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**William Paterson University
University Research and Scholarship Day 2010**

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The Faculty Senate Research Council would like to acknowledge the artist of the 2010 University Research & Scholarship Day poster and program cover,
Ms. Larysa Sterni, a senior in the Bachelor of Fine Arts program,
and her faculty sponsor, Dr. Tom Uhlein.

Schedule of Activities and Presentation Abstracts

Schedule At A Glance

9:30 to 12:20	Concurrent Individual and Group Presentations University Center Rooms 168 A and B, 171B, Ballroom A
12:00 to 2:30	Poster Presentations
12:30 to 1:45	College of Arts and Communication University Center, Room 168B College of Humanities and Social Sciences University Center, Room 171B College of Science and Health, Center for Research University Center, Ballroom A
2:00 to 3:30	Concurrent Individual and Group Presentations University Center Rooms 168A, Ballroom A, Ballroom B
3:00 to 4:45	David and Lorraine Cheng Library, Annual Authors Reception Office of Sponsored Programs, Recognition of Award Recipients University Center, Ballroom C

Presentation Schedule

Morning Individual and Group Presentations

Room 168A

10:30 - 10:50	Heejung An <i>The Impact of Four Teacher Candidates' Urban School Field Experiences on Technology Integration Practices</i>
11:00 - 11:20	Julie Rosenthal <i>Teacher Candidates Using Field Trips to Support Literacy Instruction</i>
11:20 - 11:40	Burton Weltman <i>Was the American Revolution a Mistake?: Teaching History as Choices</i>
11:40 - 12:00	Kevin J. Walsh, Jolene Battitori <i>Retaining the Good Ones: Factors Associated with Teacher Job Satisfaction</i>
12:00 - 12:30	Nancy Vitalone-Raccaro, Bernard C. Jones <i>Teaching Without Hesitation: Reaching All Learners: Using Brain-Based Instructional Strategies to Improve Instruction in Special Education</i>

Room 168B

12:00 - 12:20	Maggie M. Williams <i>The Role of Ringed "Celtic" Crosses and Interlace Knotwork Designs as Symbols of Irish Identity</i>
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Room 171B

- 9:30 - 9:50 **Diana Davis Olsen**
The Visual Language of Power: The Role of Equestrian Armor in Renaissance Europe
- 9:50 - 10:10 **Jacob Felson**
Are Twin Studies Biased? Evaluating the Equal Environments Assumption
- 10:10 - 10:30 **Alberto Montare**
A Metatheoretical Approach to Consciousness
- 10:30 - 10:50 **Rajender Kaur**
Reveling in Motley Tongues: Of Lascars and Language in Sea of Poppies
- 11:00 - 11:20 **Judith Broome**
"It's all a mess- no order or sequence:" Trauma and Narrative Structure in Roddy Doyle's The Woman Who Walked into Doors and Paula Spencer
- 11:20 - 11:40 **Marina Budhos**
"Tell Us We're Home"
- 11:40 - 12:00 **Keumjae Park**
Perception of Migrants in South Korea: A Media Content Analysis
- 12:00 - 12:20 **Hideo Watanabe**
Dr. James Curtis Hepburn

Ballroom A

- 9:30 - 9:50 **Christina B. McSherry**
The Inner Life at the End of Life
- 9:50 - 10:10 **Nadine M. Aktan**
Characterization of Patients Using an Indigent Medical Clinic
- 10:10 - 10:30 **Michael A. Figueroa, Gordon Schmidt, James Manning**
Technology vs. Physiology
- 10:30 - 10:50 **Richard Pardi, Michael Sebetich, Chad Socha**
Nutrient Cycling and the Assimilative Capacity of an Exurban Stream: Belcher Creek, Passaic County, NJ
- 11:20 - 11:40 **Linda Kaufman, Andreas Salazar, Ace Flores, Gregory Krietzman**
Block methods for Solving Banded Symmetric Linear Systems
- 11:40 - 12:00 **Cyril S. Ku**
Software Metrics for Collaborative Software Engineering Projects
- 12:00 - 12:30 **David C Gilley, Krystle Frederick**
Does the Waggle-dance Scent Stimulate Experienced Forager Bees to Visit Known Food Sources?

Ballroom B

- 12:00 - 12:20 **Avinash Arya**
Recent Developments in Fair Value Accounting

Common Hour Sponsored Sessions and Posters

Room 168B**College of Arts and Communication Sponsored Session****Payton MacDonald***New Music for Percussion***Karen Demsey***The Search for Musical Identity: Pedagogical Implications for Undergraduate Performance Students*

David Demsey

The Clark Terry Archive, and the Newly Established WP Living Jazz Archives

Lauren Razzore

Interactive Multimedia DVD: Menu Building in Adobe Encore and Aftereffects

Room 171B

College of Humanities and Social Sciences Sponsored Session

Donna Perry

Final Acts: Death, Dying, and the Choices We Make

Maya Chadda

Why India Matters: Political and Strategic Perception of India's Rise in 20th Century

Yingcong Dai

The Sichuan Frontier and Tibet: Imperial Strategy in the Early Qing

Kathleen Korgen

Multiracial Americans and Social Class: The Influence of Social Class on Racial Identity

Ballroom A

College of Science and Health, Center for Research Sponsored Session

Joseph C. Spagna, Edgar Valdivia, Vivin Mohan

Characterization of Dynamic Locomotion in Grass Spiders (Araneae: Agelenidae)

Jennifer Callanan, David Lugo, Chad Reinertsen, Christina Auger, Monica Tierno

Textural and Mineralogical Modifications of a Soil Profile as a Result of Fire

Poster Session

1. **Jennifer Johnson**

*Nitric oxide is involved in metamorphic process in anuran tadpoles, *Xenopus laevis**

2. **Martin A. Becker, Robert W. Wellner (ExxonMobil Development Co.), Christopher S. Mallery Jr. (Univ of No. Texas), and John A. Chamberlain Jr. (Brooklyn College)**

Chondrichthyans from the Lower Ferron Sandstone Member of The Mancos Shale (Upper

Cretaceous: Middle Turonian) Of Emery And Carbon Counties, Utah, USA

3. **Kevin Martus, Erica Barden, and Nicole Burchell**

Electronic Temperature Measurements in a Micro-Cathode Sustained Discharge in Neon

4. **Jennifer Callanan, David Lugo**

Textural and Mineralogical Modifications of a Soil Profile as a Result of Fire

5. **Danielle Zeltner, Michael Peek, and David Slaymaker**

*Molecular Marker Development for Studying Genotypic Diversity in *Ammophila breviligulata* (American Beachgrass)*

6. **David A. Snyder, Timothy Short, Pankaj V. Vekariya, and Leigh Alzapiedi**

A Comprehensive Software Package for Covariance NMR

7. **Nicole Magaldi, Betty Kollia**

Autistic Children's Use of Visual-spatial Information in Recognizing Pictures

8. **David Nacin**

Sequences Arising from Non-Repeating Nim Type Combinatorial Games

9. **Jane Bambrick**

A Look at the Unusual: Calligrams

10. **Kendall Martin**

Optimizing Anaerobic Soil Disinfestation as an Alternative to Methyl Bromide Fumigation

11. **Nancy Weiner**
Progression Standards for Information Literacy
12. **Donna Potacco, Rita Levine, Jessica Oscanoa, Andres Salazar, Marvin Calerone, and Emmanuel Onaivi**
Pharmacology Tutorial
13. **Jennifer Callanan, David Lugo, Chad Reinertsen, Christina Auger, and Monica Tierno**
Textural and Mineralogical Modifications of a Soil Profile as a Result of Fire
14. **Max Sainvil, Krista Averill, and Prof. Melkamu Zeleke**
The Golden Ratio and Its Occurrences in Nature
15. **Jennifer Dessell, Prof. Mark Ellis**
Generational Comparison of Attitudes on Same-sex Marriage: Is There a Generational Gap?
16. **Tiffany Rice, Prof. Paula Fernandez and Prof. Sheetal Ranjan**
Too Busy to Run for President?: Factors Influencing Student Leadership Accomplishments
17. **Salwa Muhamad and Prof. Sheetal Ranjan**
Gender Biases and L.G.B.T Issues in Education
18. **Jared Sterk and Prof. Keumjae Park**
Effects of Military Service on Veterans' Socioeconomic Status and Quality of Life
19. **Janet Thomas and Prof. Keumjae Park**
Black Women's Perceptions Toward Black Men Involved in Interracial Relationships
20. **Will Graulich and Prof. Gennifer Furst**
A Program Proposal for Combating Gang Recruitment in Paterson, New Jersey
21. **Michael Greeley and Prof. Gennifer Furst**
Program Evaluation: The Tenafly Fire Department, Recruitment and Retention
22. **Michelle Marchese and Prof. Lorraine Phillips**
Can Child Abuse be Explained through Social Learning Theory?
23. **Danielle Scassera and Prof. Mark Ellis**
Socialization of Gender Expectations: Television News Broadcasting and the Construction of "Soft" News
24. **Todd Rose and Prof. Charley Flint**
Why "We the People" Torture
25. **Jonathan Huber and Prof. Emily Mahon**
Football Fans at the Bar: Is it the Drinking or is it the Social Cohesion?
26. **Amy Learmonth, Amanda Cohen, Anderzej Krzastek**
Geometry, Landmarks or Both: A Look at Navigation in a Virtual Task
27. **Charles Tillou and Prof. Virginia Overdorf**
Internal vs. External Focus
28. **Jeung Woon Lee, Robert Benno, Diane Asmar, Brittany Knoll, Annabelle Beltran**
Changes in Pain Threshold in BTBR T+tf/J Mouse after Adrenalectomy: Relationship between Stress Hormone and Nociception in Autistic Mice
29. **John Urban**
Transcription and DNA replication can initiate promiscuously on an episome in bloodstream-form Trypanosoma brucei.

Afternoon Individual and Group Presentations

Room 168A

2:00 – 3:20

Panel: Promoting Faculty and Student Research**Sue Godar, Tina Lesher***Applying for a Fulbright : Teach, Learn, and Research Abroad***Pradeep Patnaik and Peter Griswold***The Student Undergraduate Research Program***Lourdes Bastas***Issues and Ideas for Funding and Conducting Research***Betty Kollia, Salika Lawrence***Institutional Review Board Support of Research***Room 171B**

1:45 – 2:05

Ellen Frye*The Communicative Structure of Don Gil de las calzas verdes***Ballroom A**

2:00 - 2:20

Amy Meltzer Rady*An Experiential Approach to Teaching in a Professional Preparation Program:**What Works with Today's Kinesiology Majors*

2:20 - 2:40

Emmanuel S. Onaivi*Cannabinoid and Monoaminergic System Disruption in a Mouse Model of Autism Spectrum Disorders***Ballroom B**

2:00 – 3:20

Panel: Surviving in Turbulent Times**Robert Laud***Driving Change for Entrepreneurial Success***Stephen C. Betts***Small Business Strategies for the Economic Downturn: Survive, Thrive and Drive***Vincent Vicari***Things to Do in 2010: Make 2010 a Better Year***Cesar Perez-Alvarez***How Uncertainty Avoidance Impacts Groupware Appropriation*

ABSTRACTS

Nadine M. Aktan, Nursing

Characterization of Patients Using an Indigent Medical Clinic

Using an automated Microsoft Access database system, data was characterized for an indigent population identifying its acute, chronic, and preventative health care needs. The relational database will allow for the future planning and expansion of primary and preventative health care services. Characterization will also be useful in properly submitting and receiving grants, as well as other sources of funding, in order to meet the rapidly growing demands of the target population. Of the 1077 visits characterized over a 9 month period, the diagnoses managed include: chronic disease, infections, and minor traumatic injuries. The most prevalent chronic conditions seen are hypertension, diabetes, asthma, and arthritis and for acute infections bronchitis, dermatitis, sinusitis, upper respiratory and urinary tract infections. Chronic infections such as HIV, herpes, hepatitis, and tuberculosis, along with traumatic conditions such as strains, sprains, and spasms were also treated. The medication management of these conditions includes antihypertensive and diabetic agents, inhalers and prednisone for asthma, and ibuprofen for arthritis and traumatic conditions. For acute infections a variety of oral and topical antibiotics are prescribed or dispensed. Due to the large numbers of acute and chronic health care needs of the target indigent population, future recommendations have been made including: partnering with local hospitals and medical centers, Board of Health Departments, university medical and nursing programs, businesses and pharmacies to meet these demands.

This was supported by the ART Program.

Heejung An, Elementary and Early Childhood Education

The Impact of Four Teacher Candidates' Urban School Field Experiences on Technology Integration Practices

This paper reports on case study findings in relation to four preservice teachers' technology integration experiences during their practicum. Findings indicate that there were no differences found in terms of technical competence after the teacher candidates completed their practicum experience, but that the experience helped them to a) play a role as change agents while negotiating with their own understanding and expectation toward technology integration; b) collaborate with their cooperative teachers; c) recognize and manage contextual factors such as limited technology access; and d) better construct understandings about Technological Pedagogical Content Knowledge (TPACK).

This was supported by the ART Program.

Avinash Arya, Accounting and Law

Recent Developments in Fair Value Accounting

Recent turmoil in financial markets has raised some major issues related to implementing SFAS 157. In response, the FASB took a series of short-term standard-setting actions to improve the application guidance related to fair-value measurements. In this article, we analyze three FASB Staff Positions (FSP) that provide additional application guidance and enhance disclosures regarding fair value measurement of assets and liabilities and impairments of debt securities.

FSP FAS 157-4, Determining Fair Value When the Volume and Level of Activity for the Asset or Liability Have Significantly Decreased and Identifying Transactions That Are Not Orderly, provides guidelines for making fair value measurements more consistent with the principles found in FASB Statement No. 157, Fair Value Measurements. FSP FAS 107-1 and APB 28-1, Interim Disclosures about Fair Value of Financial Instruments, enhances consistency in financial reporting by increasing the frequency of fair value disclosures. FSP FAS 115-2 and FAS 124-2,

Recognition and Presentation of Other-Than-Temporary Impairments, provide additional guidance designed to create greater clarity and consistency in accounting for and presenting impairment losses on securities.

We discuss how to implement these FSPs, provide examples and decision flowcharts to assist in this process, and discuss implications for practitioners.

Jane Bambrick, Library

A Look at the Unusual: Calligrams

Calligrams have existed since early medieval times, but the poet and painter, Guillaume Apollinaire, invented the "calligram" at the beginning of the twentieth century. A calligram is a composition in which the words themselves form the design. The script or type that forms the words is the integral part of the artwork. Calligraphers can manipulate the pen in many ways to form the calligram. Capitals, lower case, flourishes and colors can be used to form dramatic designs. This session will present original calligrams that reflect modern, serious and playful designs as well as historical calligrams. Outstanding calligrams by prominent artists will also be displayed. This presentation will be interesting, unusual and visually pleasing.

Lourdes Bastas, OSP/IRB

Issues and Ideas for Funding and Conducting Research

Resources and services provided by the Office of Sponsored Programs to support faculty and student research, scholarship and other activities.

Martin A. Becker, Environmental Science

Co-Presenters: Robert W. Wellner (ExxonMobil Development Company), Christopher S. Mallory Jr. (University of North Texas), John A. Chamberlain Jr. (Brooklyn College)

Chondrichthyans from the Lower Ferron Sandstone Member of The Mancos Shale (Upper Cretaceous: Middle Turonian) Of Emery And Carbon Counties, Utah, USA

The Lower Ferron Sandstone Member of the Mancos Shale in southeastern Utah preserves a chondrichthyan assemblage of at least 13 taxa that include: *Hybodus* sp., *Ptychodus* cf. *P. mammillaris* Agassiz, 1843, *Ptychodus whipplei* Marcou, 1858, cf. *Chiloscyllium* sp., *Scapanorhynchus raphiodon* (Agassiz, 1843), *Cretodus crassidens* (Dixon, 1850), cf. *Leptostyrax* sp., cf. *Cretalamna appendiculata* (Agassiz, 1835), *Squalicorax* sp., *Pseudohypolophus mcultyi* (Thurmond, 1971), *Protoplatyrhina hopii* Williamson, Kirkland and Lucas, 1993, *Ischyrhiza schneideri* (Slaughter and Steiner, 1968), and *Ptychotrygon triangularis* (Reuss, 1844). Although this assemblage is typical of other Turonian chondrichthyan faunas in North America, fossil teeth are preserved in two unique facies associations that consist of arenitic sandstones with mud interclasts and rounded chert, feldspar and quartz pebbles. The coarser beds within these facies associations are previously interpreted to represent storm events and turbidity flows associated with a sea level lowstand. Chondrichthyan teeth occurring within these coarser beds are indicative of extensive transport and reworking and attest to the durable nature of chondrichthyan teeth for biostratigraphic and paleoecological interpretations. Similar studies of chondrichthyan teeth in shelf marine settings may also provide new insights for facies interpretations related to sequence stratigraphy and regional stratigraphic correlations.

This was supported by the ART Program, the College of Science and Health, Center for Research, and by ExxonMobil.

Stephen C. Betts, Marketing & Management Sciences*Small Business Strategies for the Economic Downturn: Survive, Thrive and Drive*

Economic downturns create challenges for all businesses. Smaller concerns are particularly threatened because of the potential disproportionate economic impact on their specific market segments. However, they also might have unique opportunities to positively respond to changing market conditions. In this presentation I explore strategies for small businesses to survive and thrive during the downturn and drive the economic recovery. I propose that small businesses can survive threats by addressing key vulnerabilities. They can thrive by creatively modifying their product/service offerings or implementing innovative processes. Finally I argue that by responding to changing market conditions with new products, services and processes, small businesses will drive the economic recovery.

This research was supported by the Cotsakos College of Business.

Judith Broome, English*"It's all a mess- no order or sequence:" Trauma and Narrative Structure in Roddy Doyle's The Woman Who Walked into Doors and Paula Spencer*

Writers on trauma and literature have posed the questions: How does trauma become representable? How can we distinguish the representation of trauma from the compulsion to repeat? I do not believe there is a simple answer to these questions, which invite infinite exploration. I would like to suggest in this paper, however, that the raw voice of the narrator and the fragmented structure of *The Woman Who Walked into Doors* (1996) offer a fictional attempt to present unmediated trauma, trauma that is both long term and the result of a sudden shock. Without a reliable narrator, we read only the ramblings of an alcoholic woman who has just been informed that the man who brutally abused her for nearly twenty years has himself been shot to death by police. Her memories obey no time frame, but flash intrusively into her consciousness: how she loved him, how he beat her, how they would make up, how he would beat her again; her struggle to stop drinking, her battle to love and protect her children. There is no conclusion, no resolution to this novel, except for the fact that the end returns to the present; we are left with pieces of a life that we assemble according to our own experience and imagination.

In *Paula Spencer*, Roddy Doyle's 2006 sequel, the reader encounters a narrator with a name, a woman who has quit drinking, whose thinking reveals the slimmest ray of clarity. It is her body that tells the story of trauma in this novel, the broken bones that never healed properly, the missing teeth, the constant backache resulting from years of physical abuse and the hard work of cleaning houses and offices. But even if we believe in the possibility of an integrated and coherent self, for *Paula Spencer*, trauma is borne by her body. Doyle's sequel does not represent a recovery, or a narrative coherence that enables wholeness. *Paula Spencer*, I suggest, is merely a covering-over of *Paula Spencer's* story that buries the original trauma by repetition and reworking of her narrative.

This was supported by the ART Program, the English Department and by a Research & Travel Incentive Award.

Marina Budhos, English*"Tell Us We're Home"*

"Tell Us We're Home", a young adult novel (Atheneum/Simon and Schuster, May, 2010): Jaya, Maria, and Lola are just like the other eighth-grade girls in the wealthy suburb of Meadowbrook, New Jersey. They want to go to the spring dance, they love spending time with their best friends after school, sharing frappes and complaining about the other kids. But there's one big difference: all three are daughters of maids and nannies. And they go to school with the very same kids whose families their mothers work for. That difference grows even bigger--and more painful--when Jaya's mother is accused of theft and Jaya's small, fragile world collapses. When tensions about immigrants start to erupt, fracturing this perfect, serene suburb, all three girls are tested, as outsiders--and as friends. Each of them must learn to find a place for themselves in a town that barely notices they exist.

This was supported by the ART Program and the New Jersey State Council on the Arts.

Jennifer Callanan, Environmental Science

Co-Presenters: David Lugo, Chad Reinertsen, Christina Auger, Monica Tierno,
Environmental Science, Undergraduate Students

Textural and Mineralogical Modifications of a Soil Profile as a Result of Fire

The degree of soil heating during a fire event will influence modifications to soil texture and mineralogy. The upper 5-8cm of soil will experience the most intense heat and result in significant alterations. Sub-surface soils are less affected. Intense heat is attributed to high severity fires or burning of large fuel loads such as logs, brush, or slash piles. Intense heat can increase the sand fraction and decrease the silt and clay fractions. This is attributed to fusing of silt and clay particles into sand sized particles. There is also indication for the reverse effect, whereby intense heating may physically weather sand particles, resulting in decreased coarse fragments and increased fine sands, silts, and clays. It may also structurally alter clay minerals. These alterations may persist with time.

The fate of altered surface soils resulting from fire is not clear. This study investigates translocation over time from the most recent burn. Soil was sampled at 5, 10, and 20cm depths following a prescribed burn, underneath and adjacent to, a brush pile. Sampling occurred prior to and one and three months, after the burn.

Particle size analyses indicate non-significant modifications to percentages of clay, silt, and sand as a result of burning in the surface and sub-surface soil. This is contrary to the anticipated result as the brush pile was chosen as an area of intense heating. X-ray diffraction data indicate the presence of kaolinite and chlorite with minimal structural alteration.

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

Maya Chadda, Political Science*Why India Matters: Political and Strategic Perception of India's Rise in 20th Century*

Discussion of current book forthcoming with Lynne Reiner.

Yingcong Dai, History*The Sichuan Frontier and Tibet: Imperial Strategy in the Early Qing*

Discussion of recent book published by University of Washington Press, 2009.

David Demsey, Coordinator of Jazz Studies, Curator, Living Jazz Archives*The Clark Terry Archive, and the Newly Established WP Living Jazz Archives*

This grant project involved work at the home of legendary trumpeter Clark Terry in Arkansas, including the discovery, sorting and cataloguing of historic materials from his seven-decade career, some for the inclusion in his archive, located on our campus.

The Clark Terry Archive contains original sheet music, awards, instruments, tour posters and vintage photographs of the legendary trumpeter, bandleader and educator. One of the few musicians to be a member the orchestras of both Duke Ellington and Count Basie, his virtuoso solo career extends over six decades. He is one of the founders of the jazz education movement, and maintains an ongoing presence on our campus as a guest artist, lecturer and adjunct faculty member.

The WP Living Jazz Archives (now two years old) have a unique mission to connect today's students directly to the spirit and essence of the lives of legendary jazz musicians through their personal materials. By combining this with our world-class jazz program (most other archives are unconnected to any performance entity), William Paterson

has the potential to be a world leader in this area, and to literally change the way jazz is taught. Besides the Clark Terry Archive, we also house the archives of the influential trumpeter/arranger Thad Jones (1923-1986), who is the Founding Director of Jazz Studies at WP; and pianist/educator James Williams (1951-2004) who was WP Jazz Studies Director until his premature death.

This work with Clark Terry takes advantage of the fact that this 89-year-old legend is still with us, and is still deeply committed to jazz education and to continuing to broaden and deepen his Archive here on our campus.

Karen Demsey, Music

The Search for Musical Identity: Pedagogical Implications for Undergraduate Performance Students

I recently began research for a book of selected case studies of teachers (and in some cases, institutions) engaged in the active development of musical identity in undergraduate performance students. Many classical performance students finish their undergraduate studies without a clear sense of their own identity or “voice” as a performer, and with very limited experience as improvisers and composers, or as performers of music other than Western classical repertoire. Technical skills are frequently given disproportionate weight in instrumental teaching and performance evaluation. Students’ abilities to create- as opposed to re-create- a performance, are dramatically affected when they regularly engage in forms of musical expression that require imagination and original thought: improvisation, composition, learning and performing repertoire outside traditional Western classical repertoire, learning non-traditional techniques on their instruments, learning to play new instruments. As a result, students bring passion, spontaneity, and creativity to their performances and learn how to communicate with immediacy to the listener. The goal is to bring attention to a crucial and under-researched area of instrumental pedagogy. Excellent role models do exist; I wish to bring examples of innovative teaching to a wider audience and to encourage educators to incorporate these activities into their own teaching and curricula.

Jennifer Dessell, Sociology

Faculty Sponsor: Mark Ellis, Humanities & Social Science

Generational Comparison of Attitudes on Same-sex Marriage: Is There a Generational Gap?

This paper compares generational attitudes on same-sex marriage. While research on discrimination against same-sex couples has discussed homophobia based on factors, such as race, religion, or political affiliation, few studies examine how different generations view the legalization of same-sex marriage and why. The hypothesis for this study is that older generations are less accepting of same-sex marriage legalization than younger generations. Anonymous surveys were conducted using a snowball sample. The findings conclude that older generations are no less accepting of legalized same-sex marriage than younger generations “invalidating the original hypothesis. In addition, I found that general social acceptance levels on divorce, abortion, and women in the workforce have considerably increased over time; however, current acceptance levels toward homosexuality remain much lower than current general social acceptance levels.

Jacob Felson, Sociology

Are Twin Studies Biased? Evaluating the Equal Environments Assumption

Claims for genetic effects on behavior are usually based on twin studies. The validity of the twin study rests on the equal environments assumption (EEA). i.e., the idea that€¦. I argue that the main studies that have been used to support the EEA have significant methodological limitations. I reanalyze the data used in two classic studies with measures of twin similarity based on self-report rather than parental reports. Using this measure I find less evidence in favor of the EEA than the original investigators. I also review classic studies based on misperceived

zygosity. I argue that these studies are inconclusive because of problems of multicollinearity and statistical power. I conclude that genetic influences are important but that twin studies modestly overestimate their effects because of violations of EEA.

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

Michael A. Figueroa, Kinesiology

Co-Presenters: Gordon Schmidt and James Manning, Kinesiology

Technology vs. Physiology

Purpose: To investigate the metabolic energy expenditure of individuals while playing the Nintendo Wii and to determine whether or not participating in interactive gaming was able to elicit heart rate intensities necessary for cardiovascular benefit.

Methods: Thirty subjects volunteered to participate in this study. Resting caloric energy expenditure (EE) and heart rate (HR) were collected for five minutes. Metabolic data were collected using the MedGraphics open circuit spirometer while heart rate was measured using Polar telemetry monitors. During game-play, subjects stood 2 meters from the Wii system and either followed a paced jogging program for 20 minutes (group1) or a circuit consisting of 10 minutes each of tennis, boxing and jogging for a total of 30 minutes (group2).

Results: Game-play significantly increased ($p < .05$) EE and HR above resting values (EE group1: 1.12 ± 0.4 kcal•min⁻¹ vs. 7.8 ± 4.17 kcal•min⁻¹; group2: 1.26 ± 0.38 kcal•min⁻¹ vs. tennis 3.55 ± 1.74 kcal•min⁻¹, boxing 6.07 ± 2.85 kcal•min⁻¹, jogging 7.03 ± 2.84 kcal•min⁻¹; HR group1: 76 ± 14 b•min⁻¹ vs. 136 ± 28 b•min⁻¹; group2: 78 ± 8 b•min⁻¹ vs. tennis 101 ± 18 b•min⁻¹, boxing 127 ± 26 b•min⁻¹, jogging 142 ± 26 b•min⁻¹). No significant differences were found between Wii jogging HR and the target HR of 60% heart rate reserve (Karvonen method). Upper body and lower body activities revealed significant differences in EE and HR at minutes 10 and 20 (jogging vs. tennis $p < .05$).

Conclusion: Target heart rate of 60% was elicited by Wii jogging at minutes 10 and 20. The economy of effort of some games that do not require full body motion can contribute to the lower HR response.

Ellen Frye, Languages & Cultures

The Communicative Structure of Don Gil de las calzas verdes

In Tirso's Don Gil de las calzas verdes, every character speaks in asides, but the main characters' asides are the most significant to the structure of the play. Among doña Juana, don Martín, doña Inés, and Caramanchel, there are more than 40 asides. In total, there are 86 asides in the comedia, which is almost unheard of in world theater. This virtual explosion of the concrete use of the aside exposes the very baroque nature of this particular comedia. Among the 86 asides, every variation of the aside mentioned above is represented, and in some instances, the category changes partway through the longer asides. That is to say, within one aside, a character's purpose in speaking can shift, his or her thought process can alter its course, or the aside's direct function within the play can change. This is important because it demonstrates the complexity of the use of the aside as understood by Tirso. In earlier Spanish plays, one is hard pressed to encounter an example of a multifaceted aside, indeed, in many medieval and renaissance dramatic texts, there are only a few, if any, asides. By analyzing the mediating function of the asides as listed above, I will establish how the asides in Don Gil de las calzas verdes truly form the communicative axis of the play. In the end, I will show that in their totality, the asides create a strong channel of communication between the actors on the stage and the spectators in the audience (or, between the actors on the page and the reader's imagination).

This was supported by the ART Program., the Languages and Cultures Department, and by the College of Humanities and Social Sciences.

David C Gilley, Biology

Co-Presenter: Krystle Frederick, Biology, Undergraduate Student

Does the Waggle-dance Scent Stimulate Experienced Forager Bees to Visit Known Food Sources?

The waggle dance of honey bee (*Apis mellifera* L.) foragers is a message that conveys to nest mates the location of a profitable food source, and it is a paradigm for understanding communication and language among social invertebrates. We have recently discovered that waggle-dancing bees produce and release into the air a blend of chemicals which appears to be a pheromone that stimulates foraging activity. Here, I present the results of our most recent summer field experiment and put them in the context of our ongoing study of the waggle-dance pheromone. In particular, we tested the hypothesis that the pheromone increases foraging activity by stimulating experienced foragers to depart from the hive to exploit previously known food sources. We investigated this hypothesis by training bees to a feeder station, marking all experienced foragers at the feeder station, and then measuring the number of experienced foragers that arrived at the feeder following introduction of the pheromone (or the solvent, as a control) into the hive. Our results support the hypothesis above, but do not rule out additional functions for the waggle-dance pheromone.

This was supported by the ART Program and the College of Science & Health, Center for Research.

Sue Godar, Marketing & Management Sciences

Co-Presenter: Tina Leshner, Communications

Applying for a Fulbright : Teach, Learn, and Research Abroad

Learn about the various types of faculty and staff Fulbright grants and how to apply for each. This will be an interactive session so bring questions on how you can teach, conduct research, and help design curriculum/academic services in another country for our two Fulbright Ambassadors.

Dr. Godar and Dr. Leshner have been named Fulbright Ambassadors by the Council on the International Exchange of Scholars, the administrators of the Fulbright grants program for the U.S. Dept of State.

Michael Greeley, Sociology

Faculty Sponsor: Gennifer Furst, Humanities & Social Science

Program Evaluation: The Tenafly Fire Department, Recruitment and Retention

The volunteer fire service in the United States has seen a steady decrease in its ranks over the past two decades. This paper is based on a program evaluation tailored to a volunteer fire department trying to survive despite declining numbers of volunteers and increased calls to service. A volunteer fire department in Northern New Jersey was examined using mixed research methods. The Department has a tradition of service in an upper-middle class suburban community that predates the incorporation of the town itself. In response to changing times and demographics, this department looks to address its needs and prepare itself for the future. Several recommendations were cultivated which, if utilized, may help to answer many of the challenges facing the department.

Jonathan Huber, Sociology

Faculty Sponsor: Emily Mahon, Humanities & Social Science

Football Fans at the Bar: Is it the Drinking or is it the Social Cohesion?

This observational study examines the behaviors of sports fan who watch professional football games in public settings, such as a bar or restaurant. It seems as though professional football has become the most popular sport in America, and this study attempts to uncover the reasons why it has become so popular for people to go out to

the bar on Sunday afternoons to watch the games. Through the use of unobtrusive observation and participant observation, this study has shown that it is likely that there are in fact reasons why people are going to watch the games in public, other than to simply watch the game. Based on the findings of this study, it is my opinion that people are watching the games in public in hopes of finding a sort of communal feeling that goes along with this type of interaction. This type of behavior can best be explained theoretically through the use of symbolic interactionism.

Jennifer Johnson, Biology

*Nitric oxide is involved in metamorphic process in anuran tadpoles, *Xenopus laevis**

In order to adapt to a different habitat, under the influence of thyroid hormones, amphibian skin undergoes morphological, biochemical and physiological changes and the tail completely regresses during metamorphosis. Body epidermis remains non-keratinized throughout the larval life and keratinizes during metamorphosis, resulting in adult frogs with a cornified epidermal cells covering the body. The significance of nitric oxide (NO) in many biological processes is well known. Signaling mediated by nitric oxide can contribute to stress-related responses where these molecules can act as regulators of metamorphic transitions. However, there is scanty information on how NO acts as a signaling molecule during cell death and differentiation in amphibian tissues. Presently, we investigated the role of nitric oxide synthase (NOS) in skin and tail using Western blot analysis and immunohistochemistry during metamorphosis of tadpoles, *Xenopus laevis*. Our results indicate involvement of only neuronal NOS (NOS I) in skin whereas in tail inducible NOS (NOS II) is also present. In skin, neuronal NOS is present during the functional maturation phase during metamorphosis. In contrast, in tail both NOS I and II are found to be present before the beginning of tail regression. Implications of these findings are discussed in terms of putative functional importance of differential isoform expression in the context of developmental processes in this system.

This was supported by the Graduate Student Research Program (GSRP).

Linda Kaufman, Computer Science

Co-Presenters: Andreas Salazar, Mathematics, Undergraduate Student, Ace Flores and Gregory Krietzman, Computer Science, Undergraduate Student

Block methods for Solving Banded Symmetric Linear Systems

A matrix is banded if it has a triangle of known zeros in its upper right and lower left corner. It is symmetric if one can fold it over the main diagonal and the elements are the same. Several years ago we discovered an algorithm for solving banded symmetric systems of equations which required half the number of multiplications and 2/3 the space of the existing algorithms that ignored symmetry. However, for nonsymmetric banded matrices the order of the computation can be rearranged to also decrease cache misses which might be much more important than the number of multiplications with problems of thousands of unknowns. We will talk of our experience of trying to rearrange the computation to decrease cache misses and enhance data locality for the symmetric case.

This research was supported by the National Science Foundation.

Rajender Kaur, English

Reveling in Motley Tongues: Of Lascars and Language in Sea of Poppies

Ghosh's *Sea of Poppies* situates language as the key marker of the colonial experience, as a palimpsest that encodes the complex history both of coercion and economic exploitation and of adaptation and creative play. However, Ghosh moves the debate on language beyond the tired binaries of resistance and conquest of postcolonial studies. Instead, the text draws attention to colonialism as a primal brew which gave rise the many bastardized tongues forged out of the necessity of communicating with the many others who speak incomprehensible languages. While the text gestures to the undoubted hegemony of English in the bookish language employed by colonized underlings as opposed to the creative license English functionaries take with

Hindustani, it reveals nevertheless in pitting the motley languages of the characters in delightful juxtaposition with each other. The play of languages is both a philosophical and structural principle of the text that embodies the counterintuitive argument that partial incomprehensibility, not perfect translation, may be more productive of bridges of understanding and ties of friendship than those forged by a will to power through knowledge. The text itself resists an easy read and asks its readers to surrender control by subordinating the compulsion to parse each word for a literal meaning in favor of the emotional logic of the narrative in terms of context and character. The text presents the lascars as a community who have forged a working language that is an anarchic medley of Portuguese, Bengali, Arabic, Malay, and Tamil, yet beneath whose "surface farrago of sound, meaning flowed freely as the currents beneath their boats" (164). In resuscitating this language, the text pays homage to a vanished breed of freemen who transcended nation, ethnicity, language, and race.

This paper was supported by a Summer Research Grant from the School of Humanities and Social Sciences.

Betty Kollia and Salika Lawrence, IRB

Institutional Review Board Support of Research

The WPU's Institutional Review Board for Human Subject Research is an important part of the University's research support resource system, fulfilling the University's compliance requirements via a thorough but not distracting review process for faculty and staff, training resources for anyone on campus, and an educational review experience for students. This presentation will focus mainly on the process of submitting a faculty/staff or student research protocol to the IRB for review. Questions about other aspects of the IRB and human subject research at WPUNJ will be invited.

Kathleen Korgen, Sociology

Multiracial Americans and Social Class: The Influence of Social Class on Racial Identity

Discussion of forthcoming edited book due out in April 2010 through Routledge.

Cyril S. Ku, Computer Science

Software Metrics for Collaborative Software Engineering Projects

Many software metrics have been established in the past to measure the various aspects of the software development process. The scopes of the metrics span across the artifacts, the end product, the process to produce these artifacts, as well as the project management for the process. In recent years, driven by advances in telecommunication, the internet, and wireless technology, and also by economic factors, collaboration in software engineering project has become increasingly popular. As collaboration becomes more widespread, software engineering metrics for collaboration, and new or adapted metrics for collaborative projects, will become more important. Nonetheless, no comprehensive study has been done on the impact of collaboration on development productivity, process structure, or software quality. In this project, we study some commonly used software metrics to investigate whether collaboration can easily be incorporated, and where possible, to suggest strategies for that incorporation.

This was supported by the ART Program and by a Faculty Excellence Award for Service

Robert Laud, Marketing & Management

Co-Presenter: Steve Betts, Marketing & Management Sciences

Driving Change for Entrepreneurial Success

With change coming fast and furious in today's business climate, some entrepreneurial firms will emerge as victors within the next four or five years, while many will not. While it is difficult to predict which industries will fare best, it is more certain that small firms who take a "wait and see" approach will be at greater risk. Small firms must be

nimble and find solutions to immediate needs while implementing processes to identify long-term growth opportunities. Entrepreneurial firms must view these turbulent times as a portal to the next generation of business opportunities.

Amy E. Learmonth, Psychology

Co-Presenters: Amanda Cohen and Anderzej Krzastek, Psychology, Undergraduate Students
Geometry, Landmarks or Both: A Look at Navigation in a Virtual Task

Research with young children and some animals indicates that although in most cases landmarks and geometry are used together, there are some cases where an available and informative landmark is ignored (see Cheng & Newcombe, 2004). Explanations as to why young children and rats do not use landmarks under some conditions range from inexperienced weighting of the available information (Ratliff & Newcombe, 2007) to a modular geometric process (Hermer-Vasques et al. 2001). Recent animal research indicates geometric and landmark information are processed separately by rats (Wall et al. 2004). If humans indicate that landmark and geometric processing are separate, it could be part of the answer as to why young children do not use landmarks in some situations. The current study is a first attempt to examine the relationship between the use of landmark and geometric information in adults. One way to look for separate processing systems is to look at reaction times in a choice task in which some trials include both geometric and landmark information, some geometric information only, some landmark information only and some neither landmark nor geometric information. Data was analyzed for reaction time differences between trial types. Accuracy data was also examined. Results indicate that it takes longer to make a choice when either geometry alone was available than when both sources of information are available. These results show that geometry and landmark information are combined seamlessly, indicating a configurational solution to the problem.

This was supported by the College of Humanities and Social Sciences.

Jeung Woon Lee, Biology

Co-Presenters: Robert Benno, Biology

Faculty Sponsor: Diane Asmar, Brittany Knoll and Annabelle Beltran Biology, Undergraduate Students

Changes in Pain Threshold in BTBR T+tf/J Mouse after Adrenalectomy: Relationship between Stress Hormone and Nociception in Autistic Mice

Autistic children are reported to display hyper or hyposensitivity to pain. The BTBR mice, which display genetic mutations paralleling to autism spectrum disorder, display hypergrooming behaviors, exaggerated anxiogenic response to stress, and high plasma corticosterone level. Corticosterone is released from the adrenal cortex under stressful conditions, and has been implicated in increasing pain threshold (stress-induced analgesia). Our initial study suggests that BTBR mice have high tolerance to pain compared to C57BL/6J strain. This study examined the effect adrenalectomy (ADX) on expression of pain behavior in BTBR mice. Two strains of male mice were divided into a) BTBR-ADX (n=13), b) BTBR-SHAM (n=9), c) C57/6J-ADX (n=11), and d) C57/6J-SHAM (n=10). Seven to eight days after surgery, mice received intraplantar injection of 5% formalin solution (30ul or 50ul). Duration of paw licking and number of paw flinches were recorded in five minute intervals for one hour. Mice were perfused transcardially, and brain and spinal cord were collected for immunohistochemistry. C57-SHAM expressed standard biphasic flinch responses as reported previously. C57- ADX caused decrease in the number of flinches in phase II. BTBR-SHAM displayed hyposensitivity to formalin, and had very low flinch counts with abnormally low phase II response. BTBR-ADX caused even further insensitivity to formalin challenge. Administration of naltrexone (5mpk, 20mpk,; IP) induced algesia (pain) in both BTBR groups. BTBR mice are hyposensitive to pain, behavior that is similar in autistic children, with high circulating level of corticosterone. Present study suggests hyperactivity of

adrenal gland or high levels of corticosterone may increase the endogenous level of b-endorphin in spinal cord. Abnormally high levels of b-endorphin observed in autistic children may be a contributing source for their abnormal sensitivity to pain.

This was supported by the ART Program, a Research & Travel Incentive Award, and the Student Undergraduate Research Program.

Payton MacDonald, Music

New Music for Percussion

I will discuss new music for percussion that I have composed, improvised and commissioned.

This was supported by the ART Program and by the College of Arts and Communication.

Nicole Magaldi, Communication Disorders

Co-Presenter: Betty Kollia, Department of Communication Disorders

Autistic Children's Use of Visual-spatial Information in Recognizing Pictures

Autism affects overall development with detrimental impact on socialization and communication skills. However, visual-spatial skills are a relative strength for children with autism. As such, treatment techniques to address deficit areas often use visual supports such as pictorial communication systems (e.g., picture communication boards and class schedules).

Our study examines whether the level of iconicity (similarity to the object represented) impacts picture recognition in young children with autism. We hypothesized that since TOBIs (True Object Based Icons) have a very high level of iconicity, children with autism have an easier time identifying TOBIs than pictures with a lower level of iconicity (e.g., line drawings). This was tested using a matching game whereby the children were asked to match pictures (TOBIs, real pictures, and line drawings) with the objects they represented.

Further, we examined the level of pictorial information (e.g. color, size, shape) upon which young children with autism relied in order to solve puzzles. By observing the way the children complete puzzles with pieces that have different colors, sizes, and shapes, we examined whether the children derived more information to make their matching choices from the puzzle piece's color, shape or size.

Preliminary results indicate that TOBIs are more easily recognizable by the children, in contrast to theories that posit that less visual information facilitates processing in children with autism. Results will be related to standard treatment approaches.

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

Michelle Marchese, Sociology

Faculty Sponsor: Lorraine Phillips, Sociology

Can Child Abuse be Explained through Social Learning Theory?

Social Learning Theory, a theory coined by Ronald Akers, is a theory based on attachment bonds to the primary caregiver of a child at a young age. This theory proposes that crime is a learned behavior, and that parenting styles affect how a child grows up. This paper investigates whether child abuse can be explained by Social Learning Theory.

Social Learning Theory has been tested in many ways from the LIFT program to the OLSC Adolescent Training Program. It has been found that adequate parenting skills as well as consistent punishments and rewards and positive peer associations will lead to a child who is not delinquent. Abuse is a crime that can be explained by Social Learning Theory, as believed by many Sociologists. An individual who is abused as a child will most likely

abuse his/her children later on in life. If a person knows no other way to discipline a child other than beating them, just as they were beat as child, that behavior will be continued. Delinquency leads back to the parents, according to this theory, and it is believed that with proper parental training, through many programs offered, parents can gain the knowledge and skills to become parents who do not have delinquent children, thus lowering delinquency rates.

Kendall Martin, Biology

Optimizing Anaerobic Soil Disinfestation as an Alternative to Methyl Bromide Fumigation

The objective of this study is to optimize anaerobic soil disinfestation (ASD) using a pepper/eggplant double crop as a model production system. This work is part of an effort to find alternatives to Methyl bromide, an ozone depleter. Methyl bromide was used to decrease the numbers of microorganisms in the soil with the intent of eliminating plant pathogen populations that accumulate in fields dedicated to specialty crops such as vegetables like tomatoes and eggplant as well as small fruits like strawberries produced in areas such as California and Florida. ASD, an ecological alternative to methyl bromide (MeBr) fumigation, was developed in the Netherlands and Japan where it is used to control soilborne pathogens and nematodes in strawberries and vegetables. Methods of ASD integrate principles of solarization and flooding whereby anaerobic soil conditions are created by soil saturation, use of an oxygen impermeable clear plastic, and addition of a carbon source to stimulate microbial activity. We focused on developing methods to track changes in microbial community structure using mixed DNA extracted directly from soil in order to optimize the timing and configuration of treatments to get the best results in a pepper/eggplant double crop system. We tested a variety of commercially available thermostable polymerases and determined that a Stratagene product, Paq5000, performed very well for very low cost. We optimized the PCR protocol for this enzyme and tested the sensitivity of the assay.

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

Kevin Martus, Physics

Co-Presenters: Erica Barden, Chemistry, Undergraduate Student, Nicole Burchell, Mathematics, Undergraduate Student

Electronic Temperature Measurements in a Micro-Cathode Sustained Discharge in Neon

Optical emission spectroscopy of plasmas produced from a Micro-Hollow-Cathode-Discharge, (MHCD), with a Neon feedstock gas are reported. The properties that have been analyzed in these plasmas include the composition, electronic temperature of and the excited state neutral gases in the discharge. The MHCD consists of two Molybdenum plates sandwiched around a Mica insulator with an axial hole through the three layers. The feedstock gas is driven through the discharge reactor and a high voltage applied across the discharge plates produces the plasma. The plasma was generated at gas pressures ranging from 150 to 500 Torr, voltages ranging from 250 to 500V, and flow rates between 10 and 60 sccm. The Neon spectrum included a set of emission features that terminate at the same energy level from which a Boltzmann Plot was generated. The variation in the electronic temperature as a function of gas pressure, gas flow rate and driving voltage will be presented and discussed. Also to be presented is preliminary data for a discharge generated using a feedstock gas consisting of a combination of Neon and Methane.

This was supported by the ART Program, the Research Corporation and by the College of Science & Health, Center for Research.

Christina B. McSherry, Nursing

The Inner Life at the End of Life

The purpose of this study was to investigate the lived experience of the inner life of ten hospice patients as they faced their dying experience. Using Husserl's phenomenological perspective ten hospice patients were interviewed. Data were analyzed following Colaizzi's analysis technique. The Results are organized into three

meta-themes: 1) Life Review Leading to Life Perspectives; 2) Factors Related to Death Attitudes; and 3) Lifestyle Changes, including the sub-themes Living While Dying, and The Search: To Find an Acceptable and Satisfying Completion to this Life.

The inner life at the end of life was viewed as a broad framework that had dimensions that all participants shared yet within that framework there were specific aspects that each individual expressed which made their dying experience unique.

The significance of this study was the discovery of a process that can be utilized to guide and support dying patients. The meta-themes and subthemes of this study revealed what the author calls the "Inner Life at the End of Life." Within this process participants reviewed their lives and drew conclusions based on their life perspectives and attitude towards their death. The end of life changes that participants experienced during their day to day life forced participants to seek resources and new strategies to help them to maintain control and stability in their everyday existence while seeking meaning and significance. When new challenges presented themselves, the participants implemented "The Search: To Find an Acceptable and Satisfying Completion to this Life", reaching out to family members, friends, and the hospice team in an effort to relieve their discomfort and regain a degree of control.

This was supported by the ART Program.

Alberto Montare, Psychology

A Metatheoretical Approach to Consciousness

A progress report of the first two semesters of this project is presented. Human consciousness is examined as an integral part of the cosmological psychology introduced by the present author (Montare, 1996, 2000) in which mind and its consciousness is taken to be a fundamental part of the 5-level cosmological evolutionary continuum of: 1) pure energy, 2) followed by the energy-by-matter interaction; 3) followed by the energy-by-matter-by-life interaction; 4) followed by the energy-by-matter-by-life-by-mind interaction; and, 5) followed by the energy-by-matter-by-life-by-mind-by-culture interaction. During the Fall 2009 semester I examined levels 1 and 2 by an examination of the physical roots of human consciousness. Especially, the theories of the ancient Greek cosmological philosophers who sought the "PHYSIS" which was the fundamental substance from which all else is made; and, the work of modern cosmologists who now seek the "Theory of Everything" that would explain the physical basis of all entities. During the Fall 2009 I attempted to make the case that consciousness exists as organized energy and matter in the human mind. During the present semester I am examining the biological roots of consciousness by looking at levels 1,2 and 3 while reviewing the neuroscience literature with emphasis upon the theories that attempt to explicate human consciousness as a fundamental function of the metabolism of human brain tissues. I am currently trying to make the case for the notion that consciousness is organized, biologically-based energy in the mind.

This was supported by the ART Program.

Salwa Muhamad, Sociology

Faculty Sponsor: Sheetal Ranjan, Sociology

Gender Biases and L.G.B.T Issues in Education

The present study focuses on gender biases and Lesbian, gay, bisexual, and transgender issues in the classroom. Previous research found that there are evident biases and discrimination against these two groups. Various frameworks are used to understand this phenomenon such as gender discourse, harassment, and homophobia. To further understand the current status of the problem and how teachers handle these issues, the present study uses audio-recorded interviews. The interviews were transcribed and coded. Results indicate that the phenomenon does exist in the classroom against females and L.G.B.T community. The biases on these two groups have caused negative effects on their self-esteem, learning, and future. Prevention techniques are discussed to help prevent biases from occurring in the future.

David Nacin, Mathematics*Sequences Arising from Non-Repeating Nim Type Combinatorial Games*

Optimal strategies for many different Nim type games have been well studied and detailed by mathematicians such as J. Conway and R. Guy. We examine a particularly interesting Nim variant which arises from imposing move restrictions based on the opponent's previous move. Two interesting sequences arise based on the optimal strategy for this type of game.

Diana Davis Olsen, Global Financial Services Institute

Faculty Sponsor: Dr. Sara Nalle, History

The Visual Language of Power: The Role of Equestrian Armor in Renaissance Europe

Equestrian armor's primary use on the battlefield declined by the mid-14th century, yet it continued to help Europe's elite wage psychological warfare in the political arena until the mid-17th century. The full set of equestrian armor made of plate armor is called a bard, and the extremely high cost limited this option to a select group. This group employed a visual language of power, where symbols had specific meanings, and were understood in their entirety.

The two most popular styles for human armor, alla'eroic and alla'antica, were influenced by classical heroes and Roman emperors. The motifs of classical times also carried over to equestrian armor as well. These were a direct link to the power of the former Roman Empire, and effectively communicated dignity and leadership.

Parade ground armor, unlike contemporary tournament armor, did not have to be very practical at this time, which allowed for greater originality in the methods employed. The subtext of symbols present on four extant, homogeneous horse bards manufactured during the sixteenth century will be examined in greater detail and deciphered. These bards originated in Italy and Germany.

This research was supported by the American Society of Arms Collectors.

Emmanuel S. Onaivi, Biology*Cannabinoid and Monoaminergic System Disruption in a Mouse Model of Autism Spectrum Disorders*

Autism spectrum disorders (ASDs) including autism are neurodevelopmental disorders characterized by impairment in social, communication skills and stereotype behaviors. While autism may be uniquely human, there are behavioral characteristics of the disorder that can be mimicked using animal models. We used the BTBR T+tf/J mice that have been shown to exhibit autism-like behavioral phenotypes to 1). Evaluate cannabinoid-induced behavioral changes using forced swim test (FST) and spontaneous wheel running (SWR) activity and 2). To determine the behavioral and neurochemical changes after the administration of MDMA (20 mg/kg), methamphetamine (10 mg/kg) or MPTP (20 mg/kg). We found that the BTBR mice exhibited an enhanced basal spontaneous locomotor behavior in the SWR test and a reduced depressogenic profile. These responses appeared to be enhanced by the prototypic cannabinoid, Δ^9 -THC. At the doses used MDMA and MPTP did not modify SWR behavior in the BTBR mice whereas MPTP reduced SWR activity in the control C57BL/5J mice. In the hippocampus, striatum and frontal cortex, the levels of DA and 5-HT and their metabolites were differentially altered in the BTBR and C57BL/6J mice. Our data provides a basis for further studies in evaluating the role of the cannabinoid and monoaminergic systems in the etiology of ASDs.

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

Richard Pardi, Environmental Science

Co-Presenters: Michael Sebetich, Biology, Chad Socha, Biology, Alumnus

Nutrient Cycling and the Assimilative Capacity of an Exurban Stream: Belcher Creek, Passaic County

Belcher Creek is the principal tributary to Greenwood Lake, flowing north primarily from within the Township of West Milford into the Lake which straddles the northern border of New Jersey into New York. Greenwood Lake is, in turn, the headwaters for much of the potable water supply system for much of lower Passaic County. Greenwood Lake itself has been showing signs of increasing eutrophication and significant efforts have and are being made to control excessive aquatic plant growth and improve levels of dissolved oxygen in deep waters. An intensive study was conducted during the summer of 2009 of habitat, water quality and quantity within Belcher Creek. The primary goal of this study was to assess the impact of nutrient loading and other pollutant sources on the stream. We found that under the current conditions, and during the exceptionally wet summer of 2009, the Creek was able to maintain acceptable habitat and water quality along much of the length of the stream and its tributaries. However, continued development within West Milford Township, particularly reductions in wetland acreage and open space, could potentially tip the current precarious state of the stream's water quality and result in a severely degraded aquatic habitat.

This research was supported by the Passaic River Coalition & Greenwood Lake Association under grant from the U.S. EPA, and by the College of Science & Health, Center for Research.

Keumjae Park, Sociology*Perception of Migrants in South Korea: A Media Content Analysis*

South Korea, once being considered as a mono-ethnic society, is experiencing an influx of labor and marriage migrants. How does Korean society perceive these migrants? Is the society embracing the new realities of multi-ethnic social dynamics? This paper examines the ways in which new immigrants are received in South Korea through a content analysis of newspaper articles in the past 15 years. Using articles appeared in two major newspapers as the sample, the analysis summarizes an increasing attention to non-Korean population, the major symbolic frameworks in which they are received, and growing attention to "Kosian" families and their biracial children.

Pradeep Patnaik and Peter Griswold, SURP*The Student Undergraduate Research Program*

The Student Undergraduate Research Program provides support to undergraduate students to undertake research supervised by a faculty mentor. This presentation will provide information on the program, how students apply for support, and how it can benefit both the student and their mentor.

Cesar Perez-Alvarez, Marketing & Management*How Uncertainty Avoidance Impacts Groupware Appropriation*

Culture has been considered a factor affecting the reasons behind the adoption of IT. Some issues and problems in the adoption of IT are mostly due to the lack of a fit between the technology and elements of the culture in the country of adoption. National culture has been shown to influence the adoption and use of IT and moderate the adoption effectiveness. This study studies the relationship between Uncertainty Avoidance and the appropriation of technology by working groups. The results indicate that, albeit the relationship is opposite to that hypothesized, there are significant differences in Perceived Level of Comfort and Type of Appropriation. Cultural differences do impact technology appropriation.

This was supported by the ART Program and a Research & Travel Incentive Award.

Donna Perry, English*Final Acts: Death, Dying, and the Choices We Make*

Discussion of new book edited with Nan Bauer-Maglin from Rutgers University Press, 2010.

Donna Potacco, Science Enrichment Center

Co-Presenters: Emmanuel Onaivi, Biology, Rita Levine, Science Enrichment Center, and Jessica Oscanoa, Andres Salazar, Marvin Caleron, Undergraduate Students, Science Enrichment Center

Pharmacology Tutorials

Pharmacology is the study of drugs and their effect on the normal biochemical processes of living organisms. It is offered as a graduate course in several departments and colleges at William Paterson University and by academic institutions throughout the world.

We have developed a series of virtual online interactive tutorials for Pharmacology, BIO 460. The tutorials use a progressive instructional strategy which includes informational drug animations that illustrate drug-related information, and instructional games that provide self-assessment, both with and without informational feedback. The games are both humorous and challenging in order to encourage student interest and usage. Since the WebPages are online, students can access them at their own convenience.

This web site provides professors with a learning object which reinforces pharmacological concepts for their students and provides students with a convenient, entertaining learning supplement. The Pharmacology web site can be used for a blended course and has the potential to be developed further as a supplement for an online course. Currently, the game section of the website is password protection due to copyright restrictions. The animation section is available on the World Wide Web for all pharmacology students.

This project was supported by the College of Science and Health.

Amy Meltzer Rady, Kinesiology*An Experiential Approach to Teaching in a Professional Preparation Program: What Works with Today's Kinesiology Majors*

Academics have often used the lecture technique to teach subject matter. Today's students do not necessarily appreciate this traditional method. In the undergraduate courses I teach at WPU such as Movement Education and Curriculum and Teaching Physical Education in Secondary Schools, I utilize an experiential model. The experiential model involves an interactive method of instruction in which the student is as involved as the instructor in the subject matter covered in a class. Kinesiology majors often learn best by doing. In one application of the experiential model, the student teaches a lesson to the rest of the class and is evaluated by his/her peers as well as the professor. The students gain insight in learning how to communicate to the class and in critically reviewing the efforts of the student teacher. Students also will tend to adopt or adapt teaching techniques found effective and stimulating while avoiding practices that are not found helpful. Rubrics, created by pedagogy specialists at WPU, are used by the students and by the professor to evaluate the student teacher(s) of each class. In my presentation the experiential technique will be demonstrated by showing video clips and photos from my WPU classes accompanied by a Powerpoint presentation reviewing key features and achievements.

Lauren Razzore, Art*Interactive Multimedia DVD: Menu Building in Adobe Encore and Aftereffects*

The latest Adobe Creative Suites integrate the ability to create cutting edge, dynamic DVD presentations using Adobe Encore and Aftereffects. Adobe Encore has become an effective DVD authoring tool used in tandem with advanced video and sound editing programs such as Aftereffects and Premiere to create animated presentations for television or computer. This format can be used for student portfolios, museum presentations and exhibits, as well as classroom aids. The possibilities for the tools are limitless. This paper explores the technical aspects of creating menus and content in the DVD format as well as the different scenarios in which these programs can be used, highlighting how to effectively use the tool and how to technically accomplish final projects.

Tiffany Rice, Sociology

Faculty Sponsor: Paula Fernandez, Sociology, Sheetal Ranjan, Sociology

Too Busy to Run for President?: Factors Influencing Student Leadership Accomplishments

What qualities do student leaders have that other do not? Who are more likely to add the major responsibilities of student leadership to their already busy college life? This paper investigates the factors that promote student leadership accomplishments. The purpose of this study is not only to identify the reasons why certain students become leaders, but also to examine the effects it may have on them in their futures. Forty students were surveyed and one student was interviewed twice for an in-depth investigation. Themes such as role models, high achievers and trustworthiness were all common aspects that appeared throughout the research. Minority students were as active as and/or more active than those in the dominant/majority group. It was found that as time has gone by minority students have continued to move their way up amongst the ranks of student leadership, but overall, minority students experienced the world in a unique manner that is unlike those of the majority group.

Todd Rose, Sociology

Faculty Sponsor: Charley Flint, Sociology

Why "We the People" Torture

This study investigates possible reasons for public acceptance of torture by the United States. It finds that torture as a deviant behavior may be caused by a perceived failure of accepted means of intelligence acquisition for the ultimate goal which is public security. It also puts forth the notion that a popular state of anomie exists whereby continued deviance is perpetuated.

Julie Rosenthal, Elementary & Early Childhood Education*Teacher Candidates Using Filed Trips to Support Literacy Instruction*

This presentation is a description of an in-progress study of teacher-candidates' integration of field trips into their teaching of literacy to elementary school children. Undergraduate teacher education students, enrolled in a field based course in elementary literacy instruction, will visit the Paterson Museum along with the children from the Paterson classroom in which the course is embedded. Teacher-candidates will then work with children on literacy activities related to themes in museum exhibits visited. Candidates will be observed during their instructional sessions with children; children will be observed and interviewed about the ways in which the museum visit supported their understandings and motivated them; candidates will be interviewed about their desire to incorporate the use of field trips in their future teaching. A brief review of research on the use of field trips to support elementary literacy instruction will be included.

This was supported by the ART Program.

Max Sainvil, Mathematics

Co-Presenter: Krista Averill, Department of Mathematics, Undergraduate Student,
 Faculty Sponsor: Melkamu Zeleke, Mathematics

The Golden Ratio and Its Occurrences in Nature

The Golden Ratio is a unique number with ties to the Fibonacci sequence. We explore its presence throughout nature, its application to electric circuit theory, and its several interesting algebraic and geometric properties. We also show the construction and properties of the Golden Rectangle and its related Golden Spiral.

This research was supported by the MAST (Mathematics & Science Teachers for Tomorrow) project which is funded by the US Department of Education.

Danielle Scassera, Sociology

Faculty Sponsor: Mark Ellis, Sociology

Socialization of Gender Expectations: Television News Broadcasting and the Construction of "Soft" News

Women have been a part of television news broadcasting for over thirty years and their numbers are currently growing. In a field traditionally dominated by men, female reporters experience both implicit and explicit career barriers. This research investigates the differences in gender, age, story assignment, and the language style of reporters on two morning news programs in an attempt to understand how the reporter's gender reflect differences in story assignment. Then, it is hypothesized that female anchors will receive more "soft" or feature stories than their male counterparts and there will be no significant difference in language style or story framing based on gender. A five-day observation of 161 stories on ABC and CBS morning news programs yielded results confirming both hypotheses. Female reporters are assigned more "soft" news stories and there is no significant difference in how the story is framed. Socialization theory is offered as a framework for understanding the implications of this research. Possible questions for future research are discussed.

David A. Snyder, Chemistry

Co-Presenters: Timothy Short, Chemistry, Undergraduate Student, Leigh Alzapiedi,
 Biology (Biotechnology), Undergraduate Student, Pankaj V. Vekariya, Chemistry,
 Undergraduate Student

A Comprehensive Software Package for Covariance NMR

Nuclear Magnetic Resonance (NMR) is a powerful technique for the elucidation of molecular structure and dynamics. Applications of NMR range from determining the connectivity of small molecules to the characterization of the conformation and dynamics of large macromolecules such as proteins. However, the study of increasingly complex systems typically requires the use of multi-dimensional NMR, which involves long measurement times and suffers from a lack of sensitivity and resolution. Covariance NMR is a rapidly evolving technique that, following or in lieu of conventional Fourier Transform (FT) processing, provides substantial resolution and sensitivity enhancement to NMR spectra. The recently developed Generalized Indirect Covariance (GIC) framework generalizes Covariance NMR to allow for the reconstruction, from readily measured, relatively high sensitivity spectra, of highly desirable spectra for which experimental measurement is infeasible due to a lack of signal. Currently, the absence of a coherent, user-friendly software package implementing Covariance NMR hinders the widespread adoption of this powerful methodology. We present our work in developing a comprehensive, user-friendly software package for Covariance NMR compatible with both Matlab and the freely available Octave mathematical computing environment. This software package takes multi-dimensional NMR data-sets in a standard format, spectrometer independent format (NMRPipe format) and provides users with a small number of readily extensible tools to perform all major covariance processing steps and output the results in

NMRPipe format as well as to further manipulate and visualize them in Matlab or Octave. Thus, this software package will render fully accessible the powerful techniques of covariance NMR.

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

Joseph C. Spagna, Biology

Co-Presenters: Edgar Valdivia, Biology, Undergraduate Student, Vivin Mohan, Biology, Undergraduate Student

Characterization of Dynamic Locomotion in Grass Spiders (Araneae: Agelenidae)

Grass spiders (family Agelenidae) are web-builders, capable of running at high speeds on both their webs and surrounding substrates. At least one species - *Hololena adnexa*- is capable of running speeds in excess of 50 body lengths/ second on a variety of surfaces. To characterize these gaits, duty factor and relative phases of the legs were measured using data from high-speed video (taken at 500-1000 frames/second). The data were also tested for relationships between speed, frequency, stride length, and duty factor. The spiders used their legs in alternating sets of four, distributed in staggered pairs along the body axis-- an 'alternating-tetrapod' gait. This gait is characterized kinematically as a fast trot using the standard taxonomy of tetrapod gaits. We found an inverse, linear relationship between speed and duty factor, meaning that as speed increases, the normalized time spent by the legs on the ground during each full leg cycle decreases. Two spider species (*Hololena adnexa* and *Hololena curta*) were found to be capable of aerial phases during high-speed running, generally above 60 body lengths/s. Stride length and leg phase frequency increased linearly with running speed, with no clear transitions from walking to running gaits aside from the break (at < 50% duty factor) into the aerial phase. Aerial phases are unusual in arthropods and are not documented in spiders. Gaits like those seen in these spiders may provide advantages for multi-legged animals that run over irregular surfaces, due to their speed, dynamic stability and low requirements for neural feedback.

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

Jared Sterk, Sociology

Faculty Sponsor: Keumjae Park, Sociology

Effects of Military Service on Veterans' Socioeconomic Status and Quality of Life

This paper examines how military service affects individuals' later life experiences. Surveys were conducted with 72 veterans at a number of different American Legion locations in New Jersey. Drawing on theories of military experiences as the turning point in life, I asked various pre- and post-service life experiences including educational achievement, income, experience with homelessness, and stability of marriage. Veterans served in combat and non-combat situations, and of different races were compared. The findings include that military service was on average a more positive experience for African Americans than for whites. While many whites viewed military service as a replacement for college, blacks viewed the military rather as a means to go to college. The armed conflict in which a veteran served also had a significant effect on a veteran's level of education. Desert Storm veterans had the highest rate of bachelor's degrees while Vietnam veterans had the lowest. Vietnam veterans also reported the highest rates of homelessness, possibly pointing to a lack of support the veterans of that time period received.

Janet Thomas, Sociology

Faculty Sponsor: Keumjae Park, Sociology

Black Women's Perceptions Toward Black Men Involved in Interracial Relationships

Most research on interracial relationships has focused on the perspectives of interracial couples and the reactions they receive from our society. In this research, I choose to focus on black women's perspectives on interracial couples. Black women are often portrayed by media as angry or jealous towards interracial relationships, but not

many sociological studies focus on black women's voices. Using 12 in-depth interviews with black women, both young and old, this paper analyzes what black women think about black men who are involved in interracial relationships. The study discovered that black women view black men's relationships with white women more negatively than black women's relationships with white men. The respondents also viewed that white women were more submissive than black women. They were concerned about raising of bi-racial children, but they supported relationships based on true love. Surprisingly, there were no noticeable differences in young and old women's opinions.

Charles Tillou, Kinesiology

Faculty Sponsor: Virginia Overdorf, Kinesiology

Internal vs. External Focus

My name is Charles Tillou and I am a senior in the kinesiology department with a concentration in Health and Physical Education. In the spring of 2009 while in Dr. Overdorf class "Psychology of Motor Learning" we had to perform a study which analyzed a topic that was discussed in class. I chose to analyze the benefits of using an internal vs. external focus while performing a closed skill. In passed research it has been determined that a external focus is more beneficial when learning and performing closed skills. I analyzed this topic using the closed skill of golf putting. To do this, 10 female participants were randomly assigned to putt 10 times from 10 feet on a practice putting green at "Minebrook Golf Club" in Hackettstown NJ. The data was analyzed by performing a t-test in an excel spreadsheet. The difference between the two groups was determined not to be significant. For a further study, Myself and Dr. Overdorf determined that a couple of modification had to be performed in order to prove the hypothesis that the external focus is more effective than a internal focus while performing a closed skill. These modifications included, a more difficult putt, more participants, and more trials.

This was supported by the Student Undergraduate Research Program (SURP).

John Urban, Biology

Co-Presenter: Mark Sauchelli, Biology

Faculty Sponsor: Pradeep Patnaik, Biology

*Transcription and DNA replication can initiate promiscuously on an episome in bloodstream-form *Trypanosoma brucei*.*

Trypanosoma brucei, a deadly protozoan parasite, belongs to a family of early diverging eukaryotes (kinetoplastids), which can serve as model organisms for studies looking at the evolution of many fundamental biological processes. The parasite alternates between the bloodstream of its mammalian host (bloodstream-forms) and the mid-gut and salivary glands of its insect vector (procyclic and metacyclic forms respectively).

Chromosomal DNA replication is an unexplored aspect of trypanosome biology. We are using an autonomously replicating plasmid as a model system to identify sequences that regulate this fundamental biological process in the parasite. Previous results from our laboratory have demonstrated that one such element maps to RNA polymerase I promoter (GPEET-procyclicin) that drives reporter gene transcription on this episome. The close association of replication and transcription control elements and the interplay between these two processes as the parasite shifts from one developmental stage to another is of interest to us.

We have recently demonstrated unambiguously that the requirements for the replication of these episomes differ between two developmental stages of this parasite. Contrary to expectations, our results also suggested that the procyclicin-promoter on this plasmid is not responsible for reporter gene expression in bloodstream forms, though critical for transcription in procyclic forms. Since there are no other known *T. brucei* promoters on this episome, it would appear that that a substantial level of transcription can be initiated without a bona fide promoter in the

blood-stage of this parasite. We are trying to confirm this finding by deleting the entire promoter from our construct.

Promiscuous initiation of transcription and replication may be an interesting feature of trypanosome biology and it may explain why promoters have been so hard to find in this family of organisms.

This was supported by the Student Undergraduate Research Program (SURP).

Vincent Vicari, Marketing & Management Sciences

Things to Do in 2010: Make 2010 a Better Year

Small businesses and entrepreneurial ventures are feeling the effects of our economic downturn. However, there are things that such enterprises can do to help them be successful in turbulent times. In this presentation, a list of time-proven techniques will be presented and discussed, such as becoming a resource to your customers and suppliers, developing a competitive advantage and thinking strategically.

This was supported by the Cotsakos College of Business.

Nancy Vitalone-Raccaro, Special Education & Counseling

Co-Presenter: Bernard C. Jones, Special Education & Counseling

Teaching Without Hesitation: Reaching All Learners: Using Brain-Based Instructional Strategies to Improve Instruction in Special Education

Current instructional practice is predicated upon the assumption that the first and most important component of what teachers need to know is the academic content that supports the teaching of the field(s) of a teacher's license. However content knowledge alone doesn't guarantee effective instruction or student success. Pedagogy is how teachers present the lesson so that student learning is most likely to occur. In making the decisions of how to teach content, teachers draw on their knowledge base and experience to design activities, ask questions, and respond to the efforts of their students (Sousa, 2007). Pedagogy encompasses instructional strategies. At a concrete level, teachers understand that effective teaching is comprised of both content knowledge and pedagogy.

Yet teacher educators struggle with how to move teacher candidates from a concrete understanding of various instructional strategies into effective practice.

This presentation will propose a paradigm for the acquisition of responsive pedagogy that utilizes cognitive strategies and meta-cognitive strategies to help students achieve by addressing the following two questions. What does effective teaching look like? What does effective learning look like? Responsive pedagogy (Shulman, 1986) is the knowledge that teachers possess of how best to teach certain content. In practice, responsive pedagogy demonstrates flexibility in thought and practice that result from complete knowledge of a particular strategy or instructional model. The presentation will address globalization reform versus a more specialized procedural approach. The intended outcome would be to draw on brain-based instructional strategies to improve instruction in special education.

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Sousa, D. A. (2007). *How the special needs brain learns*. Thousand Oaks, CA: Corwin Press.

Kevin J. Walsh, Educational Leadership & Professional Studies

Co-Presenters: Jolene Battitori, Ed.D. Assistant Principal, Benedict A. Cucinella
Elementary School, Long Valley, NJ

Retaining the Good Ones: Factors Associated with Teacher Job Satisfaction

A study of teachers' attitude and school climate was completed in an effort to identify the intrinsic and extrinsic motivators affecting teachers' decisions to remain in the profession. The study was conducted using data collected by the National Center for Education Statistics obtained through a survey administered during the 2003-2004 school year to teachers across the nation. A statistical analysis was completed on responses of approximately 500 New Jersey teachers with at least five years K-12 experience in public schools. The analysis included: (a) item analysis, (b) correlation and factor analysis, (c) multiple linear regression and (d) analysis of variance. Responses to twenty one questions identified the variables that influence teacher motivation and whether these variables differ in importance when examined by the main effects of gender, general/special education, or elementary/secondary grade level assignment.

Findings of the study indicate that staff recognition is important to teachers' overall satisfaction. Despite the persistence of several areas of frustration, teachers are able to maintain overall job satisfaction. With respect to gender, the study indicated females perceived principal communication and consistent enforcement of rules more positively than their male counterparts. In contrast, males perceived student misbehavior as interfering with teaching more strongly than their female counterparts. Special education effects were limited with teachers reporting consistent behavior enforcement more positively than their general education counterparts. Elementary teachers reported significant differences in responses across the spectrum of many items as compared to their secondary counterparts

Hideo Watanabe, Languages and Cultures

Dr. James Curtis Hepburn

This paper explores one American who came to Japan just at the end of Japan's over two century Closure and opened the Japanese minds and hearts with his selfless dedication. Dr. James Curtis Hepburn stayed in Yokohama for 33 years (1859-1892) and voluntarily contributed to the fields of medical care, education, and Christian missionary work.

His major contributions were: 1) He treated Japanese patients for free in his clinic and his medical care opened Japanese eyes to the medical technology of the West. 2) He compiled a Japanese-English dictionary and his Japanese romanization has been widely used by Japanese when they spell words in alphabets. 3) He was an earnest missionary, who translated the Bible and established both a Christian university and a church.

The modernization of Japan was attained by her contact with the Western countries. This can be confirmed not only by national policies but also by an individual's aspiration and endeavors. By tracing Dr. Hepburn's personal contributions, this paper will explore how the Japanese specifically gained medical, intellectual, and spiritual knowledge from the West.

This was supported by the ART Program.

Nancy Weiner, Cheng Library

Progression Standards for Information Literacy

"Turnpike to Transition: Information Literacy Progression Standards for Higher Education in New Jersey"
This poster will showcase the Progression Standards for Information Literacy developed by a task force of New Jersey academic librarians from two and four year colleges. Representing collaboration at its best, members of the VALE (Virtual Academic Library Environment) Shared Information Literacy Committee, the Central Jersey Academic Reference Librarians (CJARL) Committee and the NJLA (New Jersey Library Association) College & University Section User Education Committee worked together to draft the Progression Standards. Initially prepared in response to the recently legislated statewide transfer articulation agreement between two- and four- year colleges

in New Jersey, the Progression Standards articulate specific competencies expected to be achieved by students as they complete the equivalent of the first year (30 credits) and second year (60 credits) of college level work. Designed as a framework for discussion and customization by institutions, the poster will feature the Progression Standards and identify the skills expected at the Introductory and Gateway levels. Sample assignments incorporating the Progression Standards are also included, with relevant standards identified for each. It is expected that these standards will be useful to institutions of higher learning and be used as a framework to integrate information literacy into the curriculum.

The support and encouragement of Cheng Library Director Anne Ciliberti made my participation on this statewide task force possible.

Burton Weltman, Secondary & Middle School Education

Was the American Revolution a Mistake?: Teaching History as Choices

The way you narrate history can determine what your students will get out of it and whether it will be useful to them. Irrespective of the subject matter and its author's intentions, the narrative structure of a story can determine the moral and effect of the story, and stories with essentially the same subject matter and ideological intent can have very different messages depending on their narrative structures.

The most important narrative choice you can make is whether and to what extent you portray the events as a result of chance, causation or choice. History as chance is a story of happenstance that people cannot predict or control. History as causation is a story of chains of causes and effects that people may be able to predict but cannot control. History as choice is a story of people making decisions in the face of circumstances they can't control but based on predictions and predilections as to what might and should occur that they can control. History as chance is arbitrary and unreal. History as causation is abstract and surreal. History as choice is reasonable and real, and portrays the past in ways that students can identify as similar to the present situations that they face.

While most human events are the product of a mix of chance, causation and choice, most events can be explained as primarily the result of one of these factors. If history is taught as primarily as a result of chance or causation, then the underlying message is that the world is beyond our influence and we might as well sit back and do nothing. If history moves primarily as a result of people's choices, then the underlying moral is that we, like they, may be able to affect the world through our thoughts and actions. History as choice is, thus, more interesting and helps prepare students for civic engagement.

This was supported by the ART Program.

Maggie M. Williams, Art

The Role of Ringed "Celtic" Crosses and Interlace Knotwork Designs as Symbols of Irish Identity

I have investigated and will present on the role of ringed "Celtic" crosses and interlace knotwork designs as symbols of Irish identity in both medieval and modern contexts. By discussing objects as diverse as ancient stone sculptures and twenty-first century tattoos, I examine the phenomenon of representing Irishness across time. My work offers a balanced look at both the medieval and modern functions of the imagery, and I am committed to making the book accessible to both scholarly and popular audiences. Ultimately, I seek to answer two questions: how do contemporary reproductions of medieval Irish images revive or redefine ancient notions of Irishness, and how can we make sense of these modern replicas' sustained power in the absence of originality, antiquity, or exchange value?

My presentation will consist of a summary of my research to date, using digital images and a description of the book's general outline. I plan to highlight details from those chapters that are nearing completion, with a particular emphasis on the archaeological discovery and reception of medieval crosses and metalwork in the nineteenth century. I also intend to share my recent work on Celtic tattoos, which I am developing for both a section of the book and a separate journal article.

This was supported by the ART Program.

Danielle Zeltner, Biology

Co-Presenters: Yasmeen Saleh, Biology, Undergraduate Student, David Slaymaker, Biology
*Molecular Marker Development for Studying Genotypic Diversity in *Ammophila breviligulata* (American Beachgrass)*

New Jersey's coastal dunes provide beauty and infrastructure protection for the state's coastal communities. Restoring New Jersey's coastal dunes involves single-genotype plantings of the 'Cape' variety of American beachgrass (*Ammophila breviligulata*) for dune stabilization and development. However, it remains an important question whether single-genotype plantings provide sufficient long-term sustainability and function. To begin addressing this question, we must measure genotypic diversity in native New Jersey beachgrass populations. To accomplish this, we are developing a PCR-based molecular marker system capable of identifying genotypic diversity in New Jersey's beachgrass populations. To date we have screened 100 RAPD primers and 100 ISSR primers, and have identified candidate primers suitable for use in genotypic analyses. In the near future we will use these candidate primers to measure genotypic diversity in five native *A. breviligulata* populations, ranging in location from Sandy Hook in the north to Cape May in the south. Results from these studies will provide a reference measure of naturally occurring genotypic diversity and serve as the basis for developing and testing alternative restoration practices.

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

