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PATERSON  
UNIVERSITY



**WPU RESEARCH & SCHOLARSHIP DAY**  
**CREATING & SHARING OF NEW KNOWLEDGE AND CULTURE**  
**THURSDAY, APRIL 2, 2015 • UNIVERSITY COMMONS**

Office of Sponsored Programs  
Faculty Senate Research and Scholarship Council



# University Research and Scholarship Day 2015

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Tom Uhlein, Art Department

for creating this year's poster

The Office of Sponsored Programs:

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# University Research and Scholarship Day 2015

## Wednesday, April 1 and Thursday, April 2

### Schedule of Activities and Presentation Abstracts

#### Schedule at a Glance

##### Wednesday, April 1

- 2:00 to 3:15            Poster Session  
                                Ballroom B
- 3:30 to 5:00            David and Lorraine Cheng New Authors Recognition Reception  
                                Office of Sponsored Programs Recognition of Awards Recipients  
                                University Commons: Ballroom C

##### Thursday, April 2

- 11:00 to 12:15        Individual and Group Presentations  
                                University Commons: 168A, 168B, Ballrooms A, B and C
- 12:30 to 1:45        Poster Presentations  
                                University Commons: Hallway
- Technology Across the Curriculum  
                                University Commons: Ballroom A
- College of Education  
                                University Commons: 168A
- College of Science and Health / Autism Spectrum Interest Group  
                                University Commons: Ballroom C
- Cotsakos College of Business  
                                University Commons: Ballroom B
- College of Arts and Communication  
                                University Commons: 168B
- College of Humanities and Social Sciences  
                                Atrium: Faculty Lounge, Room 126  
                                (Lunch provided, 12:00)
- 2:00 to 3:30            Individual and Group Presentations  
                                University Commons: 168A, 168B, Ballrooms A, B and C

# Full Schedule

Wednesday, April 1

**Poster Session: UC Ballroom B**

**2:00 to 3:15**

**Transplantation of Islet of Langerhans Cells in STZ-induced Diabetic Mice to Reverse Hyperglycemia: a Physiological and Histological Study**

Alec DeGraaf and Neal Joshi, Noor Eldabach, Undergraduate Biology students  
Faculty Sponsor: Prof. Jeung Woon Lee, Biology

**Genetic Structure of Native Populations of American Beachgrass (*Ammophila breviligulata* Fern.) Along the New Jersey Coast**

Alison D. Caceres, Undergraduate Biology student  
Faculty Sponsor: Prof. David Slaymaker, Biology

**Reconstructing Seawater Sr/Ca Through the Late Phanerozoic from Fossil Shark Teeth**

Bryan Gonzalez, Environmental Science  
Faculty Sponsor: Prof. Michael Griffiths, Environmental Science

**Flipped v. Traditional: A Look at the Flipped Classroom in FYS Library Instruction**

Cara Berg, Library

**The Role of Adrenal Corticosterone on Mediating the Inflammatory Pain Response of BTBR T+ tf/J Mice: The Animal Model for Autism Spectrum Disorder**

Erin Connor and Rebecca Atencio, Undergraduate Biology students, Robert Benno and Jeung Woon Lee, Biology, and Norman Schanz, Biology  
Faculty Sponsor: Prof. Jeung Woon Lee, Biology

**The Effect of Implementing a Discovery Service on Subscribed Library Resources**

Kurt W. Wagner, Richard Kearney and Mohamed Hassan, David and Lorraine Cheng Library

**Computer-User Artists and the DIY Trend**

Leslie Nobler, Art

**The Effects of Gender and Body Language on Perceived Competence**

Keith Cruz and Lisa D'Argenio, Undergraduate Psychology students  
Faculty Sponsor: Prof. Natalie Obrecht, Psychology

**Cephalopod Diversity in the Lower Devonian Schoharie Formation: A Unique Opportunity For Reassessment of Diversity From Glacial Erratics**

Marty Becker, Environmental Science, and Ralph Scimeca, Undergraduate Environmental Science Student

**Mastery-approach Goals Predict Student Expectations and Achievement in Mathematics**

Michelle Ginart, Undergraduate Psychology student  
Faculty Sponsor: Prof. Natalie Obrecht, Psychology

**Reconstructing the Timing of the Laurentide Ice Sheet Retreat in Northern NJ from a Lake Sediment Core**

Seth J. Getch and Timothy Greendyk, Undergraduate Environmental Science students  
Faculty Sponsor: Prof. Michael Griffiths, Environmental Science

**In Search of Mr. Smiley: Is an Indirect Cue Enough?**

Shannon Itjen, Nicole Caltabellotta, Tony Shenderovich and Diana Russo, Undergraduate Psychology students, and Amy E. Learmonth, Psychology  
Faculty Sponsor: Prof. Amy Learmonth, Psychology

**Gamification of Education: Improving Degree Audit Systems Through the Integration of Game Based Elements**

Thomas Agrusti, Bethan Shipway, Claudia Ramirez, Timothy Kim and Tyler Grady, Undergraduate Psychology students, Erick Veras, Undergraduate Psychology and Business student, and Andres Salazar, Psychology and Mathematics Graduate Student  
Faculty Sponsor: Prof. Thomas Heinzen, Psychology

**Medicating Patients for Pain: How well do we meet their needs?**

Toni Tortorella Genova, Doctoral Nursing student, and Brenda Marshall, Doctor of Nursing Practice Coordinator  
Faculty Sponsor: Prof. Brenda Marshall, Nursing

**A Study of the Relationship Between Teaching and Burnout**

Crystal Rivera, Sociology  
Faculty Sponsor: Prof. Deniz Yucel, Sociology

**Waiting for the World to Change: Civic Engagement in a Diverse College Campus**

Janaina Breve, Sociology  
Faculty Sponsor: Prof. Deniz Yucel, Sociology

**New Authors Reception, David and Lorraine Cheng Library  
and  
Recognition of Recent Award Recipients, Office of Sponsored  
Programs**

**Ballroom C**

**3:30**

**Thursday, April 2**

**Morning Sessions, 11:00 to 12:15**

**Individual and Group Presentations**

**UC 168 A**

**Mathematics and Computer Science**

**A Mathematical Approach to Understanding the Role of Unidirectional Voltage Dependent Electrical Coupling in a Neuronal Network**

Christina Mouser, Mathematics

**The Extension of the Unified Process**

Cyril S. Ku, Computer Science

**Cellular Automata and Mobile Wireless Sensor Networks**

Salimur Choudhury, Computer Science

**UC Ballroom A**

**Education**

**Enhancing Teacher Learning From Guided Video Analysis of Literacy Instruction: An Interdisciplinary and Collaborative Approach**

Carrie Eunyoung Hong, Educational Leadership and Professional Studies, and Irene Van Riper, Special Education and Counseling

**Engaging in a School Garden: Benefits for Children and Teacher Candidates**

Julie Rosenthal and Anissa Conyers, Elementary and Early Childhood Education

**Another Level in Our PDS Partnerships: Bringing Families and Candidates Together**

Julie Rosenthal, Elizabeth Brown, Anissa Conyers and Nicole Dynega, Elementary and Early Childhood Education

**Teachers' Evolving Understanding of Their Students' Mathematical Ideas During and After Classroom Problem Solving**

Lisa Warner, Elementary and Early Childhood Education

**UC Ballroom B**

**Science and Health**

**Dzuds, Droughts, and Livestock Mortality During Unprecedented Warming (931-2005 C.E.) in Mongolia**

Nicole Davi, Environmental Science, Mukund Palat Rao, Graduate Student, Lamont-Doherty Earth Observatory of Columbia University, Rosanne D'Arrigo, Associate Director, Division of Biology and Paleo-environment, Lamont-Doherty Earth Observatory of Columbia University, Cari Leland, Graduate Student, Lamont-Doherty Earth Observatory of Columbia University

**Current Attitudes and Practices among Pregnant Women toward Influenza Immunization**

Sharon Puchalski, Nursing

**Cellular Bioenergetics Analysis Through Mitochondrial Potential**

Eliana Antoniou, Mathematics

**UC Ballroom C                      College of Science and Health Center for Research**

**Understanding Toxin Biosynthesis in the Florida Red Tide Dinoflagellate, *Karenia brevis***

Emily A. Monroe, Biology

**Attention Control in Visual, Auditory, and Dual Modality Conditions: Effects on Language Processing for Children With and Without Language Disorders.**

Kristen Victorino, Communication Disorders & Sciences

**Reconstructing Deglacial and Holocene Climate Variability in Southeast Asia Using Speleothems and Isotope-enabled Model Simulations**

Michael Griffiths, Environmental Science

**Optimal Trading Trajectories for Algorithmic Trading**

Velantina Vega-Veglio, Mathematics

**Neurophysiological Indices of Auditory Processing in Children with Autism Spectrum Disorders and in Older Bilinguals**

Yan Yu and Betty Kollia, Communication Disorders and Sciences

# Common Hour Programs

## Poster and Sponsored Sessions, 12:30 to 2:00

### Posters

### UC Hallway

#### **Transition Metal Catalyzed Functionalization of Terminal Alkynes**

Bryant Catano, Undergraduate Chemistry student  
Faculty Sponsor: Prof. Yalan Xing, Chemistry

#### **The Association of Social Anxiety to Hostile Intent and Social Threat: Does Threat and Hostility Decrease with Cognitive-Behavioral Treatment?**

Danielle Hayes, Taylor Landy, Jennifer Poquette, Matthew Cromley, Ryan Norlander, Emily Stricker, Marina Oganosova, Undergraduate Psychology students, Carrie Masia, Psychology, Chelsea Lynch, Child and Adolescent Psychiatry, New York University, and Julie Ryan, Psychology, Fairleigh Dickinson University  
Faculty Sponsor: Prof. Carrie Masia, Psychology

#### **Whole-continent Molecular Phylogenetics of North American Agelenidae**

Derrick Dorph, Undergraduate Biology student and Joseph Spagna, Biology  
Faculty Sponsor: Prof. Joseph Spagna, Biology

#### **A Dendro-Archeological Study of Historic Structures from Rockland County, NY**

Evan Gerry and Rose Oelkers, Undergraduate Environmental Science students, Nicole Davi, Environment Science, Michael Dasilva and Chuck Stead, Environmental Science  
Faculty Sponsor: Prof. Nicole Davi, Environmental Science

#### **Effects of Transition to Practice Programs on New Nurses' Confidence and RN Role Transition**

Jacquelyn Svercauski, Nursing

#### **Clinical Improvement of Social Anxiety: Do Adolescents, Parents and Independent Evaluators Agree?**

Marina Oganosova, Ryan Nordlander, Emily Stricker, Danielle Hayes, Jennifer Poquette, Matthew Cromley, and Taylor Landy, Undergraduate Psychology students, and Chelsea Lynch, Child and Adolescent Psychiatry at NYU  
Faculty Sponsor: Prof. Carrie Masia, Psychology

#### **Multicore Programming**

Michael Farley and John-Michael Leemans, Undergraduate Computer Science students  
Faculty Sponsor: Prof. Bogong Su, Computer Science

#### **Effects of Antimicrobials on Bacterial Growth on Textiles and Latex**

Jay Shah, Undergraduate Biology student, and Miryam Wahrman, Biology,  
Faculty Sponsor: Prof. Miryam Wahrman, Biology

#### **Glove Changing Habits in Mobile Food Vendors in New York City**

Myladys Marte and Zerlina MacDonald, Undergraduate Public Health students, and Corey H. Basch, Public Health  
Faculty Sponsor: Prof. Corey H. Basch, Public Health



**Aggression in the Media and School Motivation Predict Aggression in Real Life.**

Nichole Vanderhoof, Undergraduate Psychology student, and Natalie A. Obrecht, Psychology  
Faculty Sponsor: Prof. Natalie Obrecht, Psychology

**Physical Weathering of Chlorite and Smectite As A Result Of Post-Fire Soil Conditions**

Nicole Kern and Danielle Nichols, Undergraduate Environmental Science students  
Faculty Sponsor: Prof. Jennifer Callanan, Environmental Science

**YouTube Videos Related to Skin Cancer: A Missed Opportunity for Cancer Prevention and Control**

Rachel Reeves, Undergraduate Public Health student, and Corey Basch, Public Health  
Faculty Sponsor: Prof. Corey Basch, Public Health

**Type A Personality Predicts High Workload and Stress, But Less Procrastination**

Samantha DiMeglio, Undergraduate Psychology student, and Natalie Obrecht, Psychology,  
Faculty Sponsor: Prof. Natalie Obrecht, Psychology

**Personality and College Major Selection Within the Sciences**

Samantha DiMeglio, Nicole Manzetti and Ashely Mondragon, Undergraduate Psychology  
students, Undergraduate Student, and Christian Holle, Psychology  
Faculty Sponsor: Prof. Christian Holle, Psychology

**Which Cat Said Meow? Binding and Associative Memory in Four-Year-Old Children**

Torri Jaime, Nicole Caltabellotta and Shannon Itjen, Undergraduate Psychology students, and  
Amy Learmonth, Psychology,  
Faculty Sponsor: Prof. Amy Learmonth, Psychology

**Community Level Prevenionists and their Attitudes toward and Ability to Work with Data**

William Kernan, Public Health, Jaclyn Keelin and Courtney Scheibner, Undergraduate Public  
Health students

**Food Insecurity among College Students: An Exploratory Study**

William Kernan, Public Health, and Steven Malone, Undergraduate Public Health student

**Project Medicine Drop: Working with Pharmacists to Reduce the Availability of Unused and Expired Prescription Medication in Passaic County**

William Kernan, Public Health, Jillian Mohn and Courtney Payoczkowski, Undergraduate Public  
Health students

**PhotoVoice: Attitudes towards Substance Abuse among Young Adults Aged 18-30**

William Kernan, Public Health, Phoebe DeSantis, Public Health, and Vanesa Apaza, Youth  
Prevention Specialist, United for Prevention in Passaic County

**Characteristics of YouTube Videos Related to Mammography**

Zerlina MacDonald, Undergraduate Public Health student, and Corey H. Basch, Public Health,  
Faculty Sponsor: Prof. Corey H. Basch, Public Health

**Adapting, Developing and Testing an Instrument: For Evaluation of Psychometric Properties of the Political Self-Advocacy Instrument (PSAI-N).**

Hetal Desai, Doctoral Nursing student, Brenda Marshall, Nursing, Michael Principe, Political  
Science  
Faculty Sponsor: Prof. Brenda Marshall, Nursing

### **Student-Led Development of Earth Science Curriculum for Paterson Schools**

Randall Sanders, Undergraduate Environmental Science student, and Nicole Davi and Michael Griffiths, Environmental Science

Faculty Sponsor: Prof. Nicole Davi, Environmental Science

## **College of Education**

**UC 168A**

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### **Unlearning Ineffective Literacy Methods: Examining Teacher Candidates' Prior Literacy Experiences**

Elizabeth Brown and Julie Rosenthal, Elementary and Early Childhood Education

## **College of Arts and Communication**

**UC 168B**

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### **A Comparative Study of Hong Kong and Taiwan's Tourism Marketing Communication**

Casey Lum, Communication

### **"So What?": Finding Meaning in the Changes (from Musician/Teacher to Graduate Student/Researcher)**

Carol Frierson-Campbell, Music

### **San Giovanni D'Asso Series of Paintings and Drawings**

Lily Prince, Art

## **College of Humanities and Social Sciences**

**Atrium 126**

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### **HSS Senior Research Panel**

Kara Rabbitt, Dean, College of Humanities and Social Sciences, Philip Cioffari, English, Bruce Williams, Languages and Cultures, John Livingston, History, and Gabe Wang, Sociology

## **Technology Across the Curriculum Committee**

**UC Ballroom A**

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Deniz Yucel, Sociology, Moderator

### **Increasing Engagement in the Classroom Through Interactive Technologies**

Bela Florenthal, Marketing and Management

### **Gamification and Teaching: Can it Inform my Classroom Practices?**

David A. Fuentes and Elizabeth Brown, Elementary & Early Childhood Education

**Use of Technology and Student Engagement in the Classroom**

Ellen Pozzi, Educational Leadership and Professional Studies, and Michelle Hinkle, Special Education and Professional Counseling

**Cotsakos College of Business  
UC Ballroom B**

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**Exchanges on the Economic, Social, Educational, Environmental and Global Terrorism Shock Waves  
Confronting Business**

Rajiv Kashyap, Steven Betts, Chen-Ho (Mike) Chao, and Jorge Arevalo, Marketing & Management, Sam Basu and Priya Nagaraj, Economics, Finance and Global Business, and Murugappa Krishnan, Accounting and Law

**Autism Spectrum Interest Group  
UC Ballroom C**

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**Prevalence of Autism Spectrum Disorder in Children Conceived With and Without Assistive  
Reproductive Technology & its Relation to Paternal Age**

Betty Kollia and Nicole Magaldi, Communication Disorders and Sciences, and Margaret Shakibai, Marymount Manhattan College

**Imitation and ASD: Is There a Video Deficit?**

Amy E. Learmonth, Psychology

**A Diet Enriched in Omega 3 Fatty Acid Alleviates Autistic-Like Behaviors Resulting from in-Utero  
Exposure to the Viral Mimic Poly I:C in Mice**

Robert Benno, Biology

**Endocannabinoid System Alterations in an Animal Model of Autism Spectrum Disorders**

Emmanuel S. Onaivi, Susan Sgro, Norman Schanz, Eugene Dennis, Larissa Nkouami Pamen, Claire M. Leonard, Kevin Penkoski, Monika Chung, Ndeah Terry, Liu Qing-Rong and Jasmine Wood, Biology, Georgianna G. Gould, Joao Carlos Escosteguy-Neto, Jair Guilherme Santos-Junior, Laboratory of Neurobiology, Federal University of Sao Paulo, Balapal S. Basavarajappa, NKI, Columbia University, NY

**A New Vision of Graduate Programs in Autism Spectrum Disorders: Promising Practices**

Irene Van Riper and Manina Urgolo-Huckvale, Special Education and Professional Counseling

## Afternoon Programs

### Individual and Group Presentations, 2:00 to 3:15

#### **UC 168 A**

#### **Research, Civic Engagement**

##### **Comparative Revolutions: New Directions in Research and Teaching**

Lucia McMahon, Jonathan Bone, Susan Dinan, and Neici Zeller, History

##### **UCC: Exploring Civic Engagement**

Lynne Orr, University Core Curriculum, Maggie Williams, Art and UCC Director, and David Weisberg, Music and Co-chair UCC Council

#### **UC 168 B**

#### **Social Sciences**

##### **Why Do People Fall Out of Love? A Comprehensive Study of Both Current Successful and Failed Former Romantic Relationships**

Brian Capriola, Undergraduate Communication student  
Faculty Sponsor: Prof. Soo-Kwang (Klive) Oh, Communication

##### **The Moderating Role of Gender Ideology: Exploring the Effects of Marital Communication and Interaction on Relationship Satisfaction**

Deniz Yucel, Sociology

##### **Guiding Parents and Students: The Major/Career Decision Process**

Lynne Orr, Dean's Office, College of Education, and Deborah Sheffield, College of Humanities and Social Sciences

##### **Sleepy Affairs or Partisan Slugfests? District Court Campaign Rhetoric in a Post-White Environment**

Ryan Rebe, Political Science

#### **UC Ballroom A**

#### **Health and Mathematics**

##### **Cultivating and Refining Clinical Knowledge and Practice: Relating the Boyer Model of Scholarship to the DNP Graduate**

Daria Napierkowski, Cheryl Hollema and Brenda Marshall, Nursing

##### **The Effects of Bilingualism on Executive Functions**

Eman Al-Jayeh, Undergraduate Communication Disorders student  
Faculty Sponsor: Prof. Natalie Obrecht, Psychology

##### **An Assessment of the Perceived Level of Preparedness among Faith-based Health Educators**

Naa-Solo Tettey, Public Health

## **UC Ballroom B**

## **Business, Research & Scholarship Council**

### **A Cross-Cultural Comparison of Business Complaint Management Expectations**

Bahar Ashnai, Professional Sales

### **A Simple Measure Of Liquidity, With Estimates From India's National Stock Exchange**

Murugappa Krishnan, Accounting and Law

### **The 2014 Survey of Needs for Research, Scholarship and Creative Expression at William Paterson University**

Jorge Arevalo, Marketing and Management, and members of the Research and Scholarship Council

## **UC Ballroom C**

## **College of Science and Health Center for Research**

### **Assessing Genotypic Diversity in *Ammophila breviligulata* (American Beachgrass) in New Jersey's Coastal Dune Systems**

David Slaymaker, Biology

### **Transplantation of Islet of Langerhans Cells in STZ-Induced Diabetic Mice to Reverse Hyperglycemia: A Physiological and Histological Study**

Jeung Woon Lee, Biology, Neal Joshi, Noor Eldabach, and Alec DeGraaf, Undergraduate Biology students

### **Use of Improved Modeling of the 18S Gene to Resolve Early Divergence Patterns in Spiders (Arachnida: Araneae)**

Joseph C. Spagna, Biology, and Vinny B. Faso, Biology , MS'14

# Abstracts<sup>1</sup>

**Thomas Agrusti, Bethan Shipway, Claudia Ramirez, Timothy Kim and Tyler Grady, Undergraduate Psychology students, Erick Veras, Undergraduate Psychology and Business student, and Andres Salazar, Psychology and Mathematics Graduate Student**

Faculty Sponsor: Prof. Thomas Heinzen, Psychology

## *Gamification of Education: Improving Degree Audit Systems Through the Integration of Game Based Elements*

Game based elements, such as agency, positive reinforcement, and constant feedback, have been shown to increase student performance. Empirical research has shown greater motivation, accessibility, aesthetic appeal, and comprehension for programs that incorporate game based elements into their design. Our research examined student perceptions of various degree audit systems with varying levels of game based element integration. Our evidence demonstrated how students rated the degree audit with the most prevalent game based elements above the other systems in multiple areas.

**Eman Al-Jayeh, Undergraduate Communication Disorders student**

Faculty Sponsor: Prof. Natalie Obrecht, Psychology

## *The Effects of Bilingualism on Executive Functions*

Previous research shows that bilingual children are developmentally sound, even advanced in many cognitive aspects (Kovacs & Mehler, 2009; Poulin-Dubois et al., 2010). Bilinguals have traditionally performed very well on measures of inhibitory control, a type of executive function (Bialystok, et al., 2005). However, no study, to date, has examined how the age of second language acquisition could affect the degree of enhanced inhibitory function. Young bilinguals are often classified into two categories: sequential and simultaneous bilinguals (Sebastian-Galles et al., 2005). Sequential, or early, bilinguals acquire their second language at around age 5, while simultaneous bilinguals learn both languages simultaneously from infancy (Sebastian-Galles et al., 2005). In our study, we tested whether sequential vs. simultaneous bilinguals differ on an inhibitory control task. This allowed us to explore whether the age of second language acquisition may be an important variable in bilingualism research.

In this experiment, participants, ages 5-7, were selected from a school, based on their linguistic background. Students parents completed a revised version of the Language and Social Background Questionnaire (Bialystok, 2013) in order to classify the participants as simultaneous bilinguals or sequential bilinguals. All subjects then participated in the Dimensional Change Card Sort tasks (DCCS; Zelazo, 2006), which is a measure of inhibitory function in children. Participants were required to complete a set of tasks while navigating conflicting stimuli. In the standard version, the children sorted cards based on their color and then switched to sort them based on shape. The available data thus far is in the predicted direction, suggesting that simultaneous bilinguals demonstrated a higher degree of inhibitory control than sequential bilinguals (simultaneous  $M=4.4$  cards correctly sorted; sequential  $M=3.17$ ;  $N=16$ ). Data collection is still underway. These results suggest that the age of second language acquisition may affect the degree of cognitive benefit.

**Eliana Antoniou, Mathematics**

## *Cellular Bioenergetics Analysis Through Mitochondrial Potential*

Cellular dynamics and energy levels are closely linked. The mitochondrial electrochemical potential ( $\Delta\Psi$ ) represents an approximation of the bioenergetics of a cell. In a large cell population,  $\Delta\Psi$  exhibits heterogeneity and is influenced by the environment. This research project proposes to develop a

mathematical model that will capture the cell population pattern of  $\Delta\Psi$  at various time points pre and post exposure to an apoptotic agent. The proposed model ultimately is intended as a prediction tool for drug interference with cellular bioenergetics utilizing  $\Delta\Psi$  and flow cytometry.

This project was supported by the Center for Research, College of Science and Health.

**Jorge Arevalo, Marketing and Management, and members of the Research and Scholarship Council**

*The 2014 Survey of Faculty Needs for Research, Scholarship and Creative Expression at William Paterson University*

This research regarding faculty needs for research, scholarship and creative expression was undertaken by the Research and Scholarship Council in the belief that these are essential to the intellectual vitality of the University and to the professional development of faculty. The goal was to gather information that will allow the Faculty Senate to assess the effectiveness of existing programs that support these activities and to create for the University administration recommendations that will contribute to the successful implementation of the University's Strategic Plan. This presentation will highlight key findings and related recommendations.

**Bahar Ashnai, Professional Sales**

*A Cross-Cultural Comparison of Business Complaint Management Expectations*

This study explores the complaint management expectations of 72 British and 74 German organizational buyers using automated online means-end laddering and a Hierarchical Value Map presentation. It conceptualizes the links between expected complaint resolution attributes by the buyer (i.e. means) and the buyer's value perceptions (i.e. ends). Unlike previous research, we highlight similarities and differences in the drivers behind and attributes of complaint management expectations across two countries (Germany and the UK). Even in countries appearing to be similar economically and culturally, we find differences in the desired attributes; for example, British buyers emphasize softer complaint resolution attributes compared to Germans. Our study is the first to present a model of complaint management expectations incorporating the role of culture, and provides managerial directions on standardization and adaption of complaint resolution attributes. Furthermore, it evaluates justice dimensions (especially interactional justice) and their impact on perceptions of complaint management.

**Marty Becker, Environmental Science, and Ralph Scimeca, Undergraduate Environmental Science Student**

*Cephalopod Diversity in the Lower Devonian Schoharie Formation: A Unique Opportunity For Reassessment of Diversity From Glacial Erratics*

Large numbers (>100) of glacial erratics belonging to the Rickard Hill Facies of the Saugerties Mbr. of the Schoharie Fm. (Lower Devonian, Tristates Group) occur scattered across High Mountain, Passaic County, New Jersey. These erratics are most similar to lithologies exposed ~150km north in the Helderberg region of NY. The Rickard Hill Facies erratics contain an assemblage of exceptionally well-preserved cephalopods, dominated by orthoconic nautilioids, exposed by a complex sequence of physical and chemical weathering during glacial erosion, transportation and deposition. Phragmocones and body chambers display preferred orientations on bedding surfaces and contain casts and molds of numerous invertebrates including trilobites, crinoids, brachiopods and corals. Original taphonomic conditions indicate that the High Mountain cephalopods represent a post-mortem assemblage transported by wave and current activity prior to final burial and fossilization. In initial description of the cephalopod fauna of the Schoharie Fm. in the Helderberg region, James Hall identified >65 species from the ~2m thick unit. Our examination of >85 specimens from the High Mountain erratics suggest a

total of 12-15 species present. The unique state of preservation of the High Mountain orthoconic nautiliods provides an opportunity to reassess earlier taxonomic assignments as well as reconstruct additional elements of the complex surficial geology of the New Jersey Piedmont and High Mountain.

This research was supported by Assigned Release Time for Research (ART).

### **Robert Benno, Biology**

#### *A Diet Enriched in Omega 3 Fatty Acid Alleviates Autistic-Like Behaviors Resulting from in-Utero Exposure to the Viral Mimic Poly I:C in Mice*

In this study we investigated how diet may influence the response of C57BL/6J mice to prenatal infection. We hypothesized that a diet enriched in DHA (omega- 3 fatty acid) will prevent the expression of autistic like behaviors previously shown to be produced by in utero exposure to the viral mimic Poly I:C. In addition, we sought to determine if the effects of DHA in this model are correlated with a change in immune mediated responses. The results we obtained in these experiments support our hypothesis that mice put on a high DHA diet when exposed in utero to Poly I:C would not exhibit these autistic-like symptoms and suggests that the mechanism of action may be through a neuroinflammatory process.

Although it is highly speculative to believe that the drastic rise in autism may be due to dietary changes, it is interesting to note that the rise in autism seems to parallel the change in our food sources resulting in a increased ratio of omega-6 / omega -3 in our diets. The potential interaction between the lack of protection provided by a low omega-3 diet and exposure to poly I:C or other agents which can produce neuroinflammation, suggests a much more extensive consideration of our environment as a causative agent in the explosive increase in the number of reported cases of autism spectrum disorders.

This research was supported by Assigned Release Time for Research (ART).

### **Cara Berg, Library**

#### *Flipped v. Traditional: A Look at the Flipped Classroom in FYS Library Instruction*

This project examined library instruction for students in First Year Seminar (FYS) and this poster provides an overview of initial results. This academic year, we wanted to look at two different instruction models: a traditional, lecture-based model as well as a "flipped" classroom. Students in classes selected for the flipped classroom were asked to watch a seven- minute video prior to the library instruction class and complete a brief cognitive exercise, while students in classes using the traditional model did not watch a video or complete any exercise ahead of time. Both were assessed using two measures: an in-class assignment and an optional post-class survey distributed at the end of the semester. Based on the results, the library faculty will be able to determine if a flipped approach is beneficial to our students.

This research was supported by Assigned Release Time for Research (ART).

### **Janaina Breve, Sociology**

Faculty Sponsor: Prof. Deniz Yucel, Sociology

#### *Waiting for the World to Change: Civic Engagement in a Diverse College Campus*

A strong democratic society depends on a highly educated citizenry, which are better informed to participate in the decision-making process. This study sought to assess civic engagement among college



students in a public 4-year university campus with a high percentage of racial minority and working students. Data were collected through a quantitative survey conducted in seven sociology courses in a suburban northern New Jersey university. One hundred and twenty undergraduate students took a civic engagement quiz measuring different civic indicators. Results indicate that students were more likely to report engagement in civic activities (e.g. volunteering), than engagement in activities of political voice (e.g. contacting an elected official). These findings have valuable implications to educators and organizers interested in fostering civic participation among college students from underprivileged backgrounds, by empowering them to become agents of social change in society.

This research received support from the Student Research and Creative Expression Program.

### **Elizabeth Brown and Julie Rosenthal, Elementary and Early Childhood Education**

#### *Unlearning Ineffective Literacy Methods: Examining Teacher Candidates' Prior Literacy Experiences*

Why do so many teacher candidates conduct literacy practices that are not evidence-based, and have trouble utilizing balanced literacy techniques? Often, teachers teach the way that they were taught (Oleson and Hora, 2012) even if they are presented with more effective approaches. One challenge for teacher candidates is learning pedagogical methods and strategies that do not align with their own experiences in elementary school or at home. This can lead to inequity, with some teacher candidates having advantages over others in education classes and during their field experiences. Loewenberg-Ball (1988) states that, “long before they first enroll in their first education course, (students) have developed a web of interconnected ideas about subject matter, about teaching and learning, and about schools”. Teacher candidates who experienced evidence-based strategies as students are more likely to use these strategies in their lesson plans; those who experienced a didactic teacher-centered approach are more likely to fall back on these ineffective methods. The study of teacher-candidates’ prior literacy experiences and knowledge reveals how these experiences and knowledge influence teacher candidates’ ability to comprehend and apply workshop based- balanced literacy methods in their internships. Lastly, teacher candidates’ field experiences strongly shape their concepts of literacy best practices. The results of this study will inform faculty members of candidates’ prior experiences and pedagogical strategies necessary to design field experiences and course work that meets the needs of teacher candidates. The faculty response is to establish programmatic and course-level changes in alignment with L’Allier and Elish-Piper’s (2007) findings that highlight the importance of having teacher candidates use and engage with literacy methods as students first. In addition, more structure during their early field experiences should help candidates to internalize the evidence-based teaching strategies that are recommended.

### **Alison D. Caceres, Undergraduate Biology student**

Faculty Sponsor: Prof. David Slaymaker, Biology

#### *Genetic Structure of Native Populations of American Beachgrass (*Ammophila breviligulata* Fern.) Along the New Jersey Coast*

New Jersey's coastal dunes provide both natural scenery and structural support for the shore's coastal communities. Therefore, millions of dollars have been spent on dune nourishment and upkeep. However, Sandy in October of 2012, these dunes were subject to immense damage due to the tropical storm Sandy. *Ammophila breviligulata* is a species of beachgrass residing on the New Jersey shores that had a huge role in the redevelopment and stabilization of the damaged coastal dunes after Sandy. Dune restoration projects currently involve this beachgrass species specifically and are becoming more and more focused on maintaining their genetic diversity. In our study, we collected 150 samples of *A. breviligulata* from each of two native populations at Island Beach State Park, New Jersey. We then used a series of six unique intersimple sequence repeats (ISSR) primers optimized for this beachgrass species to observe each of the sample's levels of genetic diversity throughout the dune system.

This project was supported by the Garden State Louis Stokes Alliance for Minority Participation in Science (GSLSAMP) through Rutgers University, funded by the National Science Foundation, and the Center for Research, College of Science and Health.

**Brian Capriola, Undergraduate Communication student**

Faculty Sponsor: Prof. Soo-Kwang (Klive) Oh, Communication

*Why Do People Fall Out of Love? A Comprehensive Study of Both Current Successful and Failed Former Romantic Relationships.*

Generally there are many contributing factors to the deterioration of a given relationship or marriage, with similar and different elements existing throughout each specific case. Exploration into both the alarming divorce rate of Americans and the prominent sociological phenomena pertaining to explanations of why people fall out of love are personal and societal necessities in the attempt to understand, promote and sustain healthy relationships. The ability to distinguish such elements relied heavily on data collected from specific questions administered in survey form, a series of observational analysis of a focus group, and in depth personal interviews. Findings derived from this data collection suggest both successful and unsuccessful romantic couples encounter similar relationship challenges, with successful couples ultimately displaying an ability to sustain relationships through strong commitment and effective communication levels not found in unsuccessful romantic couples.

**Bryant Catano, Undergraduate Chemistry student**

Faculty Sponsor: Prof. Yalan Xing, Chemistry

*Transition Metal Catalyzed Functionalization of Terminal Alkynes*

The transition metal-catalyzed functionalization of carbon-carbon multiple bonds is an important synthetic strategy. The need for efficient, atom-economical methods to synthesize certain synthetic intermediates under mild conditions with inexpensive reagents has led to the increased investigation of iron catalysts. It has been discovered that both aromatic and aliphatic alkynes can be halo-functionalized to  $\alpha,\alpha$ -dihalodimethyl ketals, catalyzed by iron (III) in excellent yields using methanol as a solvent and N-halosuccinimide as the halogen source. This efficient, rapid transformation is highly regioselective and can be run in mild conditions. The deacetalization to  $\alpha,\alpha$ -dihaloketones using 8% iron (III) chloride in silica was also observed and can be performed in a one-pot reaction. Direct conversion to an  $\alpha$ -haloketone is also observed using isopropanol as the solvent. An investigation into the possible mechanism of this novel reaction is currently underway.

**Salimur Choudhury, Computer Science**

*Cellular Automata and Mobile Wireless Sensor Networks*

Object monitoring is an important application of mobile wireless sensor networks. Several algorithms appear in the literature for different variants of the object monitoring problem. Most of them are either centralized or distributed. Algorithms for mobile wireless sensor networks involve many aspects not dealt with in traditional networks and hence mobile wireless networks can be viewed as an unconventional computation model. We design algorithms for mobile wireless sensor networks based on another unconventional model of computation namely, the biologically inspired cellular automata. We design a cellular automaton based algorithm for an object monitoring problem where initially a number of mobile sensors and mobile objects are deployed randomly in a dense area of the network and they are allowed to move within the network. Our main goal is to monitor the mobile objects by the mobile sensors as long as possible. To the best of our knowledge, we propose the first cellular

automaton based algorithm for this problem. We find that our algorithm can monitor a good number of objects constantly over time.

This research was supported by a Research & Travel Incentive Award.

**Erin Connor and Rebecca Atencio, Undergraduate Biology students, Robert Benno and Jeung Woon Lee, Biology, and Norman Schanz, Biology**

Faculty Sponsor: Prof. Jeung Woon Lee, Biology

*The Role of Adrenal Corticosterone on Mediating the Inflammatory Pain Response of BTBR T+ tf/J Mice: The Animal Model for Autism Spectrum Disorder*

Previously, our lab reported BTBR T+tf/J (BTBR) mice display reduced response to inflammatory pain that may be mediated by the stress-induced analgesia. The adrenal hormones mediating the stress responses are well characterized: epinephrine/norepinephrine and corticosterone. The present study examined the effect of adrenalectomy (ADX) on inflammatory pain behavior in male BTBR mice.

Male BTBR and C57 BL6/J mice (n=42) were divided into five groups: a) BTBR+ADX, b) BTBR+sham, c) C57+ADX and d) C57BL/6J+sham. Seven days after surgery, all mice were injected with intraplantar formalin (30ul) and the number of paw flinches/licks was counter for 60 min. All BTBR and C57 mice displayed classic formalin phase I. The formalin phase II were not significantly different between BTBR-ADX and C57-ADX. Overall, adrenalectomy did not reverse the hypoalgesia observed in BTBR mice.

The hypoalgesic inflammatory response seen in BTBR may not be mediated by the adrenal stress hormones.

This research was supported by Assigned Release Time for Research (ART) and the WPUNJ Student Research and Creative Expression Program.

**Keith Cruz and Lisa D'Argenio, Undergraduate Psychology students**

Faculty Sponsor: Prof. Natalie Obrecht, Psychology

*The Effects of Gender and Body Language on Perceived Competence*

We tested the extent to which gender and body language affect the hiring process for white collar jobs. Interviewees with proper body language were rated more competent, but there was no effect of gender. This work will contribute to theories that explain gender bias and professionalism in the hiring process. Our study shows how "proper" body language is important during the interview process. Whether you're a male or female is not important to our subjects.

**Nicole Davi, Environmental Science, Mukund Palat Rao, Graduate Student, Lamont-Doherty Earth Observatory of Columbia University, Rosanne D'Arrigo, Associate Director, Division of Biology and Paleoenvironment, Lamont-Doherty Earth Observatory of Columbia**

*Dzuds, Droughts, and Livestock Mortality During Unprecedented Warming (931-2005 C.E.) in Mongolia*

Warming over Mongolia and adjacent Central Asia has been unusually rapid over the past few decades, with surface temperature anomalies higher than for much of the globe. Here we use an extensive collection of living and subfossil wood samples from temperature-sensitive trees to produce a millennial-length, robust reconstruction of summer temperatures for Mongolia and vicinity from 931 to 2005 CE. This tree-ring reconstruction shows general agreement with the Medieval Climate Anomaly (warming) and Little Ice Age (cooling) trends, a significant volcanic signature, and warming in the 20th and 21st Century. Recent warming (2000-2005) exceeds that from any other time and likely

exacerbated, the impact of extreme drought (1999-2002) that resulted in massive livestock loss across Mongolia.

Understanding long term climatic variability has great social relevance, as paleoclimate histories can inform us about the periodicity of extreme climate. In Mongolia recent incidences of mass livestock mortality have called into question the sustainability of pastoral nomadic herding, the cornerstone of their culture. Close to 20 million livestock perished in the combined mortality events of 2000-2002, and 2009-2010. To mitigate the effects of such events on the lives of herders, international agencies such as the World Bank are taking increasing interest in developing tailored market-based solutions like index-insurance. Their ultimate success depends on understanding the historical context and underlying causes of mortality. In our study we also examine mortality in 21 Mongolian aimags (provinces) between 1955-2013 in order to explain its cause(s).

This research was supported Assigned Released Time for Research and by three research awards from the National Science Foundation (AGS-PRF #1137729, ATM0117442 and AGS0402474)

**Alec DeGraaf and Neal Joshi, Noor Eldabach, Undergraduate Biology students**

Faculty Sponsor: Prof. Jeung Woon Lee, Biology

*Transplantation of Islet of Langerhans Cells in STZ-induced Diabetic Mice to Reverse Hyperglycemia: A Physiological and Histological Study*

Type 1 diabetes mellitus (T1DM) is a very debilitating autoimmune disease characterized by immune cells destroying pancreatic beta cells. Most common manifestations of T1DM are hyperglycemia and weight loss that can develop into peripheral diabetic neuropathy (DN). Currently there is no cure for T1DM and DN.

This study examined; i) a possible treatment for T1DM and DN by xenotransplantation of islet of Langerhans cells from rat to mouse, and ii) pain behavior tests in diabetic BTBR T+ tf/J mice to test for DN. In experiment 1, adult male C57BL/6J (n=18) were injected with streptozotocin (STZ) to induce T1DM (350mg/dl). STZ is a drug that mimics T1DM by selectively destroying pancreatic beta cells. C57 mice were transplanted with islets or received cell culture media only as a control. In experiment 2, naïve-BTBR and diabetic BTBR (n=10) were used to measure diabetic neuropathy with paw-licking durations for 60 minutes using 5% formalin. For diabetic C57 mice, the glucose levels were 544.25±13.96 mg/dl (1wk post-transplantation) and 542.83±26.98 mg/dl (2wk post-transplantation); whereas C57 control was 564.33±33.90 mg/dl (1wk) and 563.50±26.14 mg/dl (2wk). The STZ-BTBRs displayed shorter paw-lick duration at phase II (12.0±9.71sec) compared to naïve-BTBRs (83.5±36.85sec; p<0.02). Immunohistochemical analyses labeled healthy living beta cells with primary insulin antibody post-transplantation at days 0, 1, and 14. Data suggest hyperglycemia in transplanted diabetic mice may be related to the number of surviving islet cells. Transplantation of islets may be a viable method to alleviate or prevent DN pain.

This research was supported by Assigned Release Time for Research (ART), a Research & Travel Incentive Award, the WPUNJ Student Research and Creative Expression Program, and the Center for Research, College of Science and Health.

**Hetal Desai, Doctoral Nursing student, Brenda Marshall, Nursing, Micheal Principe, Political Science**

Faculty Sponsor: Prof. Brenda Marshall, Nursing

*Adapting, Developing and Testing an Instrument: Ror Evaluation of Psychometric Properties of the Political Self-Advocacy Instrument (PSAI-N).*

**Background:** The scope of nursing practice is determined by state Legislatures. At this time, states are evaluating the advance practice registered nurses (APRN) right to full practice. In order to move these laws forward, nurses need to advocate for their rights. Multiple studies and instruments have examined nurses advocacy for patients for many years. However, no studies or instruments have been implemented to examine nurses level of political self-advocacy.

**Aim:** The purpose of this study was to test a newly developed political self-advocacy instrument in nursing (PSAI-N), which tests the level of nurses ability to advocate for themselves in the political arena. This new tool has been adapted from a previously reliable tool which tests patient (ASPMN Advocacy Instrument).

**Research Design and Method:** This study utilized a descriptive, correlational design. A convenience sample of 36 nurses, either APRN students and or/ practicing APRNs participated in the test/retest practice dissertation project to examine the psychometric properties of the PSAI-N. The PSAI-N tool measures the nurse's beliefs, knowledge, and skills related to political self-advocacy. Items were divided into 5 constructs (personal advocacy, public awareness advocacy, nurse perception about advocacy, knowledge/skill advocacy, and social/political advocacy). The PSAI-N consisted of 9 demographic items, 38 political self-advocacy items, and 2 self-identification items; study was conducted twice via pre-test and post-test within a two week interval. For both pre-test and post-test data were collected via pen-paper survey and via internet based survey.

**Results:** Thirty-six volunteers completed the PSAI-N survey. The PSAI-N had a Cronbach alpha coefficient of .98, Inter-Item correlation demonstrated significant correlations in construct 1-4 and a few non-significant correlations in construct 5, Test/retest reliability for the pre/post test revealed .883, the five constructs were between .609 and .876. The content validity was established through experts opinion. An ANOVA revealed a significant relationship between the level of perceived experience in political self-advocacy and the PSAI-N scores. ( $F(4,31)= 5.990, p= .001$ ), indicated the participants scores differed according to self-identified level of political experience.

**Discussion:** The psychometric properties of the PSAI-N tool indicated it is reliable and valid, and the Beners Theoretical Model is a good fit for the PSAI-N when examining the levels of self-identified experience in politics. The PSAI-N tool will aid the profession of nursing with examination of the needs of nurses related to political self-advocacy. The PSAI-N can be utilized by researchers and educators to identify levels of political experience and political self-advocacy knowledge.

**Samantha DiMeglio, Nicole Manzetti and Ashely Mondragon, Undergraduate Psychology students, Undergraduate Student, and Christian Holle, Psychology**

Faculty Sponsor: Prof. Christian Holle, Psychology

#### *Personality and College Major Selection Within the Sciences*

Previous research demonstrated a relationship between college major with a limited number of majors examined and personality traits. The current study examined this finding in more detail, looking exclusively at science majors to see if personality traits are related to major choice within a single academic area. Results show significant differences between majors within the sciences on agreeableness, conscientiousness, and neuroticism. Results are discussed in terms of future job requirements and personality theory.

This research was supported by funding from the Eastern Regional Travel Grant from Psi Chi.

**Samantha DiMeglio, Undergraduate Psychology student, and Natalie Obrecht, Psychology**

Faculty Sponsor: Prof. Natalie Obrecht, Psychology

*Type A Personality Predicts High Workload and Stress, But Less Procrastination*

Previous research suggests Type A personality, workload, stress, and procrastination are related. We found that people with Type A personality experience higher levels of mental workload and stress, but, counter to our prediction, procrastinate less than people with Type B personalities. A follow up study is being conducted using various procrastination tendencies to see if they can further explain this relationship.

**Derrick Dorph, Undergraduate Biology student and Joseph Spagna, Biology**

Faculty Sponsor: Prof. Joseph Spagna, Biology

*Whole-continent Molecular Phylogenetics of North American Agelenidae*

The family Agelenidae C.L. Koch 1837 is large (70 genera, 1157 species currently described, accounting for about 2.5% of all spider species) with a high level of endemism in the North America, and California in particular. Spiders from this family have recently been used as models for toxicological and behavioral research. In the Agelenidae, there have been eight genera (Hololena, Rualena, Calilena, Novalena, Agelenopsis, Barronopsis, Tortolena, and Melpomene) classified in the subfamily Ageleninae, tribe Agelenopsini, endemic to North and Central America. In the past year, an additional genus (Rothilena) has been described from Northwestern Mexico. We performed partitioned Bayesian likelihood analysis of molecular sequence data from mitochondrial (CO1 and 16S rDNA) and nuclear (28S rDNA) genes totaling 1100 base pairs from 25 representative species to develop a phylogenetic hypothesis for these genera. Results support monophyly of a group confined to Western North America extending south into Baja California (Calilena + Hololena + Novalena + Rualena + Rothilena). These are sister to a clade including the primarily Gulf Coast, Caribbean and Atlantic Coast genera Agelenopsis, Barronopsis, and Tortolena. Strong genitalic similarity within the latter group extends to the sole unsequenced genus Melpomene from Eastern Mexico and Central America, consistent with a clear biogeographic split between the Atlantic/Gulf Coast genera and those endemic to the Western US and Mexico. Tree morphology indicates an early period of rapid diversification, though large uncertainty in molecular clock estimates confounded our efforts to rigorously evaluate possible causes of this remarkable continent-wide radiation.

This research was supported by Assigned Release Time for Research (ART), a Research & Travel Incentive Award, the WPUNJ Student Research and Creative Expression Program, and the Center for Research, College of Science and Health.

**Michael Farley and John-Michael Leemans, Undergraduate Computer Science students**

Faculty Sponsor: Prof. Bogong Su, Computer Science

*Multicore Programming*

The rise of multiple core processors in computers is now common currently today. However, to completely exploit all the cores in the computer it is essential to develop programs that can use multiple cores at the same time. A program enabled to use multiple cores at the same time is known as multi-core programming which improves the performance of a program compared to a single core processor. This project will study the performance of multi-core processors. An open source benchmark will be used with an OpenMP environment to analyze the effects of multi-core programming. The conclusion of this project will demonstrate if the performance of utilizing multiple processors is a benefit in program execution. It will also provide results that will facilitate in predicting the performance of multi-core DSP's, rather than running them.

## **Bela Florenthal, Marketing and Management**

### *Increasing Engagement in the Classroom Through Interactive Technologies*

One of the challenges today in the classroom is to keep students attention, engage students in class discussions, and make sure they internalize the discussed information. With all the technological distractions (e.g. smart phones, tablets, laptops), it has become more challenging for instructors to keep students focused on the course material while in class. On the other hand, because most students have access to the internet while in class, companies started to develop online educational tools that students can use in class to increase their engagement with course material, attention, and retention of information. One such tool is offered through Socrative.com. It is a free online software that teachers and students can access via any device that is connected to the Internet. Through this software course instructors can develop for their classes multiple, true-false, or open-end questions, quizzes, exams, and group activities. I have adopted this software in my classes (Marketing Management and Thesis I) and use it to engage students in class discussions (through various questions) and to assess their retention of class information (through exit quizzes). I would like to demonstrate how I use this software to engage students in my classes. I also collected in Fall 2014 qualitative data from students and if I have the time to analyze it, I'll be happy to present their perspective of this software.

## **Carol Frierson-Campbell, Music**

### *"So What?": Finding Meaning in the Changes (From Musician/Teacher to Graduate Student/Researcher)*

"So What?" This question is posed frequently to the novice scholars enrolled in the "Research Techniques" course that is required for Master of Music students at my university. As they develop topics and conceptualize new research ideas, I add layers: "Why does it matter? To whom does it matter?" In ongoing study of my pedagogy I ask myself the same questions.

Seeking to add student perspectives to this inquiry, I recently asked for volunteers to join me in exploring ("So What?") the experience of learning to do master's level research. Three jazz musicians, one also a music teacher, offered to participate. This performance/ paper, located at the intersection of arts-based research (Barone & Eisner, 2012; Eisner, 2008) and collaborative auto-ethnography (Ellis & Bochner, 2000; Ellis, 2004), re-presents our interrogation. Miles Davis' popular tune "So What?" frames our work. Hinting at the question, a two-note motive, moving between instruments and frequent key changes, interrupts and yet is integral to the flow of the music. Weaving ethnographic depictions of our individual and collective "changes" into musical improvisation allows us to embody the construction of meaning for research as the students experienced it: a disruption that through negotiation became integral to their growth as musicians and educators.

This research was supported by the Center for Creative Activity & Research Program, College of Arts and Communication.

## **David A. Fuentes and Elizabeth Brown, Elementary & Early Childhood Education**

### *Gamification and Teaching: Can it Inform My Classroom Practices?*

What is gamification? How can it be used to extend my classroom teaching practices and student learning outcomes?

These questions and others will be briefly explored in hopes of introducing basic gaming elements and provide some strategies for beginning a discussion about how these elements can increase teaching and learning outcomes. Put simply, gamification (Lee, 2012; 2014) refers to the notion that there are

aspects of digital gaming that when drawn into non-gaming, real-life situations, can increase participants sense of engagement, excitement, understanding, and desire each with potential to increase learning outcomes. Education research has long pointed to the possibility of increased teaching and learning when certain affective (Krashen, 1981) components are present. Notions such as positive affect, genuine curiosity, motivation, and metacognition have all long been considered key areas to increase learning outcomes in various teaching settings. Theories and research about gamification relay that creativity, wonder, excitement, and surprise are among the benefits of gamification in a classroom setting. This presentation is intended to introduce these basic tenets of gamification and explore ways that it be drawn into classroom practices with or without technology. Recent literature will be shared and new strategies will be presented through literature review and analysis of gamification software, such as Conquering Technology.

**Toni Tortorella Genova, Doctoral Nursing student, and Brenda Marshall, Doctor of Nursing Practice Coordinator**

Faculty Sponsor: Prof. Brenda Marshall, Nursing

*Medicating Patients for Pain: How Well Do We Meet Their Needs?*

**Background:** Pain is part of the human experience. The management of pain is a problem of significant magnitude in the United States. Nurses are on the forefront of this issue with the capacity to assess and respond to patients needs. Nurses knowledge and attitudes towards pain can predict the nurses ability to adequately meet patients pain reduction needs.

**Objective:** A study was conducted to replicate a 1996 survey comparing outcomes of the attitudes and knowledge regarding pain survey of a convenience sample of medical-surgical nurses in 2013 with nurses from 1996 to determine if attitudes towards pain have changed.

**Method:** A Cross-sectional, descriptive, comparative design was used. The Nurses Knowledge and Attitudes Survey Regarding Pain (NKASRP) and a demographic survey were utilized to assess the nurses knowledge level and attitudes toward pain and pain management.

**Sample:** A convenience sample of nurses (n=55) from nine in-patient, medical-surgical units at a large multi-facility health care system volunteered to participate.

**Results:** No significant differences were found between the attitudes on pain from the 1996 and 2013 respondents. The mean score on the NKASRP was 67%. No significant correlations were identified between any demographic variable and nurses scores.

**Conclusion:** Despite increased educational preparation since 1996, the mean score on the NKASRP remained well below what is considered average knowledge. Patients continue to be under-medicated or not medicated for their pain. This presentation will present these findings as well as strategies to evaluate pain and meet the needs of our patients in pain.

**Evan Gerry and Rose Oelkers, Undergraduate Environmental Science students, Nicole Davi, Environment Science, Michael Dasilva and Chuck Stead, Environmental Science Professional Staff**

Faculty Sponsor: Prof. Nicole Davi, Environmental Science

*A Dendro-Archeological Study of Historic Structures from Rockland County, NY*

The use of wood timbers from historic structures in the field of dendro-archaeology has been used to broaden the understanding of local history and establish cutting dates for historic structures. This study seeks to provide absolute dates and a historical context to wood cross-sections from historic structures in Rockland County, New York. Structural timbers from a barn and a saltbox have been estimated to



have a date of construction sometime in the mid to late 19th century. Tree-ring dating has been used to evaluate the year of construction for these structures and determine cutting dates of the wooden timbers. Hemlock cross-sections from the first structure, a barn of Dutch construction, produced a chronology dating from 1684 to 1853 and the Oak saltbox structure with a chronology dating between 1641 and 1834. Having been dated against local reference chronologies, the cutting date of the barn timbers is no earlier than 1853 and a cutting date of the saltbox is no earlier than 1834. Due to technological limitations available to inhabitants of the time period, construction of the structures is constrained to no more than a few years after the initial cutting dates. Assigning a calendar year to the structures allows for the interpretation of both local archaeology and history in the Rockland County region.

**Seth J. Getch and Timothy Greendyk, Undergraduate Environmental Science students**

Faculty Sponsor: Prof. Michael Griffiths, Environmental Science

*Reconstructing the Timing of the Laurentide Ice Sheet Retreat in Northern NJ From a Lake Sediment Core*

A lake sediment core was collected from Blauvelt Lake in Franklin Lakes, New Jersey, and is being analyzed to reconstruct past local climate variability in the northern regions of the state. Radiocarbon dating ( $^{14}\text{C}$ ) was undertaken on organic material from three different depths (from the top of the sediment core), 140cm (3,313 years BP), 305cm (8,889 years BP), and 440cm (11,160 years BP). All radiocarbon dates were calibrated using Calib 7.1. The six meter core was preserved by dividing it into ten centimeter increments, and one gram samples were extracted at every three to four centimeters for analysis. Particle size analysis was performed on sediments using a Shimadzu particle size analyzer. To date, 375 cm of the 610 cm of core have been analyzed, with preliminary results showing environmental and climatic changes in the region over the past 9 thousand years (ka). Larger particle sizes are indicative of wetter periods and/or less ice coverage, whilst smaller particles sizes indicate drier periods and/or more extensive ice coverage. Additional analytical experimentation including paleomagnetic analysis (already underway at Montclair State University), and elemental analysis of C/N ratios using the CHNS/O analyzer at WPU will provide additional constraints on the environmental evolution of the region and timing of the retreat of the late Wisconsin ice sheet in northern NJ.

**Michelle Ginart, Undergraduate Psychology student**

Faculty Sponsor: Prof. Natalie Obrecht, Psychology

*Mastery-approach Goals Predict Student Expectations and Achievement in Mathematics*

We show that students who pursued mastery-approach goals expected to earn higher grades in mathematics courses and did in fact earn higher grades at the end of the semester. These results suggest that mastery-approach goals should be promoted in order to maximize student success.

This research was completed as a thesis project for University Honors College.

**Bryan Gonzalez, Environmental Science**

Faculty Sponsor: Prof. Michael Griffiths, Environmental Science

*Reconstructing Seawater Sr/Ca Through the Late Phanerozoic From Fossil Shark Teeth*

Constraining past seawater Sr/Ca ratios is an important and challenging task to scientists, because the chemical evolution of these two cations is fundamentally tied to various geologic and biogeochemical processes related to plate tectonics, weathering, diagenesis, and the carbon cycle. On geologic timescales, shifts in seawater Sr/Ca are thought to reflect variations in either the sources of Sr and Ca or the output flux via carbonate sedimentation. By improving our understanding of seawater Sr/Ca evolution, we can thus potentially gain a deeper understanding of how these processes have operated

on geologic timescales. Ancestral sharks are unique in that they have a globally robust and continuous fossil record since the late Cretaceous. This fossil record is comprised largely of teeth due to: 1) rapid and continuous replacement throughout an animal's lifetime; and 2), their dense, biogenic apatite composition which is highly resistant to chemical and physical erosion. Over the past decade, marine biogenic apatite has exhibited some success in providing a new tool for reconstructing the evolution of the world's oceans. This is largely due to the fact that enameloid has been shown to accurately preserve the aqueous conditions of the seawater at the time of tooth formation. Preliminary results of this study demonstrate that the Sr/Casw has overall declined since the late Cretaceous, a finding that is echoed in other marine fossil assemblages. Whilst this work is still in its infancy, we tentatively interpret the decline Sr/Casw to be a regionally coherent signal, and as such, provide a new record of Sr and Ca flux to the paleo-ocean.

This research was supported by the Garden State Louis Stokes Alliance for Minority Participation in Science (GSLSAMP) through Rutgers University, funded by the National Science Foundation, and the American Chemical Society Petroleum Research Fund.

### **Michael Griffiths, Environmental Science**

#### *Reconstructing Deglacial and Holocene Climate Variability in Southeast Asia Using Speleothems and Isotope-enabled Model Simulations*

Despite significant advances in our understanding of tropical Australasian monsoon climate variability on orbital (100,000 year) to millennial (1,000 year) timescales, we still know very little about the range and mechanisms of variability in the Southeast Asian monsoon (SEAM) region. To address this need, we have developed new high-resolution oxygen-isotope ( $\delta^{18}O$ ) records of monsoon variability from several stalagmites recovered from Tham Mai Cave, located in northern Laos.

The stalagmite oxygen isotope records are tied to robust chronologies constructed from >40 U-Th ages, and indicate the records span the age range of ~0.3 to 11.1 thousand years before present (ka). The composite  $\delta^{18}O$  record displays an abrupt decrease in values at 10.2 ka, with depleted values persisting until approximately 8 ka, followed by increasing values through the mid- to-late Holocene. To further investigate the mechanisms for these variations in stalagmite  $\delta^{18}O$ , we analyzed the MERRA nudged GISS ModelE2 simulations and the 20th century reanalysis nudged IsoGSM simulations of precipitation  $\hat{\delta}^{18}O$  from the grid point closest to our study site. Preliminary results show a significant correlation with Pacific sea surface temperatures SSTs over the Ni±o-3.4 region and in the western and northern Indian Ocean, suggesting that the  $\delta^{18}O$  of annual rainfall may be influenced by climate modes such as ENSO and the IOD. Furthermore, correlations with OLR, SLP, and vertical zonal wind shear over the tropical Indo-Pacific all suggest a strong relationship with the Indian monsoon intensity and convection over the Indo-Pacific warm pool, which likely contribute to pre-fractionation of moisture advected to our study site. We therefore tentatively interpret the increasing  $\delta^{18}O$  values through the Holocene as reflecting precession related decreases in SEAM monsoon strength and/or convective precipitation over the Indian Ocean and Bay of Bengal.

This research was supported by Assigned Released Time for Research and a research award from the National Science Foundation.

**Danielle Hayes, Taylor Landy, Jennifer Poquette, Matthew Cromley, Ryan Norlander, Emily Stricker, Marina Oganeseva, Undergraduate Psychology students, Carrie Masia, Psychology, Chelsea Lynch, Child and Adolescent Psychiatry, New York University, and Julie Ryan, Psychology, Fairleigh Dickinson University**

#### *The Association of Social Anxiety to Hostile Intent and Social Threat: Does Threat and Hostility Decrease with Cognitive-Behavioral Treatment?*

**Objective:** The Children's Automatic Thoughts Scale (CATS; Schniering & Rapee) is a self-report measure assessing negative self-statements in youth. The CATS includes four categories: physical threat, social threat, personal failure, and hostility. These four categories along with perceiving social situations as drawing negative attention may be features of social anxiety disorder (SAD). This study's purpose was to examine hostility and social threat biases in adolescents with SAD and to investigate whether these decrease with cognitive-behavioral treatment (CBT). We expected hostility and social threat to be elevated in adolescents with SAD. In addition, we predicted adolescents with SAD who received CBT would show greater reductions in biases following treatment completion compared to a standard school-counseling program.

**Methods:** The investigation of the CATS was part of a study evaluating school-based intervention for SAD (R01MH081881 awarded to Dr. Masia). Participants included 136 students with SAD in grades 9-11 (ages 14-17). Students received either the school-based CBT program or a standard school-counseling program. CATS was administered to students and parents at baseline, immediately following treatment and five months later.

**Results:** Our sample demonstrated an elevated Social Threat bias ( $M = 10.00$ ,  $SD = 8.39$ ) compared to a community sample. Hostility was not elevated. All treatment conditions decreased in CATS Hostility scores after baseline measurements. The same was found for Social Threat.

**Conclusion:** Findings suggest adolescents with SAD appear more concerned with negative evaluations than with others intentions. Results also indicate CATS biases decrease over time with both treatment methods.

**Carrie Eunyoung Hong, Educational Leadership and Professional Studies, and Irene Van Riper, Special Education and Counseling**

*Enhancing Teacher Learning From Guided Video Analysis of Literacy Instruction: An Interdisciplinary and Collaborative Approach*

The technological infrastructure for the use of instructional and professional videos is common in today's educational venues. However, there has been a dearth of awareness and training to help teachers critically analyze and effectively utilize video recordings of authentic classroom instruction for their professional development. This self-study examined the teaching and learning process, particularly knowledge and lessons that we, as teacher educators, learned from commentary regarding video analysis and pre- and post- surveys completed by the candidates in a graduate level special education course. The investigation explored the extent to which the guided video analysis process facilitated the candidates learning of literacy instruction in order to teach high needs students by examining teacher-candidates analysis of video-taped lessons, followed by discussions with peers and further reflections on their own teaching.

**Shannon Itjen, Nicole Caltabellotta, Tony Shenderovich and Diana Russo, Undergraduate Psychology students, and Amy E. Learmonth, Psychology**

Faculty Sponsor: Prof. Amy Learmonth, Psychology

*In Search of Mr. Smiley: Is an Indirect Cue Enough?*

There has been significant research over the past few years using search tasks to examine what available spatial information (geometric information from the shape of the environment, and/or landmark information provided by items within the environment) is used by adults and children (see Cheng, Huttenlocher & Newcombe 2013 for review). Previous work with adults indicates that although they are most likely to use landmark information in their search behavior, their reliance on landmarks can be disrupted with a distracter task (Hermer-Vazquez, Moffet & Munkholm, 2001; Ratliff

& Newcombe, 2005). The current studies are computer-based training studies where participants learn to respond relative to the location of a moving landmark on one trial type and the geometric properties of the figure on the other trial type. Test trials then put the two pieces of information in conflict to see which one has a stronger pull on behavior. In the initial study results showed that adults prefer the landmark almost unanimously when it is directly marking the correct location. Results from our current studies show that adults learned to task effectively (demonstrated by significantly improved performance over the learning trials) while maintaining their preference for a landmark even when it indirectly marks the correct location.

**Torri Jaime, Nicole Caltabellotta and Shannon Itjen, Undergraduate Psychology students, and Amy Learmonth, Psychology**

Faculty Sponsor: Prof. Amy Learmonth, Psychology

*Which Cat Said Meow? Binding and Associative Memory in Four-Year-Old Children*

Memory is not made of single items but rather the associations among items. Although some work has investigated semantic memory for cross-modal stimuli in preschoolers (see Robinson & Sloutsky, 2004), the work was not on episodic memories.

The present work was focused on episodic memory of visual and auditory information. We presented multiple exemplars of twelve animals paired with distinct but species typical sounds. The purpose of this design was to test predictions from the adult memory literature regarding the roles of familiarity and recollection in associative memory. This work has demonstrated adults can differentially rely on recollection or familiarity depending on whether the associations are arbitrary (binding) or fused into one concept in some way (unitization). When the associations are unitized, familiarity provides a greater contribution to the recognition decision (e.g., Haskins et al., 2008). Previous developmental memory research has shown that memory binding improves during early childhood (e.g., Lloyd, Doydum, & Newcombe, 2009; Sluzenski, Newcombe, & Kovacs, 2006). In the present study, seventeen four-year-old children studied animal/sound pairings and then were tested on intact and rearranged pairs as well as familiar and unfamiliar sounds or pictures alone.

Analyses of the aggregate data showed that children successfully discriminated overall and correctly identified a test stimulus as seen or unseen during training significantly more than incorrectly, but did not successfully create bindings between objects and sounds that were presented together.

This research was supported by Assigned Release Time for Research (ART).

**Rajiv Kashyap, Steven Betts, Chen-Ho (Mike) Chao, and Jorge Arevalo, Marketing & Management, Sam Basu and Priya Nagaraj, Economics, Finance and Global Business, and Murugappa Krishnan, Accounting and Law**

*Exchanges on the Economic, Social, Educational, Environmental and Global Terrorism Shock Waves Confronting Business*

The Cotsakos College of Business plans on holding a discussion/panel session on key issues confronting the future of business. Among the myriad of issues, the focus will be on a. Environmental Sustainability, (e.g., NASA predicting 20 to 30 year droughts in the US), b. Sustainability in Education (and the UN's integration of Principles for Responsible Management Education, or PRME), c. Geopolitical risks (e.g., business disruptions due to black swan events, earthquakes, political instability etc.), d. Opportunities to discuss resilience and enterprise risk, e. Income disparities (e.g., GINI coefficients and income inequalities on the rise worldwide, social discontent, implications for workforce, education, and EHS), and the on-going threat and growth of cyberterrorism and hacktivism (e.g., managing fallout of cyber attacks, e-security programs, etc.). The panel will comprise an invited list of Cotsakos College of Business faculty who are either currently researching in these areas, or have

had some past expertise in consulting businesses along these dilemmas. We welcome students and faculty from all colleges to attend and engage in the conversations.

This research was supported by Assigned Release Time for Research (ART).

**Nicole Kern and Danielle Nichols, Undergraduate Environmental Science students**

Faculty Sponsor: Prof. Jennifer Callanan, Environmental Science

*Physical Weathering of Chlorite and Smectite As A Result Of Post-Fire Soil Conditions*

Chlorite and Smectite (montmorillonite) are clay minerals common to soil. These minerals have been shown to physically alter upon exposure to forest fire. This study aims to determine a timeframe in which physical weathering occurs following the application of fire. To do this, a laboratory experiment was created in which several weathering solutions were generated by means of vacuum filtration. These solutions included rainwater filtered through soil, through ash, and through ash over soil. Rainwater filtered through ash and soil was meant to replicate the post-fire environment. The individual minerals were then exposed to these treatments, at surface conditions, for three-week intervals for 21 weeks. The minerals were then extracted from the weathering solutions and analyzed for particle size distribution. The pH of the weathering solutions + mineral were also determined before each extraction.

The preliminary results of this study indicate an overall decrease in pH for all weathering treatments + chlorite with the lowest recorded pH at 15 weeks. Smectite shows an initial pH decrease in ash treated samples followed by an increase as 12 weeks is approached. Both chlorite and smectite show apparent physical weathering for samples replicating the post-fire environment based on particle size distribution analysis. Chlorite shows an increase in fine particles beginning at three weeks while smectite shows an increase in fine particles beginning at 9 weeks. We anticipate the most significant physical weathering will occur at 15 weeks for chlorite and 12 weeks for smectite as it should correlate with the pH data. These minerals will be analyzed for structural alteration and changes in bulk chemistry at a future time. This chemical weathering data will be compared with the current physical weathering results to determine a complete analysis of mineral weathering in the post-fire environment.

This research was supported by the Garden State Louis Stokes Alliance for Minority Participation in Science (GSLAMP) through Rutgers University, funded by the National Science Foundation.

**William Kernan, Public Health, Jaclyn Keelin and Courtney Scheibner, Undergraduate Public Health students**

*Community Level Preventionists and their Attitudes toward and Ability to Work with Data*

Community-level prevention workers represent the front-line of our national public health workforce. Tasked with assessing the needs of communities and mobilizing these communities to engage in grassroots health promotion and disease prevention activities, community-level prevention workers work on a range of health behaviors, including poor diet, tobacco use, sedentary lifestyle, and recreational drug use, to name a few. Increasingly so, these individuals are asked to utilize best practices and select evidence-based strategies when selecting community-level interventions. In order to do so effectively, skills related to working with existing data and collecting new data about community-level knowledge, attitudes and behaviors are essential if these individuals are to effectively execute their responsibilities. To date there is little published research on community-level prevention workers and their ability to effectively work with data. This study attempts to more fully understand the data-related attitudes, experiences, and skills of community-level prevention workers.

This research was supported by an award from the Division of Mental Health and Addiction Services, NJ Human Services.

**William Kernan, Public Health, and Steven Malone, Undergraduate Public Health student**

*Food Insecurity Among College Students: An Exploratory Study*

Food insecurity often inhibits healthy college years due to economic hardships that college students face. Enrollment in college leads people to assume students are financially stable. The dangers of hunger are often overlooked in mainstream society and are not considered as one of the repercussions of the economic downturn. Reducing food insecurity is paramount to improve the overall health and well-being of university students. Assessing college students' knowledge, attitudes and behaviors related to food insecurity are essential to evaluate the needs of William Paterson University students. Previous research has indicated that persistent food insecurity causes a wide range of health ramifications; however, a major limitation in the existing literature is the focus on small sample populations. Therefore, the aim of this investigation is to assess food insecurity across various college student demographics. Understanding the occurrence of food insecurity can enable college administrators to implement programs to lessen the effects of food insecurity.

**William Kernan, Public Health, Jillian Mohn and Courtney Payoczkowski, Undergraduate Public Health students**

*Project Medicine Drop: Working with Pharmacists to Reduce the Availability of Unused and Expired Prescription Medication in Passaic County*

The disposal of unused and expired prescription medication has emerged as a priority public health concern for several reasons. Household disposal of prescription drugs, usually through direct introduction into public sewers or septic tanks, accounts, in part, for the alarming increase in the chemical contaminants found in US drinking water. Furthermore, misuse of prescription medication by individuals other than the intended recipient has been shown to have adverse health effects and may contribute to increased incidence of chemical dependency, particularly in at-risk populations. Passaic County, under the leadership of United for Prevention in Passaic County (UPinPC), has undertaken a comprehensive campaign to decrease the availability of unused and expired medication in the community through participation in the program Project Medicine Drop. The current study aims to collect data about program effectiveness using simple observational research techniques, as well as further assess community needs and plan additional community-based substance abuse prevention interventions. Specifically, this poster will discuss major themes that emerged when working with pharmacists in Passaic County in support of this prevention initiative.

**William Kernan, Public Health, Phoebe DeSantis, Public Health, and Vanesa Apaza, Youth Prevention Specialist, United for Prevention in Passaic County**

*PhotoVoice: Attitudes Towards Substance Abuse Among Young Adults Aged 18-30*

Existing research has identified a need to explore community-based strategies to combat the local-level protective and risk factors for substance abuse, particularly among youth. While much research focuses on middle-school and high-school aged youth, a fairly neglected group of youth not represented well in the existing literature is the young adult age group, ages 18-30. This group may represent an important population to study for a number of reasons, the primary being that as young people transition out of high school, many (particularly those who do not enter college or the full-time workforce), lose the potential safety nets provided by stable employment or involvement in an educational institution. Most critically, for those who remain at home, existing risk factors, including family strife, interpersonal violence, and the negative influences of peer groups, among others, may increase an individual's vulnerability to the damaging health effects of substance abuse. Therefore,

the purpose of study is to assess the community-level risk and protective factors for substance abuse by engaging a group of participants aged 18-30 years old using a PhotoVoice process.

This research was supported by an award from the Division of Mental Health and Addiction Services, NJ Human Services.

**Betty Kollia and Nicole Magaldi, Communication Disorders and Sciences, and Margaret Shakibai, Marymount Manhattan College**

*Prevalence of Autism Spectrum Disorder in Children Conceived With and Without Assistive Reproductive Technology & Its Relation to Paternal Age*

Assistive Reproductive Technology (ART) is any medically assisted measure taken to increase the chances of conception (e.g. in-vitro fertilization). As the incidence of autism spectrum disorder (ASD) has been on the rise (The Center for Disease Controls Autism and Developmental Disabilities Monitoring Network currently estimates that 1 in every 68 children is diagnosed with autism spectrum disorder) so has the incidence of live births resulting from ART (in 2010 CDC estimated that over 1% of all children born in the US were conceived through ART). Preliminary evidence suggests that the prevalence of ASD is higher in children conceived through ART than in children who are not (Knoester et al. 2008) and ART use among parents of children with ASD has recently been reported to be much higher than that of the general populations (Shimada et al., 2012). Additionally, advanced paternal age has been implicated in the manifestation of several neurological disorders, including ASD (Lundstrom et al. 2010; Parner et al. 2012).

The current study used survey data to examine the incidence of ASD in children conceived via ART compared with the incidence of diagnoses among children who were not, in combination with, specifically, paternal age at the time of conception.

Results indicated a slightly higher rate of ASD diagnosis for children of fathers over age 35 compared to those under 35 ( $p=0.0552$ ). Both maternal ( $p=0.0202$ ) and paternal age ( $p = 0.0006$ ) slightly increased the risk of a child being diagnosed with a Communication Disorder. This study along with supplementary epidemiological data, help to shape our understanding of possible risk factors implicated in ASD and CD.

This research was supported by Assigned Release Time for Research (ART) and the Center for Research, College of Science and Health.

**Murugappa Krishnan, Accounting and Law**

*A Simple Measure Of Liquidity, With Estimates From India's National Stock Exchange*

Market liquidity is viewed as the ease of finding a counter-party. This is determined both by price impact if an order is to be executed immediately, and by the willingness to wait and bear price risk. We motivate and define a simple empirical measure of liquidity that focuses on this attribute, by using information from both executed and unexecuted orders. We explore its implications for empirical work by estimating this measure using data from India's National Stock Exchange (NSE), and a benchmark dataset from NYSE in the US. We find that the liquidity of NSE stocks is decreasing in both price impact and waiting time, but the possibility of waiting significantly reduces the adverse effect of price impact.

## **Cyril S. Ku, Computer Science**

### *The Extension of the Unified Process*

The Unified Process is one of the software development models that captures the iterative and incremental nature of software development. The traditional Unified Process has two dimensions. The vertical dimension is the technical dimension which consists of the disciplines for software development stages: requirements, analysis/specification, design, implementation, maintenance, etc. The horizontal dimension is the business dimension which consists of the software development phases: inception, elaboration, construction, and transition. In this research, we incorporate one additional collaboration dimension and a 2-dimensional management array to the Unified Process due to the fact that in recent years, inter-organizational collaborative software development is a reality and software engineering must be collaboration-aware. For this presentation, we will describe our effort in identifying the various factors involved in the collaboration dimension; the linking of the inter-dimensional relationships in the form of a project management matrix; and our initial attempt to construct a multi-dimensional Unified Process so that the complexity of the model can be useful and understandable by the software development community.

This research was supported by Assigned Released Time for Research (ART) and the Student Worker Fund, College of Science and Health.

## **Amy E. Learmonth, Psychology**

### *Imitation and ASD: Is There a Video Deficit?*

Children with Autism Spectrum Disorders (ASDs) have been shown to have significant imitation deficits. However, there is a small amount of research using very small sample sizes, showing that children with ASDs can imitate the actions of a video model (Cardon & Wilcox, 2011). If children with ASDs imitate more easily from a video than a live model, their pattern will be exactly the opposite of the finding with typically developing children. This preference for a live model in typically developing children has been termed a video deficit (Barr 2013). Children with ASDs may also have difficulty transferring learning from a touch screen to real objects, a finding that would be consistent with the literature on typically developing children (Dickerson, Gerhardstein, Zack & Barr, 2012). Our study is aimed at systematically examining imitation from video as compared to imitation from a live model and transfer between a touch screen and real puzzle pieces in both children with ASDs and typically developing children. We will use a task that has been normed with typically developing children as having a video deficit until 48 months. We hypothesize that while children with ASDs will demonstrate lower levels of imitation overall they will perform better in the video condition than the live model condition and may have difficulty transferring learning between the touchscreen and 3-D puzzle pieces.

This research was supported by an award from The New Jersey Governor's Council for Medical Research and Treatment of Autism and the New Jersey Health (CAUT14APL004).

## **Jeung Woon Lee, Biology, Neal Joshi, Noor Eldabach, and Alec DeGraaf, Undergraduate Biology students**

### *Transplantation of Islet of Langerhans Cells in STZ-Induced Diabetic Mice to Reverse Hyperglycemia: A Physiological and Histological Study*

Type 1 diabetes mellitus (T1DM) is a very debilitating autoimmune disease characterized by immune cells destroying pancreatic beta cells. Most common manifestations of T1DM are hyperglycemia and weight loss that can develop into peripheral diabetic neuropathy (DN). Currently there is no cure for T1DM and DN.



This study examined; i) a possible treatment for T1DM and DN by xenotransplantation of islet of Langerhans cells from rat to mouse, and ii) pain behavior tests in diabetic BTBR T+ tf/J mice to test for DN. In experiment 1, adult male C57BL/6J (n=18) were injected with streptozotocin (STZ) to induce T1DM ( $\geq 350$ mg/dl). STZ is a drug that mimics T1DM by selectively destroying pancreatic beta cells. C57 mice were transplanted with islets or received cell culture media only as a control. In experiment 2, naïve-BTBR and diabetic BTBR (n=10) were used to measure diabetic neuropathy with paw-licking durations for 60 minutes using 5% formalin. For diabetic C57 mice, the glucose levels were  $544.25 \pm 13.96$  mg/dl (1wk post-transplantation) and  $542.83 \pm 26.98$  mg/dl (2wk post-transplantation); whereas C57 control was  $564.33 \pm 33.90$  mg/dl (1wk) and  $563.50 \pm 26.14$  mg/dl (2wk). The STZ-BTBRs displayed shorter paw-lick duration at phase II ( $12.0 \pm 9.71$ sec) compared to naïve-BTBRs ( $83.5 \pm 36.85$ sec;  $p < 0.02$ ). Immunohistochemical analyses labeled healthy living beta cells with primary insulin antibody post-transplantation at days 0, 1, and 14. Data suggest hyperglycemia in transplanted diabetic mice may be related to the number of surviving islet cells. Transplantation of islets may be a viable method to alleviate or prevent DN pain.

This research was supported by Assigned Release Time for Research (ART), a Research & Travel Incentive Award, and the WPUNJ Student Research and Creative Expression Program.

### **Casey Lum, Communication**

#### *A Comparative Study of Hong Kong and Taiwan's Tourism Marketing Communication*

The proposed presentation pertains to some of the findings from a comparative study of the respective marketing communication campaigns by Hong Kong and Taiwan's tourism authorities is designed to address three research questions: How has Hong Kong as a former British colony portrayed itself to prospective tourists its cultural heritage and identity since its return to China in 1997? How has Taiwan, over which China has claimed sovereignty, portrayed its cultural heritage and identity in the midst of rising advocacy for an independent Taiwan? What are the differences and similarities between how Hong Kong and Taiwan's tourism authorities portrayed their respective historical and cultural ties to China and why?

This research was supported by a Research & Travel Incentive Award, the Dean and the Center for Creative Activity & Research Program, College of Arts and Communication.

### **Zerlina MacDonald, Undergraduate Public Health student, and Corey H. Basch, Public Health**

Faculty Sponsor: Prof. Corey H. Basch, Public Health

#### *Characteristics of YouTube Videos Related to Mammography*

Mammography has long been considered a valuable screening tool for the early detection of breast cancer and more than one billion viewers use YouTube for health related information on the Internet.

Therefore, to analyze coverage of mammography screening; a total of 173 videos with over 2,500 views each, along with a comparison of professionally created videos and consumer-created videos was used for this cross-sectional study.

**Myladys Marte and Zerlina MacDonald, Undergraduate Public Health students, and Corey H. Basch, Public Health**

Faculty Sponsor: Prof. Corey H. Basch, Public Health

*Glove Changing Habits in Mobile Food Vendors in New York City*

The aim of this study was to determine if mobile food cart vendors in Manhattan adhered to current NYC health code 81.13 and is one of various measures to prevent food borne illness. A cross-sectional observational study was performed on a total of 100 carts within 10 zones in Manhattan. In the majority (56.9%, n = 1,026) of the 1,804 money exchanges, food cart vendors did not change their gloves. Not changing gloves after touching money may result in indirect transmission of agents of disease and pose health risks for consumers.

**Lucia McMahon, Jonathan Bone, Susan Dinan, and Neici Zeller, History**

*Comparative Revolutions: New Directions in Research and Teaching*

In this roundtable panel, Drawing from our distinct individual research backgrounds, we will approach the topic of revolution from a variety of chronological and geographical perspectives. Our panel will provide a comparative perspective of specific revolutions that have occurred in widely different historical and cultural settings (e.g. United States, France, Haiti, Mexico, Russia, China, Cuba). We will explore elements of these revolutions common history and examine key issues that led nations to turn to radicalism and revolution, rather than more peaceful transitions to democracy, capitalism, and modernity. Using a comparative framework, we will also explore the results of revolutions paying careful attention to who benefited from revolutionary changes, and whether and why the results were often disappointing or not for the masses (whom these revolutions were often intended to aid). Special attention will be paid to how our research into comparative revolution informs our teaching.

**Emily A. Monroe, Biology**

*Understanding Toxin Biosynthesis in the Florida Red Tide Dinoflagellate, Karenia brevis*

*Karenia brevis* is the Florida red tide alga that causes negative environmental and human health impacts through the production of a suite of potent neurotoxins, the brevetoxins. However, the molecular mechanisms and environmental factors that influence *K. brevis* toxicity remain poorly understood. To gain insight into the molecular mechanisms involved in toxicity, we are currently studying the physiological and molecular differences between non-toxic (NT-KB) and toxic sub-strains (KB) of the *K. brevis* Wilson isolate. Based on previous data that suggests a link between chloroplast metabolism and toxicity, we are examining the effects of high light intensity (HL), twice the normal light intensity, on growth, toxicity, and gene expression of both sub-strains. HL-exposed NT-KB cultures enter stationary phase of growth two days earlier than control NT-KB cultures and die shortly thereafter. The toxic strain exhibits no difference in growth between control and high light treatments suggesting the non-toxic sub-strain is more sensitive to light stress than the toxic strain. At the molecular level, toxin-related genes increase in expression between log and stationary phase in both control and HL conditions in NT-KB, but there are no significant differences in mRNA expression between control and HL conditions. However, there are differences in toxin-related protein abundance in HL-exposed NT-KB compared to control NT-KB cultures. Toxin and gene expression analyses in the toxic sub-strain will provide additional insight into the effects of high light on the non-toxic sub-strain and shed light on the underlying molecular mechanisms involved in toxicity of this harmful algal bloom species.

This research was supported by Assigned Release Time for Research (ART) and the Center for Research, College of Science and Health.

**Christina Mouser, Mathematics**

*A Mathematical Approach to Understanding the Role of Unidirectional Voltage Dependent Electrical Coupling in a Neuronal Network*

Networks of neurons can communicate with one another through both chemical and electrical synapses. The gastric mill network of the Stomatogastric Nervous System contains a subnetwork consisting of a conditional oscillator that receives both types of input. In this network, the electrical coupling is unidirectional and voltage dependent. A mathematical model consisting of a system of coupled differential equations is derived and phase plane analysis is used to understand the role of the electrical coupling and how the synaptic connections work together to generate network oscillations. It is shown that the electrical coupling provides an alternate mechanism for oscillations and helps the network function in an optimal manner.

This research was supported by Assigned Release Time for Research (ART).

**Daria Napierkowski, Cheryl Hollema and Brenda Marshall, Nursing**

*Cultivating and refining clinical knowledge and practice: Relating the Boyer model of scholarship to the DNP graduate*

The presentation will identify how the DNP prepared nurse improves the health of populations by engaging in scholarship using the Boyer model thereby improving patient outcomes and satisfaction.

Participants will be able to identify how the DNP degree prepares expert clinicians who are also scholars and educators. The DNP answers the need for expert nurses, with doctoral degrees, to educate the next generation of nursing professionals. Success in doctoral studies is dependent on attaining the skills of scholarship, through inquiry, evaluation and application of evidence.

Participants will be able to define the scholarship of discovery within the Boyer's model and how can it be best utilized by DNPs. The scholarship of discovery encompasses: primary empirical research, historical research, theory development and testing, methodological studies, and philosophical inquiry and analysis. This practice of scholarship will best serve the DNP to deliver evidence base knowledge to clinical practice.

Participants will be able to identify how the DNP can change practice. The DNP through education and practice affords nurses the opportunity to accomplish the goal of advancing the discipline on multiple fronts, generating scholarship through practice.

The DNP prepared nurse can reach beyond the discipline of nursing and incorporate research into a universal body of knowledge thereby impacting health care and improving the health of populations. The DNP prepared nurse is an expert clinician and educator who is strengthening the discipline of nursing and is using Boyer's model to champion nursing scholarship.

**Leslie Nobler, Art**

*Computer-User Artists and the DIY Trend*

Computer-using art-makers are enamored by mass produced inkjet papers and substrates. These are their DIY raw materials for making art, either with their own printers, or via commercial printing (using uploaded pictures). Not only does this begin to dismantle standards of professional art and design, it renders the process almost effortless. The printing-tech at an online store is vastly different than the artist's hands-on substrate preparation and printmaking. Utilizing the ease of newness and automation

is no substitute for art historical influence and time-honored, maker-engaged techniques. Much of the value in the computer art object rests in keeping past art alive.

Digital Art has historically had many barriers to overcome in terms of its uniqueness. The DIY culture, although it has roots in the late 1800s Arts and Crafts Movement, may devalue quality individual works or limited editions further, as it disrupts the amazing hands-on innovations that electronic artists have recently achieved. In my case, years of studying ecclesiastical and ritual textiles help inform my work. My main focus is now historic lace, reconstructing this "mined" imagery through digital drawing and then experimenting with new interpretations as I print its relief surface. A piece is far more meaningful when one must discover the right surface (or make their own) and when art knits culture(s) together over time or history. By analyzing the brilliance, and mistakes, of ancestral artisans/makers and breathing new digital life into that aesthetic we achieve more than by networking the user to a commercial printer.

This research was supported by a Research & Travel Incentive Award.

**Marina Oganeseva, Ryan Nordlander, Emily Stricker, Danielle Hayes, Jennifer Poquette, Matthew Cromley, and Taylor Landy, Undergraduate Psychology students, and Chelsea Lynch, Child and Adolescent Psychiatry at New York University**

Faculty Sponsor: Prof. Carrie Masia, Psychology

*Clinical Improvement of Social Anxiety: Do Adolescents, Parents and Independent Evaluators Agree?*

**Objective:** Clinical research has been essential in documenting treatment effectiveness. Most clinical trials in youth utilize the Clinical Global Impression Scale-Improvement (CGI-I) assigned by Independent Evaluators (IEs). The use of IEs is costly and time-consuming. Given efforts to disseminate efficacious interventions to community settings, the use of IEs will not be feasible. Thus, it is important to determine whether parent and adolescent ratings can be useful. Lewin et al. (2012) found that IEs provided lower ratings of improvement relative to children and parents across active and placebo treatments. Our study aimed to examine treatment response per adolescent, parent, and IE ratings. We predicted that parents and adolescents would report higher treatment response rates than IEs.

**Methods:** This study of the CGI-I was part of a larger investigation evaluating if school-based cognitive behavioral treatment (CBT) for social anxiety disorder executed by school counselors was effective (R01MH081881 to Dr. Carrie Masia). Participants were 136 adolescents, grades 9 through 12, ranging in age from 14 to 17 in suburban public schools. Students were randomized to 1 of 3 treatment conditions. 1) CBT delivered by school counselors, 2) CBT delivered by specialized clinical psychologists, or 3) Skills for Life (SFL), a standard school counseling program. The CGI-I was used to assess treatment response. Assessments were completed immediately following treatment and follow up 5 months later. CGI-I ratings were provided by parents and adolescents, assigned by IEs blind to participant's condition.

**Results:** Parents CGI-Is resulted in 73.1% treatment response, compared to 54.6% for the IEs,  $p=.007$ . At post-treatment the adolescents reported 82.1% progress compared to the IEs 55.3%,  $p=.049$ . At post-treatment, the adolescents reported 86.5% progress compared to the parents 78.8%,  $p=.033$ . At follow-up, adolescents reported 86.5% progress compared to the IEs 69.3%,  $p=.041$ .

**Conclusion:** Our findings are consistent with those of Lewin et al. (2012) that adolescents and their parents report higher rates of treatment response than IEs. Findings suggest that it may be necessary to utilize IEs to obtain accurate indications of treatment effectiveness.

This research was supported by the Child and Adolescent Psychiatry, NYU, Langone Medical Center.

**Emmanuel S. Onaivi, Susan Sgro, Norman Schanz, Eugene Dennis, Larissa Nkouami Pamen, Claire M. Leonard, Kevin Penkoski, Monika Chung, Ndeah Terry, Liu Qing-Rong and Jasmine Wood, Biology, Georgianna G. Gould, Joao Carlos Escosteguy-Neto, Jair Guilherme Santos-Junior, Laboratory of Neurobiology, Federal University of Sao Paulo, Balopal S. Basavarajappa, NKI, Columbia University, NY**

*Endocannabinoid System Alterations in an Animal Model of Autism Spectrum Disorders*

Alterations of the endocannabinoid system (ECS) are involved in the pathophysiology of neuropsychiatric disorders including autism spectrum disorders (ASDs). The causes of ASDs which are complex heterogeneous neurodevelopmental disorders are incompletely understood. However, the interaction between genes and environmental factors including immune system dysregulation are associated with ASDs. The ECS consists of the cannabinoid receptors (CB1Rs and CB2Rs), endocannabinoids (eCBs), and the synthesizing and degradation enzymes of eCBs. The ECS are involved in embryo neurodevelopment and growth and is a key regulator of the immune system via CB2Rs which are expressed on macrophages, microglial cells and neurons. We used the BTBR T+tf/J mice that have been shown to exhibit autism-like behavioral phenotypes to 1). Determine brain expression of CB2Rs throughout neurodevelopment in BTBR T+tf/J in comparison to C57BL/6J mice and 2). Evaluate the neurochemical and molecular basis of cannabinoid-induced behavioral effects in the mouse model. We report that CB2Rs are present and essential during neurodevelopment and its enhanced brain expression in the adult BTBR mice might be associated with the differential cannabinoid-induced behavioral effects in motor function and emotionality tests when compared to the C57BL/6J mice. eCBs, anandamide (AEA) and 2-arachidonyl glycerol (2-AG) were measured in frontal cortex, cerebellum and the rest of the brain by LC-MS using isotopic dilution method. AEA but not 2-AG levels in the BTBR mice were reduced in the brain areas analyzed. The data indicate that dysfunction in the ECS may in part contribute to ASDs. Further studies are required to determine the contribution of the different elements of the ECS involvement in the etiology of ASDs.

This research was supported by Assigned Release Time for Research and a research award from the National Institutes of Health.

**Lynne Orr, University Core Curriculum, Maggie Williams, Art and UCC Director, and David Weisberg, Music and Co-chair UCC Council**

*UCC: Exploring Civic Engagement*

This presentation will be a brief overview of UCC - Area 5: Civic and Community Engagement. View the visual representations from the 2014 Civic Engagement Day. Discuss the outcomes of UCC Area 5 and explore the civic engagement adventures supporting the University.

This project was supported by through WPU funding to support the University Core Curriculum and Civic Engagement Day.

**Lynne Orr, Dean's Office, College of Education, and Deborah Sheffield, College of Humanities and Social Sciences**

*Guiding Parents and Students: The Major/Career Decision Process*

This interactive session will explore the appropriate role a counselor might take when answering the common questions: What if a college students career goals or abilities are in stark contrast with a parent /guardians desire for their student? How can we encourage the student to find their voice with parents/ guardians? How do we serve the best interests of the student without overstepping our boundaries? Todays college freshmen are at a crossroads in their lives, and we as counselors need to take the family system into strong consideration when using counseling techniques, being particularly

sensitive to the influence parents/ guardians might have in students lives. Realizing that we work within the framework of FERPA, how do we respect the cultural differences that might influence the parental involvement in major and career choice, while serving the best interests of the students being impacted? Creatively using the cruise ship metaphor throughout, the presenters will engage the audience in the process of building a ship (representative of the student) that with each deck built, will eventually be tall and sturdy enough to chart its own career path and see the horizon, ideally with the parents as passengers. The presenters will integrate Family Systems Theory, Chickering, and Erikson to explore the topic in detail. Techniques used to engage the audience will be role playing, personal anecdotes, tested strategies counselors use with college students, and hands on building of the decks of the ship.

This presentation was supported by the Professional Advising Association, College of Education.

### **Ellen Pozzi, Educational Leadership and Professional Studies, and Michelle Hinkle, Special Education and Professional Counseling**

#### *Use of Technology and Student Engagement in the Classroom*

In this presentation, we will demonstrate the use of online comic strip makers as a pedagogical technique in online or face to face classes. We will share ideas for using them to increase comprehension and self-reflection. The format and brevity of the tool forces students to focus on main ideas and important content, while facilitating multiple learning styles. While not the result of formal research, these techniques can be used to evaluate student learning and content delivery.

### **Lily Prince, Art**

#### *San Giovanni D'Asso Series of Paintings and Drawings.*

I take to heart the adage that beauty is the greatest form of protest. Working en plein air, I attempt to take what I experience observationally in nature, translating it into a language of personal expression and universal significance. I consider myself an explorer of specific terrains, studying the atmosphere of diverse spaces. In these times of environmental and societal devastation, it is a political act to immerse myself in the landscape to record the natural beauty lurking there: to incite the arousal of sentiment, a stirring of connectedness.

This research was supported by Assigned Release Time for Research (ART) and the Center for Creative Activity & Research Program, College of Arts and Communication.

### **Sharon Puchalski, Nursing**

#### *Current Attitudes and Practices among Pregnant Women toward Influenza Immunization*

Pregnant women are more vulnerable to severe illness and complications due to influenza infection. The Advisory Committee on Immunization Practices and the American Congress of Obstetrician and Gynecologists recommend that all women who are pregnant during influenza season receive the inactivated influenza vaccine, regardless of trimester. The Centers for Disease Control (2011) reported that only 49% of women pregnant during influenza season stated that they had received the influenza immunization. Prenatal visits represent an ideal time for the APN to discuss immunization history and recommend and educate about the importance of influenza immunization during pregnancy and to help reach the Healthy People 2020 goal of 80% of pregnant women to receive the influenza vaccine. The purpose of this study was to explore pregnant women's knowledge, attitudes, and behaviors toward influenza immunization and examine vaccination coverage in this population. The purpose,

convenience sample was comprised of 60 pregnant women who were recruited from a private obstetrician and gynecologist practice. Fifty-seven percent of pregnant women did not receive the influenza immunization. Maternal age, race/ethnicity, education, and health insurance are independent from the women's decision to receive the influenza vaccination. Women who believed in the efficacy ( $\chi^2(1) = 16.587, p < .05$ ) and safety ( $\chi^2(1) = 12.219, p < .05$ ) of the vaccination were more likely to get vaccinated than those who didn't. Influenza vaccination rates in pregnant women remain low. Understanding pregnant women's knowledge, attitudes, and practices related to influenza immunization can help to improve vaccination coverage rates among pregnant women.

This dissertation research project was completed as a requirement for the WPU Doctorate of Nursing Practice.

**Kara Rabbitt, Dean, College of Humanities and Social Sciences, Philip Cioffari, English, Bruce Williams, Languages and Cultures, John Livingston, History, and Gabe Wang, Sociology**

*HSS Senior Faculty Research Panel*

Dr. Cioffari will present and give a brief reading from his recent novel *Dark Road, Dead End*, an "eco-thriller" set in the Florida Everglades that explores the dark underside of the illicit trade in exotic and endangered species. Dr. Livingston, who has a forthcoming two-volume study of science in Muslim cultures, will present his current research on the first Palestinian newspapers (1908, 1911) and the earliest Arab responses to Zionist immigration. Dr. Williams will discuss key findings from the book he recently co-authored with Keumsil Kim Yoon titled *Two Lenses on the Korean Ethos: Key Cultural Concepts and Their Appearance in Cinema*. Dr. Wang will present his current research on Human Nature and Socioeconomic Development.

**Ryan Rebe, Political Science**

*Sleepy Affairs or Partisan Sluggfests? District Court Campaign Rhetoric in a Post-White Environment*

Many court observers and scholars predicted the U.S. Supreme Court's decision in *Republican Party of Minnesota v. White* (2002) would increase negative attacks and controversial policy appeals in judicial elections. Yet, there is still little empirical evidence to support or refute these contentions. Only a few studies have attempted to quantify the level and nature of campaign rhetoric in judicial elections, and therefore, the impact of *White* on position-taking remains unclear. There is even less known about *White*'s effects at lower court levels where campaign resources and media coverage are scarce. Thus, this paper examines the effects of *White* on campaign rhetoric at the district court level in the 2012 election by investigating how frequently campaigns used attack messages and controversial policy appeals in campaign messages on the websites of judicial candidates. The issue content, negativity, and issue frames used in these websites were coded to assess the rhetorical strategy of each candidate. The data collection also included the presence of "code words" since judicial candidates might use rhetoric associated with a particular ideology or set of policy views in an effort to signal their views to voters.

**Rachel Reeves, Undergraduate Public Health student, and Corey Basch, Public Health**

Faculty Sponsor: Prof. Corey Basch, Public Health

*YouTube Videos Related to Skin Cancer: A Missed Opportunity for Cancer Prevention and Control*

Skin cancer is the most frequently diagnosed cancer in the United States (CDC, 2011). Early identification and treatment have proven to be important factors in influencing survival rates. Researchers examined the content of popular YouTube videos with the key word "skin cancer" to assess the type and quality of information provided on the internet. Videos were separated into

professional and consumer authored groups. The majority of videos (61.4%) offered information on preventative skin screenings, as well as guidelines on the specific signs and symptoms of cancerous lesions (32.9%). One in four consumer videos used the caustic herb black salve as a means of natural excision. The dangers of the unsupervised home health care videos include infection, metastasis, and misleading consumers to attempt to remedy lesions on their own. Because the internet is a mass of unregulated information, this study has been novel in reporting on the use of black salve as a popular at-home method for excision that dermatologists may not be aware of.

### **Crystal Rivera, Sociology**

Faculty Sponsor: Prof. Deniz Yucel, Sociology

#### *A Study of the Relationship Between Teaching and Burnout*

The purpose of this study is to analyze the relationship between burnout in the teaching field. As the demands in the classroom have become more stringent, making teaching less flexible, more and more individuals are likely to experience extended stress from their careers. Individuals are entering into the profession at younger ages, not necessarily prepared to deal with the daily demands of working in a school system. During the course of this study, twelve elementary and high school teachers, and three student teachers were interviewed on the basis of their daily work, and experiences. The teachers who have been teaching for ten or more years, did not respond with feeling as tired as the teachers who just entered into teaching. Additionally, the teachers who are part of Teach for America expressed feelings of burnout, after having just become teachers. There does seem to be a correlation between cultural receptivity and years of experience in the classroom, and feeling disengaged from work. Each teacher's self-efficacy and emotional intelligence appear to be key factors to influencing their well-being in the classroom. Furthermore, the results of this study are not conclusive. But rather, open the door to gaining an understanding as to how societal issues and the school education system are greatly affect the teaching profession.

This research received support from the Student Research and Creative Expression Program.

### **Julie Rosenthal and Anissa Conyers, Elementary and Early Childhood Education**

#### *Engaging in a School Garden: Benefits for Children and Teacher Candidates*

School gardens have been sprouting up across the country in the last decade, and there are multiple benefits for students including educational advantages across the curriculum, and physical and mental health benefits. In northern New Jersey, an organization known as City Green helps urban schools to set up gardens, and provides training for teachers as well as lesson plans for a range of grades. A vacant lot across the street from one of William Paterson University's urban Professional Development Schools was converted into a school garden with the help of City Green, Paterson Habitat for Humanity, the university faculty member and candidates enrolled in her elementary science methods course, and two cooperating teachers and their second and third grade students. The university faculty member teaches the science methods course which is during candidates first major field experience; students in her section along with other volunteers provided the labor needed to convert the lot into an outdoor classroom. The cooperating teachers brought children down to plant assorted vegetables which they later observed, tended, and finally harvested and ate. Teachers linked some classroom learning to the garden experiences. Teacher candidates in subsequent semesters worked with children on planting autumn vegetables and mulching the garden to ready it for the winter. Candidates reflected on the pedagogical value of school gardening, and indicated a desire to incorporate gardening in their future teaching.



**Julie Rosenthal, Elizabeth Brown, Anissa Conyers and Nicole Dynega, Elementary and Early Childhood Education**

*Another Level in Our PDS Partnerships: Bringing Families and Candidates Together*

Students learn more and succeed at higher levels when home, school, and community work together to support students learning and development (Epstein & Sanders, 2006). To advance equity in education, teachers must be prepared to work with families to develop positive links between home and school. This presentation is an update on our ongoing work to provide Elementary Education candidates opportunities to engage with families within their clinical experience in our partner schools. Candidates enrolled in a field based initial certification literacy course tutor striving readers in an afterschool program as part of their clinical work. Originally, the Parent Liaison at one of our partner schools worked with a cohort of candidates to support their communication with parents around children's literacy development. The value of this addition to the field based course was clear: Candidates grew in their desire and efficacy for engaging families who were linguistically and culturally different from themselves. We have since expanded this component to include all sections of the field based course, in three of our partner schools. Families are invited to participate in 1-3 sessions of the afterschool literacy tutoring program within the clinical experience. Candidates, with guidance from the university instructor and cooperating teacher, design literacy activities which children and family members can participate in during the sessions, and which families can bring home to continue working on with their children. Candidates report increased confidence in their ability to engage with families, and an increased desire to do so.

**Randall Sanders, Undergraduate Environmental Science student, and Nicole Davi and Michael Griffiths, Environmental Science**

Faculty Sponsor: Prof. Nicole Davi, Environmental Science

*Student-Led Development of Earth Science Curriculum for Paterson Schools*

Made possible by a grant from The Landsberger Foundation and a partnership with the Paterson Great Falls National Historical Park and Paterson Museum, we are currently developing science-based public educational materials for use within the Park and curriculum based unit plans for the Paterson k-12 community. Students from 4th to 8th grade will be exposed to topics corresponding to grade level science standards in earth science (eg. geology, hydrology and ecology and the interconnectedness of the natural and human environment). Incorporating an inquiry-based approach along with cross-content applications, lesson plans will be provided to engage k-12 students that follow NJCCC Curriculum Standards. Educational materials will be made available through the National Park Service at Paterson Falls and we plan to develop a traveling-trunk program where all materials would be made available to teachers from across the US.

This research was supported by an award from The Landsberger Foundation and undertaken in a partnership with the Paterson Great Falls National Historical Park and the Paterson Museum.

**Jay Shah, Undergraduate Biology student, and Miryam Wahman, Biology**

Faculty Sponsor: Prof. Miryam Wahrman, Biology

*Effects of Antimicrobials on Bacterial Growth on Textiles and Latex*

Hospital-borne infections caused by antibiotic resistant bacteria have become a major threat and cause of death in the U.S. and worldwide. In addition, some food-borne illnesses are also caused by bacteria, the most common being E. coli and Salmonella. We studied bacterial interactions with fomites, that is, contaminated surfaces such as textiles and glove latex, and have investigated the activity of antimicrobials on such surfaces. Fomites were decontaminated with 3% hydrogen peroxide, a highly

effective antibacterial treatment. They were then inoculated with *E. coli*, *B. subtilis* or *S. epidermidis*. Microfiber, scrubs (poly/cotton), silk, polyester, and latex exhibit different properties with regard to bacterial growth. Metal ions with antibacterial properties, such as silver and copper, were studied to determine their effectiveness in reducing bacterial contamination. Application of commercial silver ion spray did not reduce bacterial growth on microfiber, scrubs or latex, although commercially prepared silver-ion impregnated cloth appears to repel and even eliminate bacterial contamination. Microscopic studies revealed differences in interaction of bacteria with individual threads from a variety of textiles. Bacteria readily associate with polyester/cotton scrubs. Silver-ion cloth repels and inhibits bacterial activity, and hydrophobic microfiber also shows reduced bacterial interaction. This study was supported by the WPUNJ ART program, the College of Science and Health, and the WPUNJ Student Research and Creative Expression Program.

This research was supported by the Student Research Assistantship Program from the College of Science and Health, the WPUNJ Student Research and Creative Expression Program, and Assigned Release Time for Research (ART).

### **David Slaymaker, Biology**

#### *Assessing Genotypic Diversity in *Ammophila breviligulata* (American Beachgrass) in New Jersey's Coastal Dune Systems*

*Ammophila breviligulata* (American Beachgrass) grows natively in New Jersey and is also planted extensively along the NJ coast to stabilize damaged and constructed coastal dunes. We used ISSR markers to show that native NJ beachgrass populations had high levels of genotypic diversity whereas restored populations had low diversity or were monotypic. Three native foredune populations were composed of small to medium sized clones, while a rear-dune population was dominated by a single large clone. We will test the hypothesis that American Beachgrass is consistently diverse in foredunes but varies widely in backdunes, in NJ's coastal dune systems. This work will increase understanding of beachgrass biology and ecology, and inform scientific dune restorations efforts.

This research was supported by Assigned Release Time for Research (ART) and the Center for Research, College of Science and Health.

### **Joseph C. Spagna, Biology, and Vinny B. Faso, Biology , MS'14**

#### *Use of Improved Modeling of the 18S Gene to Resolve Early Divergence Patterns in Spiders (Arachnida: Araneae)*

Spiders are key predators in most terrestrial ecosystems and produce silks and venoms, making them important in the fields of biomaterials and neuropharmacology. Despite their importance, the basal evolutionary relationships of spiders remain poorly resolved. The objective of this study is to gain better resolution and understanding of these relationships by examining individual genes more rigorously, using secondary structure models for alignment of individual ribosomal genes and assessing the self-complementary pairs in a doublet model. This model was used to build a matrix of 18S ribosomal sequence from 37 spider taxa. The matrix contained 2,002 characters, 962 loop characters and 1,040 stem characters, which we analyzed utilizing partitioned Bayesian analyses. We obtained three trees: a tree derived from the comparison of loop structures alone (under the GTR model), a tree derived from the comparison of stem structures alone (doublet model), and a combined-data tree with both model partitions included. Here we demonstrate the relationships based on the 18S gene, compare them to previous studies using a variety of data, and preview further research using the 28S gene which has similar structural constraints but varies in evolutionary rate and size relative to the 18S gene.

This research was supported by Assigned Release Time for Research (ART) and the Center for Research, College of Science and Health.

## **Jacquelyn Svercauski, Nursing**

### *Effects of Transition to Practice Programs on New Nurses' Confidence and RN Role Transition*

**Background and Purpose:** The healthcare system is currently facing daunting challenges; to increase the number of new nurses needed to provide care to the burgeoning population of seniors, to provide primary care for individuals covered by the Affordable Care Act of 2010 and to fill the vacancies left by retiring nurses. Transition into practice programs are needed to help new graduate nurses develop comfort and confidence in the autonomous Registered professional nurse (RN) role.

The purpose of this study was to examine the effects of transition to practice programs on new graduate nurses in the state of New Jersey.

**Research Question:** What are the effects of transition to practice programs on new nurse comfort, confidence and RN role transition?

**Design, methods and participants:** The non-experimental, cross-sectional, correlational descriptive study utilized the Casey-Fink Graduate Nurse Experience Survey to examine new graduate nurses comfort, confidence and RN role transition. The purposive convenience sample consisted of 182 RNs licensed in New Jersey, who were hired into their first nursing job between January 2012 and June 2014.

**Results and implications:** Data analysis revealed that there were no significant differences in new graduate comfort and confidence score regardless of length of transition to practice program or entry degree received. The results of this study indicate that up to one-third of new graduate nurses surveyed lacked comfort and confidence in the RN role. The study also indicates however, that those who participated in a longer TTP program fared best, reporting heightened comfort and confidence.

## **Naa-Solo Tettey, Public Health**

### *An Assessment of the Perceived Level of Preparedness among Faith-based Health Educators*

Faith-based institutions serve as a primary source of health information for many. Research has shown that faith-based health promotion initiatives are effective in promoting positive health behavior change. However, health education encompasses many facets and is not solely about the implementation of a program or intervention. Oftentimes, clergy, wellness ministers, and lay health advisors are at the forefront of these health programs. The majority have not been formally trained in a health discipline and are called upon to educate on a variety of health issues. However, it is not clear if these individuals feel adequately prepared for these roles. To determine the perceived level of preparedness among clergy, wellness ministers, and lay health advisors, qualitative interviews and focus groups were conducted. The social ecological model was used as a theoretical framework for the interview questions. Participants expressed confidence with program specific health education as long as these topics had been covered in a training prior to implementation. However, when asked about more technical or advanced health issues they did not feel as equipped. Furthermore, participants expressed various concerns regarding having to be knowledgeable of multiple health topics, being given health information but not being fully trained on the skills needed to be an effective health educator, and serving in capacities such as counselor or patient navigator without sufficient compensation or training. This study has practice implications by demonstrating a need for formal education programs that focus specifically on training individuals to work as health educators in faith-based institutions.

**Nichole Vanderhoof, Undergraduate Psychology student, and Natalie A. Obrecht, Psychology**

Faculty Sponsor: Prof. Natalie Obrecht, Psychology

*Aggression in the Media and School Motivation Predict Aggression in Real Life.*

Researchers have found that exposure to violence in video games and media are related to an increase in violence in real life (e.g. Kronenberger et al, 2005) and desensitization to violence in people's everyday lives (Funk, et al., 2004;). We expected to replicate previous findings showing that the more exposure to violence in the media and in video games the more violent someone would be in real life and that males would be more violent than females. Additionally, we expected that students with lower GPAs and lower school motivation would be more violent than students with higher GPAs and higher school motivation. Undergraduate participants (N=151) completed our six items Violence in Video Games and Media survey, Buss & Perry's (1992) Aggression Questionnaire, Ceballo et al. (2014) School Effort Measure, and also reported their GPA and gender. We found that aggressive behavior in real life was positively associated media violence exposure ( $r=.21$ ), negatively related to school motivation ( $r=-.35$ ), and unrelated to gender and GPA. Individual difference variables may be better predictors of aggression than exposure to violence.

**Irene Van Riper and Manina Urgolo-Huckvale, Special Education and Professional Counseling**

*A New Vision of Graduate Programs in Autism Spectrum Disorders: Promising Practices*

Today's teachers face a myriad of challenges in supporting students with autism. LeBlanc, Richardson & Burns (2009) report that even a limited amount of professional development can significantly increase evidence-based instructional practices for these individuals. This presentation focuses on two factors: the urgent need for a program of advanced studies to prepare special and general educators to teach students with disabilities, such as autism, and to detail one university's method to provide intentional coursework designed to enhance educators' skills in working with these individuals. The considerations taken when crafting this program included examining the best strategies for working with this population, as well as the best practices that would support and meet the individual needs of the teacher candidates.

Approximately 40% of students with autism are taught in the general education classroom, 20% are served in resource room programs, and 40% are placed in separate classrooms. While the prevalence of autism has increased to 1 in 68 in the United States, it has increased even more in New Jersey. The latest statistics show the rate of diagnosis in New Jersey as 1 in 45 (NJ Education, 2012).

Relationships have been identified between teacher's abilities, and their beliefs, sense of self-efficacy, emotional responses to challenges and level of professional knowledge (Hastings & Brown, 2002). This suggests that, in order to best teach students with autism, educators tend to be more effective when their beliefs and knowledge are shaped by instruction in evidence-based practices (Wheeler, Mayton & Carter, 2014).

**Velantina Vega-Veglio, Mathematics**

*Optimal Trading Trajectories for Algorithmic Trading*

A fundamentally important problem in algorithmic trading is to determine the optimal trading trajectory for a large trade during a finite horizon that minimizes a cost function that jointly models the effects of market impact and market risk. In this article, we derive explicit formulas for the optimal Implementation Shortfall trading curve with linear and non-linear market impact. A complete characterization of the solution and optimal trading trajectory is provided as a quadratic optimization problem. We also analyze how changing the risk aversion weight in the cost function modifies the optimal trading trajectories.

This project was supported by the Center for Research, College of Science and Health.

**Kristen Victorino, Communication Disorders & Sciences**

*Attention Control in Visual, Auditory, and Dual Modality Conditions: Effects on Language Processing for Children With and Without Language Disorders.*

Control of attention is an important cognitive function that is implicated in language processing. Children with language disorders have problems with many executive functions, including working memory, inhibitory processing, and aspects of attention. The current study examined control of attention in single modalities (visual, auditory) as well as in a dual modality condition (visual + auditory) and its effects on word recognition skills in three groups of school aged children (ages 9-12): typically developing children, children with specific language impairment, and children with high-functioning autism spectrum disorder. Children were instructed to pay attention to one stimulus while simultaneously ignoring another. They then made a lexical decision about a target (whether it was the same as or different from the attended stimulus). Preliminary results show different patterns of performance (in terms of accuracy and reaction time) in the three groups. These results have clinical implications regarding the presentation of visual and auditory information to these varied populations.

This research was supported by the Center for Research, College of Science and Health.

**Kurt W. Wagner, Richard Kearney and Mohamed Hassan, David and Lorraine Cheng Library**

*The Effect of Implementing a Discovery Service on Subscribed Library Resources*

Library discovery interfaces provide a single search box for all of the resources: books, audiovisual, and articles in subscribed databases. In response to the user-reported confusion of multiple databases and not knowing where to search, discovery systems have been created to simplify basic searching. The relevant literature indicates that the results of implementation of a discovery system are threefold: users report that they find their overall information search experience is simplified, that their results are more meaningful, and that the overall use of the subscribed database and journal content increases. This poster is meant to illustrate initial results of the implementation of ChengFind at the David and Lorraine Cheng Library in September 2014. An initial user satisfaction survey was conducted. Google Analytics provides web traffic data. The interface itself provides use data. Lastly, a preliminary comparison is performed between journal access data in 2012-2013 and then after discovery interface implementation.

**Lisa Warner, Elementary and Early Childhood Education**

*Teachers' Evolving Understanding of Their Students' Mathematical Ideas During and After Classroom Problem Solving*

This presentation is based upon research that took place over the course of a professional development (PD) project in which researchers partnered with teachers in schools across the state of New Jersey. A central aspect of this work involved regularly scheduled PD sessions with these teachers in which the teachers solved cognitively complex problems with an eye toward using them with their own students. Researchers often visited teachers while they were implementing the problems in their own classrooms.

I will share how three middle school urban math teachers responded to their students when confronted with difficulty in understanding their mathematical thinking during class. I will highlight the ideas encountered, how they were addressed during class, and the teachers own evolving understanding of the math. I will also elaborate on their thoughts and perceptions about the in-the-moment decisions they made.

The findings indicate that the teachers tended to highlight the ideas that they seemed to understand, and became frustrated by their inability to understand and interpret other ideas and/or misconceptions. They resolved to be more diligent in considering a wider variety of potential student solution trajectories prior to class in the future, and to embrace the fact that they may not always understand the many unique solutions and strategies that arise. They also became more accepting of the fact that when students develop and share their own ideas they may, in the process, develop different and/or incorrect ways of thinking, some of which will be difficult to understand at the time.

This research was supported by Assigned Release Time for Research (ART) and the CCCS Research Project funded by the NJ Education through Rutgers University.

### **Yan Yu and Betty Kollia, Communication Disorders and Sciences**

#### *Neurophysiological Indices of Auditory Processing in Children with Autism Spectrum Disorders and in Older Bilinguals*

This presentation will include studies using neurophysiological method to examine the brain's responses to linguistic stimuli. Two studies will be presented. One focuses on the brain measures of word processing in minimally verbal children with autism spectrum disorders, and the other focuses on bilingual speech processing in the older population.

Preliminary results from both studies suggest that the lower level sensory processing is less affected by factors such as age and language experience, while higher level language processing is more sensitive to language development and age.

This research was supported by Assigned Release Time for Research (ART) and the Center for Research, College of Science and Health.

### **Deniz Yucel, Sociology**

#### *The Moderating Role of Gender Ideology: Exploring the Effects of Marital Communication and Interaction on Relationship Satisfaction*

Using data from 433 married couples in the Marriage and Relationship Survey (MARS), this study tests the effects of marital communication and marital interaction on relationship satisfaction. In addition, this study explores whether the effects of these variables vary across different gender ideology. Data from these married couples are analyzed with structural equation models to determine the contributions of (a) each respondents predictors (actor effects) and (b) his/her spouse's predictors (partner effects). No gender differences in actor and partner effects emerge. Marital communication and marital interaction both as rewards and thus increase relationship satisfaction. A partner effect emerges for marital communication, suggesting that a spouse's communication contributes significantly to explaining the variance in relationship satisfaction. Lastly, this study finds that the actor and partner effects of marital communication and marital interaction are the strongest among couples where both spouses are egalitarian and lowest among couples where both spouses are traditional.



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**New Mission Statement**

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, and
- Developing, monitoring and implementing policies to ensure compliance with sponsor expectations and regulatory requirements that are not limited to any one individual award.

The OSP reports to Dr. Stephen W. Hahn, Associate Provost for Academic Affairs in the Office of the Provost and Senior Vice President for Academic Affairs.

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**OSP Publications**

**Funding Opportunities Announcement**  
 Our weekly opportunity email

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 Our newsletter celebrating funding successes and more

**OSP Website**  
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**Online Funding Opportunity  
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*GrantSearch*                      *Pivot*

*Grants.Gov*

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**OSP Workshop Series**

April 9	Toolkit for Finding Grants: Elements of a Successful Grant Search	12:30 to 1:45, Raubinger 309
May 21	The Art of Writing a Competitive Grant Proposal	12:30 to 2:00, Raubinger 309
For details regarding workshops: <a href="http://www.wpunj.edu/osp">www.wpunj.edu/osp</a>		

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**Technical Assistance Travel**

Travel support provided to attend a workshop or conference on a funding opportunity or agency, to meet with a grant program officer, or related grant-development activity. Support must be requested before registering.

**Research Development Mentor Project**

The OSP has undertaken a year-long project with the assistance of consultants Toufic Hakim and Kathy Weiner or Group i&i Consultancy to increase the capacity of William Paterson University to develop and submit high quality research proposals. Information will be released soon on how faculty can be considered for inclusion in this project to significantly increase external support for research and related projects.