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# 14th Annual Petersheim Academic Exposition Abstracts

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14<sup>th</sup> Annual Petersheim  
Academic Exposition  
Abstracts

*April 19 - 24, 2010*



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## **Poster Presentations** – Atrium, McNulty Hall

### **Monday, April 19**

3:00 - 4:00 PM [School of Health and Medical Sciences Poster Session](#)

3:30 - 6:00 PM [Institute of NeuroImmune Pharmacology](#)

### **Tuesday, April 20**

2:00 - 4:00 PM [Interdisciplinary and Study Abroad Poster Presentations](#)

7:00 - 9:00 PM [Chemistry and Biochemistry Research Symposium Poster Display](#)

### **Wednesday, April 21**

4:00 - 5:30 PM [Biological Sciences Symposium Poster Session](#)

## **Oral Presentations / Events**

April 19 4:30 PM [School Counselor: Partners in Educational and Career Planning](#)

April 19 2:30 PM [Food Facts, Fitness & Fun Presentations](#)

April 20 5:45 PM [Chemistry and Biochemistry Petersheim Seminar](#)

April 21 Evening [Eve of Earth Day – Ecology Club](#)

April 21 4:30 PM [Learning Disability Awareness for Future Teachers](#)

April 22 Afternoon [Fostering Unity of Effort in Full Spectrum Operations](#)

April 22 AM & PM sessions [University Honors Program](#)

April 22 5:45-8:30 PM [Online Forum - Environmental Sciences](#)

April 23 8:00PM [Larry Shue's wacky comedy "The Foreigner"](#)

April 24 12:00 PM [Psychology Research Symposium](#)

## POSTER PRESENTATIONS

### School of Health and Medical Sciences Poster Session

Monday, April 19<sup>th</sup> 3:00 – 4:00 PM McNulty Hall Atrium

#### **THE ABLE SCALE: THE DEVELOPMENT OF A NEW BALANCE OUTCOME MEASURE FOR THE SPINAL CORD INJURY POPULATION**

E. Ardolino, PT, Ph.D., Magee Rehabilitation Hospital, Philadelphia, PA & Genevieve Pinto Zipp, PT, Ed.D., Seton Hall University

Currently, there are no outcome measures that have been identified in the literature to assess balance in the SCI population. Therefore, the purpose of this study was to generate items for a new clinical outcome measure, the ABLE scale, using expert consensus. One of the first steps in developing a new outcome measure is to generate items for the measurement tool by obtaining a consensus amongst a group of experts in the field. A Delphi technique is a process that is often used to obtain a reliable consensus amongst a group of experts, using a series of anonymous questionnaires. The responses are summarized and reported back to the experts in each round until a consensus is reached, or the response rate diminishes. 24 experts in SCI rehabilitation, physical therapists, who had at least 5 years of physical therapist practice, at least 2 years of evaluating and treating patients with SCI, and at least 2 years of administering the Berg Balance Scale or the Tinetti Performance-Oriented Mobility Assessment participated in the study. Experts were recruited anonymously from the 14 Model SCI Centers, the 7 NeuroRecovery Network (NRN) centers, and the NeuroPT listserv. The current version of the ABLE scale, which was written by the primary investigator, was posted online via SHU ASSET program. The experts were asked several questions regarding the items, including their importance, clarity of the wording, scoring appropriateness and administration feasibility. Experts were also provided with the opportunity to offer suggestions on improving each item and the scale as a whole. The results from the first round of the survey were used to remove or modify any items which did not meet an 80% agreement, and the revised version of the ABLE scale was posted online via ASSET. During the second round of the study experts were presented the modified ABLE scale, and were asked to answer the questions following any item which had been modified. After a consensus was reached by the clinical experts following round 2, the ABLE scale was posted online via ASSET, and the members of the NRN Balance Committee were asked to complete a survey to determine their agreement with the scale. After 2 rounds of the Delphi Study, and 1 round of an advanced review, the ABLE scale consists of 28 items, across three domains of sitting, standing, and walking. This study was the first step in the development of the ABLE scale, a new outcome measure to assess balance in the SCI population. The study utilized a Delphi technique to generate the testing items and establish the content validity of the scale. The ABLE scale consists of 28 items measured across the three domains of sitting, standing, and walking and thus may be time-consuming to administer in a clinical setting. Future testing to refine the ABLE scale is needed. Specifically, the scale will be tested for redundant items, and

gaps in the level of difficulty across the scale, which would make it necessary to either remove, modify, or add new items.

### **IDENTIFYING FACTORS THAT INFLUENCE BREAST CANCER SCREENING PRACTICES IN SOUTH ASIAN INDIAN IMMIGRANT WOMEN**

Elise E. Kumar, Genevieve Pinto Zipp, Susan Simpkins, & Doreen Stiskal

Department of Graduate Programs in Health Sciences, School of Health and Medical Sciences, Seton Hall University

Breast cancer is the most commonly diagnosed form of cancer in women. Breast cancer survival rates can be substantially increased by early detection through regular mammography screening. However, women of ethnic subgroups and those who immigrated to the United States within last 10 years are less likely to have had a recent mammogram. South Asian Indians are the third largest Asian group in the United States. Identifying the factors that influence the breast cancer screening practices of South Asian Indian Immigrant women is an important step towards developing culturally sensitive health education programs designed to raise awareness of the benefits of mammogram screening. The purpose of this study was to assess the general knowledge of breast cancer risk factors and to identify factors such as cultural barriers that may prevent South Asian Indian immigrant women from participating in mammography screening. A convenience sample of 30 South Asian Indian immigrant women who were 40 years or older completed, a self-administered survey about issues related to breast cancer. Survey findings, indicated that South Asian Indian immigrant women had 42%. More than half of the women did not utilize mammography screening. Modesty and lack of family support were two important cultural barriers identified by the respondents. The findings reported here demonstrate that South Asian Indian immigrant women are not undergoing routine mammogram screening which may be due to 42% level of knowledge about breast cancer risk factor. More than half of the women did not utilize mammography screening. The two most consistent cultural barriers identified by the participants were modesty (76.7%) and lack of family support (70%). Work is needed to promote awareness about breast cancer that takes cultural barriers into account.

### **MEASURING REGISTERED NURSE JOB SATISFACTION IN A NURSING HOME ENVIRONMENT: LITERATURE REVIEW**

Michael E. Shipley and Genevieve Pinto Zipp

Department of Graduate Programs in Health Sciences, School of Health and Medical Sciences

Registered Nurses (RNs) comprise the largest healthcare work force with approximately 2.5 million positions (Bradley, 2008). The Bureau of Labor Statistics estimates that nursing employment will rise by 23% while the supply in 2020 will fall 36% (Bradley, 2008).

Registered Nurses work in diverse settings such as hospitals, ambulatory care, nursing homes, and home health care. Over 80% of RNs work in hospitals, while less than 10% work in Nursing Homes (USGAO, 2001). To date, most of the research focuses on RN job satisfaction in the hospital setting, and little is known about RN job satisfaction in the nursing home. Since there is a shortage of RNs and the demand will increase, the importance of understanding what influences RN job satisfaction in the Nursing Home is critical to improving RN satisfaction,

decreasing RN turnover, and improving quality care. The purpose of this evidence based project was 1) to identify factors affecting RN job satisfaction in different practice areas noted in the current literature and 2) to assess the tools that measure RN job satisfaction. Based on the review of the literature, key work factors relevant to RN job satisfaction are autonomy, work content, communication, pay, growth & development, promotion opportunities, co-worker relationships, meaningful work, recognition, workload, work demands. Of the five instruments noted to assess RN job satisfaction, only two were used and found to have good reliability and validity in the Nursing Home environment: The Index of Worker Satisfaction (IWS) and the McCloskey/Mueller Satisfaction Scale (MMSS). The information obtained from the review of the literature identified factors affecting RN job satisfaction and provided a critical review of the current available instruments used to assess job satisfaction. The poster will review each tool and offer a framework based upon the literature to design methodological approach to assess RN job satisfaction in the nursing home environment.

### **THE INFLUENCE OF BODY MASS INDEX AND MENSTRUAL CYCLE PHASES ON BALANCE RESPONSES IN WOMEN**

Cathy Maher, Dhara Dalal, Tanya Galofaro, Emilia Quezada, & Jillian Regis  
School of Health and Medical Sciences, Seton Hall University

**Purpose/Hypothesis:** The purpose of this study was to assess influence of menstrual cycle phases and body mass index (BMI) on balance responses in females aged 18-28. Follicular, ovulation, and luteal phases are identified by levels of cycling hormones (estrogen, progesterone, and luteal), which appear to affect strength, proprioception, and ligamentous laxity, making women prone to injuries at different phases. Females' BMI are influenced by levels of circulating hormones. **Number of Subjects:** Seven healthy female subjects aged 18-28 volunteered to participate. **Materials/Methods:** Subjects were instructed in use of Saliva Ovulation Test and urine strips to determine menstrual cycle phases for one month. Balance responses were recorded on sensory organization and functional limitations tests using Balance Master®. BMI was calculated from standard height and weight measurements. **Data Analysis:** Descriptive statistics, means and standard deviation were determined for equilibrium and composite scores of the SOT as well as the five conditions of the FLT using SPSS® for Windows. An analysis of Variance (ANOVA) was performed to determine differences among subjects across menstrual cycle phases. Pearson's correlation coefficient was used to examine the relationship between phases, BMI, and balance responses. **Conclusion:** Fluctuation of hormone levels may produce changes in postural control and balance making females prone to injuries during different phase of the menstrual cycle. The use of SOT and FLT did not indicate any significant effect on performance in this study possibly due to small sample size. **Key words:** Menstrual cycle, follicular phase, ovulation phase, luteal phase, body mass index, balance, postural sway.

### **THE RELATIONSHIP BETWEEN SLEEP HABITS AND TEST PERFORMANCES AMONG HEALTH SCIENCE STUDENTS**

Michela Perrotta, Miriam Roth, Giulia Giacalone, Mary Dughi, & Carol Biscardi  
Physician Assistant Program, Seton Hall University

The purpose of this study was to measure the relationship between sleep habits to academic performance in graduate health science students at Seton Hall University. A 20-item survey was created to measure sleep and study habits. The survey measured hours of sleep, sleep quality, and academic performance. The survey was administered before a Human Anatomy exam to the Physician Assistant, Athletic Training, and Physical Therapy students at Seton Hall University. Non-parametric testing (Spearman's rho) was used to analyze the data along with descriptive statistics. Sixty (79%) of the 76 students registered for the course had returned a completed survey. The mean hours of sleep the night before the exam was 5.78 hours. A total of 7 students reported taking a nap the day before the exam, with a mean nap time of 58 minutes. The mean exam score was 80.77%. The correlation between students exam grades and hours of sleep the night before the test was not significant ( $p > 0.05$ ). However, the correlation between students' total sleep the day before (daytime nap and nightly sleep) and exam grades was significant ( $\rho = 0.257, p < 0.05$ ). It was found that good quality of sleep and exam grades was significantly correlated ( $p < 0.05$ ). The results of this study suggest that students who get enough hours of good quality sleep the night before an exam may outperform their peers.

### **PEDIATRIC FEEDING MILESTONES: A CRITICAL REVIEW AND PROJECT DEVELOPMENT**

Liane E. Allen, BA, Brittany L. Conwell, BS, & Nina C. Capone, Ph.D.  
Department of Speech-Language Pathology, Seton Hall University

Assessing and treating pediatric dysphagia has its foundation in knowing typical feeding / swallowing milestones. Best clinical practice is to use clinical manuals as a guide (Morris & Klein, 2000) but these are reportedly without sound normative data. Also, established norms in other areas of development are periodically re-evaluated to adjust for drifts in the population's performance. Therefore, it is important to re-evaluate the state of developmental norms in a variety of developmental areas including feeding / swallowing. The current project was a critical analysis of the feeding / swallowing development literature. Results were that the quality and quantity of scientifically-based, peer-reviewed normative data is lacking in the area of feeding / swallowing development. Also, little research is dedicated to pediatric feeding / swallowing and its disorders in the field's top tier scientific journals. Discussion will place the results in the context of best clinical practice in speech-language pathology. A series of studies is proposed to move this area of the field forward.

### **THE EFFECTS OF SLEEP DEPRIVATION ON PHYSICIAN ASSISTANT STUDENTS INTERPERSONAL RELATIONSHIPS, STRESS, AND STUDY HABITS.**

Heather Kurdali-PI, Jennifer Boxter, Scott Salvato, & Chris Schwizer  
Physician Assistant Program, Seton Hall University

Sleep deprivation has been identified as a major source of error in medical professionals, including attending physicians, residents, and nurses. Our study aims to demonstrate a link between sleep deprivation and physician assistant students in the areas of study habits,

interpersonal relationships, and overall stress. We tested for an association between sleep deprivation and the aforementioned areas through a voluntary survey administered to all three class levels of students enrolled in the Seton Hall University School of Health and Medical Sciences Physician Assistant Program. The survey was modified from its original format of a 2005 research article by Kuhn and colleagues, Assessment of Stress in Physician Assistant Students, which can be found in Journal of Instructional Psychology. SPSS 17.0 software and chi-squared and cross-tabulation tests were used to analyze the collected data. According to the results analyzed, statistically significant data demonstrated that physician assistant students are sleep deprived, get less sleep than before entering the program, and receive a poorer quality of sleep than they did prior to entering a physician assistant program, p-value significant at  $p = 0.00$  for each variable. The data showed a statistically significant difference in that physician assistant students who are sleep deprived also feel their relationships and amount of time they spend with friends is affected,  $p = 0.012$ . There is a statistically significant difference for physician assistant students reporting a poorer sleep quality since entering the program and time spent with spouse/significant other,  $p = 0.031$ . Where students report being sleep deprived, they also report a statistically significant difference in increase in study time, and decrease in sleep time, where  $p = 0.014$ . Those students reporting a poorer quality of sleep also report an increase in study time and decrease in sleep time, this was statistically significant at  $p=0.026$ . From our results, the study concluded that Physician Assistant students are sleep deprived. Both quantity and quality of sleep of physician assistant students are affected. Specifically, the areas of statistical significance are: quantity of sleep affected relationships with friends, quality of sleep affected time spent with spouse/significant other, and both quantity and quality of sleep affected time spent studying.

### **DISCRIMINATING AMONG 3 LEVELS OF MANUALLY APPLIED FORCE IN FIRST AND THIRD YEAR PHYSICAL THERAPY STUDENTS**

Monica Aswani SDPT, Karin Creighton SDPT, Kumi Dikengil SDPT, Andrew McDonough, PT, EdD, School of Health and Medical Sciences, Seton Hall University

**BACKGROUND:** Practice and feedback are two important components of motor learning necessary for acquiring a new skill. Research is still ongoing over the most efficacious type, quantity, and frequency of practice and feedback. Students in doctor of physical therapy programs are taught manual therapy techniques as part of their curriculum, yet there is no standardized method of teaching these manual skills. Because manual therapy involves applying various amounts of force to the body, students could perform these skills more accurately if they had a discrete way to measure this force. The purpose of this study was to determine whether third year physical therapy students are better able to discriminate among specific levels of force than first year physical therapy students. It was hypothesized that third year students are better able to replicate and discriminate among different levels of force due to additional practice and course work experience. **SUBJECTS:** 9 students from Seton Hall University's doctor of physical therapy program were recruited through a sample of convenience. 5 of these students had completed their first year in the DPT program and 4 had completed their third year of the DPT program. **METHODS:** This study used a repeated measures design with a pretest, practice session with concurrent visual feedback, and a posttest. The three levels of force tested were .23 kg, .91 kg, and 2.71 kg. Force application was measured using a Piezoelectric force transducer



attached to a dry femur. A layer of 7.0 cm thick foam rubber was secured over the femur to simulate human tissue. **ANALYSIS:** Data were collected using custom written programs written in the LabVIEW v7.1 language. Absolute data were analyzed in SPSS 16.0 using a 2x3 multifactorial design with  $p \leq .05$ . **RESULTS:** Preliminary results will be presented and discussed **CONCLUSION:** Results of this study as well as further research of this topic can help to contribute to the development and improvement of a standardized method of teaching manual therapy skills.

### **MEASURING CHRONIC ANKLE INSTABILITY: A RELIABILITY STUDY**

April Em, Dawn Nagy & Dr Raju Parasher, MSc, EdD, PT  
School of Health and Medical Sciences, Seton Hall University

Two important contributing factors to the mechanical instability of the ankle joint that could lead to repetitive ankle sprains is laxity of the lateral ligaments and/or the anterior relative shift of the lateral malleolus (ref) leading to an incongruity in the joint surfaces. Two measures, namely the anterior draw test and the positional fault measure are commonly used to measure this resultant mechanical dysfunction. Surprisingly, despite their extensive use in the clinic as well as in research, there is a paucity of evidence that has established the reliability of these two measures. The purpose of this study was to establish inter-rater and intra-rater reliability of the two measurements. 20 subjects, with and without a history of ankle sprains, aged 20 to 50 years (male and female) were evaluated by one tester three times to establish intra-tester reliability and by two testers to establish inter-tester reliability in a random order. The preliminary results were calculated by way of the intra class correlation (ICC) calculated using SPSS version 16.0 to establish intra-tester and inter-tester reliability. Data analysis reveals that ICC's for the positional fault show good intra-tester (0.94) and inter-tester (0.76) reliability. For the anterior draw preliminary analysis reveals that the ICC for intra-tester (0.9) reliability was good, however the ICC for inter-tester (0.41) reliability was poor. The results are discussed comparing measurement differences between the testers.

### **INFLUENCES OF A LOADED BACKPACK ON HIP MOTIONS DURING GAIT**

Doreen M. Stiskal, PT, PhD; Cyril Kurian, SDPT; Kyle Negron, SDPT; Claudia Acosta, SDPT; Alexandra Aguiar, SDPT; Margaret Head, SDPT; Deanna Paonessa, SDPT  
Department of Physical Therapy, School of Health and Medical Sciences, Seton Hall University

The purpose of this repeated measures within-subjects study was to determine how different loads placed in a backpack influence sagittal and frontal plane hip range of motion during gait. Twenty college aged (18-30 years) volunteers walked on a treadmill at 1.5 m/s for 90 seconds while wearing with a standard backpack across 5 conditions of differing loads: 0, 5, 10, 15 and 0% of body weight. Six Qualysis Proflex® cameras recorded 3D movement from 28 reflective markers placed on specific body landmarks. Data were viewed and processed with Qualysis Track Manager® and Visual3D® software packages. Means of three consecutive gait cycles were entered into separate repeated measures ANOVAs to determine maximum flexion/extension and abduction/adduction movements as well as total joint excursion in two

planes of motion. As expected, overall changes to hip motion were relatively small. Significantly more bilateral hip flexion and less right hip extension occurred with the heaviest loads while no significance differences were found in the combined total flexion/extension excursions. Subjects also widened their lateral stance as backpack loads increased although abduction/adduction data did not reach significance. Our findings suggest that the increased hip flexion is consistent with the forward trunk lean commonly seen during gait with heavier backpack loads. Similarly, the wider stance may reflect another strategy to accommodate the effects of a heavy backpack load on the center of mass relative to one's base of support.

### **THE INFLUENCE OF CONCURRENT COGNITIVE AND MOTOR TASKS ON POSTURAL SWAY IN CHILDREN: A PILOT STUDY**

Genevieve Pinto Zipp, PT, EdD, Katherine DeTata, Danielle Delgiodice, Valery Perez, Marie Sanchez, Leigh Shahbazian, School of Health and Medical Sciences, Seton Hall University

Dual tasking is the performance of two or more activities simultaneously. Historically, postural control has been considered to be a highly automatic and reflexive task. Recent evidence suggests that the control of posture utilizes attentional demands and that the postural control and the cognitive systems interact under dual task conditions. In this pilot study examining the influences of concurrent cognitive and motor tasks on postural sway in healthy children (7-10yrs old), 6 subjects were asked to stand on a force plate with their shoulders in forward flexion, elbows in extension, and hands in mid position. The subjects were instructed to stand still while looking at a picture (SS), read silently (SR), or play a videogame (SG). Center of pressure variables including length of center of pressure (LCOP) and center of pressure velocity (COPV) were calculated using a Bertec force plate. The trends showed that LCOP was significantly greater under (SG) condition compared to the (SR) and (SS) conditions. These trends suggest that the type of the task rather than its difficulty influenced the COP measures. These findings support the capacity sharing theory. Further studies are needed to investigate the effects of dual tasks, utilizing various cognitive and motor elements, on postural performance in a larger number of children to confirm these findings and in children with balance impairments.

### **INTERRATER RELIABILITY OF NOVICE LEARNERS USING THE BEHAVIORALLY-ANCHORED LIFT TASK EVALUATION (BALTE)\***

H. James Phillips, PT, PhD, Christian Delacruz, Karina Jimenez, Thomas A. Koc Jr

**Objective:** To determine the interrater reliability of novice learners using the Behaviorally-Anchored Lift Task Evaluation. **Background:** Functional capacity evaluations (FCEs) are measurement tools used in predicting safe and tolerable levels of function of physical activities and readiness to return to work following injury. Studies looking at the reliability of evaluations purported to measure patient levels of exertion and pain reports are lacking. The BALTE is a portion of a FCE that was designed by the primary investigator, and is used to assess a patient's ability to perform a lift task, while simultaneously considering the patient's sincerity of effort, and pain behaviors using behavioral anchors. The interrater reliability of the BALTE has demonstrated to be high between an experienced physical therapist of 21yrs and a novice physical therapist of

1yr. However, the Inter-rater reliability of multiple novice learners using Behaviorally Anchored Lift Task Evaluation (BALTE) had remained untested. **Methods and measures:** Eight subjects volunteered from a convenience sample of fourth year DPT students from Seton Hall University. Upon completion of a one hour lecture on the use and scoring of the BALTE, the subjects viewed 11 videos of patients performing twelve-inch-to waist and waist-to-shoulder lifts using incrementally heavier boxes. Each subject selected one of two choices in each of ten categories based on behavioral descriptors of patient exertion and pain behaviors on a tabled form. Subjects independently recorded their results for each video. **Results:** Percentage agreement ranged from 69 to 98 percent for individual categories. Out of the 10 categories, two demonstrated high reliability, four demonstrated moderate reliability, and four demonstrated low reliability.

**Conclusions:** The study demonstrated overall moderate interrater reliability of the Behaviorally-Anchored Lift Task Evaluation when used by novice learners. The mean percentage of agreement of the BALTE was calculated to be 81 percent. This is possibly due to extraneous variables that can be modified to improve its reliability if a future study was to be considered. Extraneous variables include: video and audio quality, length of the video, scoring instructions, and subject practice trials with feedback of scoring. Further studies are needed to validate the utility of this protocol as a patient assessment and management tool. \* Copyright © H. James Phillips 2006

### **UNDERSTANDING THE IMPACT OF GENDER, ETHNICITY, AND ATTITUDES AND BELIEFS REGARDING DEPRESSION AND HELP-SEEKING BEHAVIORS IN COLLEGE STUDENTS**

Eileen Eden, Allison Karish, Diana Mendez, Donna Marchetti, Mona Sedrak, PhD, PA-C  
Physician Assistant Program, School of Health and Medical Sciences

The purpose of this study was to explore the differences between gender, ethnicity, and attitudes and beliefs regarding depression and help-seeking behavior in college-aged students. A 27 item online survey was sent to students 18-29 at a private university in New Jersey. The survey gathered demographic data, information regarding attitudes and beliefs towards depression, and how likely participants were to seek help. The Academic Survey System and Evaluation Tool (ASSET) was used to administer the survey. The results of the study suggested that there is a moderate positive correlation between attitudes and beliefs and help-seeking behavior regarding depression in college students. By improving knowledge of depression and encouraging positive attitudes towards help-seeking behavior, college-aged students may be more inclined to seek help for depression. In order to raise awareness information regarding counseling services should be made available to incoming freshman and repeatedly reinforced. In addition, further efforts should be implemented at university health services to make students aware of their options.

### **KNOWLEDGE OF HPV AMONG SETON HALL UNIVERSITY STUDENTS**

Stephanie Kott, Kerri Michella, Vanessa Victoria, Diana Saidac, Joseph L. Monaco, PA-C, MSJ, DFAAPA, Physician Assistant Program, Seton Hall University

The purpose of this study is to determine if there exist differences in knowledge about infection with the human papilloma virus (HPV) among students at Seton Hall University (SHU). Students were surveyed according to graduate versus undergraduate, age, gender, and health

sciences focus versus a non-health curriculum focus. Graduate and undergraduate students 18 years of age or older were asked to participate in an anonymous 19 question survey via the ASSET survey system. One-way ANOVA revealed no significant differences in level of HPV knowledge among students in four age categories (18-21, 22-25, 26-29, 30 and older) with an F statistic of 0.528 and p value  $>0.05$  ( $p=0.755$ ). However, an independent samples t-test showed a significant difference between males and females, with a p value  $<0.01$  ( $p=0.001$ ). Between graduate and undergraduate students, an independent samples t-test showed no significant differences with a p value  $>0.05$  ( $p=0.313$ ). HPV knowledge according to health sciences versus non-health curriculum demonstrated significant differences with a p value  $<0.01$  ( $p=0.007$ ). In the SHU population, there are differences in knowledge of HPV according to gender and education focus, with females and health science majors having a greater understanding of HPV than their counterparts. In order to increase awareness about HPV, further education should be targeted to male students and non-health majors.

### **FACTORS INFLUENCING RECOVERY FROM APHASIA: IMPLICATIONS FOR CLINICAL INTERVENTION**

Cortney Carey & Venu Balasubramanian

Speech-Language Pathology, School of Health and Medical Sciences, Seton Hall University

The aim of this paper is to present a review of cognitive, linguistic, motor and physiological factors that are associated with the course of recovery from aphasia. A literature search was conducted through an online database search. Sixty-eight journal articles from diverse peer review journals along with three book chapters were identified as the source of information. It is argued that the findings of these studies and the theoretical principles behind them should be integrated into clinical practice. Indeed, this presentation highlights the clinical implications of the findings of empirical studies of such factors. In order to emphasize the need to tap into modern neuroimaging techniques in the clinical intervention process, a brief evaluation and application of event-related potentials (ERP) techniques in the study of language processing deficits and recovery in people with aphasia is presented.

### **SELF PERCEPTION OF PREPAREDNESS OF NEW JERSEY PHYSICIAN ASSISTANT STUDENTS IN CARING FOR SPANISH SPEAKING PATIENTS**

Erin Anthony, PA-S, Mark Regis, PA-S, Gary J. Bouchard, Ph.D., PA-C, DFAAPA

Physician Assistant Program, School of Health and Medical Sciences

Surveys of medical students and residents indicate the persistence of inadequate communication between healthcare providers and their Spanish speaking patients. This study examines the practices and comfort level of PA students in caring for Spanish-speaking patients of limited English proficiency and evaluates student perception of the quality of care patients of limited English proficiency receive. Using ASSET, an Internet-based survey tool, Likert-like surveys were completed by 40 physician assistant students at two NJ programs. Approximately 70% of respondents reported they were expected to see and care for Spanish-speaking only patients

while on rotation. While 60% of respondents reported “rudimentary” command of Spanish, more than 60% of respondents reported the inability to convey all medical advice and options to Spanish-speaking only patients and English-speaking patients equally. Only 35% of respondents reported using a professional translator when with a Spanish-speaking only patient. Bridging the gap of patient-practitioner language discordance is paramount. PA students in New Jersey are at a special advantage, receiving clinical education through serving a Hispanic population comparable to the Hispanic population nationwide. The question of whether PA students trained in New Jersey are prepared to serve the Hispanic population may have implications for PA programs across the country.

### **SMOKING BEHAVIOR AND ASSOCIATED ADHERENCE TO ESTABLISHED ORAL HEALTHCARE RECOMMENDATIONS**

Amera A. Amaker, PA-S, Terri S. Jones, PA-S, Danielle R. North, PA-S, Daniel F. Vernik, PA-S, Gary J. Bouchard, Ph. D, PA-C, School of Health & Medical Sciences, Seton Hall University

The purpose of this study was to examine the differences in oral hygiene practices between smokers and nonsmokers in the Seton Hall University community. The survey consisted of questions pertaining to the number of times participants floss, brush, and visit the dentist. The survey was electronically distributed to members of the Seton Hall University community via the Academic Survey System and Evaluation Tool (ASSET) and responses remained anonymous. Of the 301 respondents, 50 were smokers, and 251 were nonsmokers. The results showed that dental visits, frequency of dental visits, frequency of brushing, and frequency of flossing were all found to be independent of smoking ( $p > 0.05$ ). Among the smokers surveyed, respondents who smoked more packs per day flossed at significantly higher than expected frequencies, exceeding the ADA recommendations ( $p = 0.001$ ). In this study, smoking behavior and adherence to established oral healthcare recommendations are independent of one another within the Seton Hall University community. There was no difference in brushing teeth, flossing, and visiting the dentist when smokers were compared with nonsmokers. Heavy smokers within this population were found to floss more frequently than expected.

### **THE EFFECTS OF YOGA ON STRESS IN HEALTH SCIENCE STUDENTS.**

Vigneaux C, Gerber R, Malysz S, Hill-Lombardi V, & Rizzolo D.  
School of Health & Medical Sciences, Seton Hall University.

**Context:** Stress is a growing public health concern affecting individuals both physically and psychologically. Research suggests that yoga can have a positive effect upon the negative consequences of stress and serve as a coping strategy. **Objective:** The purpose of this study is to determine if yoga decreases stress as measured by the Hassles Scale, blood pressure, and heart rate in students in the School of Health and Medical Science programs. The hypotheses are 1) immediately following each yoga session and following four weeks of yoga, subjects will demonstrate reductions in stress as measured by the Hassles Scale, blood pressure and heart rate; and 2) subjects who participate in the yoga sessions will have lower Hassle Scale scores, blood pressures and heart rates compared to subjects who did not participate in the yoga sessions.

**Design:** This study was a cross-sectional matched group design. **Setting:** The study was conducted in the Exercise Physiology Lab at Seton Hall University with observation from all investigators. **Participants:** The subjects (8 females, 7 males) were student volunteers, 18-25 years old. All had exercise experience and no yoga experience. **Interventions:** Subjects were placed in a yoga group or a study (control) group based upon matching criteria of age, gender, exercise and yoga experience. Before and after each 30-minute session over four weeks, each subject completed the Hassle Scale. Heart rate and blood pressure were measured using a Critikon Dinamap XL 9340 Vital Signs Monitor. **Main Outcome Measures:** Paired t-tests were used to determine if there was an immediate effect on stress levels as measured by the dependent variables, pre and post intervention. One-way ANOVAs were used to determine if there was a significant difference in change scores over the 4 weeks. Significance levels for all tests were set at  $p < 0.05$ . **Results:** Significant differences were found in Hassles scale scores at weeks 1-4 in the study group ( $p < .001$  for all weeks) and weeks 1 ( $p=0.005$ ), 3( $p=0.047$ ), and 4( $p=0.019$ ) for the yoga group. No significant differences were found between change scores over the 4 week period. **Conclusions:** Both interventions were significant in decreasing stress with neither one being more effective as compared to the other.

## THE EFFECT OF STATIC STRETCH DURATION AND RECOVERY TIME ON THE PEAK TORQUE OF THE ROTATOR CUFF MUSCLES

Hunter M, Jimenez F, Merrill L, & Hill-Lombardi V  
School of Health & Medical Sciences, Seton Hall University

**Context:** Static stretching is a common practice in the athletic realm. A controversy exists in that several recent studies that have shown isokinetic strength is decreased with static stretching while others show an increase. Most studies have focused on the lower extremity. Current research on static stretching also uses varying rest intervals between stretch and strength testing to understand dose response. **Objective:** The purpose of this study is to examine the effect of static stretch duration on the strength performance of the rotator cuff musculature and the recovery time needed to achieve pre-stretch strength levels. The hypothesis is that an increase in duration of rotator cuff static stretching will increase the recovery time needed to achieve pre-stretch Maximum Voluntary Contraction (MVC). **Design:** The study is a within-subjects, repeated measures design. **Setting:** The study was performed in the Seton Hall athletic training room with data collection conducted by all investigators. **Participants:** The subjects (5 females, 3 males) were student volunteers between the ages of 18-25 with no prior history of shoulder or neck pathology. **Interventions:** The two independent variables are stretch duration (30, 60, or 120 seconds) and recovery time (0, 2.5, 5, 15, 30 minutes). Each subject established a baseline strength test during internal and external rotation. Subjects were then stretched for either 30, 60, or 120 seconds, and retested. **Main Outcome Measures:** The dependent variable was the peak torque of the MVC of the rotator cuff musculature. This was measured using the Biodex System 3 unit with internal and external rotation of the shoulder at 90 degrees abduction. Resistance was set at 60 degrees per second. A two-way repeated measures ANOVA test was used to determine if there was a significant difference in stretch duration and recovery time. Significance levels were set at  $p < 0.05$ . **Results:** No significant differences were found in peak torque following static stretch durations or recovery times. Trends indicate that strength overall increased during

internal rotation following all stretch durations (30, 60, 120 seconds), from baseline through the 30 minute recovery interval. Trends during external rotation following the 30-second stretch duration indicated that strength decreased overall, while strength increased following the 120-second stretch duration. There was no change in strength trends in the 60-second stretch group.

**Conclusions:** The results indicate that the duration of static stretching does not significantly affect the duration of recovery time on the peak torque of the rotator cuff muscles.

## PERCEPTIONS OF THE ATHLETIC TRAINING PROFESSION IN A PUBLIC SETTING

Herrema MP, Cole JN, Giuliano JM, Mallach SB, Hill-Lombardi V  
School of Health & Medical Sciences, Seton Hall University

**Context:** Across the country, many ATCs work in the private sector with the general public. However, minimal studies have investigated the knowledge level of the general public regarding the Athletic Training scope of practice. **Objective:** To survey the perceptions regarding the profession of Athletic Training within the general population. Also, to compare the perceptions of those who have had exposure to an Athletic Trainer versus those who have not. **Design:** This study was a cross-sectional design. **Setting:** The survey was distributed in an urban downtown area. **Patients or Other Participants:** The target population for this study was the general public. Participation was voluntary and anonymous. 150 surveys were distributed with 146 being returned. Of those surveyed: 48% were male, 52% female; 48% surveyed were ages 18-35, 28% ages 36-50, 24% were over 51; 8% of the occupations were in the health/medical field, 20% business, 4% law, 20% students, 48% other; 44% had previous contact with ATCs, 56% did not. **Interventions:** The survey tool had been used in a previous study examining the perceptions within a university setting. It consisted of 38 questions assessing the scope of practice of an ATC, developed from the BOC Role Delineation study. It included a demographic portion to determine the specifics of the sample population, including previous ATC contact. Content validity was established by a team of four experts in AT. Reliability was established via Cronbach's Alpha, .814 for the previous study, .839 for the current study. **Main Outcomes Measures:** Survey questions were coded as correct or incorrect. "I don't know" responses were counted as incorrect. Raw data was analyzed using SPSS version 16. Frequency counts were used to determine percent correct responses, Mann-Whitney U was used to determine significant differences between ATC contact versus no contact,  $p < 0.05$ . **Results:** 12% of those surveyed answered at least 80% of the survey correctly, 75% answered 60% correctly, 89% answered 50% correctly. Mann-Whitney U revealed 8 of the 38 questions (21%) had significantly different responses between those with previous ATC contact vs no contact, p values ranging from .001 to .045. Those with previous contact had a significantly lower number of correct answers.

**Conclusions:** Our results indicate that almost 90% of the general population does not have a good understanding of the ATC role in healthcare. Also, even with previous ATC exposure, there still appears to be a lack of knowledge regarding the expertise of the ATC. This suggests that the general public needs to be further informed and educated as ATC practice acts expand.

## BALANCE RESPONSES IN WOMEN ACROSS THE MENSTRUAL CYCLE

Desgrosiellier, S, Carannante, E, Glynos, D, Zacharkow, A, Lombardi-Hill, V, & Maher, C  
School of Health & Medical Sciences, Seton Hall University

**Context:** Research indicates females are more prone to ACL injuries as compared to males. However, there are few investigations regarding the effect of menstrual cycle phase on balance responses and the potential effect on injury. **Objective:** The purpose of this study was to determine whether fluctuation of hormones during three phases of the menstrual cycle has an effect on balance and proprioception. **Design:** This study was a within-subject repeated measures design. **Setting:** The setting was a university Human Performance lab. **Patients or Other Participants:** Five subjects volunteered from a university student population. Participation criteria included females 18 to 25 years of age with a 26-34 day menstrual cycle for six months. Exclusionary criteria included no history of lower extremity surgery or injury within six months prior to the study, and they must have no use of hormonal supplements or oral contraceptives within the three months prior to testing. Subjects tested had a mean age of 23 ( $\pm 1.58$ ), mean cycle length of 28.67 days ( $\pm 3.74$ ), 80% right leg dominant. **Interventions:** The independent variable was menstrual cycle phase. This study utilized Saliva Ovulation Q Test and urinary stick system test to detect changes in estrogen and luteinizing hormone levels (respectively), thus determining the follicular (day 1 menstruation to estrogen surge), ovulatory (estrogen surge plus 5 days), and luteal (end of ovulatory to day 1 menstruation) phases. **Main Outcome Measures:** A BalanceMaster® system was utilized to complete a series of Sensory Organization Tests and functional tests (Unilateral Stance, Tandem Walk, Step Quick Turn, Step Up-Over (SUO), and Forward Lunge (FL)) to assess balance responses. Responses measured include (not limited to) foot movement times, impact forces, sway times. A repeated-measures ANOVA was used to determine within subject differences ( $p < 0.05$ ). A post-hoc paired t-test was used to determine specific phase differences. All data was analyzed using SPSS version 16. **Results:** Means ( $\pm$ stdev): Left Foot Up (LFU) for SUO- follicular 60.93 ( $\pm 6.32$ ), ovulatory 52.07 ( $\pm 5.83$ ), luteal 55.40 ( $\pm 8.29$ ); Impact Right Foot (IRF) FL- follicular 26.07 ( $\pm 5.25$ ), ovulatory 22.93 ( $\pm 4.57$ ), luteal 23.13 ( $\pm 5.36$ ); Left Foot Movement (LFM) during Step Up and Over- follicular 1.48 ( $\pm 0.15$ ), ovulatory 1.51 ( $\pm 0.12$ ), luteal 1.66 ( $\pm 0.19$ ). Significant differences were found in several functional tests: SUO, during LFU, ( $p = .028$ ) between the follicular and ovulatory phases ( $p = .034$ ); FL, during IRF ( $p = .015$ ) between follicular and ovulatory phases ( $p = .007$ ); near-significant difference in LFM (SUO) ( $p = .058$ ) between ovulatory and luteal phases ( $p = .045$ ). **Conclusion:** Based on the significant findings, there is an imbalance between the right and left lower extremities. These results demonstrate that the subjects have less balance in their non-dominant leg in different phases of their cycle. Potentially, this may be a contributing factor in non-dominant lower extremity injuries, particularly during ovulatory phase.

## BREATHING AND STEPPING COORDINATION DURING DUAL-TASK IN PERSONS WITH PARKINSON'S DISEASE

Glendinning, D, Domingues, H, Follmer, N, Maher, C

Department of Physical Therapy, School of Health and Medical Sciences, Seton Hall University



Motor respiratory coordination (MRC) refers to the coordination of movement and breathing during cyclical movements such as in running, walking, and rhythmic motions in humans. MRC is considered to be a somewhat automated, neuromechanical pairing between rhythmic movements. MRC is diminished during walking in Parkinsons disease (PD), which is a disease of the basal ganglia that affects the motor system. In PD, movements are characterized by bradykinesia, rigidity, tremor and reduced automaticity. Several authors have identified that typically automated limb coordination decreases in PD more during cognitive tasks. We hypothesized that MRC will be decreased in PD by cognitive tasks.

Subjects included male and female persons, aged 45-85, with mild PD (Hoehn and Yahr stages 1-2) and older healthy subjects. PD subjects were measured using the following tools: Mini Mental State Examination (MMSE), Freezing of Gait Questionnaire (FOG-Q), and UPDRS. Breathing was measured by using a small thermister threaded into a nasal cannula. Stepping was measured by small heel and toe switches fitted onto the bottom of both shoes to record force. The stepping task required subjects to stand-in-place and step rhythmically. They were measured at rest, or while stepping at a self-selected pace, higher-frequency stepping, lower-frequency stepping, dual task or focus-on coordination. Normally-paced stepping was done twice during each session. Each condition was recorded for one minute with one minute break between conditions. The dual task comprised a mental task that required subjects to listen to either a mathematical problem or a verbal passage and depress a small button when they recognized a correct answer. Breathing rate and variability were measured, together with step time, inter-step interval, and stride time for both the right and left limbs. MRC was measured as frequency-ratio between breathing and stepping, and the % of breathing cycle in which right steps occurred. Preliminary results with 6 subjects (4 subjects with PD, and two healthy controls) are presented.

## Institute of NeuroImmune Pharmacology

Monday, April 19<sup>th</sup> 3:30 – 6:00 PM McNulty Hall Atrium

### **BRAIN STRESS AND ANTI-STRESS SYSTEMS IN ADDICTION**

Sraboni Sarkar & Sulie L. Chang, Department of Biological Sciences

Institute of NeuroImmune Pharmacology, Seton Hall University

Addiction is a condition that arises due to excessive use and dependence on substances such as drugs and alcohol. It is characterized by an overwhelming compulsion to take drugs/alcohol and inability to lower or stop intake. If access to drugs/alcohol is prevented a negative emotional state arises and it leads to stress. Negative emotional states include behavior such as irritability –

getting extremely bothered with small things, anxiety – excessive worrying and dysphoria-unpleasant or uncomfortable mood. Stress is known to disrupt normal brain activity and results in increase of brain stress hormones and antistress hormones. In this poster presentation, the function of the stress and anti-stress hormones in initiating and maintaining addiction have been reviewed and experimental ideas of possible treatment have been shown.

### **HIV-1 INFECTION AND NEURODEGENERATIVE DISORDERS**

Maria Gordish, Department of Biological Sciences, Seton Hall University

The purpose of this analysis is to better understand the role and implications of HIV-1 infection of the Central Nervous System in HIV-associated neurodegenerative disorders (HAND). Current literature shows that certain hallmarks and patterns of neurodegeneration - the progressive loss of structure and function of the nerve cells, similar to that found in Parkinson's disease, have been reported in HIV-infected individuals. In recent findings, tat, an HIV viral protein that increases production of the virus, has been revealed to reduce dopamine levels in the brain. The implication of this finding is that the HIV infection itself, not an opportunistic infection, may be directly responsible for neurodegeneration in HIV infected individuals. The growing success of highly active antiretroviral therapies (HAART) for the treatment of HIV-1 has led to infected individuals living for prolonged periods of times with the disease. The increasingly prolonged exposure to HIV-1 infection makes understanding the mechanisms in which HIV-1 leads to neurodegenerative disorders all the more important.

### **NEUROTOXICITY OF PESTICIDES AND PARKINSON'S DISEASE**

Jun Oh, Department of Biological Sciences, Seton Hall University

Parkinson's disease (PD) is one of the most commonly known brain illness that affects the worldwide population over the age of 65. PD damages at varying degrees of severity and time on the brain that controls motor movement and non-motor movement, such as moving body parts and cognitive ability respectively. The common motor symptoms of PD are unwanted shaking movements by hands, inability to initiate movement, and decreased body movement. The non-motor symptoms include slowed speech, inability to interpret language, and memory problems. Currently, the cure for PD is unavailable and the causes are unknown. However, recent studies have revealed another potential cause for PD other than genetic, head trauma, and drug abuse. The chronic exposure to environmental pesticides became a new risk factor that is associated with PD. Studies have found an increase in development of PD among individuals who persistently consume rural well water where various pesticides may reside. The consumption of the water is what the current theory behind how pesticides could enter into the human body and cause damages to the brain. The purposes of this presentation are to investigate the structure and function of two environmentally widespread pesticides, paraquat (herbicide) and methoxychlor (insecticide) and their possible contribution to the increased incidence of PD in the mouse models.

## **NEUROBLASTOMA: A STUDY IN UNCONTROLLED NERVE CELL GROWTH**

Nicholas Colletti, Department of Biological Sciences, Seton Hall University

Neuroblastoma is a cancerous tumor that develops from nerve tissue and occurs in infants and children. Treatment for neuroblastoma currently includes surgery, chemotherapy, and radiation. The cause of neuroblastoma is not known, but scientists believe that there may be changes in the way nerve cells develop and are maintained that result in uncontrolled cancerous growth. Normally, cell growth and death are under tight control by various body systems. The immune system, in particular, detects and eliminates abnormal or out of control cells. In neuroblastoma, however, the cancerous cells are somehow able to evade detection by the person's immune system. In this study, we examined the way neuroblastoma cells develop and grow to get a better understanding of how and why they become cancerous, and how they manage to go undetected by the body's immune system. This understanding is critical to the development of new, more successful treatment strategies for this devastating form of childhood cancer.

## **ALCOHOL AND EXPLORING THE BRAIN-GUT AXIS**

Stacie-Ann R. Creighton, Department of Biological Sciences  
Institute of NeuroImmune Pharmacology

The effects of continuous alcohol abuse on the structure and function of the brain have been widely studied. However, the underlying process as to what causes brain damage to occur at specific locations within the brain and the associated impact on brain function are not fully understood. The mechanism of the brain-gut axis - which includes the oral cavity, esophagus, stomach, small and large intestines, colon and rectum in addition to the spinal cord and nervous system - is also not fully understood. A widely accepted theory is that the brain engages in one-way communication as it relates to the effects of alcohol abuse in the body. A small number of studies have been conducted to demonstrate whether or not the brain actually participates in more of a two-way communication model, specifically regarding the brain-gut axis when exposed to alcohol as a drug. Recent reviews explore the components, alteration and study of the brain-gut axis with modern brain imaging techniques in effort to advance the understanding of alcohol's effects on the brain-gut axis. Current literature discusses the advantages and disadvantages of using the following brain imaging techniques: EEG, CEP, MEG, RET and FMRI techniques.

## **THE CORRELATION BETWEEN BRAIN DEVELOPMENT AND BREAKDOWN OF THE NERVOUS SYSTEM**

Parvathy Ramachandran, Department of Biological Sciences, Seton Hall University

Axons are the thread-like projections that arise out of a nerve cell and connect one nerve cell to another. The formation of these thread-like structures from nerve cells during the development of the nervous system occurs through some steps that are similar to mechanisms that take place during degeneration of the nervous system. Degeneration of axons occurs in diseases such as

Parkinson's, Alzheimer's and Huntington's. There are some recent studies which show that the breakdown of the axons occurs in a series of steps that are independent of processes that occur during a regulated cell death. Some cells in the human system die through a regulated set of events referred to as "Apoptosis". The axons have a mechanism independent of apoptosis while they die. These studies may help to understand how some organisms such as lizards are able to gain back nerve cells and function even following an injury.

## **SIGNALING PATHWAYS IN ENDOTOXIN TOLERANCE**

Natasha Homji, Institute of NeuroImmune Pharmacology, Seton Hall University

The response animals, including humans, generate when exposed to toxins like bacteria is called immune response, a part of which is inflammation. The immune system has 'innate' immune cells, which respond to bacteria and other toxins, and 'adaptive' immune cells, which respond to other foreign body attacks. Cells use 'pathways' to communicate signals from outside the cell to the nucleus, where genes are expressed and molecules called proteins are made. There are various proteins and other molecules that a pathway is made up of. When under attack by an endotoxin, a part of a bacteria, the innate immune cells activate pathways which produce pro-inflammatory proteins. To regulate this pro-inflammatory protein production anti-inflammatory pathways are subsequently activated. A unique balance of these pathways generates an appropriate immune/inflammatory response. This balance goes wrong in some cases when there is exposure to minute amounts of endotoxins and then subsequent re-exposure to the endotoxin. In this case, there is an over-suppression of the pro-inflammatory pathways and an over-expression of the anti-inflammatory pathways. This leads to the animal not being able to respond appropriately to subsequent endotoxin attacks; this state is known as endotoxin tolerance (ET). Clinically, this state is associated with serious illnesses like sepsis, which leads to immunosuppression and mortality. Only the role of proinflammatory pathways in ET was relatively well-characterized until recently. Here, we explore the role of two anti-inflammatory pathways known to be involved in ET.

## **OPIOID ADDICTION AND IMMUNOSUPPRESSION**

Aida Rivera & Sulie L. Chang, Department of Biological Sciences, Institute of NeuroImmune Pharmacology, Seton Hall University

Opioids, such as morphine, are clinically used to treat severe pain. However, some of the negative side effects of morphine include drowsiness, respiratory depression, addiction, and a decreased immune response. The cause for these side effects is not completely understood. But recent studies on opioid addiction and immunosuppression found a common link between the two events. It is reported that repeat morphine administration causes an addictive and immunosuppressive state through specific changes observed at the cellular level. These findings suggest the cellular changes that occur in people suffering from opioid addiction, contribute to a weakened immune system susceptible to infection.

## **Interdisciplinary and Study Abroad Poster Presentations**

Tuesday, April 20<sup>th</sup> 2:00 – 4:00 PM McNulty Hall Atrium

### **RIP CURRENTS: WHAT TO KNOW BEFORE YOU GO**

Brittany Tumminia, Class of 2012, Stillman School of Business, Seton Hall University

The purpose of this project was to determine the causes of rip currents and to propose some solutions to help decrease the number of rip current related deaths. Rip currents are very powerful forces in the water that can challenge even the most skilled swimmers. They form when, waves travel from deep to shallow water breaking near the shoreline. The problem is that there are too many deaths due to rip currents and these rip currents are becoming more and more powerful. It is important to know the ways to handle a rip current if this situation arises. Knowing the proper exit procedure can save a life. Do you know how to break the grip of the rip?

### **POLYMERIZATION OF TUBULIN, ANTIBODY COATED POLYSTYRENE BEADS**

Kirk Mutafooulos, Biology Department & Mitra Shojania-Feizabadi, Physics Department  
Seton Hall University

Microtubules have key role in many biological functions in eukaryotic cells including providing a static and dynamic frame work to maintain cell structure. In many single molecule experiments with optical trapping techniques involving microtubules and motor proteins, antibody coated beads bind to either microtubules or to motor proteins. This way, by implementing and measuring the force on beads or tracing the movement of the beads, static or dynamic properties of microtubules/motor proteins can be measured. In this study, instead of attempting to bind beads to pre-formed microtubules, antibody coated beads were polymerized with tubulin. Brightness analysis of the primary images taken by DIC microscopy provides evidence of formation of single microtubule around antibody coated beads while the beads are located inside microtubules. Furthermore, observation confirmed that these complexes of microtubule-beads are descended and attached to the surface of cover slip more frequently due to the extra weight of beads in their structures.

### **A SIMPLE MODEL FOR ANALYSIS OF HIGH CHOLESTROL TREATMENT**

Steven Giarratano, Mitra Shojania-Feizabadi, Physics Department & Thomas Marlow,  
Mathematics Department, Seton Hall University

Recent experimental papers in the medical literature have reported successes for a combination therapy for hypercholesterolemia, integrating statin therapy to reduce production of cholesterol in the liver, and the use of Ezetimibe to inhibit cholesterol absorption by the blood. We have developed a model for this process that not only reproduces the experimental results, but also provides an explanation for the synergistic effects of the two therapies. In this study two different cases are considered. One when daily cholesterol taken is constant. We extended our study and also considered a variation in the daily dietary habit, and the cholesterol taken.

### **ECONOPHYSICS (I): APPLICATION OF PHYSICS TO ECONOMICS**

Adam Behr and Mitra Shojania-Feizabadi, Physics Department, Seton Hall University

Econophysics is a new approach to investigate the dynamics of individual wealth. In this work, by considering the Boltzmann kinetic theory of collision, a two bodied approach where agents perform pairwise economic transactions and transfer money from one agent to another is studied using theoretical approaches from statistical physics. This theory is then explored through the use of a stochastic computer simulation in which individual agents make transactions in a closed system. Finally the theory is applied to real data from the US Census, which is graphed and analyzed in several manners.

### **ECONOPHYSICS (II): ANALYSIS OF RECENT EMPIRICAL DATA**

Michael Newby and Mitra Shojania-Feizabadi, Physics Department, Seton Hall University

To compare the theoretical approach of the concepts of econophysics introduced by Dr. Victor Yakovenko and explored in Econophysics (I), we analyze the recent data and personal income distribution obtained from the United States Census for 2006, 2007 and 2008. We fit the data with exponential distributions and calculated the money temperature, the average income per person, and we analyzed the distribution for different bin sizes and calculated the percentage of difference between the money temperature as we implemented different scales for the bin.

### **INVOLVEMENT OF REACTIVE OXYGEN SPECIES IN METHAMPHETAMINE-ALTERED MU-OPIOID RECEPTOR EXPRESSION IN SH-SY5Y NEUROBLASTOMA CELLS**

Erik F. Langsdorf and Sulie L. Chang, Department of Biological Sciences  
Institute of NeuroImmune Pharmacology, Seton Hall University

Methamphetamine (METH) has been shown to induce oxidative stress in SH-SY5Y, a neuroblastic, dopaminergic cell line model. In neuronal cells, oxidation of dopamine by auto-oxidative or enzymatic events leads to the production of reactive oxygen species (ROS). Neuronal cells treated with METH accumulate dopamine which can ultimately lead to increased levels of ROS. ROS has been shown to mediate expression of mu-opioid receptor (MOR). The goal of this *in vitro* study using SH-SY5Y cells was to examine how treatment with METH affects the accumulation of intracellular ROS, which may in turn modulate MOR expression. Laser scanning confocal microscopy indicated METH induced intracellular accumulation of

ROS, detected as the increased fluorescence of dihydrorhodamine 123, occurred in a dose and time dependent manner. In addition, accumulation of ROS preceded METH induced expression on MOR. METH induced MOR expression was attenuated with the free radical chelator, vitamin E. Additional evidence supporting a role for ROS in METH modulation of MOR expression includes an observed increase in MOR expression following hydrogen peroxide treatment. Our data show that the effect of METH on MOR expression appears to be dependent upon the intracellular accumulation of ROS and maybe mediated through actions of NF $\kappa$ B. This study suggests a possible coupling of METH- and opiate-mediated intracellular signaling. (This study was in part supported by PHS R01 DA07058 and K02 DA016149 to SL Chang)

### **BEACH EROSION: CAUSE, EFFECT AND SOLUTION**

Amanda Sujansky, Christopher J Decerce, Deborah M Marshall and Lisa M Didow  
Earth Science, Seton Hall University

The Purpose of our poster presentation is to relate the topics of severe storms and rip currents to the problem of beach erosion by making the general public aware of the causes, effects, solutions, dangers and proper safety procedures for these interrelated topics.

Nor'easters and Hurricanes and rip currents cause significant beach erosion along the New Jersey coast. "Rip currents are responsible for about 150 deaths every year in the United States. In Florida, they kill more people annually than thunderstorms, hurricanes and tornadoes combined." (Harris) Rip currents are an important environmental and public safety issue. They are also one of the major causes of loss of beaches on both the East and West coasts of the USA. Storm damage not only effects the beaches, but it also impacts business and the infrastructure elements of communities that have been impacted by this kind of geological damage. Many different hard and soft methods for erosion abatement have been implemented along the NJ shoreline. Hard structures such as seawalls, jetties and groins only exacerbate the problems of beach erosion and rip currents. Soft methods such as beach renourishment, natural vegetation and relocation are alternative solutions to these problems. Future decisions regarding beach management and the zoning for residences and businesses in erosion and flood prone areas require ecological, geological, financial and ethical soundness.

### **CHANGES IN HEALTHCARE: AN EXAMINATION OF CURRENT & FUTURE TRENDS IN HEALTHCARE PROVISION IN AMERICA**

George Nsiah & Hengameh Hosseini

Department of Public and Healthcare Administration, Seton Hall University

The American healthcare system is at a critical point in 2009; over 40 million people do not have health insurance, but when they fall sick they still require care, which the government and insured citizens of this country (directly and indirectly respectively) end up paying for. This has pushed the government into a large amount of national debt; America has the best healthcare available in the entire world, but at what price? The advancements in medical technology that

America continuously keeps pace with result in increasingly expensive healthcare services for the people, the majority of whom would not be able to afford it if it wasn't for the subsidy of healthcare insurance. This paper explores current trends in healthcare as far as the payment systems that exist, the quality of care for patients in need of medical treatment, and the efforts that have been made in the past to improve both aspects of American healthcare. It looks into the success and failures that are associated with these said efforts, and also looks forward to future solutions that may help to improve healthcare in America, exploring options such as a shift away from fee-for-service practices and the implementation of the principles of large, integrated healthcare systems. Most importantly, this paper predicts that if coordinated care between hospitals and their extended hospital medical staff (which comprises mostly of independent physicians who are not employed by but have affiliations with hospitals) could be better organized and operate in a more efficient, fluid matter, the average American citizen would experience higher quality care.

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### **SPORTS EFFECT ON OBESITY AND HEALTH ISSUES**

Jennifer Koeller, Thabelo Lekoetje, & Adam Lee  
Department of Mathematics, Seton Hall University

The purpose of this study was to investigate whether a history of youth sport participation was related to obesity, physical activity, and dietary intake. Sport participation in youth is a common form of physical activity, however many schools are limiting students from participating. Preventing youths from participating in sports may lead to a rise in cost for healthcare. Physical Activity is key to preventing obesity in every age group. The results suggest that participation in sports may lay the foundation for future health and health behaviors and that sports participation could be an important component of obesity prevention programs.

### **OCEAN ACIDIFICATION: A DIRECT IMPACT ON CALCIFYING MARINE SPECIES AND INDIRECT IMPACT ON WORLD ECOSYSTEMS.**

Evangelos Eleftheriou, Department of Mathematics & Computer Science, Seton Hall University

The purpose of this study is to examine the effects current and projected increasing atmospheric CO<sub>2</sub> levels will have on many of the world's calcifying marine inhabitants and how this may affect ecosystems of the entire world. The effects and actual impacts of global warming have yet to be solidly proven. However, there is virtually no study that is willing to debate the fact that anthropogenic CO<sub>2</sub> concentrations in the atmosphere are increasing. Currently, it is estimated that around one third of all manmade CO<sub>2</sub> is absorbed into the oceans. When CO<sub>2</sub> levels in the oceans increase, two directly adverse consequences take place; carbonate ion concentrations are decreased and an increase in carbonic acid which lowers the ocean pH occurs. Because calcifying species of the marine ecosystems rely on high carbonate ion saturation to develop and maintain their calcified structures, any significant change in carbonate concentrations are expected to negatively impact the growth of calcifying marine species. With levels of CO<sub>2</sub> predicted to continue to elevate the direct impact on calcifying marine species and indirect impact on ecosystems on a global scale must be evaluated.



## **THE RISING RATE OF CHILDHOOD AUTISM**

Shaheda Choudhury and Sasha Pagan

Department of Mathematics & Computer Science, Seton Hall University

One of the highest trends in childhood disability is the constant rise of early age Autism. Recent research through the website *Autism Society of America*, various online sources, and searching the many journal entries has placed Autism as one of the rising and more prominent disability that is affecting a large part of the youth in America. The hypothesis of this project is to prove that Autism is the leading developmental disability among children. This will be accomplished through the visualization of a statistical model for the constant increase growth rate per year. By bringing Autism to the forefront among developmental disorders, the hope is that this new awareness will foster further research and help those suffering with this disorder.

## **INCREASE IN AIR POLLUTION AND ASSOCIATED HEALTH RISKS**

Krishna Patel & Franzie Edquilag

Department of Mathematics & Computer Science, Seton Hall University

The purpose of this study is to determine if air pollution is increasing and if it is, then how is it affecting areas, specifically New Jersey, and individuals as a whole. This study will be conducted through online research and statistical databases in the time frame of ten years from 2000 to 2010. Through online research and various experiments it can be proven based off of the hypothesis that along with increasing air pollution, there is a risk of increasing health related issues. The professional way of conducting this study is physically testing air pollution to pure air quality. However, the tools necessary are not available, therefore data from previous experiments done by environmentalists will be used as resources. Through such methods, it will be proven how air quality is becoming worse and how it is affecting both the environment and the population. So go green!

## **INFANT MORTALITY IN THE UNITED STATES: TRENDS, DIFFERENTIAL, PROJECTIONS, 1950 THROUGH 2010**

G K Singh and S M Yu, Department of Mathematics, Seton Hall University

The purpose of this study was to compare infant mortality rates to environmental and geographical trends. Using log-linear regression models to examine multiple different sources such as; National Vital Statistics System, National Linked Birth and Infant Death files, the National Maternal and Infant Health Survey, the National Natality Survey, and the National Infant Mortality Survey in order to creates models and projections of infant mortality rates in the United states. The results show a steady decline in the past 40 years, with large improvements with disease related infant deaths. However, the model shows that many factors such as race, education, and income levels are still hold higher rates for infant death.

## **COMPARATIVE-EFFECTIVENESS RESEARCH AND COST-EFFECTIVE DECISION-MAKING**

Florence Mwangi, Health Care Economics Graduate Student, Seton Hall University

The purpose of this study was to examine the ethical issues that revolve around cost-effective decision-making, and the attempts by comparative-effectiveness research to ease the decision-making process. From a health economist's stance, it is well understood that one individual's wasteful expenses are another's essential expenses. Questions persistently arise on whether or not it is problematic that we spend such a large portion of our health care resources on the elderly and terminally ill. This is a social, economic and ethical question that is difficult even for an economist to answer. Comparative effectiveness research (CER) was designed to investigate the effectiveness of different approaches to diagnosing, preventing, and managing diseases, as well as attempt to determine which patients will benefit most from different treatments. By using CER, health care providers can use evidence-based information to decide on what care is most appropriate for the patient, while finding reasonable and cautious ways to curb excessive costs. The American Recovery and Reinvestment Act supports CER by planning to allocate funds that will pay for research studies in the next decade. However, CER is not without controversy, as people fear that bureaucrats will interfere with doctor-patient decisions regarding who receives care and what type of care they receive.

## **CONTROLLED SUBSTANCES AND SOCIETY: THE EFFECTS OF PARTICIPATION AND ADDICTION**

Ayesha Sattaur & Wendiann Sethi

Department of Mathematics & Computer Science, Seton Hall University

Since President Obama went into office in January 2009, the issue of healthcare has been thrown into society. With all the criticism that has been passed with this new bill, one of the major issues that is presented is the overuse of controlled substances. These types of substances include oxycontin, Percocet, morphine, roxicodone, and legalized marijuana. Within this presentation, the basis will be on the reasoning behind the hype of these substances. The various uses are endless, whether obtained legally with a prescription or through the undiscovered black market for prescription drugs. The main focus of the presentation is to explain the importance and provided directions of how such drugs should be handled. These drugs are highly addicted, whether being taken or selling for a quick dollar. The age range for this new form of life starts from early teens to late adulthood. The effects on life are primarily long-term that affects families and friends. The legal and illegal way of obtaining this vile substance has been changing rapidly as the rules and regulations change. New laws are being put into effect daily but the challenge never seems endless. The main age group that is focused on in the presentation is undergraduate and graduate students that are trying to finish their degrees and actually end up being addicted to the drug and trade. This presentation is a way of informing society of the different regions of this growing problem that is nationwide but is kept on the down low by the drug companies to make sure that the Federal Drug Administration accept the production of such

medications. The term pain management is used very often, how does one recognize pain and decipher between using a regular NSAID like motrin, or using a controlled substance like Percocet.

## **EXPRESSION OF THE DELTA OPIOID RECEPTOR IN DIFFERENTIATED CANCER STEM CELLS OF HUMAN NEUROBLASTOMA.**

JD Walton & SL Chang

Institute of NeuroImmune Pharmacology, Seton Hall University

Previous studies examined the expression of the mu (MOR), delta (DOR), and kappa (KOR) opioid receptors in three different phenotypes of human neuroblastoma cells – SH-SY5Y, the I-type cancer stem cell BE(2)-C, and SH-EP1 using absolute real time RT-PCR. Absolute quantification of real-time PCR offers the advantage of comparison based on copy number of the target among different phenotypes and treatments. SH-SY5Y cells had the highest copies of MOR mRNA among these three cell lines, whereas the I-type cancer stem cell, BE(2)-C, as well as other I-type cells had higher expression of DOR than the other two cell lines. Others have suggested that cancer development may be associated with altered opioid receptor regulation.

In this study, we used absolute quantification real time PCR to examine the expression of DOR in BE(2)-C following differentiation with retinoic acid (RA) to a neuroblastic phenotype. Our data showed that differentiation resulted in decreased copies of DOR mRNA compared to ethanol vehicle treatment. (This study was partially supported by R01 DA07058, R21 DA019836, and K02 DA016149 to SLC).

## **FRAMING THE MSO: ACCESS QUALITY AND COST**

Reynaldo A. McFarlane, College of Arts and Sciences, Seton Hall University

Throughout the history of the US healthcare as a system, several attempts to reform the way healthcare is delivered and how it is accessed have been made, to bring about efficiency and pecuniary improvements (based on general dissatisfaction with the way healthcare has been “rationed” over the years). Four such attempts included President Truman’s national health insurance (NHI) plan in the 1940s; the 1961 - 1965 debate during the Kennedy and Johnson administration over the provisions of Medicare; the 1971 – 1974 debate about President Nixon’s proposed national health insurance program; and the 1993–1994 debate about President Clinton’s health care reform proposal. These were ill attempts at controlling the day’s quandaries with the system, and because they were not successfully operationalized, these conditions continued to escalate, and have given way to today’s issues with healthcare as a program that is eschewed by policies favoring corporate medicine. Consequently, the US healthcare system has evolved from a simple system of home remedies to a medically robust system of technological advancement that is affected by the increasing costs that accompany these “medical progressions” which include aggregate medical expenses that have occurred as a consequence of policies. These have determined the relationships between healthcare organizations, physician

practices, patients, third party payers, affiliates, and interested parties through legislation that has effected the subordination of healthcare as a system.

## **IDENTIFICATION OF URINARY PROTEIN EXPRESSION THAT CORRESPONDS TO HIV-ASSOCIATED NEPHROPATHY IN THE HIV-1TG RAT.**

Monica Errico and Sulie L. Chang, Ph.D.

Institute of NeuroImmune Pharmacology, Seton Hall University

Kidney disease was recognized as a complication of HIV infection early in the HIV pandemic. It has more recently become a topic of interest as improvements in morbidity and mortality have come about through use of highly active anti-retroviral therapies (HAART). The spectrum of kidney disease in the post-HAART era includes HIV-associated nephropathy (HIVAN), acute and chronic kidney injury (AKI and CKI, respectively), immune complex kidney disease, and kidney disease related co-morbid conditions like diabetes, hypertension, and hepatitis as a result of HIV co-infection. While HIVAN occurs almost exclusively in patients of African descent, a diagnosis of AKI occurs in ~10% of all HIV-infected patients prior to commencement of HAART in patients of African descent and non-African descent. The requirement for biopsy or utilization of insensitive serum and urine biomarkers has proven cumbersome in diagnosis of HIVAN. The need for more sensitive and noninvasive biomarkers for diagnosis and prognosis of HIVAN exists. The HIV type-1 transgenic rat (HIV-1 Tg rat) expresses a *gag* and *pol* – deleted HIV-1 provirus that is regulated by the viral promoter. The HIV-1 Tg rat has been validated as a model of AIDS related pathology, immune dysfunction and childhood HIV-associated nephropathy. We evaluated the HIV-1Tg rats up 3 months of age in order to identify potential non-invasive urine biomarkers due to HIVAN. We have identified 6 potential urine biomarkers of which modulation corresponds to increased proteinuria, an accepted urine biomarker of acute kidney injury. (This study is partially supported by PHS K02DA016149 to SLC).

## **iSHU – AN ANDROID SMARTPHONE APP TO INTERACT WITH SETON HALL UNIVERSITY**

Joshua Anglero<sup>1</sup>, Patrick Banom<sup>2</sup>, Dorian Ellerbe<sup>2</sup>, Phillip Hess<sup>3</sup>, and Bert Wachsmuth<sup>2</sup>

<sup>1</sup>Masters of Business Administration, <sup>2</sup>Mathematics and Computer Science Department, <sup>3</sup>Physics Department

In this class project we created a multi-threaded software program (app) for the Android operating system to access and interact with information about Seton Hall University. Our app is divided into nine activities to (1) search for faculty and staff contact information, (2) look up news about Seton Hall from various Internet sources, including a general RSS news feed reader, (3) obtain information about schedules, results, and news for a number of Athletics programs, (4) check the calendar of events, (5) view an interactive campus map including GPS walking directions, (6) view photos posted on Seton Hall's Flickr channel, (7) play videos posted to Seton Hall's YouTube channel, (8) obtain weather info and forecast for South Orange, and (9) contact pre-defined SHU entities such as the "Help Desk" via email. All activities are available straight

from any Android cell phone. The app will be made available for free download through the Android Marketplace. We will demonstrate our program, highlight some design principles important for creating programs on small devices, and discuss the importance and growth of smartphones as general information management tools.

## **STRATEGIES TO CONTAIN THE HIGH AND RISING COSTS OF HEALTH: WILL THEY INCREASE EXISTING HEALTH CARE DISPARITIES, ARE THEY ETHICAL?**

Hengameh Hosseini, Ph.D., Seton Hall University

**S** Purpose: After discussing the high and rising health care costs in the United States, its disparities, and the suggested demand, supply, and managed competition- side strategies to contain health care costs and their ethical implications, the paper explores whether or not these strategies will further aggravate the existing health care disparities.

**Sh** Design/Methodology: This conceptual paper utilizes the various appropriate exiting economic and ethical theories. The economic and ethical theories utilized are relevant to the problem of rising health care costs, to the proposed demand, supply, and managed competition -side cost containment strategies, and to the existing health care disparities.

**S** Findings: The paper demonstrates that the suggested cost containment strategies do in fact aggravate existing health care inequities and are not always ethical.

**H** Originality /Value: Given the present health care reform debate in the United States and various misconceptions about it , the author believes that the paper and its findings should in fact be viewed a contribution.

**H** Key words: health care costs, health care disparities, demand- side cost containments, supply-side cost containment, ethics of healthcare.

## **USING JOURNEY OF TRANSFORMATION TEXTS TO ANALYZE CURRENT SOCIAL ISSUES**

Howard McGinn, CORE, Seton Hall University

**U** The purpose of the presentation is to demonstrate how the CORE Journey of Transformation I required readings can be used to help students analyze current social issues. Students will use Jesus' Sermon on the Mount, Parable of the Good Samaritan and other course readings to inform their discussion about the following topics: Immigration, Health Care, and Wall Street Behavior. Students worked in groups of four to develop their analysis. Each group was encouraged to permit opposing points of view in its presentations. The results of the project will be presented in poster and power point formats.

## LEADERSHIP DEVELOPMENT HONORS PROGRAM

Carley Strauss & Michael Reuter

Center for Leadership Development, Stillman School of Business, Seton Hall University

The purpose of this presentation is to share a pictorial collage of the business educational and cultural learning's and experiences of the Leadership Development Honors Program first annual study abroad to Athens, Greece.

### USING A COMMUNITY ACADEMIC PARTNERSHIP TO IMPLEMENT AND EVALUATE AN INTERVENTION TO REDUCE RISKY BEHAVIORS AND PROMOTE HEALTH IN HIGH RISK TEENAGERS.

Felicia Kishun and Emily Njoroge, Becton-Dickenson Scholars, Heather Patterson, Undergraduate Research Assistant, College of Nursing, Seton Hall University, RoseMarie Peterkin, MAT, Director, Friends and Families United, Inc., Newark, NJ., Janet Summerly, MSN, RN, Research Associate, Mary Ann Scharf, EdD, RN, Kathleen A. Sternas, PhD, RN, College of Nursing, Seton Hall University

**Problem:** High rates of risky behaviors exist among Newark teenagers including drug/alcohol use, smoking, and sexual activity which affect health. Community agencies and academic institutions can positively impact communities through collaboration on development, implementation, evaluation of interventions for high risk populations. This presentation describes: 1) a community academic partnership to reduce risky behaviors/promote health in teenagers; 2) outcomes of an evidence-based intervention, the Newark NJ Best Friends/Best Men Adolescent Family Life Intervention that promotes abstinence from drinking/drugs and sex in teenagers. The intervention included discussions, mentoring/role modeling, health/fitness classes, cultural events, community service, and recognition ceremony. **Methodology:** Four intervention schools (N=269,183 girls/86 boys) and five comparison schools (N=220,123 girls/97 boys) participated. Measures: AFL Core Baseline/Follow-up and Demographic Questionnaires. Analysis: Pearson Chi Square, Mann Whitney U Tests. LOS was .05. **Findings:** Significantly more intervention than comparison participants reported: dating/party rules (p=.005); saying no to wrong activities (p=.005); confidence (p=.009); bright future (p=.009); important to remain abstinent (p<.001) and future spouse to remain abstinent (p<.001); sex makes it harder for teen development (p=.013); abstinence is a certain way to avoid pregnancy/STDs/health problems (p=.002). Significantly more comparison participants reported: friends drink (p=.009), tried marijuana/drugs (p=.026). More comparison girls reported friends tried marijuana/drugs (p=.027). More comparison boys reported: friends drink (p=.05); not talking with parents/guardians about drinking/drugs (p=.043), sex (p=.042). **Conclusions:** The intervention contributes to reducing risky behaviors, promoting health and abstinence attitudes/behaviors in teenagers. Findings have implications for development of intervention programs which reduce risky behaviors and promote abstinence attitudes/behaviors in teenagers.

## POST TRAUMATIC STRESS DISORDER AMONG NURSES: A SYSTEMATIC REVIEW

Marycarol Rossignol PhD, RN, CNL and Yu Wang  
College of Nursing, Seton Hall University

**Problem Statement:** Nurses work round the clock in a difficult health care environment where they are often exposed to traumatic and stressful situations. Nurses routinely care for the critically ill and dying, confront ethical conflicts, and deal with aggression and abuse in the workplace. The intensity of caring for the sick can have psychological sequelae and lead to feelings of frustration and guilt which result in sleeplessness, nightmares, and irritability. Nurses as front line clinicians are vulnerable to develop an anxiety disorder such as Post Traumatic Stress Disorder (PTSD). This project describes a systematic review of the literature to document the prevalence of PTSD or Post Traumatic Stress Symptoms (PTSS) among nurses. **Purpose:** Nurses are at an increased risk to develop work-related Post Traumatic Stress Disorder. The aim of this comprehensive review is to summarize the published research identifying study type, design, location, work setting, traumatic event, sample, instruments, and incidence of PTSS or PTSD. **Methodology:** A systematic review of the literature from 1980 to June 2009 was conducted using the Medline, Academic Search Premier, Proquest, PsycINFO, LexisNexis Academic, and Cochrane databases. Inclusion criteria included research articles, theses, and dissertations written in English that identified a nurse sample size greater than 30, measured PTSS or PTSD using a validated instrument, and reported the incidence of PTSS or PTSD. Articles were excluded that measured vicarious traumatization. Key publications were hand searched and reference lists were checked. There were two single search terms and five Boolean combinations employed. Data were extracted independently by two investigators for characteristics and results using a structured data form. The coding judgments were reviewed by the investigators and disagreements were resolved by consensus. The initial coding agreement ranged from 72% to 100%, mean 89.4%. Only preliminary data are available to date and population of the dataset continues. **Findings:** The search strategy yielded 24 relevant articles and documents that were analyzed: 20 journal articles, 3 dissertations, and one master's thesis. Primarily the studies employed a retrospective cross sectional survey design using questionnaires for the data collection. The studies were conducted in 12 different countries. Research in the USA and in the hospital setting was most frequent. The most common traumatic event studied included 1) work-related, for example patient assaults and intensive care nursing, 2) caring for persons with communicable illnesses, for example the severe acute respiratory syndrome outbreak, and 3) nursing in the military. Further data analyses will characterize the prevalence of PTSS or PTSD among nurses for each traumatic event.

## SUCCESS IN ACCELERATED NURSING STUDENTS

Barbara Blozen MA RN BC CNL & Bethany DeFord  
College of Nursing, Seton Hall University

The purpose of this study was to determine the factors that contributed to NCLEX-RN success from an accelerated nursing students' perspective and examine demographic characteristics of these accelerated nursing students. This accelerated research study used the students' direct

statements, as they served as the fundamental source for development of the emergent categories. Listening to, rereading the interview transcripts and analysis of the text as a whole revealed commonalities of words and phrases which led to the development of the identified categories and coding of these categories. The data was analyzed and coded employing a grounded theory method. The major finding contributing to the success of the accelerated nursing student, as reported by the participants of this study, is the practicing of NCLEX-RN questions. Furthermore, the participants relate testing in a structured format, the ATI exams, participation in a review course, and nursing course exams and quizzes with analysis and evaluation questions were facilitated their success.

### **A STUDY ABROAD EXPERIENCE IN THE PHILIPPINES: A PARTNERSHIP BETWEEN SETON HALL UNIVERSITY, COLLEGE OF NURSING AND THE UNIVERSITY OF THE PHILIPPINES**

Chukwudi Orji and Ronald Reda, CNL Graduate Students, Eva Develleres, Alan Ray Flordeliza, Benjamin Garcia, Undergraduate Students, Mary Ann Scharf, Ed.D, RN and Kathleen Sternas, Ph.D, RN, Faculty, College of Nursing, Seton Hall University.

The purpose of this presentation is to share nursing students' and faculty experiences from a study abroad educational opportunity in the Philippines in January 2010. This opportunity was a collaborative endeavor between the College of Nursing, University of the Philippines and the College of Nursing, Seton Hall University. Five nursing students, two Clinical Nurse Leader graduate students, and three undergraduate nursing students participated. Two Seton Hall University nursing faculty organized the study abroad program in collaboration with the Deans of both Colleges, faculty from the Philippines, and administrators at both Universities. The objectives for the study abroad experience were: to explore community health nursing in urban and rural settings; and to explore cultural experiences in the Philippines. Students and faculty visited: University of the Philippines, College of Nursing and met with faculty and nursing students; the General Hospital and learned about health care in the Philippines; mayors and health officers in Pateros and San Juan Batangas and made home visits with nursing students from the University of the Philippines in urban and rural settings. Cultural experiences included: participation in the festivities and procession of the Black Nazarene from Quiapo Church, and the festivities for Fiestam Bulusan near Makati; visiting Fort Santiago and the memorial museum for the national hero, Dr. Jose Rizal; Intramuros, a walled city in Manila; San Augustine Church and museum, the oldest church in the Philippines. This presentation describes the educational and cultural experiences from the perspectives of students and faculty and includes pictures of experiences.

### **RELATIONSHIP OF VISUAL MOTOR INTEGRATION AND SCHOOL PERFORMANCE IN CHILDREN WITH A HISTORY OF LOW BIRTH WEIGHT**

Jun Zhang, PhD, RN, & Jay Majmundar  
College of Nursing, Seton Hall University



Low birth weight (LBW) is a public health problem which may place children at risk for poor school performance. Research indicates children with LBW history may experience learning difficulties, need remedial education, and drop out of school. Poor school performance can have long-lasting psychological, social and economical effects on children, families and society. Visual motor integration (VMI) affects coordination ability and cognitive processing. Impaired VMI may be why LBW children perform poorly in school. The purpose of this study was to investigate the relationship of VMI and school performance of children with LBW history.

**Methodology:** Data was retrieved from a prospective cohort study, the Neonatal Brain Hemorrhage Project, and a secondary data analyses was conducted on a regional birth cohort (n=777) from New Jersey. Developmental outcomes of LBW survivors were assessed longitudinally. Instruments: VMI was measured by Beery-Buktenica Developmental Test of VMI and evaluated by pediatricians/psychologists. School performance was measured by Woodcock-Johnson Tests of Achievement and guardians/teacher interviews. Birth weights were retrieved. **Findings:** MANOVA indicated VMI is a significant factor influencing poor school performance (Hotelling's trace value is .028,  $F=3.414$ ,  $p=.018$ ). VMI was significantly related to reading (ANOVA: $F=4.639$ ,  $p=.01$ ) and mathematics (ANOVA: $F=11.549$ ,  $p<.001$ ), but not knowledge performance. Both reading and mathematics scores were highest for children with higher LBW (1000-2000g) than lower LBW (<1000 g). The hypothesis that school performance will be lower for children with impaired VMI, compared to children with intact VMI was supported. **Conclusions:** VMI and LBW are significant factors influencing school performance of children. Children with intact VMI and higher birth weights performed better on reading and mathematics than children with lower birth weights and impaired VMI. Implications for nurses include monitoring children with a LBW history and collaborating with teachers and parents to provide early detection and intervention for children having school performance problems.

## Chemistry and Biochemistry Research Symposium Poster Display

Tuesday, April 20<sup>th</sup> 7:00 – 9:00 PM McNulty Hall Atrium

ABSTRACTS PUBLISHED SEPARATELY

## Biological Sciences Symposium Poster Session

Wednesday, April 21<sup>th</sup> 4:00 – 5:30 PM McNulty Hall Atrium

## ABSTRACTS PUBLISHED SEPARATELY

### ORAL PRESENTATIONS/EVENTS

#### **SCHOOL COUNSELORS: PARTNERS IN EDUCATIONAL AND CAREER PLANNING**

Peggy Brady-Amoon, Kathryn Gillespie, Andrea Grasso, Leanne Hershkowitz, Kristina Holmes, Jennifer Horwitz, Monika Kowalik, Kacie Krause, & Lauren Mastellone

Department of Professional Psychology and Family Therapy, College of Education and Human Services, Seton Hall University

April 19 4:30 PM Room 213 Jubilee Hall

Given current and ongoing concerns about educational access, equity, achievement and other outcomes, current and emergent thinking about school counselors' roles in educational and career planning is an important area to study. This interactive facilitated discussion will explore the school counselors' roles as partners with students, parents, school-based professionals, and the community in maximizing the academic achievement and career potential of all students. As such, we will consider collaborative, data-based, and other best practices for effective educational and career planning in diverse K-12 school settings. We will further discuss the counselor's role in fostering personal-emotional well-being, social skills, and academic achievement within the parameters of the CEHS mission of preparing competent, socially conscious, and reflective professionals.

#### **FOOD FACTS, FITNESS & FUN PRESENTATIONS**

Dr. Paula R Zaccone, College of Education and Human Services

April 19 2:45 PM & April 20 11:30 AM Galleon Room University Center

(Monday, April 12 preview in class HPER 4402 AA 2:30-3:45)

Various Presentations:

*Drink and Think:* Learn about the ingredients and nutritional effects of alcohol on the body  
- Lucia Adesso

*Digestion Suggestions:* Learn how to ease digestion - Sebastian Altilio

*Food for Sports:* Understand the nutritional needs of participation in athletics - Ben Prohaska

*Fruit Truths:* View the nutritional values of various fruits - Emily Turner

*Green Scene:* Sample nutritional messages and green edibles - Danielle Carey

*How Sweet It Is:* Get the news on sugar and its substitutes -Alexandra Harvey

*Magical Milk:* Learn of the nutritive values of milk and alternatives- Ryan Custanet

*The Meaning of Caffeine:* Facts about caffeine for children and adults will be covered

- Lauren Massucci

*Protein and Its Values:* Sample various qualities of protein foods - Ahmet Arekat

*Start Right, Eat Right:* Gather suggestions on eating healthy breakfast on a tight schedule

- David Sampson

**CHEMISTRY AND BIOCHEMISTRY PETERSHEIM SEMINAR:  
SYNTHESIS OF NOVEL GLYCOSYLIDENE-BASED QUINOLINES**

Peter H. Dobbelaar, Department of Chemistry and Biochemistry, Seton Hall University  
April 20 5:45 PM McNulty Amphitheatre

The biological prevalence and bioavailability of carbohydrates make stable sugar derivatives attractive scaffolds for drug design. Quinoline-based compounds are also significant from a therapeutic perspective. We desired to combine these structural components because the resulting compounds may have anticancer activity as DNA intercalating agents. We have demonstrated that C-glycosylated quinolines can be prepared from a one-pot, scandium triflate-catalyzed Povarov reaction followed by oxidation with manganese dioxide. The reaction proceeds through sugar-spiroannellated tetrahydroquinoline intermediates which subsequently oxidize and undergo sugar ring opening to form the aromatized dihydroquinolines. This facile method has been employed with several sugar *exo*-glycals and a series of *para*-substituted benzanilines. Deprotection chemistry utilizing boron trichloride successfully removes the benzyl ether groups. Novel C-glycosylated quinolines have been tested in the NCI60 human tumor cell line anticancer screen. Although several leukemia cell lines experienced modest growth inhibition, each compound's overall activity profile was insufficient to warrant dose titration experiments.

**LEARNING DISABILITY AWARENESS FOR FUTURE TEACHERS**

Tara M. Packard, Department of Educational Studies, Seton Hall University  
April 21 4:30 PM Beck Rooms Walsh Library

The purpose of this presentation is to promote self-education regarding teaching learning disabled students. Since inclusion classrooms are growing in popularity, there is a need for all teachers, not just those in Special Education, to develop skills for teaching classified students, like the learning disabled. In particular, the presentation will provide insight for future teachers regarding the challenges learning disabled students face within school. For example, a video will be shown with a panel discussion of learning disabled college students, who were brave enough to share their experiences. By putting a face to the label of learning disabled, it is hoped that the soon to be teachers will enter their classrooms next year with a sense of responsibility to their classified students. Perhaps, through self-education, accommodations within inclusion classrooms will be seen as less of a burden for teachers; but, instead, a chance to shine as an educator.

## EVE OF EARTH DAY

Marian Glenn

The Ecology Club will show Yann Arthus-Bertrand's movie *Home*, and the University Sustainability Committee will launch "A Year for the Earth"

April 21 6:30 pm University Green (Rain site Beck Rooms, Walsh Library)

About Home: "We are living in exceptional times. Scientists tell us that we have 10 years to change the way we live, avert the depletion of natural resources and the catastrophic evolution of the Earth's climate. The stakes are high for us and our children. Everyone should take part in the effort, and HOME has been conceived to take a message of mobilization out to every human being."

## UNIVERSITY HONORS PROGRAM

April 22 Various Presentations

Morning session at 10:30 AM - Fahy 108, Fahy 101, Fahy 131

Afternoon session at 2:30 - Fahy 307 & 4:30 PM Room 213 Jubilee Hall

Fourth-year Honors students will provide an overview of their senior thesis projects for an audience of fellow Honors students (1st & 2nd year students) and the general public.

Presentations will highlight:

- the various topics the students have been researching;
- their research methods;
- their findings.

Presenters will be encouraged to share their personal sense of the extent to which they succeeded in the original goals of their research and how the thesis process may have changed them or changed their thinking. Each student will present for approximately 5 minutes with 5 minutes for Q&A between presentations.

## ONLINE FORUM

April 22 5:45-8:30 pm

**Participants will need to Download Software** -<http://secondlife.com/support/downloads.php> and create an avatar

### **Special Note:**

These directions are for creating a *free*, standard account on the *adult* (age 18 and older) Second Life ® Linden Lab grid using the NMC Second Life Account Website portal found at: <http://sl.nmc.org/join>. Fill out the registration form. Upon creation, you will enter Second Life via NMC's Orientation Island, a welcome center specifically designed for the educational community. For tutorials in How to begin in Second Life use the link below.

[http://tltc.shu.edu/virtualworlds/mediawiki/index.php/Virtual\\_Marsh#Implementation](http://tltc.shu.edu/virtualworlds/mediawiki/index.php/Virtual_Marsh#Implementation)

Link to You Tube to preview videos posted in the Second Life Salt Marsh

[http://www.youtube.com/view\\_play\\_list?p=F70072D3385F2F46](http://www.youtube.com/view_play_list?p=F70072D3385F2F46)

**For additional Student and Visitor Instructional Materials:** *Creating Your Second Life*

*Account for Salt Marsh Dynamics and Finding the Virtual Marsh on Pirate Island - [Instructions](#)  
(2) Second Life Quick Start Guide - [Second Life Skills](#)*

### **RIP CURRENTS: “BREAK THE GRIP OF THE RIP”**

Cynthia Sharon Chilaka

Department of Environmental Science, Seton Hall University

The objective of this study was to understand the effects between beach erosion and rip currents starting from the causes of rip current formation, to safety hazards created by rip currents, due to beach erosion for swimmers. The cause of rip currents is beach erosion. The loss of sand in sand bars and beaches is due to waves and manmade structures for sand preservation. Rip currents form when channels form in off shore sandbars. Replenishing the beach is futile, because natural beach erosion creates offshore sandbars. Building structures to trap sand enhances the chances of rip currents while causing erosion in certain areas. Swimmers are not able to easily spot rip currents and are unfamiliar with protocol concerning rip currents. A solution that targets the underpinning of sand... on beaches is what is needed. One possible solution may be what many scientists are suggesting to shift from building hard structures to trap sand and to limit building property in coastal areas that are prone to sand loss. Beach sediments should be left to take their natural course.

### **THE DYNAMIC SALT MARSH**

Martha Schoene, Marian Glenn & Heidi Trotta

Department of Physics, Department of Biology & Department of Information Technology  
Seton Hall University

The Dynamic Salt Marsh is a simulated coastal environment designed for use in Earth Science, Ecology, Environmental Science and Geology courses for High School and undergraduates on any college campus, within Second Life, a multi-user virtual environment. This project was piloted (Fall, 2009) in BIOL2341AA - Ecology, an undergraduate face-2-face course taught by Professor Marian Glenn and in ENVL1019WB-Environmental Geology, a web based undergraduate class taught by Martha Schoene. This virtual environment is based on the salt-water marsh ecosystem, at Horseshoe Cove, Sandy Hook, NJ, a popular site for educational field trips. The simulated marsh presents a variety of real world challenges in coastal zone management that are best addressed using systems thinking and collaborative data-sharing. Student activities focus on collaborative inquiry-based exploration and synthesis. The Dynamic Salt Marsh activity demonstrates how to gather, interpret and analyze data to solve a real-world problem - - a mysterious fish kill. This presentation can take participants on a field trip within Second Life. No experience with Second Life is necessary, but participants who have Second Life avatars are invited to join the explorations “in person.”

### **PERFORMANCE OF LARRY SHUE'S WACKY COMEDY "THE FOREIGNER"**

performed by Seton Hall University students and directed by Professor Deirdre Yates.

Performed at SOPAC at 8 PM on April 16-18, 23-25

When an incredibly shy Englishman arrives at a fishing lodge set deep in rural Georgia, the locals assume he can't understand English because—well—he's a foreigner! Comedy ensues as the Englishman maintains his mute presence while scandals, secrets, and intrigues are freely discussed around him. Winner of the Obie and Outer Critics Circle awards.

For more information and additional show times visit:

<http://www.shu.edu/academics/artsci/seton-hall-theatre/index.cfm>

### **FOSTERING UNITY OF EFFORT IN FULL SPECTRUM OPERATIONS**

Major Jon Martin, Department of Military Science, Seton Hall University

April 22 2pm Room 132 Jubilee Hall

The United States Army conducts operations that exist along a continuum from stable peace to general war. The Humanitarian Assistance (HA) operation following the earthquake in Haiti and the current Counterinsurgency (COIN) operation in Afghanistan are excellent cases to highlight the challenges facing Army leaders at two different points along this spectrum. There are agencies and organizations other than the Army that exist to solve many of the problems associated with HA and COIN operations. These agencies and organizations include the Department of State, United States Agency for International Development (USAID), international organizations such as the United Nations Development Program (UNDP), and nongovernmental organizations (NGO). Army leaders today must work to coordinate the efforts of all these organizations under less than ideal circumstances. All of the players involved in HA and COIN operations will be more successful if the leadership of Army units and these organizations are able to foster unity of effort. The American Soldier today recognizes that a well placed handshake is often more effective than a well placed shot. This presentation will offer an Army Officer's view of this Unity of Effort challenge.

### **CHANGES IN HEALTHCARE: AN EXAMINATION OF CURRENT & FUTURE TRENDS IN HEALTHCARE PROVISION IN AMERICA**

George Nsiah, Graduate Healthcare Administration, Seton Hall University

April 23 1pm Beck Rooms, Walsh Library

The American healthcare system is at a critical point in 2009; over 40 million people do not have health insurance, but when they fall sick they still require care, which the government and insured citizens of this country (directly and indirectly respectively) end up paying for. This has pushed the government into a large amount of national debt; America has the best healthcare available in the entire world, but at what price? The advancements in medical technology that America continuously keeps pace with result in increasingly expensive healthcare services for the people, the majority of whom would not be able to afford it if it wasn't for the subsidy of healthcare insurance.

This research explores current trends in healthcare as far as the payment systems that exist, the quality of care for patients in need of medical treatment, and the efforts that have been made in the past to improve both aspects of American healthcare. It looks into the success and failures

that are associated with these said efforts, and also looks forward to future solutions that may help to improve healthcare in America, exploring options such as a shift away from fee-for-service practices and the implementation of the principles of large, integrated healthcare systems. Most importantly, this paper predicts that if coordinated care between hospitals and their extended hospital medical staff (which comprises mostly of independent physicians who are not employed by but have affiliations with hospitals) could be better organized and operate in a more efficient, fluid matter, the average American citizen would experience higher quality care.

## Psychology Research Symposium

April 24 12:00 - 2:45 PM Room 383, Jubilee Hall

### **NICOTINE AND ITS EFFECT ON SPATIAL LEARNING IN HIV-1 TRANSGENIC AND F344 CONTROL RATS**

Kroner, D<sup>1</sup>, Vigorito, M.<sup>1,4</sup>, Cao, J.<sup>2</sup>, Kass, M.<sup>3,1</sup>, Li, M.D.<sup>2</sup> & Chang, S.L.<sup>3,4</sup>

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Evidence from earlier research indicates that HIV-1 Transgenic (HIV-1Tg) rats suffer learning deficits when trying to locate a hidden platform in a multiple trial, non visual, Morris Water Maze (MWM) test compared to control rats (Vigorito et al,2007). This deficit suggests that proteins produced by the HIV-1 genome disrupts brain functioning. Nicotine is known to have neuroprotective effects and therefore the drug may be effective in reversing the observed learning deficit. In this study we examined the effectiveness of nicotine treatment on a single trial per day version of the MWM test. Further testing also examined the effects of nicotine pretreatment (7 days) as well as a dose response of 4 nicotine doses (0.125, 0.25, 0.5, 1.0 mg/kg). The findings indicated that the HIV-1 Tg rats also show a deficit in the single trial per day MWM test and that single daily trials did not require more days for learning the task. Further, a high dose of nicotine (1.0 mg/kg) had detrimental effects on performance in HIV-1Tg and F344 control groups. Preliminary testing with control rats indicates that the disruptive effects of high dose of nicotine can be reduced with a pretreatment of the drug and the lowest tested dose (0.125 mg/kg) can have a positive effect on learning (These studies were partially supported by PHS R01 DA026356-A1 to MDL and SLC and K02 DA016149)

## **THE IMPACT OF REGULATORY FIT ON WORKING MEMORY**

Justin T. Maxfield & Kelly Goedert, Department of Psychology, Seton Hall University

Traditionally, cognitive psychology has paid little heed to motivational factors that may influence performance on cognitive tasks. Recently, however, researchers have demonstrated that regulatory focus and the reward structure of a task interact to influence cognitive performance (Maddox, Baldwin, & Markman, 2006). Regulatory focus is a person's sensitivity to potential gains or losses in the environment. When participants' focus matches the task reward structure (known as a regulatory fit) they demonstrate cognitive flexibility and they demonstrate cognitive perseveration when it does not. However, little is known about the cognitive mechanism, or mechanisms, that underlie this effect. One possible explanation for the increased cognitive flexibility under regulatory fit is that the fit enhances the executive attention function of working memory. This hypothesis is bolstered by evidence that regulatory fit improves performance on the Wisconsin Card Sort Task, a measure of executive function (Maddox, Filoteo, Glass, & Markman, 2010). In this talk, I will describe my proposal for a study designed to test the hypothesis that regulatory fit exerts its cognitive effects by selectively enhancing working memory "operations" – hence, executive function – as opposed to working memory capacity. This work will improve our understanding of the motivation-cognition interface and hopefully provide an explanation of the processes underlying regulatory fit.

## **WOMEN AND MATH PERFORMANCE: INFLUENCE OF STEREOTYPE THREAT, GENDER IDENTITY, AND MATH IDENTITY**

Felicia W. Chu and Janine P. Buckner, Ph.D, Department of Psychology, Seton Hall University

A common stereotype is that men are good at math, while women are bad at math. When presented with this negative stereotype, women underperform in comparison to women not presented with this stereotype, a phenomenon called stereotype threat; in addition, when the stereotype threat is nullified, women perform comparably to men (Lesko & Corpus, 2006; Martens, Johns, Greenberg, & Schimel, 2006; Spencer, Steele, & Quinn, 1999; Quinn & Spencer, 2001). Other work (Thoman, White, Yamawaki, & Koishi; 2008) has revealed differential effects of threat type (innate ability vs. effortful control of performance outcomes), as well as differences in attributions for poor performance, with women being more likely to ascribe poor performance to ability than men (Kiefer & Shih, 2006). To investigate women and math performance, women in the present study completed one math test under a randomly assigned stereotype condition. In addition, Smith and White's (2001) Domain Identification Measure (DIM) and Spence, Holahan, and Helmreich's (1979) Extended Personal Attributes Questionnaire were administered to assess the influence of gender identity and math identity on performance. This study suggests that the types of stereotype threat (effortful control, innate ability) encountered may interact with specific identity factors (gender, math identification) to influence women's math performance.



## **INTERNET USE AND SOCIAL ANXIETY**

Amanda Sakowski & Paige Fisher, Ph.D., Department of Psychology, Seton Hall University

The purpose of this study was to examine how internet use affects individuals' perceptions of social interactions, particularly those with elevated levels of social anxiety. Participants read a series of vignettes describing hypothetical social situations then responded to questions regarding expected social outcomes and anticipated levels of anxiety. 91 college students were randomly assigned to one of two conditions: a) vignettes describing initial face-to-face interactions or b) vignettes describing initial internet interactions. To assess for relationships between amount of internet use and social anxiety, all participants reported average number of weekly hours on the internet and completed a measure of social anxiety. Data analyses are in progress.

## **INVESTIGATION OF DIRECTION OF PRISM-SHIFT AND ADDITIONAL TRAINING ON LINE BISECTION BIASES**

Matthew Fleming & Kelly Goedert, Ph.D., Department of Psychology, Seton Hall University

We investigated the time-courses of changes in perceptual-attentional (PA) and motor-intentional (MI) biases after adaptation to left- and right-shifting prisms over five prism adaptation training sessions. During prism adaptation, participants wore either left or right prism shifting goggles and pointed to 60 black circles appearing one at a time at random locations on a touch-screen monitor. Before and after prism adaptation training, participants bisected 6 lines under normal viewing conditions and 6 lines under reversed viewing conditions, which allowed us to fractionate their bisection performance into its PA and MI components. We expected the MI bias of the left-shifting group to move rightward and that of the right-shifting group to move leftward. For the PA bias we expected an initial shift in the direction opposite the prism displacement, but we then expected participants to fatigue over the multiple adaptation sessions, and for their PA bias to move rightward regardless of the prism shift. Our results show that left and right-shifting prisms differentially affect PA and MI biases, with the primary effect of left-shifting prisms on the MI bias. On natural viewing line bisection our subjects did not show strong post-adaptation effects, and the effects they did show were in the direction opposite that typically observed.

## **MEMORY FOR FACES**

Megan Mills & Marianne Lloyd, Ph.D., Department of Psychology, Seton Hall University

Past research has demonstrated that bilateral eye movements between study and test improve the hit rate for items that are recognized using recollection (Parker, Relph, & Dagnall, 2008). The present study extends this research into recognition of inverted and upright faces. It was expected that inverted faces would be more likely to be recognized using recollection and therefore would benefit from horizontal eye movement (Searcy & Bartlett, 1996). Results showed that bilateral eye movement decreased memory in the horizontal inverted level suggesting that there are differences in recognition between verbal and face recognition.

## **REPEATED CHECKING AND MEMORY CONFIDENCE**

Michelle Rittweger & Marianne Lloyd, Ph.D., Department of Psychology, Seton Hall University

The purpose of this study was to see if repeatedly performing the same behavior would lead to a decrease in memory confidence, but maintain memory accuracy. Previously, this has been observed in research performed by van den Hout and Kindt (2003). This study is a replication of the previous research, but also includes its own manipulation of providing feedback to the participants. The participants were assigned to one of two conditions, relevant checking and irrelevant checking. In the relevant checking group, the participants were asked to “turn on” and “turn off” light switches on the computer by pressing the correct corresponding button on the keyboard. They were asked questions right after training and after the experiment relating to memory accuracy, detail, vividness, and confidence. The irrelevant checking group was asked to perform a similar task except they were asked to primarily “turn on” and “turn off” different parts of a computer, but were also asked to “turn on” and “turn off” light switches in the beginning and end of the experiment. They were asked to answer the same questions as the experiment group about their last trial, which was a light switch trial. Currently, the data is being organized and analyzed to see if participants in the relevant checking group have a decrease in memory confidence, detail, and vividness, but maintain memory accuracy.

## **MOTIVATION ORIENTATIONS AND ACADEMIC SUCCESS**

Ashley Graham, Amy Hunter, PhD & Paige Fisher, Ph.D.,  
Department of Psychology, Seton Hall University

This study examined the relationship between motivation orientations, stress and coping variables, and academic performance. Prior studies suggest that intrinsic motivation is related to lower levels of stress, while motivated behaviors are related to high levels of stress, distress and poor psychosocial adjustment. Prior studies also suggest that there is no relationship between motivation orientations and academic success. However these questions have not been examined with college freshmen. In the current study, 56 college freshman completed several self-report surveys assessing motivation, perceived stress, general health, academic adjustment, self-determination, and several demographic variables including college entry qualifications. Analyses will assess the following relationships: motivation orientations and self-determination, motivation orientation and academic success, and self-determination and other coping variables. Data analysis is in progress.

## **THE EFFECT OF YOGA ON MENTAL HEALTH**

Kristen Brunell & Paige Fisher, Ph.D., Department of Psychology, Seton Hall University

This study investigated yoga’s impact on mental health. Two questions were tested: 1) whether a single yoga session could have an impact on an individual’s sense of well-being, level of stress, and fitness orientation, and 2) the impact full length mirrors have on an individual’s ability to be

mindful and feelings about their appearance. Some participants in this study practiced yoga in a room with a full-length mirror, others practiced in a room with no mirror, and a third condition only read about yoga. Our hypotheses, based on previous studies of physical exercise and dance, are that a single session of yoga will positively impact mental health, but that this effect might be lessened for those who practiced in front of a mirror.

## **EFFECTS OF REM DEPRIVATION AND FEAR CONDITIONING ON RATS EXPOSED TO AN ENRICHED ENVIRONMENT**

Jessica Nicaretta & Amy Hunter, Ph.D., Department of Psychology, Seton Hall University

The effect of exposure to an enriched environment (EE) on the deficit in extinction following REM sleep deprivation was investigated. At six weeks of age, animals were raised in either standard conditions or EE for a period of six weeks. All animals were exposed to cued fear conditioning (presentation of a CS light and tone) and half were REM deprived for 6 hours immediately after conditioning. Forty-eight hours (extinction 1), ninety-six hours (extinction 2), and six days later (extinction 3) extinction sessions were conducted. Time spent freezing decreased across the session in extinction 1 and 2, indicating successful and continued extinction among all animals. Time spent freezing did not change across the session of extinction 3. EE rats showed impaired extinction as indicated by increased freezing during all 3 extinction sessions. The impairment of extinction by REM deprivation (RD) was marginally significant only in Extinction 1. Results from this study could indicate that EE may impair extinction through enhancement of fear conditioning. A stronger CS-US association acquired during conditioning could result in difficulty in extinguishing that association during extinction training.

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Unite!