the experiences described by participants. Merging Small's (1998) notion of musicking with the concept of becoming put forward by Deleuze and Guattari, these authors suggest, can demonstrate how "musical becomings emerge within varying interplays of both material and symbolic or discursive forces" (p. 73).

Interpreting musical becomings at this time and in this place is complicated by many factors: the layers of human interaction in cultural institutions, the fact that this state-level Palestinian cultural entity is modeled on Western musical practices, and the everyday realities faced by Palestinians living under occupation. It is difficult as an outsider to even perceive all of these complications, yet without noticing them, we miss important musical becomings.

Support for this study was provided through Assigned Release Time for Research (ART), a Research & Travel Incentive Award, the Basem and Muna Hishmeh Foundation, and the Edward Said National Conservatory of Music.

Session: College of Arts and Communication

Andrew Gladfelter, Faculty, Sociology and Criminal Justice

Spatial Variation in Community-Level Predictors of Hate Crime

Research has consistently suggested that hate crimes, like many social problems, cluster across geographic space. However, most studies rely on global regression models (e.g., linear regression/OLS regression) that provide a "best fit" across a diverse spectrum of communities at the expense of overlooking smaller scale local variation. By leveraging the power of geographically weighted regression (GWR), this study examines spatial nonstationarity, or local variation, in these structural predictors of hate crime. Instead of using fixed parameters across the entire sample, GWR creates a local regression model for each data point in the sample, allowing predictors to vary across observations in both magnitude and direction. This process allows researchers to identify places where, for example, theories do not adequately explain real events--in some cases, in the wrong direction. The ultimate goal is the refinement of criminological and sociological theory to better explain patterns in observed data and/or to develop new theories to explain what pre-existing theories cannot.

Session: Technology Across the Curriculum

Donea Gomez, Master's Student, Communication

Faculty Sponsor: Professor Kyung-Hyan Yoo

The Uses and Gratifications of Instagram and VSCO: A Comparative Analysis

Despite not having the visible Like metrics that are highly sought-after by younger cohorts and mainly users of Instagram, use of the photo-editing and sharing platform, VSCO is thriving among users in the same demographic. Previous studies have observed uses and gratification of engagement metrics in terms of motivation to use social media platforms and found the affirming impact that Like metrics have on Instagram users to use the platform. By juxtaposing motivations of VSCO use as a non-Like player, practitioners can better understand the motivations to use social media in future platform development processes. Due to the lack of existing applications that operate similarly to VSCO, there are no available studies that investigate the uses and gratifications in this context. A survey design will be utilized to gather data on motivations to use each platform across eight dimensions that include intensity to use a platform, information sharing, self-documentation, social interaction, entertainment, passing time, self expression, and convenience. Users that have active accounts on either platform will be assessed and a comparative analysis will organize the data collected in a narrative way that explicates the distinction in motivations to use the two similarly operating platforms.

Session: Interdisciplinary Posters

Michelle Gonzalez, Faculty, Special Education & Counseling/Educational Leadership & Professional Studies

Dyslexia knowledge, self-efficacy, and professional development needs of in-service educators

New Jersey is one of the few states that mandates annual professional development related to reading disabilities (i.e., dyslexia). This study explored the dyslexia knowledge, self-efficacy, and professional development needs and perceptions of educators in New Jersey. Results and implications will be discussed.

Session: College of Education

Julienn Guzman, Undergraduate Student, Psychology

Faculty Sponsor: Professor Amy Learmonth

Virtual Play Room

Research examining the developmental patterns of navigation in rats has shown that infant rats use different navigation strategies as they mature. In a task designed to elicit complex navigation strategies, infant rats use a simpler strategy that relies on directional information (cue/directional learning) instead of the complex multiple cue strategy (place learning). When comparing cue/directional and place learning in the Morris's Water Maze (MWM), cue/directional learning was the most effective solution for younger rats (Akers et al., 2009) This presentation will discuss a computer-generated game to explore this difference in humans. The goal of the game is for participants to find the location of the target within the circle. A simple virtual 3D space similar to the Morris Water maze will be used to test how the participant will use their navigation skills from a 1st person player perspective. Spatial learning will be assessed across multiple trials. Cued trials will include distinctive shapes to determine whether trial completion can be reached without place learning.

Session: Interdisciplinary Posters

Edin Hadzovic, Master's Student, Kinesiology

Racine Emmons-Hindelong, Faculty, Kinesiology

Lydia Hwang, Undergraduate Student, Kinesiology

Christopher Santana, Undergraduate Student, Kinesiology

Faculty Sponsor: Professor Racine Emmons-Hindelong

Single-Dose Beet Root Juice vs Caffeine: Which is More Effective at Enhancing Cognitive Function?

Introduction: Beetroot juice (BRJ) and caffeine (CN) have been shown to enhance endurance exercise performance through multiple physiological pathways. Research shows that long-term consumption of BRJ can lower oxygen requirement and extend exercise time. The purpose of this study was to investigate the effects BRJ and CN have on cognitive function after exercising to exhaustion.

Methods: Nineteen participants completed 3 trials of testing, 1-week apart. During day 1, participants completed the Bruce Protocol stress test. On days 2 and 3, participants walked at a high intensity until exhaustion. On day 2 of testing, participants consumed 4.8 ounces of concentrated beetroot juice (800 milligrams of nitrate). On day 3 of testing, participants consumed a caffeine pill containing 4 mg/kg/ bodyweight along with 4.8 ounces of water. Cognitive function was assessed using a Stroop test before and after each trial. Additionally, rating of perceived exertion (RPE) with the Borg scale was recorded at each stage.

Results: BRJ and CN produced significantly faster post-congruent Stroop times compared to baseline (BRJ=684.32ms; CN=678.47ms vs. 873.37ms; $P < 0.01$). No significant differences were found in exercise time, maximum RPE, and incongruent post-test Stroop or Stroop effect across all conditions.

DISCUSSION: BRJ and CN improved congruent trials suggesting delayed mental fatigue, however no supplementation effect was observed in RPE, exercise time, or trials presenting additional stimuli.

Conclusion: These findings suggest short term single-dose use of BRJ or CN may enhance cognitive function, but will not enhance exercise time or RPE.

Session: Interdisciplinary Posters

Raghad Hassabelnaby, Doctoral Student, Psychology
Megan Conrad, Faculty, Psychology

Contributors to the Development of Fears: The Influence of Individual Characteristics and Parental Disposition on Learned Animal Fears

Nearly 7-9% of adults are diagnosed with a specific phobia (APA, 2013), often beginning at a young age, with animal phobias having the earliest onset around the age of 7 years, and carrying into adulthood (Muris & Field, 2010; APA, 2013). Behavioral-genetic research has shown that genetic factors can make up to 50% of the variance for some childhood fears (Eley & Gregory, 2004). However, animal fears can also be elicited from verbal threat information, such as that transmitted by caregivers (Hadwin et al., 2006). Parents likely play an important role, shaping children's experiences by highlighting positive or negative information about animals. The current study examines the role of two potential factors, individual characteristics (anxiety, fear) and parental dispositions (animal fear), in the development of early animal avoidance. Children (N = 96, range: 4;0-7;11 years) were read a storybook about a snake or frog that contained either positive or negative information. After storybook reading, self-reported fear of the animal was measured using the FBQ and the BAT. Parents completed a questionnaire including family information, child fear measurement, child anxiety scale, and a measure of their own fear of snakes. Children's individual differences (i.e., anxiety, $t(77) = 3.99$, $p < .001$ and fear levels, $t(79) = 3.08$, $p = .003$) were found to predict avoidance and fear behavior. Additionally, parent's own fears predicted children's learned fears, $r(20) = .468$, $p = .037$. Our results emphasize the importance of both individual differences and parental dispositions in the development of early animal fears, which will be discussed.

Kelley Healey, Faculty, Biology

Geselle Cancino-Prado, Undergraduate Student, Biology

Indira Sawh, Undergraduate Student, Biology

Cassie Girardin, Undergraduate Student, Biology

Cristina Jimenez Ortigosa, Center for Discovery and Innovation at Hackensack Meridian Health

Resistance profiling of medically-relevant FKS1 mutations expressed from plasmid in the human fungal pathogen *Candida glabrata*

Echinocandins, such as caspofungin and micafungin, are first-line agents in the treatment of invasive *Candida glabrata* infections. Fungal associated resistance arises upon mutation of genes (FKS1 or FKS2) that encode for the drug target enzyme, beta-1,3-glucan synthase. A gap-repair approach was used to clone the coding region of FKS1 from a wild-type strain onto a plasmid carrying the nourseothricin resistance marker and a strong promoter (pCN-PDC1). Transformed cells that lacked a chromosomal gene copy (*fks1* Δ) were initially screened via PCR and susceptibility to FK506 (FKS2 inhibitor) to ensure proper FKS1 presence and expression, respectively, from plasmid (pFKS1). Additionally, consistent with the presence of a strong promoter, we measured a 6.4-fold increase in FKS1 gene expression (early log phase) and a 2.0-fold increase in Fks1 protein expression in the *fks1* Δ strain carrying pFKS1, compared to wild type strains. Several medically-relevant amino acid alterations (i.e. F625S, S629P, D632E) were incorporated into pFKS1 through site-directed mutagenesis and expressed in the *fks1* Δ strain.

Transformants were screened as above and drug susceptibility assays performed with caspofungin and micafungin. Compared to expression of pFks1-wild type, assays revealed 4-fold increases in minimum inhibitory concentrations (MICs) upon expression of pFks1-F625S and 8- to 16-fold increases in MICs following pFks1-S629P expression. These studies have provided the tools to test additional amino acid substitutions and analysis into how specific FKS1 mutations influence drug resistance within an isogenic strain. Additionally, we are currently manipulating pFks1 for future protein structure (e.g. addition of a 12x His tag) and microscopy experiments.

Support for this study was provided through Assigned Release Time for Research (ART), the Center for Research, College of Science and Health, and College Student Research Assistance.

Session: Center for Research, College of Science and Health

Christopher Herbert, Faculty, Music

Who Let the Authors Out? Musical Composition, Authorship, and Intellectual Property: A Comparison Between Music of Colonial Pennsylvania and Late-Twentieth-Century America.

The presentation focuses on Herbert's principal research on the music and composers of the Ephrata Cloister of Colonial Pennsylvania. Through analysis of over 125 extant music manuscripts, Herbert was able to establish that the celibate sisters of the Ephrata community were America's first known composers. Although this finding is significant, it does come with a caveat; what authorship and intellectual property meant to the Ephrata community is probably not how it is interpreted today by musicologists and other scholars. Indeed, the modern concept of authorship is crystalized in the writings of Michel Foucault, who argued that the label of "author" distinguishes an individual through an established identity of creation, thereby elevating social status while separating the individual from society. Throughout music history, Foucault's notion of authorship comes in and out of focus and is not always an apt characterization to describe a creator's relationship to their work. A surprising comparison to Ephrata music that challenges our established notions of authorship is found in the history of the July 2000 hit song "Who Let the Dogs Out."

Support for this study was provided through a grant from the College of Arts and Communication's Center for Creative Activity & Research Summer Grant Program.

Session: College of Arts and Communication

Nick Hirshon, Faculty, Communication

The Creation of a Spectator Sport in Television's Emergent Years: "Bowling Headliners" (1948-1950)

"Bowling Headliners," a television series broadcast on ABC and DuMont from 1948 to 1950, established the tenpin game as a spectator sport with the ability to draw large numbers of fans to the small screen and the alley. The program encouraged novel forms of participation by home and live audiences and complemented the sometimes dull activity on the lanes with appearances by models, singers, and famous announcers such as Don Dunphy, a celebrated boxing broadcaster, and Russ Hodges, the longtime voice of baseball's New York Giants. The show's ability to make such an impact reflected the might of three of the most notable media organizations of the twentieth century. "Bowling Headliners" was hosted by two editors from the New York Daily News, who could promote the series through the platform of America's most widely read newspaper, near the peak of its circulation at more than two million daily readers and four million on Sundays, the day the program aired. Meanwhile, the show provided ABC, then only three years old, with a chance to pioneer coverage of athletics in a bid to gain ground against the longer-tenured and higher-rated CBS and NBC, an ultimately successful strategy. In its second season, "Bowling Headliners" headed to the DuMont network, another innovator of sports programming aiming to distinguish itself on the television dial. Together, these entities cemented bowling in the national consciousness. This project considers how the show's formula, on wide display in television's breakthrough years, showcased many of the ingredients still used to sell sports programming today, such as gratuitous images of attractive women and celebrity guests.

Support for this study was provided through Assigned Release Time for Research (ART) and a grant from the College of the Arts and Communication's Center for Creative Activity and Research.

Session: College of Arts and Communication

Matthew Johnson, Master's Student, Psychology

Michael S. Gordon, Faculty, Psychology

Faculty Sponsor: Professor Michael S. Gordon

Musical Tempo Affects the Experience of Time

While listening to music, many experience the phenomenon of "time flying." This research was designed to examine that phenomenon and specifically the interaction between musical tempo with the experience of duration. To address this question, participants were asked to perform a temporal bisection task. Temporal bisection involves the presentation of a standard stimulus relative to a series of experimental comparisons. In this version, participants determined whether each comparison tone was shorter or longer in duration than the standard. Test conditions were varied using five musical tracks that manipulated the constancy of the tempo and overall beats per minute. While there was some

individual variability, the data seemed to suggest that the slow constant tempo, and the fast variable tempo create distinct biases in duration judgements. In addition, participants that indicated having prior music experience (instrument/voice), showed less overall bias, particularly at the extremes. These preliminary findings indicate some of the constraints between music and time perception. Importantly, investigations are ongoing to clarify how related variables such as arousal and harmonic complexity might alter the musico-temporal interactions.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: Interdisciplinary Posters

Parminder Kaur, Faculty, Chemistry

Ian Hicks, Undergraduate Student, Chemistry

Jonathan McTague, Undergraduate Student, Chemistry

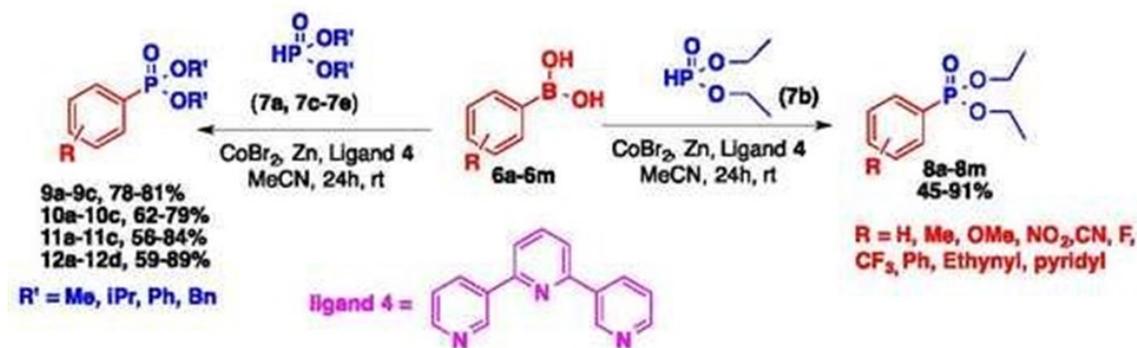
Tatiana Hapatsha, Undergraduate Student, Chemistry

Rania Teriak, Undergraduate Student, Chemistry (WPU Alumni)

Cobalt Catalyzed C-P Bond Formation by Cross-Coupling of Boronic Acids with P(O)H Compounds in Presence of Zinc

In this project, we have reported the use of cobalt(II)salts for the first time as catalysts for the cross-coupling of arylboronic acid with alkyl/ aryl phosphites. The reaction was carried out under mild conditions in the presence of zinc powder as an additive and ter-pyridine as a ligand. The use of non-precious cobalt salt makes the protocol advantageous, as it is inexpensive and more abundant than the previously used methods where precious metal salts (Pd and Pt) were used. A series of cobalt salts were screened in the process along with a series of bidentate and tridentate nitrogen based ligands. The substrate scope for this reaction was tested by reacting a variety of arylboronic acids with diethyl phosphite. The reaction was found to have a wide substrate scope and the products were obtained in good yields as shown in the attached Figure 1.

Figure 1. Substrate scope of Cobalt catalyzed C-P bond formation (<https://www.mdpi.com/1420-3049/25/2/290>)



Support for this study was provided through Assigned Release Time for Research (ART), the Student Research and Creative Expression Program (SRCEP), and the Center for Research, College of Science and Health.

Session: Center for Research, College of Science and Health

Anita Kumar, Faculty, College of Education, Dean's Office

Learning to Enact Effective interactions in a Practice Based course for Pre-service Early Childhood Teachers.

The study examined what happens when a course designed using practice-based teaching approaches, namely the Framework for teaching practice (Grossman, 2011), the Learning cycle to enact core practices (McDonald, Kazemi & Kavanagh, 2013) the Classroom Assessment Scoring System (CLASS; Pianta, LaParo & Hamre, 2008), and a sequence of practice-based learning activities using video-analysis and

rehearsals, was implemented. I studied the implementation and outcomes of this course by analyzing course documents, observations and field notes, CLASS™ ratings, focus group and my researcher journal. Study findings include details about gains in PSTs' knowledge and skills related to effective interactions, particularly Emotional Support and Classroom Organization interactions, and challenges with Instructional support interactions. Study findings also detail my instructional interactions with the ECE-PSTs in the course, to reflect on what it means to enact a practice-based pedagogy.

This presentation and related manuscripts are based on previously conducted research was supported by Assigned Release Time (ART).

Session: College of Education

Toni LaSala, Faculty, Kinesiology

Jordan Cola, Faculty, Kinesiology

Michael Figueroa, Faculty, Kinesiology

Racine Emmons, Faculty, Kinesiology

Peak Fat Oxidation Rates in Deconditioned Normal Weight Compared to Obese Individuals on a Lower Body Positive Pressure Treadmill

Purpose: To determine the differences in peak fat oxidation (PFO), peak maximal oxygen consumption (VO_{2peak}) and respiratory exchange ratio (RER) while walking at 100% to 75% on a lower body positive pressure treadmill (LBPP) in normal weight compared to obese men.

Methods: Fourteen normal weight men (age, $M = 22.6 \pm 2.1$, height, $M = 1.7m \pm .07$, weight, $M = 79.72 \pm 6.1$ kg, BMI, 27.5 ± 2.9 kg/m² and Body Fat %, $14.1 \pm 6.8\%$) and fourteen obese men (age $M = 23.2 \pm 2.4$ years, height, $M = 1.4m \pm .07$, weight, $M = 110.2 \pm 16.3$, BMI 36.2 ± 3.8 kg/m² and Body Fat % $38.1 \pm 7.2\%$) were randomly assigned to walking on the LBPP treadmill at 100% and 75% of their body weight. Subject walked at a constant speed of 3.3 mph where percent grade increased three minutes following the warm up from 3% to a maximum of 15%. PFO, RER and VO_2 were measured using indirect calorimetry.

Results: There were no significant differences in VO_{2peak} , however according to Wilks's statistic, there was a significant effect on body composition and fat oxidation, $\lambda = .70$, $F(2,25) = 5.36$, $p < .05$ in the 100% condition. There was also a significant effect on body composition and RER using Wilks's statistic, $\lambda = .74$, $F(2,25) = 4.51$, $p < .05$ in the 100% condition.

Conclusion: The normal weight population burned significantly more fat as a fuel, when comparing fat oxidation rates and RER In the 100% body weight. To optimize fat utilization, the obese is encouraged to exercise a lower body weight to obtain a greater fat utilization.

Session: Interdisciplinary Posters

Courtney Lawler, Master's Student, Kinesiology

Michael A. Figueroa, Faculty, Kinesiology

Faculty Sponsor: Professor Michael A. Figueroa

Vertical Jump: Do Different Types of Tape Enhance Jump Height?

Introduction: The purpose of this study was to investigate whether or not athletic tape on the quadriceps muscles affected vertical jump (VJ) height.

Methods: Forty-two participants, male ($n=21$) and female ($n=21$), between the ages of 18-26, completed three separate trials of jumps using three different types of tape [Kinesio Tape (KT), Elastikon (E), Non-elastic (W)] over a three-week period. The tape was randomly assigned before each session. A warm-up preceded baseline jump measurements prior to each session. Three jump measurements were taken one minute apart after the tape was applied in an upside-down V-shape. **Results:** A repeated measures ANOVA revealed no significant differences in pre-intervention measures (PreKT 21.90 ± 5.74 , PreE 21.63 ± 5.41 , PreW 21.76 ± 5.29). A paired T-Test revealed significant differences between pre-jump measurements to highest jump (KT 0.81 ± 1.08 , E 0.80 ± 1.49 , W 0.55 ± 1.06). However, no significant differences were found between pre-jump height and average jump heights for all conditions.

Discussion: No significant differences were seen between pre tape jump measurements during any of the three sessions. A significant difference was seen between pre-tape jump measurements and the

highest jump measurement for all three conditions, however no significant differences were observed over the average jumps.

Conclusion: None of the tapes that were used offered any added benefit to jump height when compared to each other. This may be beneficial to athletes and medical professionals when determining if a type of tape can improve athletic performance.

Session: Interdisciplinary Posters

Amy Learmonth, Faculty, Psychology

Shazna Ali, Undergraduate Student, Psychology

Kirsten Fernandez, Undergraduate Student, Psychology

Julienn Guzman, Undergraduate Student, Psychology

Victoria Hanks, Undergraduate Student, Psychology

Tatiana Charles, Undergraduate Student, Psychology

Irena Curanovic, Doctoral Student Psychology

Christina Lagomarsino, Doctoral Student Psychology

Faculty Sponsor: Professor Amy Learmonth

Search task learning not evident during learning trials influences behavior at test

Participants for this study were preschool children who were three to five years old. They were recruited through various daycares and word of mouth. Preschool children were presented with a computer screen search task which was presented by the experimenters. The study began by asking the participant to touch the corner where they believed Mr. Smiley was hiding. The experimenter then pressed the key that corresponded with each rectangle or square corner according to the participant's selection. On half of the learning trials the geometry of the shape indicated where to look for the target and on the other half a star at the edge of the screen provided the cue. In contrast to previous results, the children learned to use the landmark, but not the geometry, however, in test trials the geometric response was preferred by three, four, and five-year-olds. It is possible that the star trials were too hard and interfered with the children's ability to see the pattern in the rectangle trials. This could have caused the children to respond randomly on all the trials.

Support for this study was provided through Assigned Release Time for Research (ART) and the Student Research and Creative Expression Program (SRCEP).

Session: Interdisciplinary Posters

Weihua Liu, Faculty, Computer Science

Bogong Su, Faculty, Computer Science

Natalia Zaytseva, Undergraduate Student, Computer Science

Dev Dave, Undergraduate Student, Computer Science

Oliver Alvarado, Undergraduate Student, Computer Science

Oliver Nunez, Undergraduate Student, Computer Science

An investigation between Python and SPSS in Software Performance Prediction

In our recent study, we introduced a new prediction model which combines several machine learning algorithms such as KNN, clustering, similarity, sample and attribute weighting with multiple linear regression techniques to predict the execution time of Digital Signal Processing (DSP) software at source code level. We implemented the algorithm in SPSS and Python but realised that there are a lot of differences. In the presentation, we will investigate the results from those two methods.

Support for this study was provided by the College of Science and Health through a Graduate Student Research Assistant in Materials Chemistry.

Session: Interdisciplinary Posters

Weihua Liu, Faculty, Computer Science

Bogong Su, Faculty, Computer Science

Erh-Wen Hu, Faculty, computer science

Jian Wang, Mobile Broadband Software Design, Ericsson

Using Machine Learning Techniques for DSP Software Performance Prediction at Source Code Level

Efficient performance prediction at source code level is essential in reducing the turnaround time of software development. In the presentation, we introduce a new prediction model, which combines several machine learning algorithms such as KNN, clustering, similarity, sample and attribute weighting with multiple linear regression techniques to predict the execution time of DSP software at source code level. Prediction at source code level tends to both under-predict the performance for certain testing samples and over-predict for some other samples. Therefore, we propose a new algorithm called MAX/MIN algorithm to select the best-predicted execution time. To validate the new model, we measure experimentally the execution time of a set of functions selected from PHY DSP Benchmark and run them on TIC64 DSP processor. It is observed that the average absolute relative prediction error is less than 10% between the computed performance from the new model and the actual measured execution time.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: Interdisciplinary Posters

Weihua Liu, Faculty, Computer Science

Machine Learning Techniques for Software Performance Prediction

In this presentation, I will introduce different machine learning Techniques for Software Performance Prediction. It is observed that the prediction error is significantly decreased using Machine learning Techniques.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: Center for Research, College of Science and Health

Jennifer Louis, Undergraduate Student, Chemistry

Faculty Sponsor: Professor Dr. David Snyder

A Biochemistry Approach to Understanding Aging Processes Involving Effects of Proteins on the Production of Lipofuscin

Aging is a complex process that involves both physiological and biochemical changes. One effect of aging is the accumulation of neuromelanin and lipofuscin pigments in the brain, which potentially have negative physiological effects. Tyrosinase catalyzes the initial steps of melanin formation, making it a protein of interest. Previous research members ran lipofuscin formation assays using a two-parts reaction involving the oxidation of polyunsaturated fatty acids (PUFA) to produce malondialdehyde, followed by a Hantzsch reaction. Resulting data indicated that tyrosinase increased the production of a fluorescent compound in vitro. Tyrosinase was therefore, either catalyzing the PUFA oxidation or catalyzing the Hantzsch reaction. To further investigate these findings, we developed an NMR-based assay to measure the Hantzsch reaction in a homogeneous mixture, from which we acquired conflicting data indicating that tyrosinase had no catalytic activity. However, modifying the original lipofuscin formation assay, by replacing the PUFA with propanal and acetylacetone, i.e. removing the PUFA oxidation step from the assay, resulted in data indicating that tyrosinase does catalyze the Hantzsch reaction.

Session: Interdisciplinary Posters

Karen Macey-Stewart, Doctoral Student, Nursing

An Examination of a Nurse Practitioner-Led Individualized Pain Plan Management Upon Length of Stay, Hospital 30-Day Readmission, and Quality of Care for African American Adults with Sickle Cell Disease

The purpose of this study is to examine if the implementation of an individualized pain management plan (IPMP) by a nurse practitioner-led pain service will decrease the length of stay (LOS), hospital 30-day readmission rate and improve quality of care in individuals with (Sickle Cell Disease (SCD) by using the guidelines established by the National Heart, Lung and Blood Institute (NHLBI). A mixed-method was utilized for this study. A retrospective chart review was conducted to evaluate the impact of using an IPMP vs a traditional pain management plan (TPMP). The qualitative component was used to understand the lived experience of individuals with SCD in the acute care setting in relationship to pain triggers, the numerical pain scale, coping strategies, and non-pharmacological interventions.

The results of an independent sample t-test showed with a sample size $N=61$, the mean LOS for the TPMP was 7.89 days and 5.66 days for the IPMP with a mean difference of 2.23 days, $t=2.278$, $p=.024$ ($p<.05$). The 30-day hospital readmission showed clinical significance $p=.054$, where 75% of the individuals with IPMP were not readmitted within 30 days of discharge. For quality indicators using nonpharmacological interventions showed statistical significance with the IPMP group $p=.000$. In using Pearson Chi-square, there is a relationship between having a hematologist in the community and using the IPMP, $\chi^2(5, N=122) = 65.267$, $p=.000$.

The findings of this study demonstrate how nurse practitioners in the acute care setting using national guidelines, and a patient-centered approach can improve quality patient outcomes that are aligned with the Institute of Medicines (IOM, 2001) report.

Session: Interdisciplinary Presentations

Peter Mari, Master's Student, Communication

Faculty Sponsor: Professor Angie Yoo

Social Media's Influence in Millennial Healthcare and Medical Services

This study takes an in-depth look at the extent to which millennials seek health-related information online. Do millennials use social media to view health information? Are hospitals and physicians actively posting content on social media to connect with the younger generation? Are millennials more likely to consult with online resources instead of visiting a primary care physician? Many healthcare professionals are seeking the value of staying connected and using social media platforms to discuss health related topics and trends. Millennials are the first generation to grow in a world where any and all information is right at their fingertips. This study, conducted as a survey to millennials, investigates if this generation is more inclined to research their own personal health if the information is more easily accessible to them. It seeks to uncover the motivation behind the searches and on which platforms the searches are being done.

Support for this study was provided through the Student Research and Creative Expression Program (SRCEP).

Session: Interdisciplinary Posters

Debbie Mohammed, Faculty, Nursing

Monica Mutyula, St. Michael's Medical Center

Lisa Marie Koumoulos, Master's Student, Nursing

Jihad Slim, St. Michael's Medical Center

Trends in Retention at Peter Ho Clinic among HIV-diagnosed patients, 2013-2017

Objectives: Retention in care and adherence to prescribed anti-retroviral therapy improves patient outcomes. This study evaluated annual and durable retention in medical care among patients at the Peter Ho Clinic, from 2013-2017.

Methods: Patient data were downloaded electronically from the electronic medical record. Descriptive statistics were used to summarize retention in care with Pearson Chi-square. Multiple logistic regression models identified patient characteristics associated with retention in medical care.

Results: As of December 31, 2017, 1000 (57%) patients were retained in medical care. Between 2013 and 2017, annual retention in care increased from 84% to 90%. Durable retention across two-year (67%-72%), three-year (59%-63%) and four-year (53-54%) periods remained stable. Patients less likely to stay in care were less than 60 years, had a history of drug use, public insurance and reengaged in medical care at the Peter Ho Clinic.

Conclusions: Interventions to retain patients in care will lead to improved patient outcomes. Patients younger than 60 years, a history of drug use, with public insurance and reengaging in medical care may benefit from access to intensive medical case management services to improve durable retention.

Session: Interdisciplinary Posters

David Nacin, Faculty, Mathematics

The Power of Padovan

The Fibonacci (or Pingala) numbers are the single most famous number sequence in music, art, and architecture. They arise naturally in both a spiral of squares and a ratio involving proportions of rectangles. In this talk, we question how natural the choices in both these constructions are, and focus on a different sequence which arises as a result of both a different spiral and a different question about proportions of rectangles. We construct this new sequence in both ways and provide ample evidence for its importance alongside its more famous cousin.

We will show how our new sequence surprisingly appears in Pascal's triangle and then prove several identities without either words or numbers, by considering colorings corresponding to sums of entries. We will examine the uses of this sequence in architecture, particularly in Hans van der Laan's Monestary at Vaals. Finally we will present recent research on the growth properties of this sequence, presenting a counterexample to a conjecture and seeing how far we can push the limits of that counterexample.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: Center for Research, College of Science and Health

Priya Nagaraj, Faculty, Economics and Global Business

Wendy Christensen, Faculty, Sociology and Criminal Justice

Phoebe Jackson, Faculty, English

Kendall Martin, Faculty, Biology

Richard Kearney, Librarian, Library

Panel Discussion on Open Education Resources

Use of Open Education Resources (OER) reduces the cost of study materials for students, which has many potential benefits, including helping students stay in school. The OER task force brings to you a panel discussion on Open Education Resources. Faculty members on the panel will discuss their experiences – the challenges and advantages - of using OER material. The discussion will address the need for OER, examples of various materials used, the resources that are currently available, and the support required going forward. This session is highly recommended for all faculty members, irrespective of whether they are currently using OER or not. Let's get ready for the future together.

Session: Open Educational Resources

Leslie Nobler, Faculty, Art

African Pattern and Identity in Contemporary Surface, Textile and Fashion Design

African fabrics based on the Dutch Wax Print (Ankara) popularized during Africa's colonial era, have had an enormous recent impact on Western Fashion, especially in the US and UK. The trend has had an affect in the visual arts as well, which circuitously, impacts fashion design. In fashion, and notably for

celebrities, this is in part due to identity and pride in one's African roots; in the fine arts, Yinka Shonibare and Njideka Akunyili Crosby make statements about identity politics, colonialism up through post-colonialism, and racism. The global village of the internet has driven this proliferation, as have improvements in fabric printing technology. Patterns can now be designed authentically in western Africa and sent electronically to Europe for artisanal quality printing. Examples of Ankara's new reach across the Atlantic include its greater availability and utilization, from authentic textile shops in African-American neighborhoods, to low-end reproductions in discount chains. More recently these textiles/patterns are integral to important works of in major art museums, from Philadelphia and San Francisco to the Mass MOCA, all the way to the Israel Museum, and throughout Europe. We see this trend throughout social media thanks to Instagram, Pinterest and celebrity photos. What shall sustain this new design direction is that Ankara adapts to the times. Some is now printed in West Africa; but regardless of the design or production locale, Ankara stays relevant because the motifs are based on objects and scenes in today's everyday life. When designing, studying and teaching Ankara, this idea is first and foremost, from spiritual eye motifs to drawings of foods to the symbolic chain patterns. By deconstructing the techniques of, and exceedingly rich history behind Ankara, up through social issues connected with its trendiness, we examine the whys and hows driving this strong new African wave in design. This first-hand creativity experience, anecdotally informs this paper, along with historic and contemporary sources of inquiry, in examining what is behind this far reaching trend.

Support for this study was provided through a Research & Travel Incentive Award, the Bunka Gakuen University Library, Tokyo, Japan, and the Kyoto Shibori Museum, Kyoto, Japan.

Session: College of Arts and Communication

Cynthia Northington-Purdie, Faculty, Secondary and Middle School Education

Teaching Online through Podcasting

What is a podcast? In this age of social media, and interactive multi-platform software, the creation and use of podcasts as a teaching modality makes sense. Podcasts are free, international, available on a multitude of platforms, and easy to access. Lecture materials that would traditionally be delivered in a brick and mortar classroom can now be accessed at any time on virtually any device (cellphone, tablet, computer, smart-watch etc.). The presenter of the workshop is a podcaster in higher education with over 1000 weekly listeners. The purpose of this workshop is to highlight the benefits of podcasting in higher education. Participants in this workshop will discover the benefits of podcasting. The ease of creating one's own podcast will be demonstrated step by step. Participants will be encouraged to create podcasts as a means of showcasing research and pedagogies in higher education.

Session: College of Education

Daniel Novikov, Undergraduate Student, Computer Science

Cyril S. Ku, Faculty, Computer Science

Jin-A Choi, Faculty, Communication

Faculty Sponsor: Professor Cyril S. Ku

A Web-based Platform for Mining and Analyzing Social Media Data

This project is a collaboration between the Department of Computer Science and Department of Communication at William Paterson University. The purpose of the project is to build a mining and analyzing platform for communication researchers to investigate social, cultural and health issues using the large magnitude of unstructured data in social media such as Twitter, YouTube, Facebook, and other online environments.

A prototype system is being constructed using social media data from Twitter and YouTube. The system will provide data collection function (for example, keywords extraction) from Twitter tweets or YouTube transcripts and user comments. Built-in mining algorithms such as regression, classification, association, and clustering will be available. Special analyzing tools for trends, hidden relationships, sentiment analysis, as well as semantic extraction will be supported.

This poster specifies the overall architecture of this web-based platform. The front-end web/user interface uses HTML5 and CSS. It connects to a back-end relational database (MySQL) server for data storage. The interface is broadcasted via a Flask web server, which is also responsible for organizing the computation of the data-analytic requests. These requests are computed with data mining and machine learning algorithms which enable this special kind of data analysis. Examples of social, cultural, or health issues using this web-based platform are also presented.

Support for this study was provided through Assigned Release Time for Research (ART) program, Office of the Provost, and by the College of the Arts and Communication Center for Creative Activity & Research Summer 2019 Grant.

Session: Interdisciplinary Posters

Emmanuel Onaivi, Faculty, Biology

Identification of CB2R Neuro-Immune Crosstalk in Alcohol Preference

Neuroinflammation is emerging as a key component in the effects of CB2Rs expressed in neurons and glial cells that are key regulators of immune response. We generated Cx3Cr1-Cnr2 cKO mice with selective deletion of CB2Rs in microglia. We utilized multidisciplinary approaches to determine the neuro-immuno-modulatory effects of CB2Rs in the DAT-Cnr2, Cx3Cr1-Cnr2 cKO and wild type (WT) C57BL/6J mice. Here we report 1). That CB2Rs are involved in the tetrad assay induced by cannabinoids in the WT and the CB2R cKO mice contrary to the long-standing notion that the characteristic tetrad tests were induced mainly by CB1R agonism. 2). In the hippocampus, there was enhanced IBA1 immunoreactivity in both CB2R cKO mice, and microglia activation was detected by CD11b in the dentate gyrus in WT, DAT-Cnr2 and Cx3cr1-Cnr2 mice with clear morphological difference in the Cx3cr1-Cnr2 mice after stress. 3). Neuroinflammation signaling pathways of PI3K/AKT/mTOR, MAP/ERK and NF- κ B were differentially affected by the cell-type specific deletion of CB2R in cerebral cortexes of CB2R cKO and WT mice. 4). Alcohol preference ratio was significantly higher in Cx3cr1-Cnr2 cKO and WT, than DAT-Cnr2 cKO mice that consumed less alcohol. WT mice and Cx3cr1-Cnr2, but not DAT-Cnr2 cKO mice showed robust conditioning to alcohol in the CPP paradigm. We concluded that microglia and DA neuron specific deletion of CB2Rs reveals a neuro-immune basis for the behavioral alterations, and modulation of alcohol behavioral effects of type 2 cannabinoid receptors.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: Interdisciplinary Presentations

Lynne Orr, Adjunct Faculty, College of Education, Dean's Office

Brianne Reyes, Master's Student, English

Defining and Promoting Student Wellbeing

This presentation includes a summary of how American and international colleges define students' wellbeing. American colleges began using wellbeing within the practice of positive psychology. Now, colleges in the United states use the term health and wellness, which encompasses a multidimensional meaning including psychological, social, physical, and spiritual wellbeing. The remainder of the presentation discusses varying wellness programs conducted on today's American college campuses.

Session: Interdisciplinary Presentations

Lynne Orr, Professional Staff, College of Education, Dean's Office

Brianna Reyes, Master's Student, English

Incorporating Innovative Instructional Strategies to Enhance Learner Engagement in Online College Course

The effectiveness of innovative college teaching in online learning can be measured by learner engagement. Online learners in a master's degree program in education have expressed and shown an increase in learner engagement through the facilitation of innovative practices in addition to a synchronized weekly Skype session to apply innovative practices. These practices have proven to increase learner engagement and decrease completion time for doctoral study candidates. The two

online programs will describe how the inclusion of innovation in online instructional strategies increases learner engagement. Solutions and recommendations for effective instructional strategies will also be reviewed in relation to facilitating learner engagement.

Session: College of Education

Karen Phillips, Faculty, Nursing

Lisa DePue, Faculty, Nursing

The Influence of Postpartum Fatigue on Exclusive Breastfeeding Rates at Discharge

Exclusive breastfeeding is recommended as the optimal method of infant feeding, yet exclusive breastfeeding rates remain lower than recommended. One explanation may be the impact of postpartum fatigue. Postpartum fatigue can be overwhelming, making daily tasks more difficult including infant feeding, leading to earlier discontinuation of breastfeeding (Runquist, 2007; Troy, 2003). Although postpartum fatigue has been reported as a common occurrence, less is known about its effect on exclusive breastfeeding rates. The purpose of this study was to determine the effect of postpartum fatigue on exclusive breastfeeding rates at discharge. Using the Visual Analog Scale for Fatigue (VAS-F) (Lee, Hicks, & Nino-Murcia, 1990), this quantitative quasi experimental study examined the effect of postpartum fatigue on exclusive breastfeeding rates of 157 women at discharge. One hundred percent of mothers in the study reported varying levels of fatigue postpartum, with 47% breastfeeding exclusively. Low levels of fatigue were reported by 49 mothers (31.2%), 92 mothers (58.6%) reported moderate levels of fatigue, and 16 mothers (10.2%) reported high levels of fatigue. Of the 49 mothers who reported low levels of fatigue, 21 (13.4%) reported exclusive breastfeeding and of the 92 mothers who reported moderate levels of fatigue, 49 (31.2%) reported exclusive breastfeeding. In the high fatigue category, 4 (2.5%) mothers of the 16 mothers breastfed exclusively. These findings suggest that postpartum fatigue impacted exclusive breastfeeding rates at discharge. Future recommendations should include strategies for coping with postpartum fatigue along with strategies that improve exclusive breastfeeding rates. This study was supported by Assigned Release Time for Research (ART).

Session: Interdisciplinary Posters

Jamie Reulbach, Undergraduate Student, Biology

David Freestone, Faculty, Psychology

DIY Cognitive Neuroscience

In this joint talk, we describe a fully automated 24/7 data collection testing environment for cognitive neuroscience experiments. These experiments can be time consuming to run because it takes weeks or months to collect data from single animals. Likewise, these experiments often use food pellets to reward animal performance, but the pellets can be expensive, and the delivery system can be difficult to clean, leading to errors. Typical experiments require researcher intervention and handling of mice, both increasing the load on experimenters and the chances of errors. The typical testing equipment costs thousands of dollars each, and a lab may have a dozen of them. In the first part of this talk, we describe our development of a cheap DIY mouse operant chamber that uses water as a reward. The testing environment takes only a few hours to build and costs around \$150. By programming the tasks with Arduino, we were able to create a timing procedure that transitions from a Fixed Interval (FI) task to a differential reinforcement of a low rate of behavior (DRL) task. In the second part of this talk, we describe how this project leads to student engagement, increases lab cohesion, and teaches hands-on and directly transferable technology-driven skills.

Session: Technology Across the Curriculum

Kayden Rivera, Undergraduate Student, Environmental Science

Alexandria Beilman, Undergraduate Student, Post-Baccalaurate Pre-Professional Program

Faculty Sponsor: Professor Michael Griffiths

The Extinction of Otodus megalodon: Insights from Nitrogen, Calcium, and Clumped Isotope Ratios.

The largest and most iconic extinct shark to have ever lived is *Otodus megalodon*. A general consensus indicates that the ability to thermoregulate in *O. megalodon* acted as a key driver for the evolution of gigantism that impacted its ecological role and success in surviving environmental changes. The cause for the extinction of *O. megalodon* is unknown, however it is hypothesized that the ability to thermoregulate played a role. In this study, shark teeth were drilled into a fine powder, acid washed, and sent to UCLA to be tested using Clumped Isotope Thermometry (CIT). CIT is a technique which relies on the thermodynamic preference of C13 and O18 to form bonds in the carbonate mineral lattice. These values can be used to determine body temperature of the animal while it was living and ultimately ability to thermoregulate.

Session: Interdisciplinary Posters

Andrew Rogolino, Undergraduate Student, Communication

Jin-A Choi, Faculty, Communication

Faculty Sponsor: Professor Jin-A Choi

The Impact of Influencers on Consumers' Purchase Intentions

Social media has become a mainstream outlet to connect with friends, family, celebrities, and influencers. An influencer is a user on social media who has established credibility in a specific industry. A social media influencer has more access audience and can persuade others by virtue of their authenticity and reach. Social media has paved the way to be the main source for advertisements as opposed to traditional mediums, such as television, billboards, and magazines. Influencers want to relate to their audience to produce engagement. Influencers advertise brands and products to their audience, mainly their followers, but how many consumers actually purchase items based on influencer advertisements? The researchers conducted a survey in order to examine whether consumers intend to buy products based on influencer advertisement posts on social media. This survey was conducted to see how much of an impact influencers have on consumers' purchasing behavior and why. Participant's purchase intentions and relatability of influencers to consumers were measured and compared between influencer advertising and traditional advertising. The findings of the study indicate that while purchase intentions of consumers may not be influenced by influencer advertisements on social media, consumers are more drawn to influencer advertisements as opposed to traditional advertisements due to its relatable nature.

Session: Interdisciplinary Posters

Julie Rosenthal, Faculty, Elementary and Early Childhood Education

Elizabeth Brown, Faculty, Elementary and Early Childhood Education

Alison Dobrick, Faculty, Elementary and Early Childhood Education

Laura Fattal, Faculty, Elementary and Early Childhood Education

Courtney Moran, Undergraduate Student, Elementary and Early Childhood Education

Serena Pearson, Undergraduate Student, Elementary and Early Childhood Education

Anissa Conyers, Paterson School 12 Teacher

Creating a "Third Space" to Advance Teacher Candidates' Practice and Children's Learning

There are many research-based instructional methods through which students can be taught. Some research has shown that teaching through constructivist methods allows for higher levels of understanding in students, since students explore concepts through hands-on activities, allowing them to make personally meaningful connections. Constructivist teaching methods also develop learners' self-efficacy by allowing them to be agents of their own growth, and students are more engaged in their

learning experience when constructivist methods are used (Hendry, Frommer, & Walker, 1999). While constructivist methods are often touted as optimal in university based educator preparation programs, frequently teacher candidates observe more didactic methods in their field based clinical practice internships. In the current project, teacher candidates in the University partner hosted a “fair” on campus in which they used constructivist methods to guide 3rd grade students from the Professional Development School in their learning about the historical importance of their home city of Paterson, NJ. TCs plan and implement a series of hands on learning activities, and children from the PDS are brought to campus to work with TCs. Participating Education faculty and two teacher candidates involved in the project will co-present this poster which was previously presented at a national conference by the teacher candidates.

Support for this study was provided Paterson School 12 and the William Paterson Professional Development Schools Network.

Session: College of Education

Trayer Run-Kowzun, Master's Student, Kinesiology

Toni LaSala, Faculty, Kinesiology

Michael Figueroa, Faculty, Kinesiology

Faculty Sponsor: Professor Toni LaSala

The Effect of a 7-week Progressive Yoga Intervention on Hamstrings Flexibility

Purpose: To determine the effect of a 7-week progressive yoga intervention on hamstrings flexibility using a digital goniometer. It was hypothesized that hamstring flexibility will increase in this healthy young adult population.

Methods: Thirty-one college-aged males and females ($M = 21 \pm 2.62$) years participated in 110 minutes twice per week for a 7-week progressive yoga intervention. Pre and post-test measurements were taken to determine hamstring flexibility on the right and left leg using a digital goniometer.

Results: A paired samples t-test indicated a significant difference in the pre and post-test on hamstring flexibility. Results for the right leg pre-test ($M = 78.29 \pm 7.98$) and post-test ($M = 82.99 \pm 6.92$), ($p < .001$) and from the left leg pre-test ($M = 77.41 \pm 8.64$) and post-test ($M = 81.67 \pm 7.74$), ($p < .001$) indicated an improvement after the intervention. Average range of motion increase was 4 degrees in both legs. There were no statistically significant differences between group means for right and left pre and post measurements by gender as determined by one-way ANOVA.

Conclusion: Hamstring flexibility can be improved with a progressive 7-week Hatha yoga session and may be used as a modality to improve flexibility and muscular function in activities of daily living as well as athletic performance.

Session: Interdisciplinary Posters

Darlene Russell, Faculty, Secondary and Middle School Education

Mark Stack, Undergraduate Student, Secondary and Middle School Education

Kathryn Hathaway, Undergraduate Student, Secondary and Middle School Education

Jonah Balagtas, Undergraduate Student, Secondary and Middle School Education

Hayley Gazzara, Undergraduate Student, Secondary and Middle School Education

Nikki Sisco, Undergraduate Student, Secondary and Middle School Education

Cassandra Soto, Undergraduate Student, Secondary and Middle School Education

Jacqueline Lovett, Undergraduate Student, Secondary and Middle School Education

Maritza Miele, Undergraduate Student, Secondary and Middle School Education

Justine Webb, Undergraduate Student, Secondary and Middle School Education

From Collaboration to Class Book Publication: How Students Became Authors in an English Methods Course

This presentation focuses on how critical digital writing was used to examine identities and sociocultural consciousness in an English methods class resulting in a collaborative book. Sociocultural consciousness is “profoundly influenced by life experiences, as mediated by a variety of factors, including race, ethnicity, gender, and social class” (Villegas & Lucas, 2007, p. 31). Sociocultural

I. Support for Teaching

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David & Lorraine Cheng Library

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- Center for Teaching and Learning with Technology (CTLT)
- Media Services
- Broadcast Production and Support Services (BPS)

II. Support for Research and Creative Expression

- Assigned Release Time for Research (ART)
- Research and Travel Incentive Program (RTI)
- Student Research & Creative Expression Program (SRCEP)
- Office of Sponsored Programs

III. Academic Development

Academic Development Programs

- Academic Success Center
- First Year Foundations Program
- Gloria S. Williams Advisement Center
- Academic Progress/Early Alert Program
- New Student Experience/First-Year Seminar
- Sophomore and Junior Experience
- Office of Testing
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IV. Support for Student Learning

- Career Development Center
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consciousness building and exploration is a part of culturally relevant instruction, which revolves around students, their cultures, interests, and literacies, and acquired knowledge base (Winn & Johnson, 2011; Haddix & Sealey-Ruiz, 2012; Ladson-Billings, 1995). A sociocultural narrative is a writer's story about the tensions of cultural identities, the experienced challenges and triumphs, the involved players [family, friends, society, etc.], and the conscious resolutions or pathways to resist, persevere or change. In an English methods course in spring 2020, professor and students collaborate to write their own sociocultural narratives on the power of bearing witness for a printed classroom book using an internet publishing platform. This presentation will discuss the collaborative book process and student authors will read excerpts of their published works.

Session: College of Education

Bonnie Smith, Undergraduate Student, Public Health

Faculty Sponsors: Professor Corey Basch and Professor Zoe Meleo Erwin

#celiacdisease: The Use of Instagram in Contending with Chronic Illness

Celiac disease is a serious autoimmune disease that affects a person's ability to digest gluten. Gluten, a protein, found in wheat, rye, and barely, causes an immune response that attacks the small intestine in gluten free people. A person with celiac disease has to adapt to a diet excluding gluten, there is no cure. A person who is gluten free may face problems such as gluten free food items being more expensive, social isolation, and gluten contamination. Since more people are turning to the internet for their health information, this study describes what information there is about celiac disease on Instagram. This study was conducted by analyzing 150 posts on Instagram. Posts were found by searching the hashtag celiac disease on the explore page. All posts and captions were analyzed to see if they fit under three main ideas: personal stories, management of the disease, and support systems. Using Excel descriptive statistics, the percentage of posts and captions with exhibiting characteristics were calculated. The results of this study show that celiac disease has a notable presence on Instagram. Over half the posts were personal stories, while one third of the posts were offering support or management of the disease.

Session: Interdisciplinary Posters

Samantha Smith, Doctoral Student, Psychology

Megan Chesin, Faculty, Psychology

Michele Cascardi, Faculty, Psychology

Testing Whether Belief in a Just World Mediates the Relationship Between Childhood Emotional Abuse and Self-Esteem

Belief in a just world (BJW) may explain the relationship between childhood emotional abuse (EA) and self-esteem (SE) given findings from prior studies showing that BJW is positively associated with SE and EA is negatively associated with BJW and SE. Formal tests of mediation have not previously been conducted. The purpose of this study was to test whether BJW mediated the negative association between EA and SE using survey data from college students. Though EA and BJW were both associated with SE in expected directions, mediation was not supported.

Support for this study was provided through the Student Research and Creative Expression Program (SRCEP).

Session: Interdisciplinary Presentations

David Snyder, Faculty, Chemistry

Exploring the Effects of Tyrosinase on Lipofuscin Formation

Lipofuscin is an, oftentimes fluorescent, pigment, produced by reactions between polyunsaturated fatty acid (PUFA) oxidation products with other biological molecules. Lipofuscin accumulates as cells age and increased lipofuscin formation is associated with diseases including macular degeneration and Parkinson's disease. Since Parkinson's disease, in particular, involves neurons characterized by (neuro) melanin, we investigated the influence of tyrosinase, the enzyme catalyzing the initial reactions

involved in melanin formation, on lipofuscin formation. In a simplified in vitro model of lipofuscin formation, tyrosinase increases the formation of a fluorescent, lipofuscin-like product. Subsequent experiments demonstrate that, under certain conditions, tyrosinase catalyzes a Hantzsch reaction between acetoacetone, propanal and glycine. This suggests that, in addition to catalyzing melanin formation, tyrosinase helps detoxify reactive aldehydes, produced from PUFA oxidation, by catalyzing their condensation with free amino acids, thus preventing their further reaction with other biological molecules.

Support for this study was provided through Assigned Release Time for Research (ART) and the Center for Research, College of Science and Health.

Session: Center for Research, College of Science and Health

Joseph Spagna, Faculty, Biology

Foraging in grass spiders: construction of, and prey-capture on, a dry, flat web

Spiders in the family Agelenidae, informally called "grass spiders," make and use webs in unusual ways. They spin silken threads to form a funnel, then extend a horizontal sheet of silk from that funnel. The spider then hides in the funnel, only coming out to extend and repair the sheet web, or to catch prey that has fallen on the web surface. Over time the spider continually adds silk and the web and may add some additional three-dimensional silk structure. The spider relies on vibrations through the web to sense the prey, and its own speed and deftness at moving on the dry, stretchy silk to catch and envenomate the prey. The goal of this work was to understand how the web is built and how its usage changes over time, using two species of grass spider- "Hololena curta" and "Agelenopsis potteri". Using high-speed video, we recorded prey capture sequences from these spiders. We measured speed, accuracy, and foraging success rates for these spiders in webs of different ages, to test the hypothesis that as the web ages and thickens, it allows better prey capture performance along one or more of these parameters. However, these hypotheses were not supported by the video data. Rather, we observed that very new webs- some only a few hours old- allowed for efficient prey capture almost indistinguishable for webs that had been built and reinforced for multiple weeks.

Support for this study was provided through Assigned Release Time for Research (ART) and the Center for Research, College of Science and Health.

Session: Center for Research, College of Science and Health

Tim Stiroh, Master's Student, Kinesiology

Jordan Cola, Faculty, Kinesiology

Faculty Sponsor: Professor Jordan Cola

Time to Peak Muscle Activation and the Effect of Different Training Intensities

Introduction: This study analyzes neuromuscular adaptations between high and low training intensities and their effect on time to peak muscle activation, vertical jump height, and peak power.

Methods: Twenty recreationally trained men, with at least one year of resistance training, will be recruited from William Paterson University. This research will last six weeks. Week one is familiarization and pre-training measurements followed by four weeks of training and one week of post intervention measures. Participants will be randomly assigned to a high intensity or low intensity group, performing hang high pulls, trap bar deadlifts, goblet squats, and goblet split squats. For the first 3 exercises, the high intensity group will perform 5 sets of 3 repetitions and the low intensity group will perform 5 sets of 4 repetitions, equalizing volume. Both goblet split squats are 3 sets of 8 repetitions. Statistical analysis will be performed using an ANOVA.

Hypothesis: Both groups will improve their time to peak muscle activation and vertical jump height. However, the higher intensity group will show greater changes, and will also increase their peak power compared to the lower intensity group, as shown in degree of motor unit recruitment.

Discussion: Increased motor unit recruitment in the 80% group will yield significant changes in these and peak power. This is due to the size principle of motor unit recruitment seen with heavy loads.

Conclusion: This research will show how the neuromuscular system changes in response to a more practical resistance training program.

Session: Interdisciplinary Posters

Figen Suchanek, Master's Student, Chemistry

Panayiota Antoniou, Master's Student, Chemistry

James F. Varner, Master's Student, Chemistry

Jonathan J. Foley, Faculty, Chemistry

Faculty Sponsor: Professor Jonathan J. Foley

A Model Reaction System: CIS/TRANS Isomerization of Azo-Benzene in Nanosized Optical Cavities

Light is a basic tool for the investigation of molecular properties. The strong interactions between molecules and quantized photons create polaritons which are hybrid light-matter. These polariton states hybridize the energies from both ground and excited electronic states and change the behavior of potential energy surfaces in molecular system. As a result of this, they are useful tool to tune and to control photochemical reactions. Herein, we report a model reaction system of the cis/trans isomerization of azo-benzene in the nanosized optical cavity. The optical cavity is comprised of a large titania nanosphere decorated with small metal nanoparticles where the azo-benzene molecule may be adsorbed. In our simulation, we showed that by changing the frequency of photon/photons inside the cavity, the polaritonic potential energy surfaces can be selectively modified for different nuclear configurations and as a result of this, isomerization reactions can be controlled. In addition, by tuning the light-matter coupling strength, due to non-adiabaticity of the polaritons, one or multiple polariton surfaces through non-adiabatic transitions result in different preference of product.

Session: Interdisciplinary Presentations

Anthony Sudol, Undergraduate Student, History

Faculty Sponsor: Professor Lucia McMahon

Comparison of the US and Australian civilian internment camps during the Second World War

Purpose and Motivation: Within the history based community there are concerns over topics being lost due to time or misrepresentation, as well as lack of conversation about these topics. Such as the environment of the Japanese during the Second World War. Throughout my education experience and that of my peers the teaching of the Japanese Internment was lackluster at best, and solely focused on this being an American phenomenon. The motivation of this paper is to increase the exposure of the public to the topic of civilian internment of the Japanese in multiple countries.

Problem: The issues that lie within this is that some of these instances are popularly taught as a single nation isolated. However we will be not only bringing the existence of internment camps/relocation centers for the Japanese residing within these nations we will also be comparing them to one another. Including the events leading up to them, and the lives within the camps.

Methods: This will be achieved through writings of fell historians, oral histories where applicable, photographs, as well as government documents about said internments.

Results and Conclusion: The results have shown that the existence of civilian internment camps of Japanese are not exclusive to the United States, but other world powers during the Second World War. With these relocation centers having several commonalities, as well as their own unique differences.

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Session: Interdisciplinary Presentations

Anthony Sudol, Undergraduate Student, History

Faculty Sponsor: Professor Lucia McMahon

Memorial and Education of Military Comfort Women an issue of modern Japan from its Imperial Past

Purpose: The purpose of this presentation is to highlight not only the existence of the Military Comfort Women that were forced into sexual slavery by the Imperial Japanese government during the Second World War, but also to highlight the issue as an ongoing struggle for recognition, and acceptance by the Japanese government in modern times

Problem: During the Second World War after the massacre of Nanking, China in late 1937 to early 1938 the Imperial Japanese government instituted the creation of the Military Comfort Women as a means to stave of acts of sexual violence to the local populations. However after the war, and up to this day the discussion about the existence and use of the Military Comfort Women has created controversy not only locally in Japan, but also in issues of foreign affairs.

Methods: Through the use of historian's works, newspapers, oral histories, as well as government correspondences we have highlighted not only the long term struggle of the victims to be recognized by the Japanese government but also the issues surrounding arts created in memory of these women.

Results and Conclusion: Though the issue and knowledge of the existence of the Comfort Women has been growing in popularity among the history community, as well as the general public. However there are still issues that surround the topic. For the Japanese government the issues are causing friction in international and even local affairs.

Session: Interdisciplinary Presentations

Jesus Toxtle, Undergraduate Student, Computer Science

Igor Lyebyedyev, Undergraduate Student, Computer Science

Faculty Sponsor: Professor Kiho Lim

Vulnerability Testing of Contactless NFC Mobile Payments

As more and more retail businesses begin to offer cashless transactions for their customers, the security of the emerging contactless payment systems and contactless payment cards is being put under further scrutiny. There are documented exploits and operating systems pertaining to the vulnerability of this technology, and attempts have been made to patch these flaws and remove the user's ability to acquire the unsecure software from the open web. In our research, we investigated the ability of a potential perpetrator to acquire the vulnerable software, use it to steal a victim's credit card information, and then conduct unauthorized transactions, all without the victim's knowledge. We designed an experiment in which a contactless credit card's details would be skimmed using one device, transmitted to another, which in turn would transmit the details to a payment terminal. We simulated the POS device using a contactless card reader, and a rooted NFC-enabled Android phone acted as the skimming device, with another similar phone being the receiver device. We were able to successfully read a credit card using the phone and an app called NFC Proxy. By skimming the card, we were able to grab credit card

information and emulate it. Our findings indicate that individuals with contactless credit cards can be skimmed with such an application and store that information to be used for unauthorized transactions. A solution to this is by keep their card with RFID wallets that will block the ability to scan these cards. Support for this study was provided by the College of Science and Health through a Graduate Student Research Assistant in Materials Chemistry.

Session: Interdisciplinary Posters

Jesus Toxtle, Undergraduate Student, Computer Science

Faculty Sponsor: Professor Kiho Lim

Analytical Study of Web Application Vulnerabilities

Within a website there are different layers of security that are implemented to stop various cybersecurity attacks such as Command Injection, SQL Injection, and XSS. Another one type of attack widely used is Social Engineering that one can use social engineering skills to trick an individual into giving information willingly via phone/email causing a major security leak. Some Social Engineering attacks that can mask a company's website to an attacker's IP address so they can collect information via a fake login page. These are just some of the attacks that can cause significant damage not only to the website as well as the users browsing on that website. The consequences of such vulnerabilities can lead to stolen credit card information, date of birth, mailing address, and even social security numbers. All these attacks share the idea that an attacker can remotely access information that is supposed to stay encrypted via the server-side. However, a hacker can access such encrypted data by finding various types of exploits including the failure to validate user input and running malicious SQL statements to read sensitive data from a database. These exploits can be exploited with weak security built in or creating backdoors for easy access. There are hundreds of other vulnerabilities that can severely damage the infrastructure of a website which will be explained, further on the poster board. In this poster, we experiment above-mentioned attacks with various levels of security, and we analyze the malicious commands.

Support for this study was provided by the College of Science and Health through a Student Research Assistant.

Session: Interdisciplinary Posters

Leslie Trigoura, Master's Student, Chemistry

Faculty Sponsor: Professor Yalan Xing

Functionalization of C sp³-H Bonds via Copper Catalyzed Electrochemistry

Electrochemistry has made major contributions to organic synthesis through its "green" methodology, higher atom economy, and minimal waste. Organic electrosynthesis utilizes electrical current to drive the activation of organic molecules via the removal or addition of electrons. Due to its selective redox of organic molecules, organic electrosynthesis can perform reaction transformations that have not been generated traditionally through the use of conventional chemical reagents. Electrochemistry is a beneficial asset for chemists providing clean transformations, mild reaction conditions, simple scalability, high functional group tolerance, low energy consumption, and a step away from the use of toxic redox reagents. Through this research, we have developed a strategic electrochemical approach to perform this Csp³-H bond functionalization on C-H bonds adjacent to oxygen and nitrogen, using an undivided cell with graphite electrodes as both anode and cathode. The identification of the optimal conditions are currently under investigation in the laboratory.

Support for this student was provided through Assigned Release Time for Research (ART) and the Student Research and Creative Expression Program (SRCEP).

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Session: Interdisciplinary Posters

James Varner, Master's Student, Chemistry

Faculty Sponsor: Professor Jonathan Foley

Pioneering Materials for Solar Energy Conversion

I will present preliminary results on a new concept for solar energy conversion that harnesses the heat that is universally generated by photovoltaic cells to enhance the efficiency of electricity generation. Perovskite are an emerging class of material that show unique light absorbance with exquisite light matter interactions including strong absorbance in the visible spectrum of light. These properties are extremely desirable in photovoltaic (PV) devices. Perovskite thin-films, also known as 2D perovskites, show greater durability under standard PV operating conditions compared to their 3D counterparts. Unfortunately, the excited charge carriers generated by absorption of visible light suffer high rates of recombination in 2D materials, which wastes energy in the form of a photons and heat. To prevent the recombination of electrons to holes we proposes a multi-layer structure that will utilize a polystyrene thermal emitter layer to emit IR radiation to prevent excitonic recombination. A schematic of such a multilayer structure is illustrated in the figure below. By increasing the amount of IR photons absorbed by the excited charge carriers, the recombination rate will decrease resulting in less waste and a larger energy output. This does not only increase the energy produced from the 2D perovskite PV device but also utilizes a larger part of the solar spectrum.

Figure: schematic for proposed Perovskite PV device. (left) Transparent cathode (E), hole transport layer (F), perovskite layer (G), electron transport layer (H), and reflective anode (I). The top five layers comprise the novel architecture for transducing solar IR radiation, including: short-pass reflective coatings (A and C), polystyrene IR-absorbing layer (B), and thermally insulating vacuum layer (D).

(right) Schematic of IR thermal emission splitting excitons.

Support for this study was provided through the Student Research and Creative Expression Program (SRCEP), the College of Science and Health through a Graduate Student Research Assistant in Materials Chemistry, and the Research Corporation for the Advancement of Science's

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Support for this study was provided through the Student Research and Creative Expression Program (SRCEP), the College of Science and Health through a Graduate Student Research Assistant in Materials Chemistry, and the Research Corporation for the Advancement of Science's
Session: Interdisciplinary Posters

Ronald Verdicchio, EdD, Faculty, Elementary and Early Childhood Education

Finding Your Cultural Opposite: Making Culture Live Through Podcasting

A “sobering” study on teacher diversity suggests that in all states there is a diversity or cultural gap between teachers and their students in the public schools (Brookings, 2017). As schools become more culturally diverse, the cultural difference between student and teacher has become more acute. One way to narrow the gap (besides recruiting a diverse teacher pool) is to include narratives of culturally diverse voices in the delivery of course material. By introducing diverse narratives class discussions have the potential to connect with learners and stimulate discussion and awareness. Podcasting provides an opportunity for teachers and professors to create original course material using diverse voices for student use whether K-12 or higher education. This presentation will include an overview of the potential of podcasting as a teaching medium and a discussion on how to get started. The podcast, Finding Your Cultural Opposite, will be used to demonstrate how podcasting can stimulate student research as an introduction to an undergraduate field research assignment. Attendees will be asked to participate in a short simulation. Podcasts can be accessed at: https://www.mixcloud.com/Rumblings_From_A_Rambler/

Support for this study was provided through the Sabbatical Leave Program.

Session: College of Education

Miryam Wahrman, Faculty, Biology

Catherine Coffaro, Undergraduate Student, Biology

Analysis of Bacteria on Microfiber and Scrubs Using Scanning Electron Microscopy

Textiles can absorb bacteria and become vectors for transmission of nosocomial infections in healthcare settings. In this way scrubs and other hospital uniforms composed of cotton or a polyester-cotton mix can potentially transfer infections from patient to patient. In previous research studies using light microscopy we demonstrated that cotton, scrubs, silk, and polyester retain considerable amounts of bacteria, while microfiber, a synthetic textile with hydrophobic properties, has lower affinity for bacteria than other textiles. In this study we used scanning electron microscopy (SEM) to confirm the unique nature of microfiber. At increased magnification, we observed and quantified bacterial cell counts (*Bacillus subtilis*, and *Staphylococcus epidermidis*) on scrubs and microfiber threads. For this project a

new technique was developed to fix and sputter coat samples of bacteria on microfiber and scrubs (polyester-cotton) threads for use in SEM. This study showed that binding of *B. subtilis* and *S. epidermidis* to scrubs was significantly higher than to microfiber threads. This data supports the recommendation that healthcare workers should use more microfiber for clothing and other fabrics in healthcare settings in order to help reduce hospital-acquired infections. Future studies can adopt the newly developed SEM techniques to observe bacteria-thread interactions. By viewing the physical surface details of the fibers, it may be possible to learn how bacteria differ in their attachment to various textiles. We gratefully acknowledge the support of the WPUNJ ART program.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: Interdisciplinary Posters

Renee Whelan, Faculty, Elementary & Early Childhood Education

Jill Patterson, Adjunct Faculty, Elementary and Early Childhood Education

Leadership Development: A Case Study on How Creating and Sharing Online Resources to Children/Families Influences their Perceived Leadership Competencies

Teacher leaders can impact teaching and learning in schools by helping their peers improve their teaching practices and collaborating with families as they continue to grow in the teaching profession. The Teacher Leader Model Standards (Teacher Leadership Exploratory Consortium, 2008), outline seven key domains of teacher leadership: fostering a collaborative culture supporting educator development and student learning; accessing and using research to improve practice and student learning; promoting professional learning for continuous improvement; facilitating improvements in instruction and student learning; promoting the use of assessments and data for school and district improvement; improving outreach and collaboration with families and community; and advocating for student learning and the profession. All these domains highlight the importance of collaboration with and empowerment of various stakeholders who have an invested interest in supporting student success.

This study examines the extent to which existing course assignments that ask students to create online learning opportunities for children/families provide evidence of students' engagement in teacher leadership competencies. Reflections from a sample of the students were also explored to gain insight into how they are perceiving, interpreting, and, in turn, developing their identity as teacher leaders through these assignments. Preliminary findings may be used for course improvement to design assignments that further support students' development of leadership identities that set the foundation for truly collaborating with and empowering other stakeholders in supporting student success.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: College of Education

Zachary Winkler, Undergraduate Student, Environmental Science

Nicole Szubart, Undergraduate Student, Environmental Science

Brittney Christie, Undergraduate Student, Environmental Science

Troy Perry, Undergraduate Student, Environmental Science

Jennifer Callanan, Faculty, Environmental Science

Michael DaSilva, Professional Staff, Environmental Science

Faculty Sponsor: Professor Jennifer Callanan

The re-examination of Packanack Lake: Effects of Non-point Source Pollution

The natural process of eutrophication is accelerated by excess nutrients from nonpoint source pollutants. With use of inorganic compounds such as copper sulfate (CuSO_4) a process known as oligotrophication can reverse eutrophication by mass killing algal blooms. Eutrophication is accelerated from the runoff of commonly used household goods like fertilizers, pesticides, and rock salts that contain chloride and phosphorus. Runoff containing these compounds can create large algal blooms. It is critical for the health of a lake and the community surrounding it to determine the sources of eutrophication and find effective and safe means of combating it. Looking at Packanack Lake in Wayne,

NJ, a team of students from William Paterson University set out to reexamine a previous study done one year prior. The goal was to determine the amount of nonpoint source pollutants and their levels. The initial study was to determine the lakes current condition and to examine if there were traces of non-point source pollution at designated outfall-pipes. The secondary study looked at weather data, geomorphology and coliform bacteria as well as reexamining the sites from the initial study. Eight inlet pipes were sampled around the lake. A total of 24 water and 24 sediment samples were taken. These samples were tested and analyzed to determine the pH, alkalinity, dissolved oxygen, turbidity, temperature, conductivity, phosphorus, coliform bacteria, and anion presence.

Upon visual examination of the lake, it was apparent that the lake was undergoing an algal bloom. Field results using the YSI 550 and the LaMotte 2020e Turbidity meter confirmed our thoughts on a possible algae bloom. Sites F1 and F2 in particular had eutrophication. This is due to a lack of circulation, pollution, and local waterfowl droppings as they are known to congregate there. With these conditions combined, it provides the perfect conditions for large scale algal blooms. To prevent these findings from repeating, it is recommended that Packanack Lake minimizes fertilizer, pesticide, and rock salt usage as well as install SolarBee or similar water pumps to increase circulation throughout the lake.

Session: Interdisciplinary Posters

HyukJae Henry Yoo, Faculty, Art

SanjoCaster: A Case Study on Modernization of World Traditional Musical Instruments

This talk will focus on an example case study on the application of multidisciplinary research spanning across design and music. Creation of new musical experiences & musical instruments via design are an ongoing personal research category. As part of the ongoing Design+Music research, a new modern version of the traditional Korean instrument gayageum named SanjoCaster has recently been created, with the name based on the famous electric guitar Fender Stratocaster. The new SanjoCaster design seeks to expand the possibilities for breaking new grounds in music. The Stratocaster was integral to the creation of the entire Rock & Roll music genre and its cultures, leaving a timeless legacy in human civilization. The Stratocaster also exemplifies the mantra of the American Industrial Design icon Charles & Ray Eames, "The Best for the Most for the Least," by making available the electric guitar instrument at low-cost via mass-manufacturing production processes. The SanjoCaster aspires to expand on such paradigm, in a cross-cultural and inter-disciplinary manner. The new design offers unique features and significant improvements in musicality, versatility, playability, tuning, amplification, portability, sustainability, and mass-manufacturability, with modern aesthetics & style. Support for this study was received from the Korea Ministry of Culture, Sports and Tourism and the Korea National Treasure Intangible Culture Asset - Residency, Sponsorship and Collaboration program.

Session: College of Arts and Communication

Kyung-Hyan (Angie) Yoo, Faculty, Communication

International Travelers' Social Media Use and Impacts during 2018 PyeongChang Olympics.

The emergence of social media provides a new opportunity to generate and earn media coverage of events. Many recent studies have argued that tourism experience is not simply staged by organizations but co-created with tourists (Prebensen & Foss, 2011) and social media play an integral role in the co-creation process (Neuhofer et al., 2014). However, still, there is little empirical evidence documenting the role and impacts of social media in the event visitors experience. Therefore, this study examined the role of social media communication in the Olympic visitors' perception, experience and decision-making especially focusing on international visitors. An onsite survey was conducted at a number of sites in PyeongChang city during the 2018 PyeongChang Winter Olympic period, Feb. 9-25, 2018. 125 completed surveys were collected and 104 were usable surveys, which formed the actual sample for this study. The results show that the travelers who used the official Olympic social media platform to plan their trip reported more positive image of South Korea ($M=6.24$, $t(101)=2.3$, $p=.022$) and Pyeong Chang ($M=5.84$, $t(101)=2.7$, $p=.008$) as a tourism destination than the travelers who did not use the sites ($M=5.68$ and 5.05 respectively). However, there was no significant difference in their Olympic event experience

and the perceived images of South Korea and PyeongChang as an Olympic host country/city. The implications and limitations are discussed.

Support for this study was provided through a grant from the College of Arts and Communication's Center for Creative Activity & Research Summer Grant Program.

Session: College of Arts and Communication

He Zhang, Faculty, Art

Knotted Carpets from the Taklamakan: A Medium of Ideological and Aesthetic Exchange on the Silk Road, 700 BCE-700 CE

This research paper provides with a comprehensive study of the knotted carpets discovered in Taklamakan desert in Xinjiang, northwest of China. As the crossroad on the ancient Silk Road, this Chinese Central Asian region has played important roles of cultural exchanges with materials that carries artistic motifs from Greco-Roman world, Persia, India, and central China. The knotted carpet is one of the medium that demonstrates such exchange, interaction, and integration. The carpets happen to be also the earliest samples of the kind in the world. In addition to a historical survey on the carpets, the author gives a stylistic analysis to pin point out the origins of the motifs and ideas in the carpet designs, and discusses their significance.

Support for this study was provided through Assigned Release Time for Research (ART).

Session: College of Arts and Communication

Business Policy and Practice Research Forum

Cotsakos College of Business

Abstracts are presented in alphabetical order base on the primary author's last name.

Rahi Abouk

Effect of Cannabis Policies on Cannabis Use Among Youths and Young Adults

Several states have legalized cannabis for medical and recreational purposes in the United States. This project investigates the effect of exposure to these policies during high school years on consumption of cannabis during young adulthood. Consumption of cannabis for young people is risky as their brain has not fully developed. Therefore studying the effect of cannabis policies which potentially increase the accessibility and use of these products among them is very essential. This project informs policy makers about the set of strategies they have to adopt to improve population health, especially cannabis consumption.

Jorge Arevalo

Academia in the Non-Profit Sector: A Comparative Analysis of Education Programs and Stakeholder Needs

There is little understanding as to whether nonprofit management educational programs offerings generate strategic changes or impacts to nonprofit organizations, specifically the fundraising skills of executive teams. In this article, we analyze the educational attributes that would underlie the nonprofit's ability to generate competitive advantage from the adoption of a sales driven training program. We develop hypotheses on training and educational proficiency and test whether skills and knowledge in sales determine fundraising capability. Results from an interview of 33 nonprofit organizations in the New York/New Jersey area of the US strongly support our arguments.

Avinash Arya

Lease Accounting: New Standard

Financial Accounting Standards Board (FASB) has recently issued a new leasing standard (ASU 842) that requires almost all leases to be reported on a balance sheet as a liability with a corresponding right-to-use asset. However, compared to the old rules, the new leasing standard is quite complex and is over 300 pages in length. This research project focuses on what is new in the standard. It explains the provisions of the new standard and provides examples of its application to help financial statement preparers, users, and their independent accountants to effectively implement the new standard. This is especially important for industries such as health care, airlines, and real estate that are traditionally lease intensive. It can also be used as a pedagogical resource by accounting academics to teach new leasing rules as part of an accounting curriculum or CPA review course.

Bahar Ashnai and Saeed Shekari

The Nonprofit Selling and Fundraising Challenges and Opportunities: An Exploratory Study of Nonprofit Organizations

This project explores the fundraising challenges and opportunities in the nonprofit sector. Prior studies have primarily looked at improving nonprofit organizations' management and have not covered a wide range of sales and marketing techniques useful for nonprofit organizations' fundraising. Our model-free analysis of the correlation between the number of fundraising staff and the amount of funds raised shows that the addition of one fundraising staff brings in approximately \$800K in funds raised for the nonprofit organization on average. This clearly shows how inefficient organizational resource

allocations can limit the ability of the nonprofit organization to raise funds effectively. Furthermore, in our qualitative study, we find evidence that interpersonal communications in the nonprofit sector can benefit from conventional sales training to improve different aspects of the fundraising process. Such improvement is achieved by incorporating critical sales skill sets such as cold-calling, objection handling, and closing.

Valeriya Avdeev and Sia Nassiripour

Real Estate and Tax Credits: How Can Tax Credits be used to Make Affordable Housing More Feasible?

This paper focuses on specific tax credits that fall under general business credits that can be used to allow real estate development ventures to invest in housing developments, such as renewal communities tax credit, increased limited expensing election, empowerment zone employment credit, tax-exempt bond financing, new markets tax credit, low-income housing credit, and disabled access credit. Due to denials of zoning variances by the local town boards, the share of housing specifically designated for the low-income residents has decreased since 1990. As such, the available tax credits that allow renewal communities to attract real estate development ventures could be a feasible solution to the shortage of low-income housing that we currently have throughout the country.

Yoel Beniluz

The Conflict of Interests between Stockholders and Debtholders: Exploring a Reverse Wealth Transfer at Sears

The conflict of interests between stockholders and debtholders is a central element in the academic finance and economic literature as well as in the real world of business practice. The common argument is that stockholders can exploit wealth from debt holders by directing and motivating the CEO of the company to take on risky projects that generate high returns – assets substitution. The purpose of this study is to shed light on situations in which the transfer of wealth is going in the opposite way: from stockholders to debt holders.

Giuliana Campanelli Andreopoulos & Alexandros Panayides

Why Has the US Failed to Recognize the Strategic Importance of Apprenticeships to its Economy and Society?

The research project studied the current state of apprenticeships in the US, identified the reasons why this program has been lacking and their consequences, and provided the necessary recommendations. A preliminary investigation showed that financial, managerial, educational, and political factors highlight the limited availability of apprenticeships that characterize today's US system. The failure to anticipate the demand emerging from advanced manufacturing and the strategic sectors drove the US into a labor crisis.

Elizabeth Ekmekjian and Martin Gritsch

An Evaluation of Tax Amnesty Programs with Special Emphasis on the Effects of the 2018/19 New Jersey Tax Amnesty Program on the City of Paterson

This paper focuses on the most recent New Jersey amnesty program in 2018/19. We especially focus on the impact that the program had on the City of Paterson. In recent years, approximately three quarters of U.S. states have offered some kind of a tax amnesty program. The State of New Jersey has offered tax amnesty programs several times in recent years. Participating taxpayers who paid all of their outstanding taxes and half the interest were no longer responsible for the remaining half of the interest. Overall, the estimated amount that was collected by the State via this amnesty program was \$282 million. We used that figure as a basis for the estimated impact of the tax amnesty on the City of Paterson. In addition to being New Jersey's third-largest city, Paterson is different from most other parts of New Jersey because the unemployment rate is substantially higher than the statewide average. Paterson also has a large immigrant community and a large percentage of minorities.

Myles Garvey and Jim Samuel

The Social Supply Chain: Leveraging Social Media Analytics for Supply Chain Strategy

This research aims to develop the technical and conceptual models that are necessary to mine and analyze information from social media platforms for the purpose of designing strategy and network structure. This involves designing a framework of textual and social network analytics specific to supply chain concerns. One of the key dimensions of textual data analysis is the use of dictionaries for sentiment analysis and sentiment classification – such methods are being successfully employed in multiple domains including capitals markets and equity trading. Existing dictionaries have weaknesses and we intend to comment on and initiate ideation for simultaneous use of multiple dictionaries in conjunction with our own proprietary domain relevant weights and custom dictionary keywords. The models and frameworks developed here can be leveraged for the identification and prediction of supply chain risk and risk propagation, consumer product feedback and recalls, product design and supply chain information sharing, as well as real-time inventory, production, and logistics strategies at the operational level of the firm.

Rajiv Kashyap, Jim Samuel., Peter Caiazzo. CFA

Transparency versus Performance in Financial Markets: The Role of CSR Communications

This project investigates the empirical boundary conditions (moderators) under which firms choose to disclose versus withhold information from investors based upon their strategic emphasis. We found significant differences in terms of voluntary information disclosures between firms that consistently delivered positive earnings surprises versus those that delivered negative earnings surprises. We investigated this effect in a more granular fashion by separately examining differences in environmental, social, and governance disclosures between the two pools of firms. We found that in essence, the differences remained consistent – and positive earnings firms were significantly more likely to disclose information about their ESH activities than their counterparts. From a fund manager's perspective, this finding should raise an immediate red flag – firms that are likely to underperform are likely to be less transparent than overperformers.

Robert Laud, Andrey Kretinin, and Stephen C. Betts

Exploring the Antecedents of Corporate Social Entrepreneurship

This project is dedicated to providing a generalizable empirical contribution to the area of social entrepreneurship by focusing on the antecedents of corporate social entrepreneurship of US-based companies. In particular, the project is focusing on the factors which may encourage US corporations to engage in social entrepreneurship and on the specific characteristics of US corporations which are associated with higher degrees of social entrepreneurship. Understanding these factors is crucial for promoting prosperity and supporting the healthy development of human societies around the globe.

John Malindretos and Lawrence Verzani

The Existence and Hedging of Transactions Foreign Exchange Exposure

Foreign exchange exposure is a measure of a firm's profitability, net cash flow, and market value changing as a result of a change in exchange rates. An important duty of the financial manager is to measure the effect of foreign exchange exposure and manage it in such a way as to maximize the profitability, net cash flow, and market value of the firm. When foreign exchange rates change, the effects on a firm can be measured in several ways. This study examines the transactions kind of foreign exchange exposure and the hedging of that exposure by US multinational enterprises. It highlights the diverse ways in which transactions exposure arises and focuses on the reasonableness of hedging this kind of exposure. In addition it will explore how practitioners cover this type of exposure.

Ali Mir and Raza Mir

A Framework for Understanding the Disproportionate Impact of Student Debt on African Americans in the US

In this paper, we focus on the differential impact of student debt along the axis of race in the US in order to understand its contours and to propose a theoretical framework to subject it to analytical scrutiny. Our intent in this paper is to draw attention to this specific demand and to add the weight of data to support this claim. In this process, we hope to encourage teachers and scholars at American business schools to recognize the conditions under which many of our students labor and struggle, and for policy makers to engage with this problem seriously. In our paper, we offer a brief discussion of “racial capitalism” and the crucial role of slavery in the construction of the capitalist system. We then detail the predatory nature of student debt in the U.S. and its debilitating effects on marginalized sections of society. The data shows that after a brief detour, the U.S. has continued to move toward ‘two societies – separate and unequal’. Nowhere is this trend more evident than in the field of education, and student debt has played an enormous role in this process.

Priya Nagaraj

Deep integration for the success of trade agreements

Trade agreements in the last couple of decades address not just reducing tariff rates but also try to harmonize regulations. This project focuses on the impact of the degree of trade harmonization on the amount of trade utilization between countries. It investigates how the presence of regulations affects the amount of tariff reduction utilized between countries that are signatories to a trade agreement. The results of this analysis are valuable information for trade negotiations, especially in the current climate. If regulations impede the utilization of preferential agreements, trade negotiations should be focused on harmonizing regulations for maximum benefit.

Solomon Nyaanga and Andrew Nyaboga

City of Paterson Economic Development Needs

The purposes of this report are to determine the degree of the city’s awareness of the factors that are contributing to its state of decay economically. This report also examines methods by which the city can overcome its state of decay and better the prospects for robust and sustainable economic prosperity, and to formulate long-standing strategic approaches to create ownership in the city. On the basis of the study supported by statistics from various sources, it is concluded that the City of Paterson has a plethora of serious challenges that impede its ability to develop and grow economically. The challenges are even more profound today than they were at the time of its founding. We recommend developing private sector partnership programs by packaging attractive tax breaks to lure and incentivize potential businesses and other investors long term. And, to promote more robust Urban Enterprise Zones with emphasis on cost effectiveness and efficiency. In addition, there is a need to focus on investing in manufacturing, healthcare, retail and transportation infrastructure for better employment prospects for the City’s residents

Siamack Shojai

Costs and Benefits of Outsourcing Online MBA Programs: A Case Study

This research project focused on the following question: should a public university offer its online programs using in-house e-learning resources or outsource it? The project also focused on the impacts of offering online programs as an add-on or as an integrated part of the institutions’ mission, and the potential impacts of outsourcing of business programs on specialized business accreditations such as AACSB. In addition, it explores the economics and financial considerations of in-house e-learning services and outsourcing. The preliminary observations indicate that outsourcing needs to be considered as an integrated component of the mission of an institution of higher education. Also, the

reputation of an institution plays a significant role in offering online programs with high academic quality and integrity. Less reputable institutions that succumb to watering down admissions and other academic standards suffer strategically and damage their existing reputation.

Mahmoud M. Watad

Comparing Innovation Performance and Economic Development of Turkey and Egypt

This research project examines the innovation performance of two countries, Egypt and Turkey, which are at different development stages. It uses both the Global Innovation Index and the World Intellectual Property Organization databases. The objective is to determine which factors or combination of factors (i.e., policy areas), have led to their current level of innovation and consequently, economic development. A premise of the study is that innovation and economic development are positively correlated. Thus, the results of this research are valuable to low and middle performing economies to help them understand the link between policies and both innovation and development and adjust their strategic policy-making efforts. Additionally, the results provide crucial information to foreign aid agencies and International Institutions so that they have a more solid ground on how and where to allocate their resources.

Lianzan Xu and Francis Cai

HP's Restructuring Charges of the Past Two Decades

This study examines HP's reported restructuring charges of the past two decades. HP incurs and recognizes restructuring charges from 2000 to 2018 annually, often in the hundreds of millions, even billions, of dollars. Evidence strongly suggests that HP has turned one-time, non-recurring restructuring charges into a handy tool for earnings management. There are signs of "big bath" and "cookie jar" everywhere. In such circumstances, financial analysts and investors cannot just brush aside "restructuring charges" as one-time nonrecurring, and thus of low or minimal information content. Financial analysts and investors have an enhanced urgency to gather and scrutinize whatever information they can obtain and evaluate the true economic reality of corporate "restructuring charges". The major source remains with the management discussion and analysis (MD&A) and the income statement and its accompanying notes. The reality is, not all restructuring charges are the same. Adjusting and recasting the reported earnings is rightfully called for to better understand a company's true performance and fair market value.

Ge Zhang, Steven Digirolamo and Peter Caiazzo

Paterson's Business Incubating Analysis

Despite being the third most populous city in New Jersey, Paterson's median household income is approximately \$36,000- well below the state of New Jersey's- with nearly 30% of residents' income below the poverty level. Paterson needs immediate economic growth and renewal. A business incubator (BI) serves as an interface between a business idea and the real market. Business incubators provide services such as shared office-space, business training/mentoring assistance, links to capital, IP and social networks. We have found some factors are important to the successfulness of Paterson' local business. For example, credit score and white collar percentage all contributed positively to the success of business sales volume. Lack of business resources/education due to small size needs to be improved in the future. From our analysis, the government needs to implement BI according to the features of each zip code. We suggest different types of BI for individual zip codes. Setting up several smaller sized BI will help Paterson's local business owners have better training in capital investment, technology skills, legal education, and more.

Debt Financing and Learning Curve Investment

Learning-curve technologies play an important role in a number of industries. With a learning-curve technology, the unit operating cost falls as the cumulative output increases. The reduction in cost implies an increase in profits. This has a significant effect on the valuation and competitive position of the company.

This paper examines a firm's optimal investment (timing and size) and financing decisions with learning-curve technology. The main findings are as follows. Debt financing will in general moderate the effect of the learning curve on the investment decision; indeed, with high debt levels the investment decision is virtually independent of the rate of learning. With optimal debt financing, however, the investment decision is generally similar to the unlevered case; the exception is for very slow learning, when investment size can be significantly smaller than for the unlevered firm. The optimal leverage ratio is an increasing function of the speed of learning. However, if there are borrowing constraints, optimal leverage ratio is initially increasing and subsequently decreasing in speed of learning.



BRING EXPLORATIONS ART TO LIFE

EXPERIENCE THE MAGIC OF CONTEMPORARY GRAPHIC DESIGN

ARTIVIVE

1. Install the Artvive App on your smartphone.
2. Open the App and point your phone at the poster.
3. View the poster through your smartphone.

The EXPLORATIONS 2020 poster that is the cover of this booklet and which was printed and posted around campus was created as a project for each of the undergraduate students in the Fall 2019 Typography Form and Application (ARTS 2510), taught by Professor Matt Finn. We have included all of the ideas submitted for consideration for 2020. All the submissions used the Artvive app to create an image that becomes a video, like the cover of this booklet.

The Research, Scholarship and Creative Expression Council would like to thank Professor Finn and his students for their outstanding contribution to Explorations 2020.

The posters included on this and following pages are presented with each artist's statement regarding their creation.

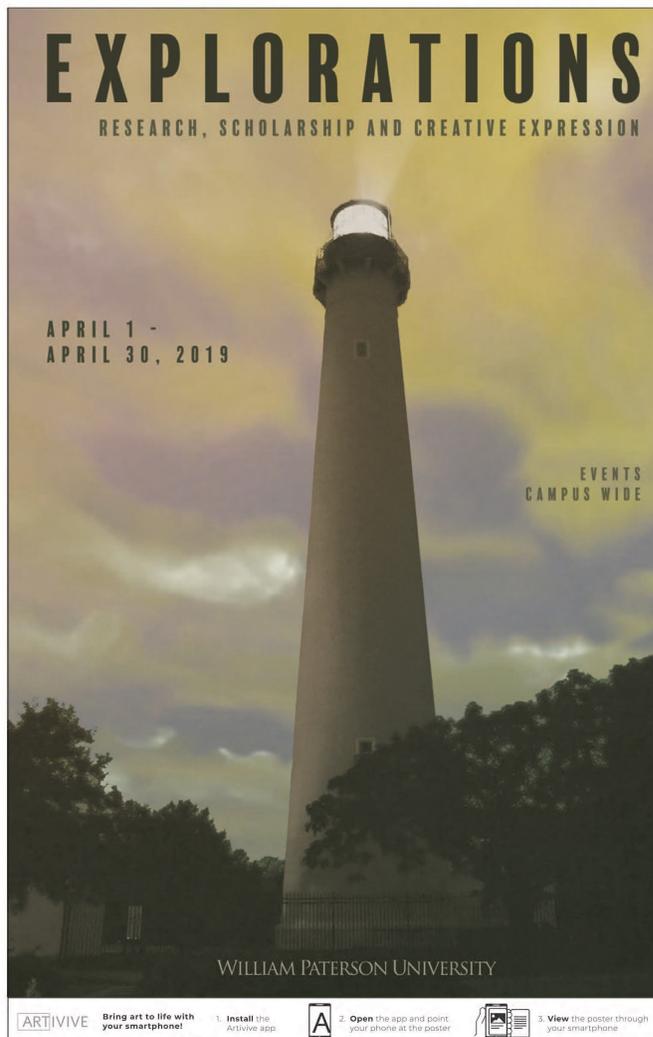


Waterfall

Liam Garcia

When I thought explorations I thought of a trip or a trek you take. A journey that you take. When I went to Puerto Rico this summer I went to a place called “El Yunque National Forest”, which is the only tropical rain forest protected by the United States National Forest System and the United States Forest Service. When I took the trip up the mountain to visit the waterfalls, some of the security had blocked the roads to the main part of the forest and informed us that there was severe damage that can take months even years because of Hurricane Maria in 2017. Maria left a lot of the Puerto Ricans without power for months and still have not fully recovered from it. My take on this is being Puerto Rican born and raised this was my part of my home and realizing I may not be able to visit this area for a long time makes me upset.

“Blink and you miss it” is a saying I used to show that thing can disappear in a blink of an eye. Whether it be naturally or by man. The final cut shows a forest lit on fire. This is what I think of when saying blink or you'll miss it. Once the fire engulfs the forest its gone forever.

**Lighthouse**

Josephine Latimer

What is exploration? It is welcoming the unknown, venturing into the murky depths, reaching out in the hopes of discovery. What better way to illustrate that than having the focal image of the poster be a lighthouse, a helping hand in those dark, trying times at sea. Lighthouses symbolize navigation through life, a guiding force to help you on whatever endeavor you may find yourself taking.

-For the poster I wanted to convey that ripeness in the air before a summer storm, which I did through my color palette and effects. In doing so I think you're able to get the feeling of ideas brimming forth, waiting to be unleashed, not unlike a bloated cloud heavy with rainwater. The lightning that rolls through is indicative of the crashing bursts of ideas that come from the minds of those who are doing important research and creative work.



Space Ship

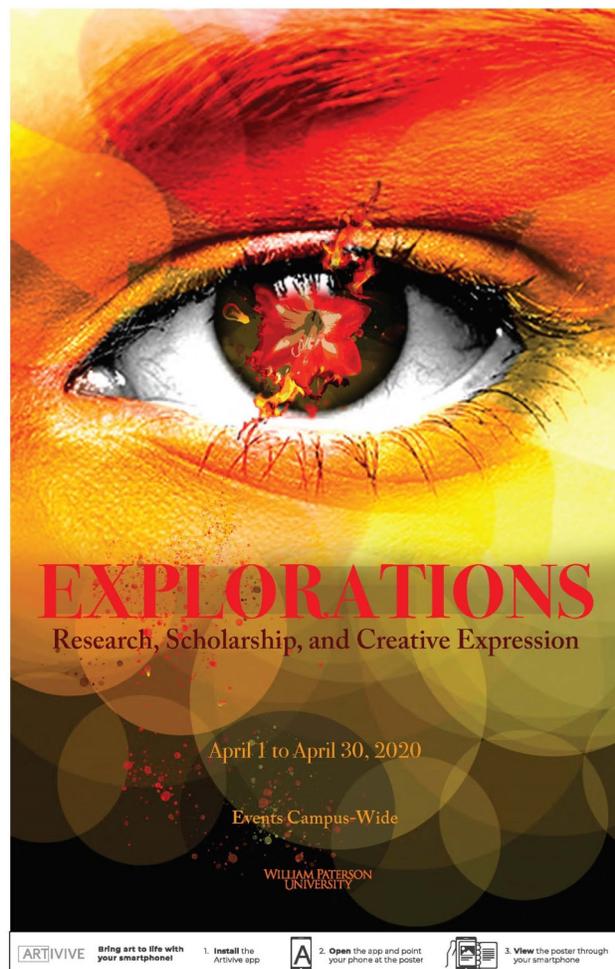
Cindy Montalvo

As you can see I decided my theme for the exploration poster to be about space why you may ask? The reason being when I think about science, I think about space. When I think about space, I think about the impossible made possible. So, I have chosen a futuristic space shuttle to be surrounded by stars. An allegory that for mankind to move forward in life like the space shuttle we must be surrounded by people who shine like the stars in the middle of the deepest and darkest night. A reminder to us all "The light shines in the darkness, and the darkness has not overcome it."

Flames/Eye

Nathan Nunez

For my interpretation of exploration is about the courage and passion within each individual to go beyond their limits and discover more. The flames are a symbol for passion, creative force, and transformative power, which also works with the flower that is an Amaryllis that symbolizes strength and self-confidence. The eye is to symbolize the person, which leads to the inner thoughts and determination of a person. The goal was to incorporate all these aspects to represent students of any field of concentration exploring their passions.



Clouds

Tobi Edwards

For my interpretation of exploration is about the courage and passion within each individual to go beyond their limits and discover more. The flames are a symbol for passion, creative force, and transformative power, which also works with the flower that is an Amaryllis that symbolizes strength and self-confidence. The eye is to symbolize the person, which leads to the inner thoughts and determination of a person. The goal was to incorporate all these aspects to represent students of any field of concentration exploring their passions.



Watercolors

Monushra Miah

My poster was inspired by watercolor. I wanted to capture the uncertainty of watercolor and the way color flows with water. I'd like to think that exploring is similar in the sense that we as humans go on a journey of trying to find meanings to enlightenment with a goal in mind only to be surprised by the discovery of something totally different, innovated and possibly life changing.

Sparkler

Harvey Uzquiano

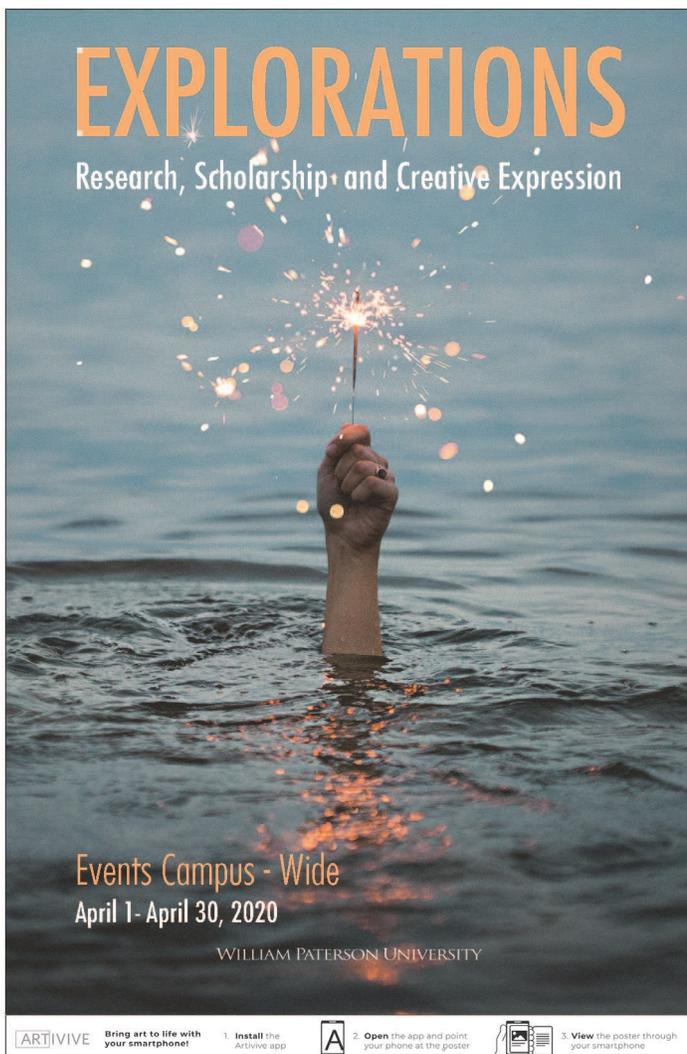
At the start of our careers we as students are compelled to reuse the tools that were once given to us to make use in the real world. As with struggles faced in life we are challenged intellectually as well physically with a demand and supply that can oftentimes leave us exhausted. But due to the nature of adapting towards these difficulties we fuel ourselves with these same struggles to push ourselves even further to meet goals, deadlines, and satisfaction. The idea of “explorations” touches upon all departments and what better way to creatively express positive symbolism. Each piece of graphic found within this poster can carry different meanings which is an expression within itself.

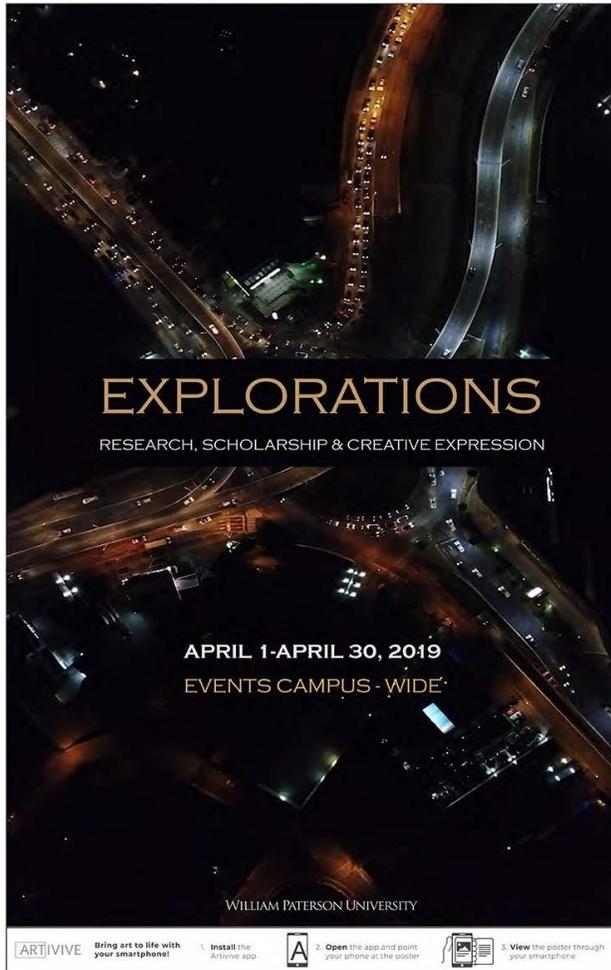
The way I chose to view it is as follows:

The ocean can symbolize challenges: anything can happen while submerged in water, it takes a great deal of strength and energy to swim to the top. The idea of diving into water can connect with challenging yourself to find your potential.

The hand above water symbolizes strength.

The sparkler symbolizes leadership, enlightenment, truth: to have the hand holding the sparkler can signify that he/she that holds the light above water can either be leading the way towards success, as much as you being the light that shines brightest.





Ariel City/Highways

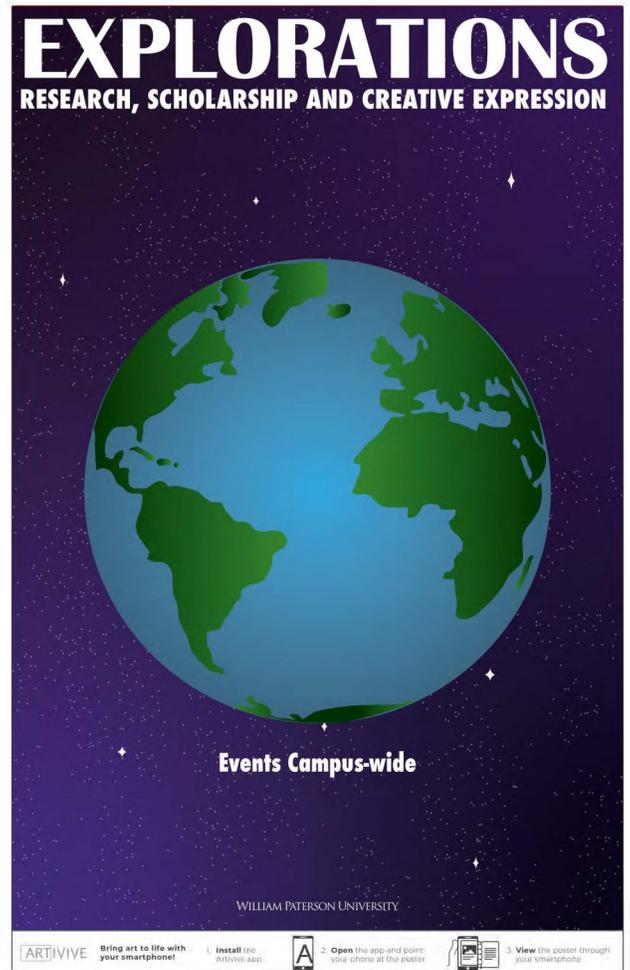
Carlos Lingat

The idea behind my poster was explorations. When I heard those words I immediately thought traveling, getting into a car, a plane, and some form of transportation and just going. Going out into the world and exploring and experiencing everything out there. That is why I picked this busy highway scene. It's what the roads would look like when someone is headed into JFK airport. You have someone in one car traveling to maybe Spain. In the next car someone going to other complete side of the world like Asia. All these people next to each other about to go out there and explore the world.

Globe

Aleksi Preteroti

What was stuck in my head throughout the whole process of making the poster was that the whole event was for everyone. Everyone has something to say and to show and so I chose a picture of the world that shows a part of every continent. I didn't want the world to be one sided. The animation along with the poster is also simple and to the point.





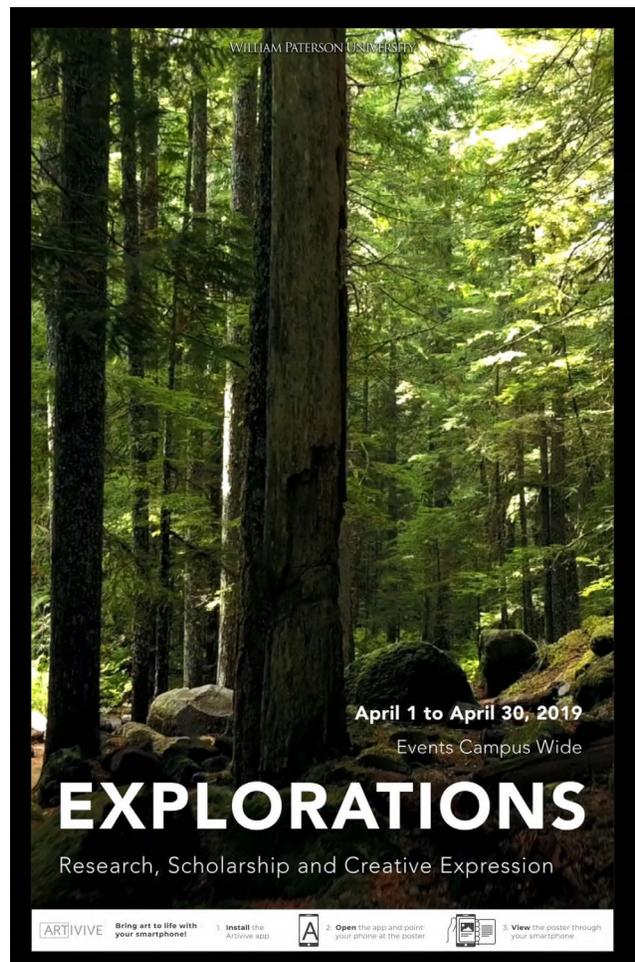
Waves

Briana Flemmings

For my explorations poster I chose an image of waves to represent explorations. When I think of exploring, I think of traveling. When traveling you are bound to see an ocean, lake, river or some body of water. The main purpose of exploring is to discover new things. I chose this particular image/video because at first glance one might not make it out what it is but once you interact with it using the app you discover something new. I also like the mystery of perspective the poster suggests. The view could be up from above like in an airplane or low like looking down into the ocean.

Northern Forrest

Josh Smith





Office of Sponsored Programs

Promoting Ideas Into Knowledge

The Office of Sponsored Programs (OSP) provides assistance and support to William Paterson University faculty and staff who seek external grant or contract support for research, teaching, service, public programs, creative endeavors, conferences and other types of projects from federal, state, and other government sponsors, grantmaking public charities, professional associations, and some commercial sponsors. The OSP concentrates its activities in three areas:

- Proposal development, submission and finalization of contracts (Pre-Award)
- Award set-up, management, and reporting (Post-Award)
- Fulfillment of contract terms and regulatory requirements (Compliance)



Benefits of External Support

- ◆ Increases impact of research activities that create new knowledge
- ◆ Encourages artistic activity that creates and shares culture
- ◆ Promotes teacher professional development that enables excellent educational practices
- ◆ Recognizes the contributions of the recipient's research, creative or service activity to their colleagues and the community
- ◆ Supports business development that strengthens the economy
- ◆ Inspires students to reach their goals
- ◆ Engages project leaders in personal and professional growth

Mission and Services

The mission of the Office of Sponsored Programs is to provide value-added assistance to encourage, develop, and support the research, scholarship, education, creative and community service aspirations of William Paterson University's faculty, staff, and students.

The Office of Sponsored Programs accomplishes its mission by:

- Collaborating in the development of projects and leading the submission of proposals to Federal, State, and other government sponsors, grantmaking public charities, professional associations, and some commercial sponsors.
- Securing and initiating awards, supporting stewardship and compliance requirements, and assisting in closing-out individual awards.
- Developing, monitoring and implementing policies to ensure compliance with sponsor expectations and related regulatory requirements.

If you are interested in seeking external funding to support a new or ongoing project or activity, contact the OSP:

973-720-2852

Kate Boschert

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