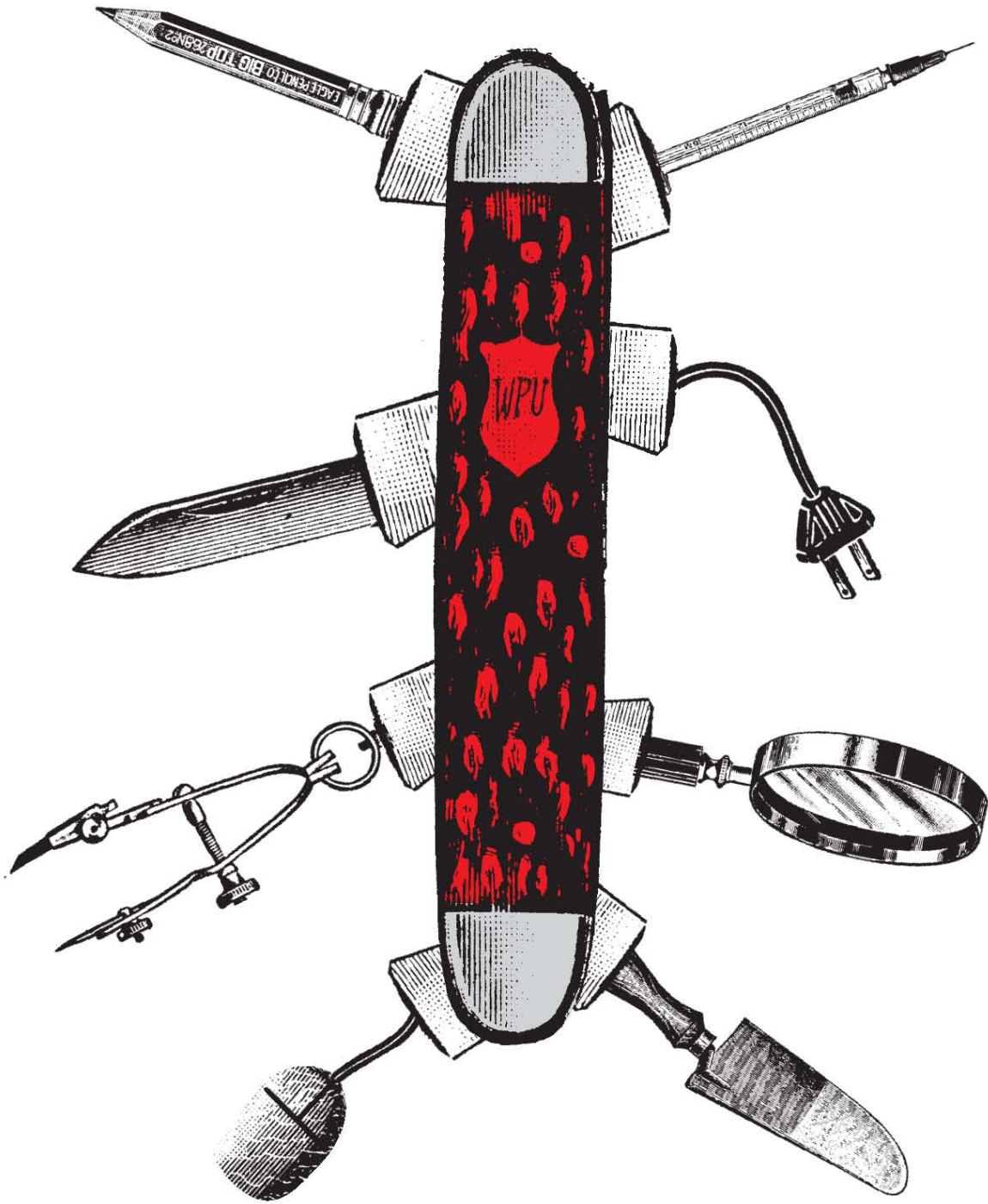


DISCIPLINES MAKING A DIFFERENCE THROUGH RESEARCH



2009 WILLIAM PATERSON UNIVERSITY

**RESEARCH & SCHOLARSHIP DAY**

THURSDAY, APRIL 2 • UNIVERSITY COMMONS

Faculty Senate Research Council \* Office of Sponsored Programs \* David & Lorraine Cheng Library  
Center for Research, College of Science & Health \* College of Humanities & Social Sciences

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University Research and Scholarship Day 2009**

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William Paterson University

University Research and Scholarship Day 2009

## 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, 171 A and B
11:30 to 3:00	Poster Presentations
12:30 to 1:45	College of Science and Health, Spring Faculty Meeting University Center, Ballroom C College of Humanities and Social Sciences, April Faculty Research Seminar Atrium 258
2:00 to 3:30	Concurrent Individual and Group Presentations University Center Rooms 168 B, 171 A and B, 202
3:00 to 4:45	David and Lorraine Cheng Library, Annual Authors Reception Office of Sponsored Programs, Recognition of Award Recipients University Center Room 168A

## Presentation Schedule

### *Morning Individual and Group Presentations*

#### ROOM 168A

9:30-9:50	<b>Katherine Sullivan</b> <i>An Ethnonursing Study of the Culture Care Values, Beliefs and Practices of New Baccalaureate-Prepared Registered Nurses Regarding the Primacy of an Ethical Commitment to the Patient Within Two New Jersey Magnet Hospitals</i>
9:50-10:10	<b>Nadine M. Aktan</b> <i>The Relationship between Social Support, Anxiety, and Demographic Variables and Functional Status after Childbirth</i>
10:10-10:30	<b>William David Kernan</b> <i>Searching For and Making Meaning After Breast Cancer: Prevalence, Patterns, and Negative Affect</i>
10:30-10:50	<b>Susan Sabatino, Nancy Weiner, Kathy Malanga</b> <i>The Library Component of First Year Seminar: What Do the Students Think?</i>
11:00-11:20	<b>Melda N. Yildiz</b> <i>Myths and Misconceptions in Education: Power of Media and New Technologies in Developing Critical Autonomy among Teacher Candidates</i>
11:20-11:40	<b>Geraldine Mongillo, Rochelle Kaplan</b> <i>Empowering Teachers as Peer Leaders</i>
11:40-12:00	<b>Heejung An, Hilary Wilder</b> <i>Implementing an online educational technology course in a teacher education program: Challenges and Solutions.</i>

12:00-12:20 **Julie Rosenthal, Marie Donnantuono, Mary Lebron, Christina Flynn, Denise Fitzpatrick**  
*Keepin' it Real: Teaching and Learning about Literacy in the Context of Partner Schools*

### ROOM 168B

9:30-9:50 **Diana Davis Olsen, Prof. Sara Nalle**  
*The Visual Language of Power: The Role of Equestrian Armor in Renaissance Europe*

9:50-10:30 **Amy Meltzer Rady**  
*Teaching Multicultural Activities in a High School Physical Education Curriculum*

10:30-10:50 **Daniel Savacool, Prof. Linda Kaufman**  
*Building the matrices needed for designing optical fibers.*

11:00-11:20 **Linda Kaufman**  
*Fitting exponentials and Gaussians over multiple data sets*

11:20-11:40 **Cyril S. Ku**  
*Performance Analysis of Digital Signal Processors Using SMV Benchmark*

11:40-12:00 **John Najarian**  
*Complexity and Recognition Aspects of the Web-based Languages and their Contribution to the "Decline" of Search Engines, Spiders, and other Traversal Programs*

### ROOM 171A

11:00-11:20 **Malay K. Dey**  
*Who Profits from Trading Around Earnings Announcements?  
Evidence from TORQ Data*

11:20-11:40 **Mahmoud Watad**  
*Constructing a Framework for IT/IS as an Organizational Innovation*

11:40-12:00 **Martin Gritsch**  
*Electronic Documents vs. Hard Copies: An Unhappy Medium?*

12:00-12:20 **Jennifer Bauer, Andrew Carney, Barbara Della Vecchia, Kyle Stanton, Jack Zapotoczny, Prof. Christine Kelly**  
*US Protest and Repression: Student/Faculty Collaborations in a Capstone*

### Room 171B

10:10-10:30 **Judith Broome**  
*"'All shall be well and I'll forgive you': Emotional Abuse in the 18th-Century English Novel"*

10:30-10:50 **Kevin J McKernan, Prof. John Peterman**  
*"Radical Exodus" Readings from a book of poetry.*

11:00-11:20 **Bernard C. Jones**  
*Objectivity vs. Subjectivity: A Teacher in Referral*

11:20-11:40 **Nancy Vitalone-Raccaro**  
*Early Intervention Evaluation Reports: Guidelines for Writing User-Friendly and Strength-Based Assessments*

11:40-12:00 **Colleen Takemoto, Prof. Betty Kollia**  
*Fluency and Mental Control*

12:00-12:20 **Salika Lawrence, Stephen Betts, Terry Reicher**  
*WPU Institutional Review Board Policy and Procedures Update and Information Session*

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### Mid-Day Activities

#### Posters

1

**Poliana Oliveira, Prof. Carey Waldburger**  
*Constructing a Functional Chimeric Histidine Kinase*

- 2 **Carrie Eunyoung Hong**  
*Discourse-oriented ethnographic analysis of classroom talks: Language in the classroom and language of the classroom*
- 3 **Melkamu Zeleke**  
*On Generalizing Motzkin Numbers using k-Trees*
- 4 **David Slaymaker**  
*Molecular Marker Development for Diversity Studies and Clonal Identification in *Ammophila breviligulata* (American Beachgrass)*
- 5 **Kendall J. Martin**  
*Towards a more fitting spatial analysis of microbial community composition*
- 6 **William David Kernan, Glen Sherman, Marianne Edmond**  
*Supporting a Local, Community-Based Effort to Prevent Underage Drinking*
- 7 **Galena Badiner, Prof. Gary Gerardi**  
*Synthesis and Characterization of Transition-Metal-Doped CdSe Nanocrystals*
- 8 **Eliana M Agudelo, Prof. Sheetal Ranjan**  
*Characteristics of Pregnant Women in a City Hospital*
- 9 **James VanGurp, Anna Yap, Prof. Jiashri Menon**  
*Nitric oxide synthase isoforms in metamorphosis of Anuran tadpoles, *Xenopus laevis**
- 10 **Martin A. Becker**  
*Osteichthyans from the Arkadelphia Formation (late Maastrichtian) of Hot Spring County, Arkansas, U.S.A*
- 11 **David Nacin**  
*Koszul Algebras and Generalized Layered Graphs*
- 12 **Tiffany Matos, Prof. Sheetal Ranjan**  
*Minority Violence: The Caged Animal Effect*
- 13 **Christopher Fiduccia, Alex Collins, Prof. Sheetal Ranjan**  
*Where do Sex Offenders Place Themselves?*
- 14 **Meredith Peters, Prof. Sheetal Ranjan**  
*Quality of Police Contact: The Effects of Contact on Citizens' Attitudes Toward Police Officers*

**Ballroom C** **Center for Research, College of Science and Health Faculty Meeting**  
Presentations by recipients of support from the **Center for Research**

**Atrium 258** **College of Humanities and Social Sciences, April Faculty Research Seminar**  
Prof. Keumjae Park, *The Korean Transnational Family: Global Education and Reproduction of Class Privilege*

### ***Afternoon Individual and Group Presentations***

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**Room 168A**

- 2:00-2:20 **Richard DeLuca**  
*Don't Re-Invent the Wheel: Solving Problems by Using Business Research*
- 2:20-2:40 **Cesar Perez-Alvarez**  
*Cultural Dimensions and Group Perceptions in Electronic Environments*
- 2:40-3:00 **Stephen Betts**  
*Why Sustainability is the Ethical Choice for Business*
- 3:00-3:20 **Robert Laud**  
*Leadership and Innovation in Times of Uncertainty*

**Room 171A**

- 2:00-2:20 **Tricia Coxwell Snyder, Martin Gritsch**  
*Exploring Options: Did the 1993 Omnibus Act Alter Executive Compensation and Reduce Tax Revenue*

2:20-2:40 **Tricia Snyder**  
*How Does Monetary Policy, Income and Stock Market Wealth Impact on the Housing Market and the Overall Economy?*

2:40-3:00 **Leonard Presby**  
*Enhancing Student Learning with only a Click*

3:00-3:20 **Sandra L. Miller**  
*NJVID: A Collaborative Portal for Statewide Video Access*

### **Room 171B**

2:00-2:20 **Timothy Liu**  
*Poetry Reading*

2:20-2:40 **Rajender Kaur**  
*On the Blurry Edges of the Republic: Violence and Terror in Siddhartha Deb: An Outline of the Republic and Mitra Phukan's "The Collector's Wife"*

2:40-3:00 **Rosa E. Soto**  
*"Made to be the Maid?" An Examination of the Latina as Maid in mainstream Film and Television*

3:00-3:20 **Christine Reed**  
*Introduction to University Performing Arts and WPLive*

### **Room 202**

2:00-2:20 **Emmanuel S. Onaivi**  
*Genetic Basis of Marijuana Use*

2:20-2:40 **David C. Gilley, Jacqueline M. Kuzora**  
*A pheromone produced by waggle dancers increases the foraging activity of a honey bee colony*

2:40-3:00 **Michael Peek, Hieke Droegmoeller**  
*Growth responses to sand burial in the common dune grass, *Ammophila breviligulata**

3:00-3:20 **Madeleine Rosar, Eliana Antoniou**  
*Hematopoietic Stem Cell Proliferation Modeling Under the Influence of Hematopoietic Inducing Agent*

### **Room 168B**

3:30 – 4:45 **David and Lorraine Cheng Library Annual Authors Reception**  
**Office of Sponsored Programs, Recognition of Award Recipients**

## Abstracts

### **Eliana M Agudelo, Sociology**

Faculty Sponsor: Prof. Sheetal Ranjan, Sociology

#### *Characteristics of Pregnant Women in a City Hospital*

This paper documents the results of a research study conducted at St Joseph Regional Medical Center, a hospital with an average of 250 deliveries per month, in which 65 in-patients at the Mother/Baby Unit were approached and 60 of them completed a survey that examined the relationship between marital status and the presence of characteristics during pregnancy such as alcohol consumption, smoking habits, presence of drug abuse, depression, gaps between pregnancies, rate of unexpected pregnancies and low birth weight. This topic was chosen with the objective of obtaining a more solid idea of the surrounding community to ultimately encourage behaviors that lead to stronger and healthier pregnancies. The sample was chosen in a convenient manner. Subjects were approached and given a survey on the second or third day of stay at the hospital. The results prove that women in a non-solo relationships tend to have less babies with low birth weight, less depression, less tendency to refuge in drugs, smoking or alcohol. Theories such as social support and social learning support the idea of providing supportive care and promoting positive health and emotional care to improve women's pregnancy experiences, children to be born and develop healthier so families and entire communities benefit from physical and emotional wellness.

This was supported by the ART program.

### **Nadine M. Aktan, Nursing**

#### *The Relationship between Social Support, Anxiety, and Demographic Variables and Functional Status after Childbirth*

Purpose: To explore relationship between social support, anxiety, age, and parity and functional status after childbirth (FSAC)

Methods: Sample consisted of 177 healthy, pregnant women between the ages of 19-40. During Time 1, the PRQ 85-Part 2 and the STAI were administered. At six weeks postpartum, participants completed these and the IFSAC. Coefficient alpha reliabilities of instruments were performed. Using a two-tailed test of significance, the Pearson product-moment correlation coefficient was used.

Results: The STAI demonstrated coefficient alphas from 0.90-0.93; the PRQ 85-Part 2 was 0.87 and 0.93; and the IFSAC was 0.90 with subscales ranging from 0.58-0.90. The relationship between state anxiety and FSAC ( $r = -.204$ ,  $p = .008$ ) was found to be significant. A significant relationship was found between FSAC and race ( $F = 2.750$ ,  $p = .030$ ) and ( $t = 2.960$ ,  $p = .004$ ). Additional significant findings were: state anxiety during pregnancy and self-care ( $r = -.162$ ,  $p = .038$ ), state anxiety in the postpartum and household ( $r = -.162$ ,  $p = .039$ ) and self-care ( $r = -.269$ ,  $p = .000$ ), trait anxiety and self-care ( $r = -.264$ ,  $p = .001$ ), social support during pregnancy and self-care ( $r = .299$ ,  $p = .000$ ), social support in the postpartum and self-care ( $r = .161$ ,  $p = .040$ ), and parity and social-community ( $F = 4.472$ ,  $p = .009$ ) and self-care ( $F = 4.472$ ,  $p = .009$ ). Methodological problems such as the reliability of instrument subscales, homogeneity of the sample and variation in data collection may have affected results. Replication is recommended using a non-homogenous sample.

Implications: Relationships have been demonstrated between social support, anxiety, and FSAC. Nurses must understand the complexity of these processes in order to facilitate and implement effective interventions to promote positive resumption of FSAC.

This was supported by the College of Science and Health Center for Research, and Sigma Theta Tau International Honor Society of Nursing.

**Heejung An, Elementary and Early Childhood Education**

Co-Presenter: Hilary Wilder, Educational Leadership and Professional Studies

*Implementing an online educational technology course in a teacher education program: Challenges and Solutions.*

In an effort to support William Paterson University teacher candidates to better understand and apply technology integration in a meaningful way, the authors implemented an online educational technology course that emphasized teaching with technology in the context of education. The objectives of this presentation are therefore two-fold. The first is to describe the rationale, and theoretical underpinnings used for developing the online educational technology course, along with the challenges that were overcome in order to bring the plan to fruition. The second objective will be to report our findings after the students completed the online educational technology course, by examining the course's impact on their a) technology competence, b) Technological Pedagogical Content Knowledge (TPCK), c) attitudes and beliefs toward their future technology integration practice, and d) attitudes toward the online course.

This was supported by the ART program.

**Galina Badiner, Chemistry**

Faculty Sponsor: Prof. Gary Gerardi, Chemistry

*Synthesis and Characterization of Transition-Metal-Doped CdSe Nanocrystals*

Studies concerning the physical and chemical properties of nanoparticles are currently an active area of research. This is due to the possibility of realizing new properties of materials as a result of the large ratio of surface area to volume of materials in this form. Nanoparticles are being considered for possible applications such as drug delivery, photovoltaic devices and inexpensive catalysts.

Our work involves the preparation of cadmium selenide nanoparticles doped with transition metals of the first transition series. These elements often contain unpaired electrons, which can be detected using a spectroscopy known as electron paramagnetic resonance.

We are interested in correlating nanoparticle size with possible changes in the magnetic properties of the transition metals incorporated in the crystalline structure of cadmium selenide nanoparticles. Thus far we have successfully synthesized undoped cadmium selenide particles ranging in size from approximately 2 to 4 nanometers in diameter. We have also prepared copper doped cadmium selenide using a new synthetic method.

This was supported by the ART program.

**Jane Bambrick, Cheng Library***Designing with Alphabets and Letters*

Most of us think of the alphabet as a group of letters used for communication. Letters form words and words form sentences, but the alphabet can also be viewed as art. There are hundreds of typefaces designed by graphic artists and many are indeed impressive. However, hand lettered alphabets are far more striking. Using ink or paint a calligrapher can transform either individual letters or the complete alphabet into a unique work of art. Letters and texts can be enhanced in a number of ways. The addition of flourishes, sweeping or elegant lines added to letters, create an exquisite look and the embellishment with gold illuminates letters. The color, size and placement of letters are other avenues that calligraphers use to provide an inviting and distinctive look to their work. Calligrams, objects or people designed with letters, are another way for calligraphers to use designs in an innovative way. The selected works on display present examples of the ways letters can reflect art and these can be enjoyed by the viewers.



**Martin A. Becker, Environmental Science**

Co-Presenters: Christopher A. Mallory, Department of Biological Sciences, University of North Texas, John A. Chamberlain, Jr., Department of Geology, Brooklyn College  
*Osteichthyans from the Arkadelphia Formation (late Maastrichtian) of Hot Spring County, Arkansas, U.S.A*

The Arkadelphia Formation (late Maastrichtian), Hot Spring County, Arkansas, USA, contains osteichthyan teeth, scales and skeletal elements belonging to: *Cylindracanthus ornatus* Leidy, 1856, *Atractosteus* sp., *Lepisosteus* sp., cf. *Hadrodus priscus* Leidy, 1857, *Pseudoegertonia* cf. *P. granulatus* (Arambourg, 1952), *Paralbula casei* Estes, 1969, *Enchodus ferox* Leidy, 1855, *Enchodus gladiolus* (Cope, 1872), *Enchodus petrosus* (Cope, 1874), *Enchodus* sp., and teleostei incertae sedis. These fossils are concentrated within a lag deposit that separates the underlying marls of the Arkadelphia Formation from the overlying Tertiary Midway Group limestone. Outcrop exposures of this lag deposit occur within the Ouachita River and are expressed as a series of partially submerged, steeply inclined fold limbs that strike obliquely to water flow. The co-occurring osteichthyans recovered in this study span a broad range of salinity tolerances, foraging behaviors, and dietary preferences, whose concentration indicates transport, exhumation and reburial associated with storm activity and sea level cyclicity across a shallow Late Cretaceous marine shelf. Arkadelphia osteichthyan taxa belong to groups which survive the Cretaceous Tertiary extinction event.

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

**Stephen Betts, Marketing and Management**

*Why Sustainability is the Ethical Choice for Business*

Sustainability and ethics are two popular topics in organization and business studies, as well as in other social sciences. The meanings of sustainability and ethics, and related relevant decisions and implications vary greatly depending on the context and discipline. However there is an intuitive notion that sustainability and ethics are interdependent. Sustainability implies that the system, activity or resource is able to stay as it is or grow and develop without undesired changes or depletion. In this presentation I will argue that any basis for ethical decision making must be one that has sustainability as one of its main explicit concerns or implicit outcomes. Using the "tragedy of the commons" as an exemplar, I will examine several ethical philosophies, perspectives or frameworks, such as utilitarianism, rights and justice, and explore their relationships with the basic ideas of sustainability. The conclusion is that one ultimate purpose of business ethics is to "protect the commons", in other words businesses must establish and maintain sustainable practices. The implications of such a stance, the difficulties in defining the relevant "commons" and determining what needs to be sustained will be discussed.

This was supported by the ART program.

**Judith Broome, English**

*'All shall be well and I'll forgive you': Emotional Abuse in the 18th-Century English Novel*

This presentation is part of a larger project that considers the various ways that domestic violence, in all forms, was understood and discussed during the 18th century and beyond. I argue that the developing genre of the novel provided a way to bring such violence into public discussion.

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

**Richard DeLuca, Marketing and Management***Don't Re-Invent the Wheel: Solving Problems by Using Business Research*

Almost any business problem has been solved at some time, so it is not necessary to "re-invent the wheel" by expending much time and effort to develop a "new" solution. All that is necessary is to conduct some business research. The presenter will demonstrate, with examples, how a number of problems were solved by using various research methodologies to find answers. When faced with an unfamiliar problem, researching it usually produces instances where the problem was solved. Using the results of such research enables a problem solver to either adopt or adapt the previous solution (or solutions) to their particular situation.

**Malay K. Dey, Economics, Finance and Global Business***Who Profits from Trading Around Earnings Announcements? Evidence from TORQ Data*

Using TORQ database, we investigate whether equity trading by individuals and institutions around earnings announcements generate any profit for those traders groups. We define profit as the excess return over a passive portfolio return. Our results indicate that institutional investors do not earn excess returns from trading either before or after announcements. Individuals earn weakly significant positive excess returns from their trading during the half hour before announcements but they also suffer a significantly negative excess return from trades on the day after announcement. Institutions suffer trading loss one hour post-announcement and on the day prior to and one-day after announcements. We interpret these losses as due to the adverse price effect of trade size.

**Christopher Fiduccia, Sociology**

Co-Presenter: Alex Collins, Sociology

Faculty Sponsor: Prof. Sheetal Ranjan, Sociology

*Where do Sex Offenders Place Themselves?*

Does the number of children under the age of 18, along with the characteristics (social disorganization/routine activity/broken windows theory) in a given area have any relevance to the reason why registered sex offenders place themselves in a certain area? The hypothesis of the study is that the area with the highest amount of sex offenders will show the greatest characteristics dealing with the three theories. This is one of the few reasons why sex offenders position themselves in certain areas once they are let back into communities. The purpose of this study was to try and see what types of locations sex offenders actually position themselves in while using routine activities theory, social disorganization theory, and broken windows theory to compare the characteristics of certain neighborhoods. In order to see what types of neighborhoods sex offenders positioned themselves in, numerous observations were done to get a good feel about why such high concentrated areas of sex offenders look the way they do. The observational data was collected in relation to Routine Activities theory, social disorganization theory, and broken windows theory to better explain the reasoning for sex offenders positioning themselves in those different areas, while looking at the important characteristics of all three of the communities (Newark, West Orange, Orange). The main findings showed that the areas with a high population density tended to have more sex offenders, as well as the areas that were highly populated with children under the age of 18.

**David C. Gilley, Biology**

Co-Presenter: Jacqueline M. Kuzora, Biology, Undergraduate Student

*A pheromone produced by waggle dancers increases the foraging activity of a honey bee colony*

We tested the hypothesis that a suite of semi-volatile compounds produced by waggle-dancing honey bees (previously identified as Z-9-tricosene, tricosane, Z-9-pentacosene, and pentacosane) together act as a pheromone that organizes the foraging activity of a honey bee colony. We predicted that upon introducing a synthetic blend of the compounds into a hive, we would observe a change in the number of bees departing from the hive and arriving at an artificial feeder station to which the bees had been trained. We observed during thirty minutes following compound insertion, an increase as great as 46% in the number of bees departing the hive and as great as 106% in the number of forager visits to the feeder station. This strong behavioral response suggests that some or all of these compounds act as a pheromone which plays an important role in regulating foraging activity within a honey bee colony.

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

**Martin Gritsch, Economics, Finance, and Global Business***Electronic Documents vs. Hard Copies: An Unhappy Medium?*

The way in which information is shared has changed drastically over the past two decades. The ability to store, transmit, and receive large amounts of data in an electronic format has increased dramatically during that time. In this paper, I focus on several aspects that came with this change. First, while information can be exchanged electronically, hard copies of documents are oftentimes still produced. Hence, the question arises whether the sender or the recipient(s) of the information bears the burden. Second, I consider the impact of various actions in the environment. In many instances, both the sender and the recipient(s) of a document print out a hard copy, hence leading to wasted resources. Third, the currency of information is a relevant issue. If information from, for example, a government agency is provided as hard copy, it is oftentimes not feasible to update such information in a timely fashion if errors need to be corrected or new or updated information should be passed on to the involved parties. Electronic media offer a clear advantage in that respect. Fourth, if information, especially regarding government policies, rules, and ordinances were posted only online, the burden of proof on the side of the recipients if there were a dispute regarding the posted information would be increased substantially because of the previous point.

**Carrie Eunyoung Hong, Ph.D., Educational Leadership and Professional Studies***Discourse-oriented Ethnographic Analysis of Classroom Talks: Language in the Classroom and Language of the Classroom*

Discourse is one of the most widely used terms in contemporary educational research as well as other disciplines. Many scholars within the traditions of qualitative research in education specifically pay attention to classroom discourse in that its practice occurs by clear rules and conversational routines. It is necessary to understand the nature of classroom talks distinct from other speech exchange systems of social conversations. The study examined the characteristics of classroom discourse in the classroom for learners of English as a Second Language (ESL). The target dyads of discourse analysis in this study are six Korean-speaking students and one American ESL teacher in a public elementary school in upstate New York. The process of data analysis invites a rich discussion about discourse-oriented ethnographic methods—combination of ethnographic and critical analysis of classroom discourse. The findings of the study demonstrate that the close examination of classroom discourse provides valuable information not only about the nature of social interactions in the ESL classroom, but also about the dynamic relationships between language, discourse, and constitutive effects of discourse practice on students'

identity. The study gives a valuable insight for educational researchers to understand the complexity of language, power, and identity among English language learners when they encounter various ways of language used in the classroom.

### **Bernard C. Jones, Special Education and Counseling**

#### *Objectivity vs. Subjectivity: A Teacher in Referral*

The purpose of this study was to analyze teacher's decision making during the special education referral process. Specifically, the study examined how academic achievement, behavior, socio-economic status, race/ethnicity, and gender impact the teacher's decision to refer students for special education services.

Elementary teachers completed a survey that consisted of questions which allowed them to report on the variables that most influenced their referral decisions. For each survey question, the Spearman Rho correlation coefficient (Hinkle, Wiersma, and Jurs, 2003) was used to determine if a correlation existed between individual variables and the teacher's decision to refer a student for special education services. The Mann-Whitney U test was used to further analyze referral decision between female and male teachers.

Results of this study indicate that teacher referral decisions are influenced by certain variables. In particular, academic achievement, academic readiness skill concerns and behavior were most often cited by teachers as influential in their special education referral decisions.

### **Linda Kaufman, Computer Science**

#### *Fitting Exponentials and Gaussians Over Multiple Data Sets*

In 1978 Golub and Leveque considered an exponential fitting problem with multiple data sets where the nonlinear variables, the decay rates, had to hold for all the data sets simultaneously, but the linear variables, the pre exponentials, could vary from one data set to the next. They showed that with the variable projection technique, one could reduce the problem to only the nonlinear variables. Since then, papers using this observation have appeared in the biophysics literature, the systems identification literature, in the medical literature for studying diseases of the retina, the spectroscopy literature, and in the numerical analysis literature for determining the knots in a 2 dimensional spline problem. Many nonlinear least squares solvers require the Jacobian of the residual vector. In this paper we show that using a tensor product of orthogonal matrices the number of rows for the Jacobian for the multiple data set problem can be significantly reduced. For 1000 data sets each with 500 observations and 3 exponentials, we reduce the problem from 500,000 rows to three problems : one with 1000 rows, another with 500 rows and a third with 6 rows.

This research is supported by the National Science Foundation (NSF).

### **Rajender Kaur, English**

#### *On the Blurry Edges of the Republic: Violence and Terror in Siddhartha Deb: An Outline of the Republic and Mitra Phukan's "The Collector's Wife"*

Perhaps it is no coincidence that the North East happens to be the favored regional choice of locale in a spate of recent novels: Kalimpong in Kiran Desai's, *The Inheritance of Loss* (2006), Parbatpuri, a small town in Assam in Mitra Phukan's *The Collector's Wife* (2005), Imphal and numerous other small towns of Manipur and Tripura that the protagonist of Siddhartha Deb's, *An Outline of the Republic* (2006) traverses to investigate a mysterious photograph, and the Sunder bans in Amitav Ghosh's, *The Hungry Tide* (2004). The North East has long been a region in the grip of enduring separatist and ethnic violence, which is only now, courtesy of the new riches endowed by globalization, capturing the national imagination of the bourgeoisie as an exotic tourist destination on the far reaches of the republic. In *An Outline of the Republic*, Siddhartha Deb, calls the North East, "the forgotten

world". However, the Shangri La image summoned by the name "the Seven Sisters," as the North Eastern States are also popularly known as, is a euphemism for underdevelopment and a severe lack of basic infrastructural facilities that would connect them to the national mainstream. In recent years there has been a spurt in the violence by insurgent groups that has finally managed to get media attention alongside the centre stage occupied by terrorism in Kashmir or Communal violence in Gujarat. I mention these diverse novels published between 2004-2006 in one breath, because to my mind they focus, to different degrees, and from slightly different perspectives, on the problem of widespread political and civil unrest manifested in various secessionist movements, and ethnic conflicts that are different from the problem of sectarian religious conflict between Hindus and Muslim or the vicissitudes of extended joint family sagas occasioned by Partition that has been the fictional fodder of the Indo-Anglian novel for a long time now. In this presentation I will focus on Deb's, *An Outline of the Republic* and Mitra Phukan's *The Collector's Wife*, as two texts in which the personal is densely interwoven with the political in the disaffected life of their respective protagonists, the frustrated journalist Amrit in the quest to uncover the story behind a photograph of a young woman being held captive by two machine-gun-wielding insurgents, and Rukmani, the unhappy wife of the District Collector, who loses both her husband and her lover to terrorist violence. The lives of both these characters mirror the bleakness and poverty of the region, the violence lurking beneath the surface, and the widespread feeling of things about to collapse. In the farthest reaches of the republic, where the forgotten of the world dwell, the fault lines exposed by the pathology of nationhood at the time of partition, have now only proliferated with globalization. Both Deb and Phukan detail a richly atmospheric world where rebel militias, Maoist outfits, chimerical NGO's with such grand names as the Prosperity Project, are all part of a generalized disaggregative momentum barely contained by the brute force of ubiquitous security forces of the Indian State.

This was supported by the College of Humanities and Social Sciences grant for summer research, 2008.

### **Christine Kelly, Political Science**

Co-Presenters: Jennifer Bauer: "Environmental Justice: The Case of North Carolina, Warren County Protests"

Andrew Carney: "The 1980 Student Anti-Apartheid Movement: Anatomy of Successful Protest"

Barbara Della Vecchia, "Protest and the Right to Life Movement: Evaluating Impact"

Kyle Stanton, "Social Movement Theory and the American Indian Movement"

Jack Zapotoczny, "Newark 1967: The Efficacy of Riot as Protest"

### *US Protest and Repression: Student/Faculty Collaborations in a Capstone*

This seminar/capstone in Political Science aims to produce thesis driven research treating claims in the literature on US Protest and Repression as applied to specific cases chosen by students. Research frames in the course are tied closely to the faculty member's current research and the seminar is premised on the Freirian concept of student/teacher collaboration.

### **William David Kernan, Department of Public Health**

Co-Presenters: Glen Sherman, Division of Student Development and Enrollment Management,  
Marianne Edmond, Health and Wellness Center

### *Supporting a Local, Community-Based Effort to Prevent Underage Drinking*

As institutions of higher learning, it is our responsibility to serve not only our own students, but also the prospective students within the schools in our surrounding communities, many of whom will become college students in future years. As prevention of underage drinking and alcohol abuse issues cut across more traditional on and off campus geographical and psychological boundaries, it becomes essential to think as community-minded

citizens as we approach our work on this issue. We will describe our collaborative efforts with local community members who are already working in the area of prevention. We will highlight how we have broadened our efforts beyond the gates of the university by partnering with multiple local Municipal Alliances in order to reach students earlier in their academic careers. It is our belief that if we can influence these students' choices and behaviors earlier on, they will represent a reduced risk for underage drinking as they progress through middle and high school, perhaps through community college, and into the four year colleges and universities in New Jersey (and beyond). In particular we will highlight our efforts in supporting these local Municipal Alliances in the monitoring, evaluation, and financing aspects of their programs.

This was supported by the NJ Division of Alcoholic Beverage Control.

### **William David Kernan, Department of Public Health**

#### *Searching For and Making Meaning After Breast Cancer: Prevalence, Patterns, and Negative Affect*

Cancer and its treatments can result in many negative psychological outcomes. Some researchers suggest that the first several months after diagnosis is a critical period in which persons with cancer experience an "existential plight" a period characterized by significant emotional distress, worries about personal health and safety, regrets about the past, and a preoccupation with life and death issues (Weisman and Worden, 1976). This present study describes the prevalence and patterns of searching for meaning (SFM) in the aftermath of breast cancer and asks how the search relates to made meaning (MM) and emotional adjustment. Women (n =72) reported their level of SFM, MM and negative affect (NA) at multiple time points in the first 18 months after breast cancer treatment. Over time, four SFM patterns emerged: continuous (44%), exiguous (28%), delayed (15%), and resolved (13%). Just over half of the participants reported having MM at early and late time points. A higher level of SFM was unrelated to MM, but was associated with a higher level of NA in longitudinal analyses controlling for baseline NA. Women who engaged in an ongoing, unresolved SFM from baseline to follow-up also had a significantly higher level of NA at follow-up than women who infrequently or never engaged in SFM over time. These analyses reveal that a) there is great variability in the prevalence and pattern of SFM in the aftermath of breast cancer and b) SFM may be both futile and distressing.

This was supported by the ART program.

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

#### *Performance Analysis of Digital Signal Processors Using SMV Benchmark*

Unlike general-purpose processors, digital signal processors (DSP processors) are strongly application-dependent. To meet the needs for diverse applications, a wide variety of DSP processors based on different architectures have been introduced to the market over the years. The functionality, performance, and cost of these processors vary over a wide range. In order to select a processor that meets the design criteria for an application, processor performance is usually the major concern for digital signal processing (DSP) application developers. Performance data are also essential for the designers of DSP processors to improve their design. Consequently, several DSP performance benchmarks have been proposed over the past decade or so. However, none of these benchmarks seem to have included recent new DSP applications. In this talk, I will present a new benchmark to compare the performance of popular DSP processors from Texas Instruments and StarCore. The new benchmark is based on the Selectable Mode Vocoder (SMV), a speech-coding program from the recent third generation (3G) wireless voice applications. All benchmark kernels are compiled by the compilers of the respective DSP processors and run on their simulators. Weighted arithmetic mean of clock cycles and arithmetic mean of code size are used to compare the performance of five DSP processors. I will also present how the performance of a processor is affected by code structure, features of processor architecture and optimization of compiler. The extensive experimental data gathered and analyzed should be helpful for DSP processor and compiler designers to meet their specific design goals.

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

**Robert Laud, Marketing and Management Sciences***Leadership and Innovation in Times of Uncertainty*

Times of economic or political turmoil cause leaders to re-evaluate their organizations, the market and the future. Weaker players will be weeded out while stronger players will find new opportunities, and emerging companies will grab a foothold in the new economy. Successful organizations will require a new type of leadership, top-down decision-making, and a focus on market shifts. Innovation, organization resilience and an ability to forecast emerging demands replaces steady-state management. This presentation will highlight current management responses to uncertainty including leadership traits, innovation imperatives, and organization resilience.

**Salika Lawrence, College of Education**

Co-Presenters: Stephen Betts, Cotsakos College of Business, Terri Reicher, Cotsakos College of Business

*WPU Institutional Review Board Policy and Procedures Update and Information Session*

The Institutional Review Board for Human Subject Research (IRB) reviews, approves and has oversight responsibility for much of the research involving human subjects conducted by faculty, staff and students at WPU. This presentation will cover the important elements of the IRB's review processes, the submission of protocols by faculty/staff or students, and the Certification of Human Subject Research Training.

**Timothy Liu, English***Poetry Reading*

I have recently published two new books in 2009, a volume of verse called BENDING THE MIND AROUND THE DREAM'S BLOWN FUSE (Talisman House) and a collaboration with the artist Greg Drasler called POLYTHEOGAMY (Saturnalia Books). I would like to read a sampling of perhaps half a dozen poems from each book and then conclude the reading with a Q and A.

This was supported by the ART program, Talisman House Publishers (Jersey City, NJ), and Saturnalia Books (Philadelphia, PA).

**Kendall J. Martin, Biology***Towards a More Fitting Spatial Analysis of Microbial Community Composition*

Outbreaks of exotic diseases in crops can eliminate the affected crops from international or regional markets, affecting global trade as well as local concerns. Such a drastic outcome can occur regardless of whether the pathogen is intentionally introduced as a bioterrorism agent or accidentally introduced. I am developing methodologies for identification of the primary causal agents of diseases where the etiology of the pathogen could not be anticipated. The two main difficulties in this are: misdiagnosis (identifying a secondary agent as the primary agent of disease) and the possibility that the pathogen may not be detected by the specific methods used. My model for overcoming these difficulties is to perform spatial analysis of all epiphytic microorganisms on transects from more healthy to more diseased areas in suspect fields. The transition through space into diseased areas would allow me to simulate a disease time-course so that the primary agent could be identified. I have been developing an index of community composition which is calculated by taking the Euclidean distances between each sampled community and a pair of reference communities and calculating the difference between this pair of distances for each sample. By looking at adjacent samples I could detect patches of similar microbial communities, but the method is difficult to universalize. This year, I tested an approach using two contrasting, idealized,

community-distribution profiles, but I dropped this approach for a Principal Component Analysis that could eventually lead to a calculation of the statistical significance of the patterns my model detects.

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

**Tiffany Matos, Sociology**

*Minority Violence: The Caged Animal Effect*

Faculty Sponsor: Prof. Sheetal Ranjan, Department of Sociology

This presentation explores the impact that self-identification as a minority holds on an individual's interactions with violence through the course of his or her life. This research uses in-depth interview method to gather personal information about each individual's life experience. In this paper, the interview data provided some dominant themes the most important being: definition of minority, inner-city environment, minority status and effect, and causes of minority violence. The research examines whether or not each individual believes that their status as part of the minority or majority effects their interactions with violence.

**Kevin J. McKernan, Communications/Honors Humanities**

Faculty Sponsor: Prof. John Peterman, Philosophy

*"Radical Exodus" A book of poems written by Kevin J McKernan*

Readings from a book of poems in development, entitled "Radical Exodus."

This was supported by a PTK and Honors Scholarship.

**Sandra L. Miller, Instruction and Research Technology**

*NJVid: A Collaborative Portal for Statewide Video Access*

NJVid is a collection and service driven portal that technically consists of six component parts: Collections, Networking and Access, Authentication and Authorization, Services, Repository, and Mass Storage. Initially funded by an IMLS (Institute of Museums and Library Services), NJVid provides New Jersey's K-20 institutions, museums and libraries state-of-the-art video access. This presentation will talk about how NJVid came about, what we have done so far, formative assessment along the way, and where we are going.

This is supported by an award from the Institute for Museums and Library Services (IMLS).

**Geraldine Mongillo, Educational Leadership and Professional Studies**

Co-Presenter: Rochelle Kaplan, Educational Leadership and Professional Studies

*Empowering Teachers as Peer Leader*

Despite the fact that teachers are increasingly expected to provide leadership in their schools, we realize that preparing teachers for these expanded roles and making the transition from classroom practitioners into school leaders is fraught with many obstacles. This presentation describes one of the strategies and opportunities that we have used in two of our graduate master's degree programs for teachers to help them overcome obstacles and support their emerging acceptance of themselves as school-based leaders. Both presentations focus on developing classroom teachers as staff developers for colleagues in their own schools and how we assess their progress toward that outcome.

This was supported by the College of Education.



**David Nacin, Mathematics***Koszul Algebras and Generalized Layered Graphs*

This poster is an introduction to my current research in non-commutative algebra, and a class of algebras called  $A(\gamma)$ . The algebras  $A(\gamma)$  are not quadratic so one can not ask the question of whether or not they are Koszul algebras. One way to bring up the question of Koszulity is to require some additional assumption that will guarantee the algebra is quadratic. Recently work done by mathematicians Cassidy and Shelton has revealed that certain quadratic  $A(\gamma)$  algebras happen not to be Koszul. In this poster, I will explain this result and the open problems in this area of mathematics.

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

**John Najarian, Computer Science***Complexity and Recognition Aspects of the Web-based Languages and their Contribution to the "Decline" of Search Engines, Spiders, and other Traversal Programs*

With the progress resultant from scripting and programming in the context of development of aesthetic web pages, rich in content, modes of interaction, and features, problems emerge from the expressive power of those implementations, languages, and methodologies. In particular, the complexity of traversal, inquiry, reachability, consistency, and search directly reduce the effectiveness of search engines, site verification, information dissemination, and maintenance procedures. Simulations and observed statistics are reviewed, followed by theoretical results and inferences on costs and social consequences.

This was supported in part by the Department of Computer Science and and the College of Science and Health.

**Poliana Oliveira, Biology**

Faculty Sponsor: Prof. Carey Waldburger, Biology

*Constructing a Functional Chimeric Histidine Kinase*

"The pre-eminent mode by which bacteria monitor and adapt to their environment is by "two-component signaling". A typical two-component system consists of a transmembrane sensor (histidine) kinase protein that senses extracellular signals and a cytoplasmic response regulator protein that affects a cellular response. The architecture of these proteins are modular with the sensor kinase usually consisting of an extracellular sensor domain connected to an intracellular transmitter domain and the response regulator usually consisting of a receiver domain connected to a regulator domain. Over 1000 of these systems have now been identified with most bacteria possessing multiple different two-component systems. The sensor and regulator domains from different systems show little sequence homology whereas transmitter and receiver domains show extensive sequence homology, especially among residues that carry out the autokinase and phosphoryl transfer reactions. This makes sense, as it appears that a single conserved mechanism for signal transduction has evolved such that a single bacterium can sense many different signals and carry out specific responses for each of those signals. Despite the modular nature of these proteins, there have been very few examples of functional hybrid sensor kinases where the sensor domain from one system is attached to the transmitter domain from another system. Here we show that a hybrid sensor kinase consisting of the sensor domain from the E. coli CitA protein and the transmitter domain from the E. coli PhoQ protein is functional. The CitA/PhoQ chimera responds to extracellular citrate, the normal signal for CitA, whereas PhoQ does not. We will discuss the implications of this result as well as possible reasons for the rare functional nature of this chimera.

This was supported by the ART program and an award from the National Institutes of Health (NIH) to Dr. Carey Waldburger.

**Diana Davis Olsen, History**

Faculty Sponsor: Prof. 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-fourteenth century, yet it continued to help Europe's elite wage psychological warfare in the political arena until the mid-seventeenth 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 three extant, homogenous horse bards manufactured during the sixteenth century will be examined in greater detail and deciphered. These bards originated in Italy and Germany.

This was supported by a Graduate Research/Travel Grant present at the International Sixteenth Century Society Conference, October 2008.

**Emmanuel S. Onaivi, Biology***Genetic Basis of Marijuana Use*

The human body and brain makes its own marijuana-like substances that are called endocannabinoids. Endocannabinoid system (ECS) is composed of endocannabinoids, enzymes for their biosynthesis and degradation with genes encoding two distinct cannabinoid (CB1 and CB2) receptors (CBRs) that are activated by marijuana use. Physical and genetic localization of the CNR1 and CNR2 genes have been mapped to human chromosome 6 and 1 respectively. Chromosomal hot spots and epigenomic factors are likely associated with reward preferences and variations in CBR genes have been associated with human disorders including drug dependency, obesity and depression. The ubiquitous abundance and differential distribution of the ECS in the human body and brain may explain numerous marijuana effects in most biological systems associated with smoking marijuana. Multidisciplinary approaches were utilized to study the genetic basis of marijuana use. Our data on the cloning of mouse CB1 cDNA and the chromosomal localization of mouse CB1 and CB2 genes is syntenic with the human chromosomal CNR1 and CNR2 genes. Our discovery of post-synaptic localization of neuronal CB2-Rs warrants a re-evaluation of the role of CB2-Rs and their interaction with CB1-Rs in the mammalian brain. Our data also indicate a number of polymorphisms and sub-type CBR specificity indicating that marijuana use may be coded in our genes. Thus, genetic variants and haplotypes in CNR1 and CNR2 genes may be exploited in elucidating this natural regulatory mechanism and in identifying specific targets in conditions of endocannabinoid dysfunction.

This was supported by the ART program, a Research and Travel Incentive Award, the College of Science and Health Center for Research, and as a guest scientist at the National Institute on Drug Abuse (National Institutes of Health).

**Michael Peek, Biology**

Co-Presenter: Hieke Droegmoeller, Biology, student

*Growth responses to sand burial in the common dune grass, *Ammophila breviligulata**

We monitored plant performance above and belowground in each summer from 2006 to 2008 in response to an experimental addition of 10 cm/yr sand accretion rate, added in four increments. In all years, we saw a significant increases in culm numbers in response to sand burial. On average, plants had 25% more culms if they were in the sand burial treatment, representing a significant allocation to aboveground biomass. Plants grew in height during

all summers, not surprisingly, but plants treated with sand additions grew significantly taller. On average, these plants were 20% taller than control plants. Belowground, we are seeing very little effects of burial. Thus far, root length and root numbers are not significantly different between sand burial treatments and controls. There does seem to be an increase in survival rates for roots that are buried, but the data are still being analyzed. If these trends continue, we may be able to identify that the trade-off for increasing aboveground biomass is the retention and maintenance of root tissue.

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

## **Cesar Perez-Alvarez, Marketing and Management**

### *Cultural Dimensions and Group Perceptions in Electronic Environments*

This research explores the role that cultural factors and perceptions about technology play on groupware adoption. Technologies are culture-bound (Goulet, 1977). IT adoption depends on cultural characteristics, and its effects should vary among cultures (Fukuyama, 1995; Hofstede, 1980). In particular, attention is given to the way in which cultural differences affect both the adoption of groupware and the process outcomes. The study is framed using Hofstede's operationalization of national culture (Hofstede, 1980).

Study's research questions:

1. Do individualistic cultures encourage the adoption of groupware technologies more than what collectivistic cultures do?
2. Do groupware technologies shorten power distances among group members in cultures with a long power-distance?
3. Do groupware technologies shift the group focus from a social to a more task-related in cultures where femininity is prevalent?

The experiment was run in three universities, in two different countries. A total of 176 people from three countries, in 44 groups participated in the study. Groups solved a marketing case, in an electronic meeting space. Data were collected using three questionnaires. According to the results, working groups in a collectivistic culture seem to have more positive perceptions toward the technology, the technology-supported process and the outcomes, than those in a more individualistic culture. Positive perceptions are associated with better group performance. A direct implication is that the impact of group technology on group's performance and outcomes is moderated by cultural factors and that the consideration of cultural factors is essential for effective technology adoption.

This was supported by the ART program.

## **Meredith Peters, Sociology**

Faculty Sponsor: Prof. Sheetal Ranjan, Sociology

### *Quality of Police Contact: The Effects of Contact on Citizens' Attitudes Toward Police Officers*

This project examines the quality of direct contacts between police and citizens of Northern New Jersey. The research examines if citizens form their attitudes toward police officers based on their past encounters with the police. It primarily examines whether citizens with more positive contacts have more positive attitudes toward police. Data was collected by convenience sampling with a survey instrument. Participants (N=350) were males and females of all ages and races. Findings indicate that positive experiences with citizen-initiated contacts were positively related to attitudes toward the police ( $r=.616, p<.001$ ); similar results were found for police-initiated contacts ( $r=.681, p<.001$ ). One way ANOVA tests also revealed a significant effect of political identification and race on attitudes toward the police.

**Leonard Presby, Marketing and Management***Enhancing Student Learning with Only a Click*

The role of a professor is to help students learn. In one's classroom, it is admirable if one can motivate and engage their students. Unfortunately, this may not be easily attained since the majority of all college faculty still teach their classes in the conventional lecture mode. An alternative and/or supplement to traditional lecture is active learning. This paper shows how implementing one approach of active learning, which incorporates a response system, helped engage students in learning the subject matter of a Quantitative Methods course as well as access their knowledge. It provided valuable feedback to both students and professors.

**Amy Meltzer Rady, Kinesiology***Teaching Multicultural Activities in a High School Physical Education Curriculum*

William Paterson University Kinesiology undergraduate majors will lead and demonstrate several multicultural activities that may be used in a high school physical education program. The leaders will invite attendees of the session to participate. The activities will originate from various parts of the world providing insight into many different cultures and backgrounds. Since today's modern classroom is made up of students from many diverse backgrounds, incorporating games from other countries provides increased interest in our curriculum.

**Christine Reed, Director, University Performing Arts***Introduction to University Performing Arts and WPLive*

What is UPA and what does it do? Some may be aware that the performing arts exist at WPU, but many are unaware of the range and quality of the programs created and presented here. In a short time UPA has evolved into the driving force behind all performing arts here, often providing the first impression people outside our community have of WPU. Under the auspices of the COAC, UPA oversees the creation and presentation of programs such as the Vistas Series, Jazz Room, and the New Jersey Playwrights Contest. UPA is also responsible for all aspects of theater operations in Shea Center for Performing Arts and Hunziker BBT. UPA, as central to the academic mission of the University, provides logistical support services to all Music and Communication/Theatre department performances, Distinguished Lecture Series, WPU galleries, and all other University events held in these spaces. This presentation will reveal some little known and surprising facts about our activities. What is WPLive? The WPLive brand and website are the portal for all performing arts programs produced and presented at WPU. Its mission is to ensure a lively and significant presence and integral role for the performing arts in the life of the University and of the broader surrounding community. We strive to expand the role of the performing arts in the education of all students, in the best tradition of liberal education by offering innovative and comprehensive programming of outstanding quality and multicultural reach offering creative outlet and educational experiences to all.

**Madeleine Rosar, Mathematics**

Co-Presenter: Eliana Antoniou, Mathematics

*Hematopoietic Stem Cell Proliferation Modeling Under the Influence of Hematopoietic Inducing Agent*

The process by which hematopoietic stem cells (HSC) residing in the bone marrow differentiate into blood cells is known as hematopoiesis. In the event of hemorrhagic shock, it is crucial for the HSC to rapidly differentiate into new committed erythroid progenitor cells that will give rise to erythrocytes. Growth factors and cytokines enhance the self-renewing process of HSC and are, therefore, crucial to restoring normal levels of blood cells in the body.

Hematopoietic inducing agents (HIAs), such as the cytokine erythropoietin (EPO) and granulocyte-colony stimulating factor (G-CSF) play a vital role in hematopoiesis because they are capable of inducing the proliferation of stem cells. The aim of the current study is to mathematically model the effect of HIA on the proliferation rate of hematopoietic stem cells at varying levels of oxygenation. The role of HIA was analyzed by constructing a set of coupled ordinary differential equations upon which mathematical analysis was performed. The model makes predictions of hematopoietic activity during low O<sub>2</sub> levels (ranging from 3% to 15%) similar to conditions ranging from acute blood loss to normal conditions.

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

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

Co-Presenters: Marie Donnantuono, Elementary and Early Childhood Education,  
 Mary Lebron, Elementary and Early Childhood Education, Cooperating Teacher,  
 Christina Flynn, Elementary and Early Childhood Education, Cooperating Teacher,  
 Denise Fitzpatrick, Elementary and Early Childhood Education, Cooperating Teacher  
*Keepin' it Real: Teaching and Learning about Literacy in the Context of Partner Schools*

The required teacher education course in literacy instruction for Elementary Education majors is held on-site in area partner schools. In this course, teacher-candidates work with first and second grade students on literacy tasks in an after school setting. They learn to assess children's literacy abilities, plan for instruction based on individual needs, and reflect on the impact of their instruction. This presentation is an examination of the impact of these activities on future teachers' pedagogical knowledge development, and children's literacy growth. Results indicate that participating children outperformed their non-participating peers in important ways. Children also seemed to have benefitted emotionally from the experience. Future teachers gained insight about how assessment informs instruction and grew in their understanding of balanced literacy. In addition, course co-instructors, including university faculty and classroom teachers, experienced professional growth through guiding teacher candidates in their assessment, instruction, and reflection.

This was supported by the ART program.

### **Susan Sabatino, Cheng Library**

Co-Presenters: Kathy Malanga, and Nancy Weiner, Cheng Library  
*The Library Component of First Year Seminar: What Do the Students Think?*

For more than a decade, the Cheng Library at William Paterson University has conducted hundreds of library instruction sessions for the students enrolled in the University's First Year Seminar (FYS). Yet the librarians had little idea of what the students really thought about these sessions, and what they learned. During the fall 2007 semester, the Library conducted a study of 13 sections of FYS. The study, in a pre-test and post-test format, provided insights into both the affective and cognitive domains of the first-year students and the student's reactions to the library sessions. This presentation will review the results of this study.

This was supported by a WPUNJ Sabbatical Leave Award.

### **Daniel Savacool, Computer Science**

Faculty Sponsor: Prof. Linda Kaufman, Computer Science  
*Building the Matrices Needed for Designing Optical Fibers.*

To design an optical fiber entails using a function optimizer which requires one to evaluate a design merit function for various settings of the design parameters- the widths and refractive indexes of the various layers of the fiber. It has been long known that these optimizers tend to quit if they do not get good analytic derivatives of the merit

function with respect to the design parameters. In our situation each merit function involves building the main matrix plus other matrices involving the derivatives of the main matrix with respect to the design parameters, solving for the eigensystem of the main matrix, and then processing the eigensystem and producing derivatives of this process. As one speeds up the last two steps, building the derivative matrices becomes a larger portion of the computation time. We show that the concept of separation of variables can be used to speed up this time.

This was supported by an award from the National Science Foundation (NSF) to Dr. Linda Kaufman.

### **David Slaymaker, Biology**

#### *Molecular Marker Development for Diversity Studies and Clonal Identification in *Ammophila breviligulata* (American Beachgrass)*

New Jersey's coastal dunes provide both natural beauty and infrastructure protection for the state's coastal communities. Millions of dollars have been spent restoring and maintaining New Jersey's coastal dunes, and dune/beach management is an on-going process. While many plant species play a role in colonizing and stabilizing coastal dunes, the predominant and most important plant species in New Jersey is *Ammophila breviligulata* (American beachgrass). My lab will develop a molecular marker system that will be used to determine genetic diversity in native and restored beachgrass populations in New Jersey, and to genetically fingerprint beachgrass clones for experimental purposes. Here I report the initial steps in establishing a working molecular marker system for New Jersey beachgrass populations.

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

### **Tricia Coxwell Snyder, Economics, Finance, and Global Business**

Co-Presenter: Martin Gritsch, Economics, Finance and Global Business

#### *Exploring Options: Did the 1993 Omnibus Act Alter Executive Compensation and Reduce Tax Revenue*

The increase in stock option compensation has become increasingly controversial in recent years as disclosures emerge that executives abused the exercising of stock options. The Omnibus Budget Reconciliation Act of 1993 allows "performance-based pay," such as stock options, not to be subject to the cap on corporate income tax deductions for salaries exceeding \$1 million. In this paper, we examine if current tax policy encourages firms to issue stock options as a form of executive compensation to avoid taxes and by how much this practice reduces tax revenues for the government. We first document how the compensation of executives earning in excess of \$1 million annually has shifted towards stock option compensation: While mean salaries were almost flat from 1992 to 2000 and bonuses increased by approximately 40 percent, the Black-Scholes value of stock option compensation more than tripled. Regressions of the natural logarithm of salary, bonus, and stock option compensation, respectively, on the same set of independent variables show that firms that are predicted to be affected by the salary cap pay their executives close to 50 percent more in stock options than firm that are not affected by the cap. We then construct a variable that measures the amount of income that is not taxable since it is paid in the form of stock options that would be taxable if the same amount were paid in non-performance-based pay. Based on this variable, we estimate the loss in tax revenue for the government and find that the total loss in tax revenue is approximately \$24 billion over all the years that are included in our data set. In 2000, the last year of our data set, alone, the loss in tax revenue is estimated to be close to \$5 billion.

This was supported by the ART program.

**Tricia Coxwell Snyder, Economics, Finance and Global Business***How Does Monetary Policy, Income and Stock Market Wealth Impact on the Housing Market and the Overall Economy?*

This paper empirically examines the interactions between monetary policy, stock market wealth, housing investment and GDP. In recent years there has been growing talk about the downturn in the housing market and how the housing market is dragging down the rest of the economy. Thus, it is important to understand the interactions between monetary policy, income, the stock market. This paper also determines whether monetary policy, income or stock market wealth has a greater impact on the housing market.

Using quarterly data from 1959:Q1-2007:Q4, I use an error correction vector autoregression (ECM) model to determine the predictive power and the feedback effects between the money supply (M2), the Federal funds interest rate (FFR), stock market wealth (measured as the S&P 500), income (GDP) and housing (residential) investment. Results find that housing investment responds to changes in money and interest rates much more than to changes in wealth or income and that housing has a tremendous impact on GDP. This suggests that monetary policy may be a useful tool in helping to restore the housing market and the restoring the housing market is vital to the overall economy.

This was supported by a WPUNJ Sabbatical Leave Award.

**Rosa E. Soto, English***"Made to be the Maid?" An Examination of the Latina as Maid in mainstream Film and Television*

I was watching films one day when I noticed an odd thread throughout all of them that I may have never noticed before and which speaks to the way in which a narrative is complicit in perpetuating an image and in negating experience. Each of the films I was watching had a latina maid. This paper therefore begins the struggle to examine and understand the many ways the portrayal of the maid as latina affect a growing audience of latin@s. How does the latina spectator take on encoding and decoding, a Stuart Hall reference, as a strategic way in which to strip the maid of its negative influences and see something positive in the role? I hope that this project serves as the basis in which latin@s can find agency and subjectivity in the roles themselves, in the ways in which the roles are structured and in the performativity of the actresses themselves. Additionally, I wish to examine the many complicated ways that the latina servant or maid functions for the white spectator audience. I hope this project serves to help the reader gain knowledge of how these individualized classifications of the latina maid are used to complicate, problematize or situate white middle class or upper middle class value systems.

**Katherine Sullivan, Nursing***An Ethnonursing Study of the Culture Care Values, Beliefs and Practices of New Baccalaureate-Prepared Registered Nurses Regarding the Primacy of an Ethical Commitment to the Patient Within Two New Jersey Magnet Hospitals*

Ethnonursing research is a qualitative research method developed by nurse theorist Madeleine Leininger, who initiated the study of nursing within a cultural context. This research project, a doctoral dissertation in progress, explores the experience of new baccalaureate-educated nurses as they leave the culture of education and enter the culture of hospital nursing. Specifically, perceptions of nursing ethics by new graduate nurses are explored. Nurses today are taught, through the American Nurses Association Code of Ethics, that their primary ethical commitment is to the patient. Fifty years ago, the nurse's primary commitment was to physician and institution. This research focuses on how the nurse's primary ethical commitment to the patient is enacted today in the hospital setting. An overview of the project and relevant literature will be presented; research has not been completed.

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

**Colleen Takemoto, Communication Disorders**

Faculty Sponsor: Prof. Betty Kollia, Communication Disorders

*Fluency and Mental Control*

This discussion will begin with a brief overview of the persistent consequences of communication disorders as they pertain to social stigmas, academic achievement, and overall mental health. Emphasizing the damaging effects of social stigmatization, a review of the covert repair hypothesis will present fluency disorders as a concealable stigma. Theories pertaining specifically to fluency disorders, such as stuttering, will be discussed in pertenance to studies of thought suppression, secrecy, and mental control. Such consistencies are highlighted to suggest that similar cognitive mechanisms may be playing a role in the persistence of fluency disorders. The discussion concludes by describign the present investigates attempt to link dysfluency with the action identification theory and the optimality hypothesis (Vallacher and Wegner, 1985, 1987; Vallacher and Wegner, 1986, 1987). The premise behind the action identification theory is that the way one identifies, or describes, what they are doing plays a role in degree of success, or overall outcome, for that particular task. According to the optimality hypothesis, the identities of actions should be modified depending on the self-perceived difficulty of the task at hand in order to achieve a performance that is ideal.

**James Van Gorp, Biology**

Co-Presenter: Anna Yap, Biology, (Graduated 2008 )

Faculty Sponsor: Prof. Jaishri Menon, Biology

*Nitric oxide synthase isoforms in metamorphosis of Anuran tadpoles, *Xenopus laevis**

Nitric oxide (NO) a signaling molecule, produce in situ by nitric oxide synthase regulate metamorphosis in some invertebrates as well as ascidians. NO has both, apoptotic and antiapoptotic properties mediated via activation of caspases and guanyl cyclase respectively. NO is also involved in cellular dynamics of regressing tail of anuran tadpoles. The objectives of the present study were to investigate a) cell specific localization for NOS using immunohistochemistry (IHS) b) if thyroid hormones control gene expression for NOS isoforms and c) changes in NO sensitive guanylyl cyclase in intestine and tail during different stages of metamorphosis of *Xenopus laevis* tadpoles. Immunostaining shows that, both NOS I and III are expressed in cytoplasm of epithelium and brush border of the intestine just before remodeling begins, and in epidermis of tail before regression begins. Though, there was stronger expression for NOS I than NOS III in both the tissues. NOS II was not expressed at all in either tissue. Increased apoptosis during critical period of intestinal remodeling and tail regression is associated with high expression of NOS I. RT-PCR results show that during spontaneous metamorphosis, when endogenous T3 levels are at peak, (as well as following exogenous T3 treatment) there is down regulation of NOSI in intestine. However, in tail there is up regulation of NOS I at the same stage (beginning of tail regression). Absence of guanylyl cyclase in either tissue indicates lack of NO signaling via formation of cGMP, but it may be via caspases favoring apoptosis. In conclusion, NOS(s) might be playing a crucial role as an endogenous regulator of NO signaling in intestinal remodeling and tail regression of anuran tadpoles promoting apoptosis in a tissue and/or cell specific fashion.

This was supported by the College of Science and Health.

**Nancy Vitalone-Raccaro, Special Education and Counseling***Early Intervention Evaluation Reports: Guidelines for Writing User-Friendly and Strength-Based Assessments*

Assessment and evaluation activities are an integral part of early intervention services. These activities culminate in written evaluation reports that include information such as observations of skills and deficits, diagnosis, and recommendations for intervention. However, few guidelines exist to help early intervention providers in writing evaluation reports that are strength-based and use language that is easy for families to understand. This article



presents a family-centered framework with guidelines and specific strategies for writing effective evaluation reports that build strong alliances between families and practitioners. [Towle, P., Farrell, A. E., and Vitalone-Raccaro, N. (2008). *Early intervention evaluation reports: Guidelines for writing user-friendly and strength-based assessments. Zero to Three, 28(4), 53-60.*]

### **Mahmoud Watad, Marketing and Management**

#### *Constructing a Framework for IT/IS as an Organizational Innovation*

The paper presents a comprehensive framework for IT-enabled organizational innovations. The framework highlights the factors that affect the effective introduction of knowledge and information systems to become an organizational innovations. It conceptualizes the innovation process as an open system and takes into consideration knowledge management and performance evaluation. The rationale for this framework is that because of the narrow scope of current frameworks, managers and IT personnel often fail to see the whole picture of their organizations. This difficulty reduces manager's ability to understand the interrelationships between IT-based innovations and business processes. Consequently, introducing IT/IS into an organizational context doesn't achieve its intended objectives and often fails entirely. The framework will be useful to managers in their efforts to transform their organizational operations with the use of IT applications.

This was supported by the ART program

### **Melda N. Yildiz, Secondary and Middle School Education**

#### *Myths and Misconceptions in Education: Power of Media and New Technologies in Developing Critical Autonomy among Teacher Candidates*

The study outlines the difficulties and unique characteristics of developing critical autonomy through new media and technologies in Teacher Education programs. It explores three key topics in order to understand the educational experiences of the participants: the wide range of meanings participants associate with myth and misconceptions in K12 education; the impact of developing alternative multimedia learning objects (modules) and strategies on participant's reaction and understanding of educational issues (myths and misconceptions); and the ways in which the participants respond to online activities. This presentation will provide the voices and stories and examples from K12 classroom as well as showcase learning objects developed by Web 2.0 technologies. It outlines the study:

1. Design: Learning objects integrating Web.2.0 technologies and using assessment strategies, and reflective practices are most conducive for Teachers and Teacher Candidates to enhance their teaching.
2. Institutional/ Program Level Decisions: How do we empower our teacher candidates and develop critical autonomy and dismantle myths and misconceptions on selected issues (case studies). Most importantly, re-design our teacher education programs to transform our professional development to meet the needs of the net generation teacher candidates and K12 students?
3. The role of new media and technologies: How does creating an online learning objects enhance a teacher candidate's literacy and technology skills and to develop critical autonomy? (Does constructing a media develop competency and demonstrate achievement of both NJ Teaching Standards AND the ISTE National Educational Technology Standards?) Will multimedia skills gained from the process of developing media projects transfer to K12 student use in the classroom?
4. Assessment: How do we assess our teacher candidates? What kind of artifacts do they need to create and how do they create their projects?

This was supported by the ART program.

**Melkamu Zeleke, Mathematics**

Co-Presenter: Mahendra Jani, Mathematics

*On Generalizing Motzkin Numbers using  $k$ -Trees*

We used  $k$ -Trees to generalize the sequence of Motzkin numbers and showed that Baxter's generalization of Temperley-Lieb operators is a special case of our generalization of Motzkin numbers. We also obtained a recursive summation formula for the terms of 3-Motzkin numbers and investigated some asymptotic properties of the terms of  $k$ -Motzkin numbers. The results from our study are published in *Ars Combinatoria*, a leading Canadian Journal of Research in Combinatorial Mathematics.

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

