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INTRODUCTION AND WELCOME MESSAGE

This year’s Research Days Keynote Speaker is Jasmine Rand, an attorney who represented the Trayvon Martin family. We are all aware of that tragedy and the widely-followed case that sparked a national debate about racial profiling and stand your ground laws. What you may not know is that Jasmine Rand was teaching a class while she was representing the Martin family. It was Jasmine’s students, working side by side on the case, who helped coin the phrase “I Am Trayvon Martin” and to launch what became an international movement to promote social justice.

Higher education at its best is a partnership between faculty and students learning from each other. Research Days is a celebration of our students and faculty exploring new ideas and discovering together. Each year, that celebration grows. This year, over 300 Kean University students are presenting their research or creative projects across a wide range of disciplines, mentored by 77 Kean University faculty members. We meet our students at a time in their lives when they are most actively exploring what the future can be for them. We can all remember a teacher who made an enormous difference in the path of our life. We may each be that teacher for one of our students. What a gift. What a responsibility. My hope is that Jasmine Rand’s story will inspire some of you to become a “Kean Upstander,” taking action to support human rights.

At the very beginning of our mission we state: “The University dedicates itself to the intellectual, cultural, and personal growth of all its members…In particular, the University prepares students to think critically, creatively and globally; to adapt to changing social, economic, and technological environments, and to serve as active and contributing members of their communities”.

Research Days demonstrates the development of many of these characteristics in our students. Let us celebrate their achievements as we continue to dedicate ourselves to their growth intellectually, culturally, and personally.

Jeffrey H. Toney, Ph.D.

Jeffery H. Toney, Ph.D.
Provost and Vice President for Academic Affairs
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| 10 a.m. – 11 a.m. | STEM Lecture Hall 2nd Floor | Keynote: Jasmine Rand, Lawyer, Professor, Civil Rights Leader  
I Am Trayvon Martin: Hoodies Up — How One Case Changed a Nation & Ignited the World |
| 11 a.m. – 4 p.m. | STEM 3rd and 4th Floors | Faculty Research Presentations  
See program for details of rooms and times |
| 12:30 p.m. – 3:30 p.m. | GL 406 | Design Forum 2015  
Presentations by five RBSD faculty; student exhibits on 1st floor |
| 2:30 p.m. – 3:30 p.m. | STEM 307 | M.A. Holocaust and Genocide Studies Faculty Panel  
Justice After Genocide |
| 3 p.m. – 4 p.m. | STEM 4th Floor | Kean University Assessment Institute Update  
Poster Session |

**Wednesday, April 29, 2015**

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| 8:30 a.m. – 4 p.m. | STEM 306/324/501 | Student Oral Presentations — every 15 minutes  
See program for details of rooms and times |
| 9 a.m. – 11 a.m. | STEM 318 | Psy.D. Dissertation Symposium |
| 10 a.m. – 3 p.m. | STEM Atrium | Student Poster Presentations |
| 10 a.m. – 12 p.m. | CAS Lobby | Research & Technology Showcase — morning session |
| 11:30 a.m. | STEM Atrium | Presentation of the 3MT Awards, Undergraduate and Graduate Student Research Awards |
| 1 p.m. – 3 p.m. | CAS Lobby | Research & Technology Showcase — afternoon session |
| 3 p.m. – 4 p.m. | STEM 501 | Holocaust and Genocide Studies Panel |
| 4:30 p.m. – 5:30 p.m. | STEM 317 | Ed.D. Student Research Panel |
| 5 p.m. – 7 p.m. | STEM 6th Floor | Early Childhood & Family Studies Graduate Colloquium |
KEYNOTE PRESENTATION

I Am Trayvon Martin: Hoodies Up – How One Case Changed a Nation & Ignited the World

JASMIN R M N E  R A N D
Founder of RAND LAW, L.L.C. & Represented the Trayvon Martin Family

“I Am Trayvon Martin” became the battle cry for a whole new generation seeking social justice. However, this new call to arms is not just about race. Anyone can be a target to dangers, tragedies and abuse of basic human rights. As the attorney on the forefront of this widely-followed case, Rand will share her legal experience, use of the media to further a social justice cause, and her experience as a professor that encouraged her students to work side by side on her case and launch what became an international movement. Rand’s students under her tutelage coined the phrase, “I Am Trayvon Martin.” From her students lips to President Obama’s ears, upon the announcement of the not guilty verdict, the President of the United States stood by the family and said, “I too Am Trayvon.”

***

Jasmine Rand is a champion for civil and human rights – the National Bar Association recognized Rand one of the Nation’s Best Advocates Top 40 Lawyers Under 40 in the United States. Jasmine Rand is a professor, national legal analyst, international legal consultant, lecturer, columnist and civil rights leader. She is also the founding attorney of RAND LAW, L.L.C., a Miami-based civil litigation firm. She is currently involved in police brutality cases throughout the nation from the LAPD to the NYPD. In addition to networks such as, CNN, MSNBC, HLN and Fox, Rand also appears on numerous international networks in Jamaica, Colombia and Japan.

Rand is an active law professor and has performed legal analyst work throughout the world. Most recently, Rand guest lectured at Harvard Law on Stand Your Ground laws, at University Mohammed V law school in Rabat, Morocco, and the University of the West Indies in Kingston, Jamaica. In January 2014, Rand traveled to the Kingdom of Morocco to assist the King and Supreme Court Justices on implementing international human rights standards throughout its judicial system. Most recently, Rand developed curriculum on the Trayvon Martin case and taught a course at the University of Miami School of Law, which included innovative topics such as music as an instrument of social change with an emphasis of Bob Marley’s influence on human rights leaders.

Among other accomplishments, Rand was the National Chair of the Human Trafficking Task Force of the National Bar Association; worked with the Southern Poverty Law Center on Immigrant Justice Project and human trafficking issues; and, recently accepted a position as visiting lecturer on Human Rights at Harvard.
Dr. Elizabeth Hyde is associate professor and assistant chair of the Department of History. She received her Ph.D. in European history at Harvard University. She joined Kean in 2007.

Dr. Hyde has worked diligently to embody the teacher-scholar model so vital to a teaching institution. She created and chairs the Department of History Undergraduate Learning Committee, a committee that organizes and oversees undergraduate programming and resources in the department, including advising meetings, career seminars and resources, writing workshops, and student organizations. In 2012, she, along with Dr. Jonathan Mercantini, received a QFI Award for the creation of the Department of History Honors Program. The program they designed received approval in spring 2013 and is now flourishing.

In her capacity as co-director and teacher in the Honors Program, Dr. Hyde has worked to facilitate student involvement in conducting original historical research while utilizing the unique resources here at Kean and at Liberty Hall. She, along with Dr. Mercantini, initiated one of the first student-centered collaborations with the Kean University Archives and Special Collections and Center for History, Politics and Policy with the launch of Honors Program “Nancy Thompson World War II Scrapbook Project.” For the project, history honors students have been engaged in the scanning, transcription, and analysis of letters written by Newark State Teacher’s College students and alumni as they scattered around the globe in a range of roles during World War II. The first four honors students working on the project were among 60 participants (selected from over 600 applicants) honored to present their work at “Posters on the Hill” in spring 2014 in Washington, D.C.

Nine history honors students, along with Dr. Elizabeth Hyde and Dr. Jonathan Mercantini, presented their work at the Northeast Regional Honors Conference, “Battlefields of Change” in Gettysburg, Pennsylvania. Those nine, along with a student in the computer science program here at Kean, will highlight these project outcomes and debut the digital component to the project here at Research Day.

This spring, Dr. Hyde, along with Dr. C. Brid Nicholson, launched a new collaborative research project on the Florence Dwyer Papers in the Kean University Archives. Partnering again with the Archives’s Erin Alghandoor and the Center for History, Politics and Policy’s Shane Derris, the project was designed to introduce students to original historical research through the study and analysis of the papers of New Jersey Congresswoman Florence Dwyer, who served in the U.S. House of Representatives from 1958 to 1972, and whose papers are housed in the Kean University Archives. Dr. Hyde and Dr. Nicholson shepherded thirty-five students through the exploration of the Dwyer archive, the creation of posters summarizing their findings, and the design of lesson plans hosted on the Archive website for their use in K-12 classrooms. The students presented their posters at the New Jersey State House in Trenton.

Dr. Hyde is the first to acknowledge that each of these projects on which she has been privileged to advise, guide, and mentor students is the result of teamwork with valued colleagues and students. These projects demonstrate the outstanding work that can emanate from collaboration across disciplines and departments. And they highlight how engaging students in original research in the humanities allows them to grow their research, writing, and critical thinking skills while modeling for them the excitement and intellectual rewards to be had from being part of a larger project in collaboration with their peers.
## FACULTY PRESENTATIONS

**Tuesday, April 28, 2015**

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| 11 a.m.  | STEM 324 | Psychological Flexibility Mediates the Influence of Childhood Maltreatment on Female Aggression toward Intimate Partners  
Dr. Donald Marks |
| 11 a.m.  | STEM 307 | Studying the Orbits of Planets Around HD 10180         
Dr. David Joiner |
| 11:45 a.m.| STEM 307 | Pro-Apoptotic Properties of Salicylic-Fatty Acid Conjugates  
Dr. Evros Vassiliou |
| 11:45 a.m.| STEM 324 | The Concert Series for the Deaf and Radio Baton Project: Two Unique Music Projects with Applications for the Music Classroom  
Dr. Lyn Schraer-Joiner |
| 12:30 p.m.| STEM 415 | The First Line of Defense in Cybersecurity and Trustworthiness of Online Services  
Dr. Jing-Chiou Liou |
| 12:30 p.m.| STEM 324 | Resiliency After Sandy: Climate Change and Disaster Planning for Adaptation in Urban Environments  
Dr. Julia Nevarez |
| 12:30 p.m.| STEM 307 | Influenza Transmission Modeling and Smart Phone Technologies  
Dr. Feng Qi |
| 1:15 p.m. | STEM 324 | Effects of Criminal Justice System Exposure on Youth’s Substance Use Trajectories: Findings from Year 3  
Dr. Connie Hassett-Walker |
| 1:15 p.m. | STEM 415 | Nurse Resources and Surgical Outcomes in Elderly New Jersey Patients: The Role of Safety Net Hospitals  
Dr. Karen Moosvi |
| 1:15 p.m. | STEM 307 | The Effect of Plaintiff Deception and Monetary Caps on Pain and Suffering Awards  
Dr. Richard Conti |
| 2 p.m.    | STEM 415 | Assessing the Initial Impact of Intergenerational Occupation-Based Golf-Mentoring Program for At-Risk Youths  
Dr. Mary Falzarano, Dr. Jennifer Gardner |
2 p.m.  STEM 324  Food As An Indicator of Cultural Wisdom in Global Cinema  
Dr. Kristine Mirrer

2 p.m.  STEM 307  The Efficacy of a Measure of Psychology Program Outcomes: Student Researchers  
Dr. Zandra Gratz, Yoyce Geronimo, Jennifer Palacios

2:45 p.m.  STEM 307  The Day Ahead: IPO Today, Acquired Tomorrow?  
Dr. Qian Mao

2:45 p.m.  STEM 324  Using Motivational Interview as a Pedagogical Tool for Teaching and Advising Comment  
Dr. Christopher Lynch

3:30 p.m.  STEM 324  Helping Latina Pregnant Women Reduce their Risk to Gestational Diabetes - Final Year Findings  
Dr. Consuelo Bonillas

3:30 p.m.  STEM 307  The Generative Literature Project  
Dr. Mia Zamora

Design Forum 2015 –  
12:30 p.m. to 3:30 p.m.  GL 406

Stand Out: Building Your Design Portfolio  
Prof. Denise Anderson

A New Form of Textbook: Design Fundamentals Notes on Color [Theory]  
Prof. Rose Gonnella

3D Printing Designs  
Prof. Ed Johnston

NIMBLE: Thinking Creatively in the Digital Age  
Prof. Robin Landa

The Unseen Seen: Exploring the Technology of the Image  
Prof. Alan Robbins

M. A. Holocaust and Genocide Studies Faculty Panel –  
2:30 p.m. to 3:30 p.m.  STEM 308

After Genocide - Justice?  
Drs. Frank Esposito, Sue Ellen Gronewold, C. Brid Nicholson, Keith Nunes
CONSUELO BONILLAS
Physical Education, Recreation and Health
Helping Latina Pregnant Women Reduce their Risk to Gestational Diabetes – Final Year Findings

This research study was funded by a 3-year (2011-2014) federal grant from the Health Resources and Services Administration (HRSA). The goal was to reduce the risk of gestational diabetes in Latina pregnant women by educating them on healthier eating habits and encouraging physical activity. Dr. Bonillas collaborated with a local non-profit agency to provide the nutritional counseling sessions and with a local prenatal clinic to recruit the women in the intervention and comparison groups. Eighty-eight Latina pregnant women between the ages of 18-40 were recruited in this research study during the third and final year of funding. Fifty-women were recruited to be part of the intervention group, but only 35 women actually received the intervention. Thirty-eight women were recruited to be part of the control group, and 35 of those women stayed in the program to complete the needed surveys to compare both study groups. The women recruited in the intervention group received 1-10 nutritional counseling sessions during the pregnancy. These counseling sessions were meant to educate on nutrition and exercise during pregnancy and motivate the participants to eat healthier and be physically active during their pregnancy. After signed consent, both study groups completed baseline and post-surveys to use as comparison, along with specific information retrieved from their medical records (i.e., glucose or protein in the urine, blood pressure, gestational weight gain, GDM diagnosis and pregnancy outcomes). The goal of Project Juntas was to determine if a behavioral program can improve the health related behaviors of Latina pregnant women to ultimately result in healthier pregnancies/births and life styles. To accomplish this, pregnancy related outcomes of those in the intervention group were compared to that of the control group. On Research Day, we will present the findings from the final year of funding to show if a 25% improvement in knowledge, attitude and healthy behaviors during pregnancy was documented in the participants in the intervention group when compared to their baseline surveys and that of the control group. We will also discuss if the participants in the intervention group were less likely to gain excessive gestational weight gain, less likely to be diagnosed with GDM, less likely to have abnormal blood pressure readings, and less likely to have traces of glucose or protein in their urine analyses when compared to the pregnant participants in the control group.

This research is supported by the Health Resources and Services Administration (HRSA) - grant H5MC22657

RICHARD CONTI
Psychology
The Effect of Plaintiff Deception and Monetary Caps on Pain and Suffering Awards

The DSM-5 defines malingering as “the intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives such as avoiding military duty, avoiding work, obtaining financial compensation, evading criminal prosecution, or obtaining drugs” (American Psychiatric Association, 2013, p. 739). Malingering may also represent adaptive behavior in some circumstances. The DSM-IV-TR also states that malingering should be suspected in (a) a medicolegal context, (b) situations where there is a discrepancy between objective findings and the individual’s claimed stress and disability, (c) patients who fail to cooperate with treatment or diagnostic procedures,
and (d) cases where there is a presence of antisocial personality disorder. However, malingering is not a binary distinction. Rather, it is viewed along a continuum that can range from mild forms of exaggeration to the deliberate outright faking of symptoms (Resnick, 1984; Rogers, 1990, 1997, 2008). Each year in the United States, a substantial number of people suffer from traumatic brain injury (TBI). Estimates range from 500,000 to 7-8 million with a majority of cases resulting from automobile accidents (Bennett, Dittmar, & Ho, 2007). The total economic cost estimated at $25 billion per year (Grafman & Salazar, 2000). Due to advances in technology, many people who once died from TBI now survive. As a result, many cases that would have been wrongful death cases are now personal injury cases (Taylor, 1999). Forensic neuropsychologists are frequently called upon by the legal system to perform evaluations on plaintiffs in lawsuits involving compensation or litigation. Since a financial incentive is at stake, the assessment of malingering is an integral part of the evaluation process (Reynolds, 1998). The present study examined the impact of plaintiff deception on damage awards. Participants read a simulated case involving an automobile accident and expert evidence was presented that the plaintiff was either honest, exaggerating, or malingering in describing his symptoms. Participants were told that compensatory damages for loss of work, etc. had already been paid to the plaintiff and they were to award an amount for pain and suffering only. According to the law, compensation should be awarded solely by the severity of the plaintiff’s injury. Pain and suffering caps were set three different amounts: $10,000, $35,000, and $900,000, representing the 10th, 50th, and 90th percentiles respectively based on a previous study when no caps were presented. In addition, participants completed the Belief in Just World Scale (BJW), the Revised Legal Attitudes Questionnaire (RLAQ), and a demographic questionnaire. The plaintiff’s conduct and scores on the BJW and RLAQ had a strong impact on damage awards in each condition. The amount set as a cap for pain and suffering only influenced awards in the honest condition with greater amounts resulting in greater awards. The results of this study are consistent with previous findings that suggest juries are often skeptical of plaintiffs (Hans & Lofquist, 1992) and become rigid when they feel the plaintiff has been deceptive (Hall & Pritchard, 1996). However, juries are rational in their decisions of compensation and tend to award monetary damages concurrent with the plaintiff’s economic loss (Vidmar & Hans, 2007). In general, juries award compensation to plaintiffs based on the severity of their injuries; the more severe the injury, the larger the financial award (Cather, Greene, & Durham, 2006).

MARY FALZARANO, JENNIFER GARDNER

Occupational Therapy

Assessing the Initial Impact of Intergenerational Occupation-Based Golf-Mentoring Program for At-Risk Youths

The purpose of this study is to discover the initial impact of a newly developed chapter of the PARFORE program, a gang intervention and prevention golf mentor program for at-risk youth. The study seeks to determine if participation in the PARFORE program has an impact on the at-risk youths’ self-esteem and resiliency, levels of depression, anxiety, anger, disruptive behavior and self-concept, as well as engagement in occupation (i.e., healthy activity). Induction into youth gangs has been equated with the extreme end of the deviant peer continuum (Gatti, Tremblay, Vitaro & McDuff, 2005). Adolescents endure a process of development that either necessitates gang involvement or prevents gang involvement (Dahberg & Potter, 2001). Gang affiliations do not occur instantaneously (Ali, Dwyer, Vanner & Lopez, 2010). These adolescents, herein described as at-risk youth, are exposed to a dynamic interaction between their performance skills (cognitive, emotional, and physical skills) and the contextual demands of their environment (AOTA, 2008). At-risk youth who choose to engage in gang
activities may believe there is no reasonable alternative. They may feel compelled to join because of the lack of alternative resources and opportunities in their environment. Unfortunately, once an at-risk youth engages in gang activity, he or she often progresses to more socially deviant behavior. For these reasons, it is important to identify those who have a propensity to engage in gang activities or identify individuals who are in the early stages of gang activity (Gatti et al., 2005). Despite the need for early intervention based programs and evidence of the impact on the at-risk youth’s ability to avoid or disengage in gang activities, there is a dearth of research to examine program effectiveness through objective measures of protective factors. Protective factors include resiliency, self-esteem, coping and problem solving abilities and positive social and contextual influences. The concept of resiliency, which is defined as an individual’s capacity to engage in health promoting behaviors in the face of adversity and is an important element in human adaptation (Ali, Dwyer, Vanner & Lopez, 2010). Social contextual factors associated with resilience include positive reinforcement from significant individuals, positive parenting encouraging occupational competence and self-esteem, having supportive adults who foster trust, and having opportunities to engage in health occupations (De Anda, 2001; Licitra-Klecker & Waas, 1993). Adolescents who demonstrate greatest resiliencies have been identified as individuals who flourish in high stress, disadvantaged or harmful contexts (Anthony, 1987). To mitigate the negative factors in the lives of at-risk youth and to develop and enhance the protective factors, the PARFORE program was developed as community based program to specifically target at risk youth through the game of golf and healthy occupational activities opportunities and engagement. Perseverance, Accountability, Resilience, Fellowship, Opportunity, Respect, and Empowerment (PARFORE) is an integrated occupation based prevention mentor program using the game of golf to teach necessary life skills. Dr. Jennifer Gardner and the faculty of the Kean University Occupational Therapy (OT) have developed a PARFORE program and recruited at risk youth living in Newark, New Jersey to become participants in the KU PARFORE program over a two year period. Preliminary results of the impact of the program will be presented.

ZANDRA GRATZ, YOCIE GERONIMO, JENNIFER PALACIOS

Psychology

The Efficacy of a Measure of Psychology Program Outcomes: Student Researchers

The current study examined the efficacy of a test developed for use as part of a University Psychology Program evaluation. Unique to the research process was the role students played in the analysis of the efficacy of the measure. In particular, through the combined efforts of students and faculty, the psychometric qualities of a measure were estimated. The project further highlighted the limitations and assets of locally developed measures of outcomes at the University level. Beyond this, the project afforded students authentic test experience. Assessment has been an issue in higher education for many years; the value added aspects of a college education is a much discussed and debated issue (American Colleges and Universities, 2004). Assessment has been a long time concern in psychology (e.g., Dunn, McCarthy, Baker Halonen & Hill, 20007). Although there are commercially available tests such as the CLA (Collegiate Learning Assessment) or MFT (Major Field Tests), some have suggested that to examine the specific aspects of the curriculum, locally developed measures of outcomes should be used (e.g., Shermis, 2008). This would help to ensure that which is measured reflects that which is taught. Although intuitively sound, developing a content based assessment is difficult. The Kean University School of Psychology developed six student learning objectives (SLO) for students in its program. Students’ voyages to obtain mastery of the learning objectives may take a variety of forms in that there are 6 required courses and five required major electives which may be selected from 47
possible courses. In an effort to develop a measure, faculty submitted two or more items per SLO, for a total of 61 items. These items were the basis of the research conducted by students in an Honors Tests and Measurement Class. To gather data to examine the reliability, construct and criterion related validity, the draft measure was administered to 68 students in Introductory Psychology classes and 83 students in Senior Seminar classes. Content validity was cross confirmed by students; this resulted in four items being omitted. As part of the process, there was considerable debate among students as to the location of each item within an SLO; in several instances, student researchers were at odds with the faculty item placement. Additionally, six items were removed because item to total test coefficients were negative. The remaining items yielded a Coefficient Alpha estimate of reliability of .81. In support of validity, correlations between tests scores and variables such as number of psychology, courses, interest in psychology and class (seminar vs. intro) were all significant (p<.05) and positive. The final measure demonstrated sufficient reliability and validity for use. However, the extent to which the exam is a measure of each SLO is questionable. This, in concert with the debate engaged in by students trying to confirm each item’s location in one SLO, suggest restraint when using SLO scores to inform instruction. Although it may be a suitable overall measure of psychology program outcomes, it may not be as useful in identifying specific areas to inform instruction and program development. Additional research is needed to confirm the measures relationship to each SLO as well as the relationship between tests scores and rubrics used to assess projects and presentations.

CONNIE HASSETT-WALKER
Criminal Justice
Effects of CJ System Exposure on Youths’ Substance Use Trajectories: Results from Grant Year 3

The goal of this study is to examine how exposure to the criminal justice system influences substance use during the transition from adolescence to early adulthood. We adopt a life course perspective (Moffitt, 1993) and posit that there is no single pattern of substance use or justice system involvement. Results to date show three trajectories of justice system involvement: little to no CJ involvement (class 1); non-violent drug offenders (class 2); and violent drug offenders (class 3). Class 2 individuals were as likely to receive probation as they were incarceration; however, class 3 individuals were much more likely to face incarceration. Race, ethnicity and gender differences were also found between the three classes. Class 1, the non-offender class, primarily contained white males and females of all races ethnicity. Conversely, classes 2 and 3 primarily contained black and Hispanic males; black males were relatively equally distributed between classes 2 and 3. Hispanic males, however, were primarily associated with class 2. How justice system involvement alters pathways of substance use (e.g., binge drinking, smoking marijuana) will also be presented.

This research is supported by the National Institutes of Health (NIH) – R15 grant #1R15DA032875-01
DAVID JOINER
NJ Center for Science, Technology and Mathematics

Studying the Orbits of Planets around HD 10180

Radial Velocity spectroscopy is a technique used to search for planets around other stars in the galaxy. As a planet orbits a star, it causes the star to “wobble” slightly in orbit, and these wobbles can be detected as a Doppler shift in known spectral lines. There are many sources of error in measuring a stars radial velocity curve, however, both inherent in the measurement process and in our incomplete understanding in the variable nature of many stars, leading to uncertainty in any planet prediction. We apply N-body modeling to the results of planet searches using radial velocity techniques. This can be particularly useful in identifying false positives in multi-planet systems, helping to identify false signatures that, if they were a true detection, would result in an unstable system. The system HD 10180 has been reported to have up to 9 planets, which if all planets were confirmed would make it the most populated solar system ever found, including our own. Two of the planets, HD 10180 i and HD 10180 j, however, which are disputed by some researchers, can be shown to be dynamically unstable. Additionally, we have re-calculated the radial velocity fit and confirm initial findings of this system which suggest 6 confirmed planets. The remaining debated planet, HD 10180 b, should it be confirmed by additional data, would not result in dynamic instability.

JING-CHIOU LIOU
Computer Science

The First Line of Defense in Cybersecurity and Trustworthiness of Online Services

Today, most of the computer users still rely on single-factor static authentication, which only requires a pair of username and password for the user to log into the system. However, more and more severe security breaches in each year prompt us that we need to develop a better authentication mechanism. One solution is to adopt the multi-factor authentication. However, it is financially not possible to implement multi-factor, even just two-factor, authentication for all the computer users. In this paper, we propose a single-factor dynamic authentication (SiFaDA) that relies on a virtual one-time password (VOTP) technique to achieve best security level similar to any OTP techniques for computer systems with touch screens. It requires a single-factor, but transmits an OTP produced by an agent installed in the client computer to the server for dynamic authentication. Thus, this technique will significantly increase security, same as any OTP techniques, but dramatically reduce the negative issues in deployment complexity in all multi-factor authentication techniques.

CHRISTOPHER LYNCH
Communication

Using Motivational Interview as a Pedagogical tool for Teaching and Advising

Teaching contemporary students has challenges. Students work full time and have family issues. In addition, research shows that since the 1970s time spent studying for a class outside of class time has been decreasing (Babcock and Marks, 2011). At the same time (Best, 2012 we have more students enrolled in higher education than ever before. This means much more diversity in learning styles and goals for education. It can result in conflicts between students and faculty. Students complain about too much work while faculty end up griping about the students can’t write? They don’t do the work? They don’t study for exams? This can lead to frustration for all parties involves and just doing the
minimum to get by. Another option is to repeat the material over and over again. The outcome is that some students become bored by the repetition and disengaged, learning gets sidetracked. Freire (1970) talks about meeting learners where they are. His work challenges academics to recognize they too are learners. Motivational Interviewing (Miller and Rollnick, 2002) is used by health care providers, social workers, psychologists and addictions counselors. Motivational Interviewing is a process of goal setting and uncovering roadblocks to reaching these goals. It provides an approach to learning that brings to life Freire's theory. Although the classroom professor is not a psychologist or a counselor, we can learn from this perspective. It involves meeting students where they are and asking what their goals for their education are. I have been using motivational interviewing to motivate my students to achieve better grades. It involves asking students, early in the semester, how my course will help them as they move to their futures. It involves asking them to set a goal for grades they hope to achieve. It also involves my laying expectations for them at the beginning of each semester and comparing our expectations with each other. Traditionally, the syllabus has often managed this task, but motivational interviewing engages the students as part of the process of learning rather than passive recipients of a syllabus. Each student completes a goal setting sheet that not only involves setting a goal for the semester, but also highlighting what obstacles he or she might encounter within his or her life in trying to achieve the goals. At mid semester students are asked to examine how effectively they have dealt with learning obstacles and what they might do to get back on track if the obstacles are a problem. I find that students are taking more responsibility for their learning. They are taking my classes more seriously and I find the quality of their work whether reading, written papers or studying has been enhanced. The goal setting has also provided a tool for me on a one to one basis with students while at the same time I have more of an understanding of the learning obstacles they face. I have found that there is a small minority of students not responsive to the process. I have used research by Maddi and Khoshaba (2005) that was developed for the business community on “hardiness” or resilience. Hardiness involves providing motivation by creating systems of meaning that are realistic and freeing. It can be applied to the classrooms where motivation involves seeing that the challenges of learning can themselves be learning experiences. This involves motivating students to see the importance of a commitment in the learning process as it can produce positive outcomes in their lives. They also need to realize that they can take control of learning when given tools that they recognize. My research then moves on to show the value of Appreciative Inquiry (Cockel and McArthur-Blair, 2012). This is beneficial for anyone in an advising role or teaching role. It can be used in core freshman orientation programs as it focuses not on remedial but on motivating for success. It can be used for discussion in student faculty advising sessions.

QIAN MAO
Accounting and Finance
The Day Ahead: IPO Today, Acquired Tomorrow?

While no firm will reveal its exact motivation of going public is to be taken over, neither can researchers test the intention empirically because firms either can seek potential bidders or are being sought out, we are not suggesting getting acquired is double exit firms’ motivation behind their IPOs. An important question that follows is why those double exit firms are quickly acquired after becoming public even if being taken over is not the primary motive for an IPO, what intrinsic characteristics of the double exit firms make them an attractive takeover target in the M&A market. A similar research was conducted by Reuer and Shen (2004). They compare firms with “sequential divestiture through IPOs” with “outright divestiture of private firms”, and argue IPO can ameliorate the costs due to information asymmetries.
in M&A market. As IPOs are generally treated as an independent decision, our findings of the timing of double exit incidences shed light on the possible connection between the IPO market and the M&A market. IPOs are not the final destination for entrepreneurs, top managers, and venture capitalists. We are left with the puzzle of why those firms go IPO in the first place. It would also be interesting to see whether the signals sent by IPOs have any impact of the payment methods in M&A. Investment banks play an important role in firms IPO, there may also act as merger advisors, either for target firms or acquiring firms. Our hope is that this paper will encourage a more thorough and robust line for future research.

DONALD MARKS
Advanced Studies in Psychology

Psychological Flexibility Mediates the Influence of Childhood Maltreatment on Female Aggression toward Intimate Partners

Despite considerable study (Berthelot et al., 2014; Widom, Czaja, & Dutton, 2014; White & Widom, 2003; Whitfield et al., 2003), the relationship between childhood maltreatment and aggression toward intimate partners remains poorly understood, with a particular need for additional research regarding the function of participation of women in intimate partner violence (Archer, 2002; Orcutt, Garcia, & Pickett, 2005). Gardner and Moore (2007) have developed a model for understanding the experience of clinical anger and its behavioral sequelae, including its role in relationship conflicts. These authors theorized that participation in psychological and physical aggression in intimate partner relationships, while predicted by a number of psychological variables, functions primarily as an emotion regulation strategy, as individuals employ behavioral efforts to control aversive environmental stimuli or escape from aversive relational contexts as means of avoiding or down-regulating the experience of anger. According to Gardner and Moore's anger avoidance model (AAM), history of childhood maltreatment contributes to intimate partner violence in adulthood through its influence on temperament, cognitive-emotional schemas (i.e., rule-governed behavior), general negative affect, and the experience of anger — all of which contribute to deficits in psychological flexibility (i.e., the ability to remain engaged in valued life activities even in the presence of aversive thoughts and emotions). This study of female undergraduates found that (a) the components of the AAM (temperament, schemas, negative affect, anger, and psychological flexibility) mediated the relationship between childhood maltreatment and engagement in psychological aggression (e.g., name calling, shouting) toward intimate partners, (b) the components of the AAM mediated the relationship between childhood maltreatment and engagement in physical aggression (e.g., shoving, hitting) toward intimate partners, (c) psychological flexibility and the experience of anger together accounted for the mediating effects between childhood maltreatment and psychological aggression, and (d) psychological flexibility alone accounted for the mediating effects between childhood maltreatment and physical aggression. Implications of these findings for the understanding of the relationship between early aversive histories and aggression for women in intimate relationships are explored, as are the implications for treatment of the mediating roles played by anger and psychological flexibility.
KRISTINE MIRRER
Communication, Media and Journalism

Food as an Indicator of Cultural Wisdom in Global Cinema

Food is a critical conveyor of cultural wisdom and history. Signifying religious, familial, geographic, ethnic, and cultural traditions, food links holidays and family traditions across generations and continents. The ritual of food in significant events across cultures has been captured on film. This paper will explore the representation of food in international cinema. Characters’ relationship to food in films is one area that has been explored in films from a wide variety of international settings. Scarcity or abundance of food is another theme that has been visualized on the screen across cultures. Topics as far ranging as medicine, labor, and pleasure have been explored in movies from different nations. Likewise, the relationship between food and exercise has also shared the big screen. Food in film is also a vehicle to explore gender roles, class and power, and community and belonging. Woman’s role as nurturer and food provider has frequent display in cinema. Signatures of food design and display are also used to convey directors messages regarding the nature of characters or their social status within the culture explored on screen. Individual movie directors frequently display recurrent themes regarding food in consecutive films. This aspect of auteur cinema suggests examination of the cultural influences that shaped the director to understand the cultural wisdom of food in individual films. It is apparent that within the wisdom of culture that food is a powerful connector. This research demonstrates the varied manners in which cinema has revealed this connection in multicultural cinema.

KAREN MOOSVI
Nursing

Nurse Resources and Surgical Outcomes in Elderly New Jersey Patients: The Role of Safety Net Hospitals

Hip fracture is common in older adults and often requires surgical intervention. Co-management of these patients by geriatricians and orthopedic surgeons has been linked to better outcomes; however, little is known about the allocation of nurse resources and the quality of care in these elderly patients. This study examined the allocation of nurse resources in safety net hospital and non-safety net hospitals and the association between nurse resources and outcomes in elderly patients admitted for surgical repair of hip fracture. Outcomes of interest included in-hospital mortality, length of stay(LOS), and prolonged length of stay(PLOS). This retrospective study was of all patients 65 years of age and older (n = 10,686) admitted to New Jersey acute care hospitals from January 1, 2010 to December 31, 2011 for surgical repair of hip fracture. Data were from New Jersey Department of Health and Senior Services, New Jersey Hospital Association, State Inpatient Database, American Nurses Credentialing Center and Hospital Alliance of New Jersey. Data were merged and examined using descriptive and inferential statistics. No difference was found in the allocation of nurse resources in safety net and non-safety net hospitals. Patients admitted to safety net hospitals had a 44% increase in odds of in-hospital mortality (p=0.004), 9% increase in LOS (p=0.06) and 51% increase in PLOS (p=0.041). Each additional hour of registered nurse care per patient day was associated with a 1% decrease in LOS (p=0.058) and 9% decrease in odds of PLOS (p=0.012). Magnet accreditation moderated the effect of registered nurse hours per patient day and was associated with a 53% increase in odds of PLOS (p=0.001). Hospital safety net status and availability of nurse resources are associated with the quality of care in elderly patients admitted for surgical repair of hip fracture.
Hurricane Sandy is the most recent climate event that has triggered a serious discussion on preparedness for climate change in the urban east of the United States. Sandy and the conditions under which rebuilding takes place are introducing new epistemologies and necessary changes to assumed ways of thinking about us and the environment: social, natural and built. In the process of seeking answers, many possible applications and approaches have emerged. It seems that an event of Sandy’s magnitude does produce a similar magnitude event on reflexivity. Addressing immanent change — climatic and social — has triggered a renewed consideration on strategic development that is flexible and redundant. Some of the new terminology that has emerged after Sandy is resiliency and redundancy. Both are terms widely applied within the discourse on preparedness and recuperation. This emerging discourse includes the possibility of constantly rethink and evaluate options that might otherwise be considered as failures when thinking about the multiple systems that need to be addressed before and after a climate event of Sandy’s scale. Disaster risk is now part of the required understanding towards climate change impacts. Alternatives to spatial design have forced a rethinking of what constitutes a community and the local. Adaptive strategies also need to catch up when demographic changes dramatically alter social landscapes. Still an ongoing process, Sandy has opened a space for dialogue and spatial reconsiderations for our urban mode of living in today’s changing climate. This presentation will elaborate on themes presented at the City Futures Conference in Paris, last June 2014 to provide a general framework of the social, economic, and environmental impacts of Sandy Superstorm to the US Eastern seaboard within the context of cities and environmental sustainability in order to address sustainability as a public relations strategy embedded in progressive political discourses in cities versus the actual level of implementation of sustainable practices. The presentation will also provide alternatives to water surge technologies used in different cities and critically examine current interventions to improve the deteriorated landscapes left after Sandy. Suggestions for institutional support and research as well as the discourses on climate change and political responses will provide a platform for discussion and critical analysis of the possible limitations cities and states encounter in finding forward thinking solutions. The manner in which cities, specifically New York and New Jersey address spatial justice, the distribution of environmental impacts in the protection of social and environmental resources will also be critically addressed.

**Feng Qi**

*Environmental and Sustainability Sciences*

*Influenza Transmission Modeling and Smart Phone Technologies*

Experience with past influenza epidemics have demonstrated key roles of high population density and sophisticated social contact network in amplifying transmission of such air-borne virus, especially in urban areas. Spatiotemporal epidemic models at the city scale are essential in assisting surveillance, early warning and decision making to control the amplification effect in cities during outbreaks. As influenza typically spreads via contact between infected and susceptible individuals in their overlapped activity spaces, daily mobility-contact information is an important indicator of exposure and risk of infection for individuals. Fine-scale epidemic models thus should explicitly incorporate such parameters as human space-time behavior and contact characteristics. A major difficulty, however, has been the
lack of detailed individual mobility and contact data. My previous NIH project has developed methods
and a software package to capture and model space-time activities of individuals related to influenza
transmission. My current RTR research aims at improving the previous study by integrating detailed
contact information to provide essential parameters for the development of influenza transmission
models. A smart phone application has been developed to capture proximity as well as GPS information
to model human contact characteristics. The app utilizes the built-in Bluetooth and GPS sensors to
obtain such information. The modeled human contact characteristics will be used to parameterize
individual-based influenza transmission models. This presentation reviews the current status of
influenza transmission modeling, discusses the challenges, and presents the smartphone technology
used to address these challenges.

This research was supported by the National Institutes of Health (NIH) – grant #1R03AI090465-01

LYN SCHRAER-JOINER
Music
The Concert Series for the Deaf and Radio Baton Project: Two Unique Music Projects
with Applications for the Music Classroom

The purpose of this presentation is to describe two unique music projects developed for students who
are deaf or hard of hearing. The Kean University Concert Series for the Deaf brought varied musical
experiences, emphasizing the auditory, tactile, kinesthetic, and visual modalities, to children in New
Jersey, Delaware, and New York. The purpose of the Radio Baton Project, an outgrowth of the concert
series, was to determine if the radio baton could be used as a tool for improving the ability of students
with hearing loss to maintain a steady beat. The researchers also sought to determine if the radio baton
could (a) aid students in controlling performance tempo and (b) help them to perceive and gain an
understanding of dynamics and pitch. Findings revealed that students were able to maintain a steady
beat, but that they had difficulty with melody recognition, findings that reinforced previous research
(Chen-Hafteck & Schraer-Joiner, 2011; Butler, 2004; Darrow, 1984; Jahns, 2001; Korduba, 1975;
Oxenham, 2008; Rileigh & Odom, 1972). These projects had a great impact upon all who participated.
They reinforce the importance of music for all children regardless of background and ability as well as
the significance of a multimodal approach to music education.

EVROS VASSILIOU
College of Natural, Applied and Health Sciences
Pro-Apoptotic Properties of Salicylic-Fatty Acid Conjugates

Salicylic Acid (SA) and Acetyl Salicylic Acid (ASA) are widely known for their anti-inflammatory and
analgesic properties. The analgesic and anti-inflammatory properties of SA and ASA are attributable
to their ability to interact with the cyclooxygenase enzymes (COX) and inhibit metabolism of Arachidonic
Acid (AA). Recently, SA and ASA have been recognized by a number of groups as anti-proliferative agents.
Their anti-proliferative properties are thought to be independent of AA metabolism and Prostaglandin
(PG) synthesis. A number of studies are indicating that the anti-proliferative properties of SA and ASA
are related to the transcription factors NF- B and AP1. The relevance of ASA as a putative anti-
proliferative agent has further been highlighted through clinical studies, particularly colorectal cancer
studies, in which ASA exhibits prophylactic and anti-metastatic properties. Poly Unsaturated Fatty Acids
(PUFAs) are also a class of molecules with reported therapeutic properties. AA, the omega-6
polyunsaturated fatty acid has been known for decades as the primary ligand for the COX enzymes. Only recently have other PUFAs, such as Docosahexaenoic Acid (DHA) and Eicosapentaenoic Acid (EPA), being recognized as alternative ligands to the COX enzymes. ASA has been shown to augment the formation of potent anti-inflammatory metabolites of PUFAs collectively referred to as Resolvins. In the context of the observations described above, we designed and synthesized a conjugate of SA and DHA in an effort to create a synthetic molecule that will exhibit the characteristics of these two molecules. The rationale behind our approach lies in the consideration that the concurrent intracellular presence of SA and DHA will exhibit a more potent anti-proliferative effect in the context of inhibition of intestinal cell proliferation and ultimately colorectal cancer.

MIA ZAMORA

The Generative Literature Project

The idea of a generative novel is one that can be traced to the OuliPo group (Ouvroir delittérature potentielle) in France. According to the OuliPo website, the generative writer is “un rat qui construit lui-même le labyrinthe dont il se propose de sortir.” (Trans: “A rat who builds the maze he wishes to escape.”) In this understanding of art and literature, the idea of creation, especially literary creation, is one of wordplay and gameplay. Therefore, the generative novel is, in itself, a game — one of interplay between people, cultures, and institutions. It is an open-ended enterprise which in many ways ensures new and unexpected results. In order to create a work of generative literature, there must be a creative constraint (limitation) which forces the writer to direct writing toward a particular purpose. This constraint can be based upon anything that compels the writer to generate text, but these constraints are usually one of two types: linguistic and situational. Dr. Zamora’s research will highlight new experiments in the generative literature genre as it considers the new affordances of digital writing in a networked and computational environment. In particular, it will highlight the participation of her Electronic Literature class in “The Generative Literature Project” - a crowdsourced gamified digital novel about a murder. Nine writing professors and their students—from the US, The Marshall Islands, and Puerto Rico—have completed a series of artifacts about ten “distinguished alumni” of the fictional “Theopolis College,” a highly competitive Liberal Arts College that exists in the “leafy suburb” of the fictional town of Theopolis. The artifacts created by the students and their professors can be found the clues and red herrings, motives and alibis of the suspects in the murder of Theopolis College President, Cadence MackArthur. The Project will be published by the peer reviewed scholarly journal “Hybrid Pedagogy” in fall 2015. In this research presentation, Dr. Zamora will highlight the work of her Electronic Literature students while offering a birds-eye view of the open ended electronic literary experiment. As one of the nine participating classes, her Kean students are co-authors of this generative novel and their work is an essential foundation for this avant-garde and innovative literary experiment. The presentation will include both a description of the project including phases of development and forms of collaboration (i.e. the mechanics) and a schema of the digital writing spaces generated thus far (i.e. the infrastructure). Analysis of the project will include reflection on the element of creative play as an inherent entry point in the generative literature undertaking. It will also account for the ways in which community develops around a collaborative fictional enterprise. Other topics addressed include networked character development; social media as a space of fictional creation; pedagogical approaches and challenges; and, examples of student generated character “artifacts.”
DESIGN FORUM 2015

Robert Busch School of Design

DENISE ANDERSON

Stand Out: Building Your Design Portfolio

In today’s increasingly competitive marketplace, parents and students who are identifying the right college to attend consider the ability to secure gainful employment in their chosen field of study as a critical component of their search. In the field of professional design, the portfolio is the student’s single most important means for demonstrating their talents, skills, and body of work to a potential employer or client. Despite the portfolio’s essential role, publications that offer straightforward and actionable instruction on portfolio building are few, and none of those are supported by materials that can be used by a professor in the classroom. Filling this empty space in the design publication bookshelf, Stand Out: Building Your Design Portfolio utilizes a step-by-step approach to teaching design students how to develop a unique brand, build a book of work, and find a job. Stand Out combines hands-on work exercises with a teaching guide comprised of short, easy-to-absorb chapters, in the voice of a seasoned professional with a deep understanding of the design business. Each chapter is organized to provide a clear explanation of its purpose (what the reader should expect to learn), objectives (steps the reader will need to take), and a brief narrative (how to accomplish those objectives).

ROSE GONNELLA

A New Form of Textbook: Design Fundamentals Notes on Color [Theory]

A New Form of Textbook: Design-Fundamentals Notes on Color [Theory] How to teach design fundamentals by relating to students through their own eyes AND notebook. When Pearson, a mammoth textbook publisher, approached me to write a textbook for a series on design fundamentals for freshmen and sophomore college students, my first internal reaction was to decline – no, it was to run fast in the opposite direction. There are hundreds of textbooks on design fundamentals—did the field and students need another of the same? No. And therein lies the reason for accepting to write yet another textbook on design fundamentals—with the caveat that I could “run in the opposite direction”. To test a new approach with regard to writing a text, I would be allowed complete freedom regarding the delivery of the content material. The form of delivery would be different from the texts of any existing publication. I sought to challenge the standard approach of long narrative with professional illustrations. The purpose was to test a hypothesis that fundamentals of design can be reinforced best through learning from one’s peers. The results of such an approach are meant to motivate students to actually read the textbook in order to cross reference in-class learning, and therefore boost the percentage of overall retention of course content. The project description as addressed to both the students and teachers of design: Say your worst nightmare came true and you not only missed a class in your Introduction to Color Theory course—one of the required courses for that coveted design degree—but you missed the ENTIRE SEMESTER? What would you do? Here’s what: You’d go to the coolest, funniest, smartest, most creative kid in class and borrow his or her notebook. And that notebook would look exactly like Design Fundamentals: Notes on Color [Theory]. Design Fundamentals: Notes on Color [Theory] looks and functions like a student’s sketchbook with hand-written notes and personal illustrations capturing the
key concepts and assignments taught in an intro to color course. Fun, fast-paced, and full of color, this imaginative notebook teaches in such a way that inspires as well as instructs. This isn’t required reading, it’s desired reading, and it’s one book that students will want to keep and enjoy long after they’ve mastered the fundamentals of designing with color. Most critical to the success of the book and new approach, Max Friedman, student in the RBSD, was invited to be the “note-taker” and illustrator—the “owner” of the notebook. Max signed a three-book contract with Pearson and myself. Books two (in progress) and three of the series will have a third researcher, Christopher J. Navetta, RBSD alumnus, designer, and adjunct instructor. The first book Design Fundamentals Notes on Color (Theory) is on the shelves and Max is earning a royalty—proof that we have a run-the-other-way success.

ED JOHNSTON  
3D Printing Designs

Professor Ed Johnston is a multimedia designer, artist, and educator working in a variety of contexts involving interactive design and three-dimensional digital technologies. An overarching interest in his practice involves visualizing the unseen. Professor Johnston will be presenting a variety of both his own 3D printed work and his students’ works. He will also explain different design processes that go into preparing a design for 3D printing. Professor Johnston will also discuss the future of 3D printing and the potential for cross-disciplinary collaborations.

ROBIN LANDA  
NIMBLE: Thinking Creatively in the Digital Age

Creating in the digital age presents new challenges for all designers. Employers and clients call upon creative professionals to quickly conceive and execute grand ideas and react nimblly to rapid changes in industries, technology and business sectors. Graphic designers need to be empathetic, interdisciplinary story-makers working across media. They must fully understand what each specific media channel can do and how each channel can be utilized to deliver an engaging brand experience, contributing an integral element of the brand narrative. It is essential that designers generate concepts for a campaign that take various forms related by strategy, voice and design across channels, ranging from print to social films to websites to mobile apps to web platforms. Many graphic designers, art directors and creative directors face the new challenge of creating relevant original content for brands, social causes and organizations to market online and in social media. Part of this challenge entails understanding how people behave online, become co-creators, and use technology, mobile and social media. Unique content must give people a story to tell, one that engages them enough to share online. Industrial designers need to address unexpected challenges to meet market needs. They address usability issues and generate design concepts that address social issues facing the global community. Reconsidering what functional objects are all about—whether reinventing the concept of a car, soccer ball, wheelchair or eyeglasses—requires keen imaginations that synthesize need, beauty, function, and experience. To face these new challenges, one must view a design problem with a new mind-set, cultivate one’s creative thinking and prepare one’s imagination, as well as be a design expert with additional knowledge gained by keen interest in a broad range of subjects. In the design professions (advertising design, graphic design, industrial design, and interior design), a problem is given and you have to solve it. In the digital age, rather than thinking about solving a problem, one needs to approach the design goals with an open experimental mind-set. To do this, one must learn to set aside the closed conventions of what design or advertising is supposed to be, and instead strive to understand how to
make a brand social and create content and product design that people will find engaging, relevant or beneficial. One must ask: Is the idea flexible? Is it entertaining? Is it informative? Does it have value? Will it positively impact society? Does the idea inspire content that people will share? How will the idea manifest and function for the capabilities of specific channels and platforms? The motto of this new mind-set is: Inform; entertain; be useful; do good.

**ALAN ROBBINS**  
*The Unseen Seen: Exploring the Technology of the Image*

Our remarkable eyes and visual cortex allow us to experience the vast visual world and to construct a model of it in the mind. Yet we are in fact quite limited in what we can see. Most of the universe is completely invisible to us. If we think of what exists as vibrating energies, we can only see a minuscule amount of all there is. Limitations to our ability to visually process speed, scale, distance, luminance, and other factors restrict what our eyes and brain encounter. Imagination expands this horizon by leading to evolving technologies that give us the ability to extend the limits of our vision and create images that help us understand what is out there beyond our narrow sight. The examples of this span 40,000 years of our history, from the earliest markings on stone thought to be records of the lunar phases all the way up to the new “quantum microscope” that allows us to visualize matter at the atomic level. Along the way are innovations in imaging that are commonplace to us but that were astounding leaps in our ability to see. The drawings of Galileo that challenged the orthodox view of the universe, the invention of Wilhelm Rontgen that revolutionized medicine, Eadweard Muybridge’s experiment that probed into the laws of movement, NASA’s Hubble Deep Space photo that transformed our ideas about the scope of the cosmos. These and other examples in this presentation demonstrate two things: first, the essential and expanding role of images in our understanding of the world and, second, how the exploding universe of our images has molded our sense of reality. Remarkable too is how beautiful so many of these images are, revealing the hidden structures and harmonies of a complex world. This presentation is about awe and understanding and what it means to really see the world.
M.A. HOLOCAUST AND GENOCIDE STUDIES
FACULTY PANEL

M.A. Holocaust and Genocide Studies

JUSTICE AFTER GENOCIDE

After the horror of genocide has been categorized the notion of justice still lingers. In Bangladesh and Cambodia, United Nations approved Asian tribunals will soon complete their work. In Ireland there has been a faint recognition of the horrors, and no recompense. Native-Americans still await any kind of justice, while even survivors of the Holocaust battle for possessions. So what happens in the aftermath of genocide? How, if, and when is justice ever really served?

THE IRISH FAMINE – C. Brid Nicholson

While recognition of the famine in Ireland and its impact on the Irish has been recognized, the apology was light, and blame was never admitted. More recent academic work is suggesting that the famine was actually worse than first recognized and if this is the case then is the apology the way to claim for justice?

CAMBODIA AND BANGLADESH: AFTER GENOCIDE – Sue Gronewold

In Cambodia and Bangladesh there were long delays in obtaining any kind of justice, for varied reasons in each country. In Bangladesh the genocide took place over a nine month period in 1971; in Cambodia, there were four years of state sponsored genocide from 1975-79. Tribunals are concluding in both, 40 years afterwards. What is to be done after justice is theoretically served? Can Cambodians and Bangladeshis “move on” and find some kind of closure?

NATIVE AMERICANS - Frank Esposito

Native American genocide has been going on for several centuries though it has had varied manifestations ranging from warfare, deliberate spreading of disease to sterilization of Indian women. For many Indian tribes the future is still a bleak one due to these historic injustices. Native Americans have been cast into a bleak existence, still suffering due to forced sterilizations, and the forced spread of disease. Is there any possible way of seeking compensation? Be it monetary, or legal?

THE RESPONSE OF INTERNATIONAL LAW TO THE HOLOCAUST – Keith Nunes

The Nuremberg Trials seemed to solve the issue of justice for the European conscience, ignoring the personal and material loss. What legal steps do survivors and their families have? Is justice even possible?
Assessment of Student Learning Outcomes (SLO’s) in the School of General Studies

School of General Studies Faculty

Assessment of student learning outcomes (SLO’s) in the School of General Studies at Kean University in an ongoing and import process that has been implemented and studied for the past several years. For academic year 2014-2015, SLO’s are broken into 3 categories: knowledge, values and skills. Information from the assessment process is used to determine teaching methods, materials and curriculum changes and future needs.

This work includes the contributions of the School of General Studies faculty (in alphabetical order): Amy Brady, Robin Rosen Chang, Kim Chen, Leslie DaCosta, Laura Golnabi, Lydia Kaplan, Ramaydalis Keddis, Bridget Lepore, Kathleen Lodge, Mirela Negoita, Juan Carlos Orejarena, Michael Rizza, Elizabeth Sieminski, Lisa Sisler

Presented as part of Research Days 2015 are the results of the fall 2014 assessment process for writing, speech, quantitative reasoning and critical thinking.

GES1: Writing to Communicate and Clarify Learning

Writing skills for the General Education program are assessed using the Kean University Writing Rubric. Writing skills were assessed at 3 levels, ENG103x, GE 202x, and Capstone (beginning, intermediate, advanced levels). Results of assessment show that students gain competency in writing, with the majority of students scoring at the expected level.

GES2: Communicate Effectively through Speech

GES2 was assessed at 3 levels during fall 2014. The introductory level was assessed in Comm1402, Speech as Critical Citizenship, which is a General Education course required of all students. The intermediate level was assessed in Research and Technology, GE202x, a General Education course required of all students. The advanced level was assessed in capstone courses. Assessment was completed using the Kean University Speaker Evaluation form. Results of assessment show that students gain competency in speech and presentation skills throughout the introductory and intermediate levels with more investigation and discussion needed for the capstone level.

GES3: Solve Problems using Quantitative Reasoning

GES3 was assessed at 2 levels during fall 2014. The introductory level was assessed in General Education math courses, Math 1010, Math 1016 and Math 1030, which are Foundations of Math, Statistics and Problem Solving respectively. The Intermediate level was assessed in Research and Technology, GE202x, a General Education course required of all students. Assessment was completed using the AAC&U Quantitative Literacy VALUE Rubric. Results of assessment showed that the majority of students are meeting the appropriate level on the rubric for the level of the course.
GES4: Think Critically about Concepts in Multiple Disciplines

GES4 was assessed at 2 levels during fall 2014. The intermediate level was assessed in Research and Technology, GE202x, a General Education course required of all students. The advanced level was assessed in capstone courses. Assessment was completed using the AAC&U Critical Thinking Rubric. Over 90% of students scored appropriately for the level of the course at the Intermediate level. More than 80% of students at the capstone level were assessed at a level 3 or 4, though a discussion of what is the acceptable level for a capstone student is necessary.

An Introduction to the Strategic Planning Process

Joseph Cronin

This poster highlights the importance of the strategic planning process. It is important to realize that when developing a strategic plan for your unit or division that it is a living, breathing document that should be used to chart how you want your area to grow and develop. Strategic plans are best thought of as bridge documents between your mission and vision statements. They allow you to provide a much needed linkage between what it is you do on a daily basis (your mission) and where it is that you want to grow your area or division (your vision). A structured plan allows you to be specific by defining your goals, objectives, and specific behaviors. For your plan to be effective, these three elements (goals, objectives, and specific behaviors) must be related directly to your mission statement and must be obtainable and realistic given the time-frame of your plan.

Using a Capstone Course to Assess Teaching Objectives in BA Earth Science Program: the Case of Environmental Issues Seminar (ES 4981)

Kikombo Ilunga Ngoy

Environmental Issues Seminar is a capstone course required for students who are BA majors in Earth Science in the School of Environmental and Sustainability sciences (SESS). Students explore a wide range of environmental topics by analyzing their societal as well as their environmental impacts. Results of their studies are presented in written and oral formats. Teaching objectives for this course integrate the five student learning outcomes (SLOs) in BA Earth Sciences. The SLOs dovetail with General Education and Kean University learning outcomes. To achieve these objectives two assessment tools were developed to evaluate the impact of the teaching techniques. Students were given a pre and post nine-question survey with rubrics graded from 1 to 10 to evaluate themselves. In addition to the self-evaluation, students’ term papers were graded using 9 rubrics on a scale of 1 to 5. The higher the scale number the more the students agree with the rubrics. Data have been collected since 2011 – 2012 academic year. Even though the scores vary from one rubric to another, results have been generally higher and are consistently showing that BA Earth Science is achieving its objective.
Assessment of Developmental Outcomes and Progress Through Doctoral Psychology Training

Andrew Wolanin, Donald Marks, Jennifer Block-Lerner

The Kean University Psy.D. Program in Combined School and Clinical Psychology utilizes assessment as a fundamental aspect of the program mission and training model. The outcome evaluation process acquires data from faculty, students, alumni, clinic clients, external supervisors, and graduates and incorporates both performance and observational data. Outcome measurement has been conceptualized in the context of the developmental trajectory of our students, which is based on the competencies of training outlined by the American Psychological Association (Fouad et al., 2009). Student progress is monitored in relation to expected minimum levels of performance, as well as normal developmental progression of students in the program. Academic Review Committee (ARC) evaluations are obtained twice yearly from both internal faculty members/supervisors and external externship/internship supervisors. Since the onset of the program, 1,134 responses have been collected from faculty members and external supervisors. At each evaluation period, the data are aggregated to review internal faculty ratings of students as well as external supervisor ratings of students across multiple domains related to the program’s goals, objectives, and competencies. The ARC rating system contains developmental anchors based on levels of professional development in psychology. The ARC ratings are aggregated to create a mean score for each student at each time point in the program for both internal and external ratings. Based on expected levels of professional development, a minimum score for each time period in the program was identified to determine if a student is progressing appropriately and “on track” in their training based on the goals, objectives, and competencies of the program. Outcomes are consistently assessed from multiple perspectives at each stage of training. The ARC also engages in annual program self-assessments, which include review and discussion of proximal student outcomes, distal student outcomes, admissions data, externship application and placements, internship application and match rates, and postdoctoral placements and employment rates.

Data will be presented to illustrate minimum scores identified as metrics of appropriate (“on track”) developmental progress through the Psy.D. program across a range of professional domains. In addition, data will be presented to illustrate how the “on track” bar advances as students progress through the program sequence, and how “on-track”/“off-track” status can be used as a tool to identify students requiring remediation in specific training areas.
Max Friedman was nominated separately by two of his professors for the 2015 Undergraduate Student Research award based on his participation in three research projects; his work illustrating, designing and co-authoring two books; and, his work on the “Look Who’s Getting Engaged” ad campaign for John Prendergast’s *The Enough Project*. Max has received numerous awards for his work, had a summer internship with a prestigious advertising agency in New York, and is a design assistant for Kean Cre8tive, the RBSD in-house service learning studio.

Max Friedman entered Kean University as a freshman and received the Robert Busch School of Design (RBSD) scholarship in his sophomore year, which is a full tuition scholarship—only one RBSD student receives this scholarship per year.

Professor Rose Gonnella asked Max to join her research project because she had observed his outstanding and innovative design thinking as well as his ability to draw and visualize in many different formats and media. Professor Gonnella was seeking a student who could meet the challenge of research and potentially distinguish the project. The project came about through a recommendation from Professor Robin Landa to senior acquisitions editor Nikki McDonald at Peachpit Press/ Pearson Publishers. Nikki McDonald asked Professor Gonnella to research and write a textbook series on general design fundamentals for freshman/sophomore-level art and design students. Professor Gonnella truly felt there was no need for additional conventional texts on that subject; however, in consultation with the publisher and working with Max, Professor Gonnella and Max accepted the challenge of writing and designing a textbook series on design fundamentals if they could research and explore new and alternative ways of information delivery through creative design. Their publisher agreed to give them the opportunity. Max and Professor Gonnella collaborated on two books together and now are working on a third:

*Design Fundamentals: Notes on Visual Elements and Principles of Composition*
*Design Fundamentals: Notes on Color Theory*
*Design Fundamentals: Notes on Typography*

Last semester, Max Friedman also worked on two research projects with Professor Robin Landa. Max was one of the “All-Stars”—a student team who created several projects for John Prendergast’s *The Enough Project*. The Kean University Human Rights Institute recognized Prof. Landa, Max and the other All-Star students with Human Rights awards for their work on behalf of this cause.

Max was nominated for the Young Guns worldwide competition, which recognizes the top designers under 30 years old, sponsored by the Art Directors Club, an important professional design association.
Alisha Thom has been conducting research on students with disruptive behavior and poor emotion regulation skills since her second year in the Combined School and Clinical Psychology Doctoral Program. Alisha was nominated for the 2015 Graduate Student Research award based on the extent and value of her research activities and her initiative in pursuing research projects outside course-based requirements. As an example, her presentation, along with three colleagues, in February, 2015 at the National Association of School Psychologists conference received a standing ovation from the audience.

Most recently, Alisha and her colleague Angela Almeida developed a manualized emotion regulation intervention aimed at working with elementary-aged children with externalizing behavioral issues, including inattention hyperactivity/ impulsivity, anger, and aggression. The Emotion Regulation Intervention for Children (ERIC) is a 10-15 week group-based program. The first goal of the ERIC program is to help students exhibiting disruptive behaviors in school learn about and identify emotions. ERIC also provides training in a variety of coping skills and other evidence-based practices to help students’ function more effectively when they experience unpleasant thoughts and feelings.

ERIC was piloted with elementary-aged students (2nd to 5th grade) in Irvington, an urban public school district in New Jersey. Teachers of the student participants were asked to complete the Behavior Assessment System for Children- Second Edition in order to assess behavioral changes. Findings from the study showed a significant decrease in both externalizing (e.g., hyperactivity, inattention) and internalizing (e.g., symptoms of depression and anxiety) behaviors as rated by classroom teachers over time.

Alisha has presented at multiple national conferences including: The National Association for School Psychologist Conference (NASP; 2014 and 2015), Association for Behavioral and Cognitive Therapies Conference (ABCT; 2013), and American Psychological Association Convention (APA; 2015). Alisha is a member of the Psi Chi Psychology National Honor Society and the Chi Alpha Epsilon National Honor Society. In May 2014, Alisha graduated with her Master’s degree in Educational Psychology and is currently in the process of completing her doctoral degree.

Alisha will be moving forward with the ERIC project, by continuing to implement the intervention and collect data within urban school settings. After graduating in May 2017, Alisha plans to continue working with children who exhibit disruptive behaviors in school and hopes to continue research into ERIC and work towards dissemination and publication of the ERIC manual.
STUDENT POSTER PRESENTATIONS

BIOLOGY

ALEXIS LARSON
Faculty Advisor: Nancy LaFleur

Characteristics of domesticated animals increase or decrease likeliness of potential adoption

The Humane Society has estimated an average of 6 to 8 million animals enter a shelter each year. However, only 3 to 4 million of these animals are adopted, leaving millions of adoptable pets to live out their lives in cages. My experience working in a shelter over the past three years made me want to better understand what makes a particular animal adoptable. To understand this, I will use both shelter records and a survey of potential adopters. Preliminary data from shelter records show that most people look for young pets with minimal to no health issues. Breed, color, and temperament play a very strong role in the adoption process. Data from shelter records will be compared with a brief survey I have created for potential adopters to fill out regarding the characteristics they look for most when searching through an overcrowded shelter full of potential pets. With these data, I hope to provide an idea of what can be done to increase adoption rates of our less adoptable animals in the shelter.

BUSINESS

ANDREW ARIAS, JUSTINE JOHNSTON
Faculty Advisor: Thomas Abraham

Can a business be both profitable and sustainable? A case study of GE

This poster presentation uses a case study approach to research the ability of businesses to create shared value for themselves and society. Can the giant conglomerate GE operate in a way that is socially, economically and environmentally sustainable? The success of businesses in their quest for a sustainable business model will have a profound on the quality of life for the entire planet. The method used in this research is mostly secondary data collection from online research; basically, concentrating on the annual reports and sustainability reports and shadow reporting by the media and other stakeholders. This data will be analyzed using the Global Reporting Initiative (GRI) and integrated reporting guidelines. Also, in the project we will discuss GE’s Ecoimagination program and the products/services offered and how it fits with the idea of creating shared value.

XINYI CHEN, TYRONE CARTER
Faculty Advisor: Thomas Abraham

Marketing Plan for Kean Liberty Hall Farm Mushrooms

Our goal is to construct a marketing plan for Kean Liberty Hall mushrooms, which will involve the study of sustainability and marketing. We will determine who the customers are and what their needs will be. This research will be conducted through data collection from secondary sources as well as interviews.
of Jackie Park Albaum, who is in charge of the Kean Liberty Hall Farms, and potential customers. At the end of the project, we will produce a viable marketing plan for the farm.

**G N I N A  D I A L L O ,  A N G I E  A Y O**  
Faculty Advisor: Thomas Abraham  
*Can IBM be both profitable and sustainable? : A case study*

This project uses a case study approach to research the ability of a business to be profitable for stockholders and sustainable for society. Is IBM a sustainable company? The method used in this project will be secondary data sources from the Internet. This data will be analyzed using the Global Reporting Initiative (GRI) and integrated reporting guidelines as well as business strategy concepts such as creating shared value.

**D A N I E L L E  J A C K S O N ,  K E V I N  G A L A Z I N**  
Faculty Advisor: Thomas Abraham  
*A case study of the Adidas Group and its Sustainable Practices*

The Adidas Group, a global leader in the sporting goods industry, is committed to conducting business that is socially, economically, and environmentally sustainable. Adidas is creating shared value by implementing their four pillars of sustainability strategy that puts an emphasis on people, product, planet, and partnerships. Through innovative uses of material and manufacturing techniques, Adidas is able to pursue their Design for Environment (DfE) approach which ensures extreme environmental consideration. The data will be primarily collected through analyzing annual company reports and sustainability progress reports while also observing various secondary sources. The data will be evaluated using the Global Reporting Initiative (GRI) and integrated reporting guidelines as well as business strategy concepts such as creating shared value.

**A A N C H A L  S I N G H ,  P A O L A  C U E L L A R**  
Faculty Advisor: Thomas Abraham  
*H&M- Sustainability Report*

This poster presentation shows the vision that H&M has as a sustainable company. Their vision is to run their operations in a way that is socially, economically and environmentally sustainable. The question that will be investigated in this poster will be “How does H&M manage to operate in a sustainable manner and manage to make high profits as well”? The methods used in this research are mostly online research, basically concentrating on the annual reports and sustainability reports and several articles posted on recognized sources.

**K A R I  V A L I C K A S ,  E R I C A  H A Y E S**  
Faculty Advisor: Thomas Abraham  
*Creating a business plan that provides sustainable business solutions for Groundwork Elizabeth at Liberty Hall Farm*

My partner and I are working with Groundwork Elizabeth at Liberty Hall Farm to develop a sustainable business plan for their crop waste. The main objective is to reconceive products while redefining...
productivity by reducing costs and reducing the farm’s carbon footprint. It also provides a model for local cluster development. Our plan will include products for the farmers’ market such as juice or ice pops made from all of the edible parts of the plants, or “ugly produce” that would be typically wasted. Additionally, a low-cost biochar kiln helps them to produce their own biochar, which is used to add soil fertility and sequester carbon out of the atmosphere. These two methods offer sustainable solutions to reduce their costs and carbon footprint. With the production of biochar, Groundwork Elizabeth at Liberty Hall farm has simultaneously reduced costs by lowering their fertilizer expenses and sequestered carbon dioxide into the soil, while their farmers’ markets products have increased revenue and reduced their waste. The success of businesses in their quest for a sustainable business model will have a profound on the quality of life for the entire planet. The method used in this research is mostly primary data collection from interviews with Jackie Albaum of Liberty Hall Farm.

**CHEMISTRY**

**JOSE POZO, PHILOMENA MENTA, LANE ZIERTEN**

Faculty Advisor: Matthew Mongelli

*Synthesis and characterization of symmetric and asymmetric bimetallic ruthenium (II) complexes*

Symmetric and asymmetric bimetallic ruthenium (II) complexes have been synthesized and characterized. The asymmetric complexes are of the form \([(TL)2Ru(BL)Ru(Cl)(tpy)]^3+\), where TL is the bidentate ligand 1,10-phenanthroline (phen) or 2,2’-bipyridine (bpy), tpy is the tridentate ligand 2,2’:6’,2”-terpyridine and BL is a bridging ligand 2,3-bis(2-pyridyl)pyrazine (dpp) or 2,2’bipyrimidine (bpm). The symmetric complexes are of the form \([(TL)2Ru]_2(BL)]^4+\) and \([(tpy)(Cl)Ru]_2(BL)]^2+. Changing the TL ligand on the complexes should affect the light absorbing properties of the complexes and thus affect the photodynamic ability of the complexes.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP) Program

**EIDA SALEEM**

Faculty Advisor: Yeung-gyo K. Shin

*Solar Cells*

A photoelectrochemical cell is a solar cell that produces electricity. Cheap Dye Sensitized Solar Cells are constructed conveniently in an effort to produce electricity efficiently. These cells work like photosynthesis, harvesting sunlight to create energy. A Dye Sensitized Solar Cell is comprised of thin semiconductor crystals with an ultra-thin coat of TiO2 nanoparticles. TiO2 has a relatively large band gap between Titanium 3d orbitals and Oxygen 2p orbitals. The cells are coated with a solution that contains high quantity of anthrocyanine which are mainly found in berry juices. Two electrodes are sandwiched together with the conductive sides facing each other; an electrolyte solution containing iodine is placed between these electrodes. A photon is absorbed by a dye molecule (sensitizer) for an electron to access its excited state to escape the sensitizer and diffuse through the TiO2 nano particles on the anode conductive layer. The electron performs work and enters the cathode conductive layer which is covered with graphite. The electron reduces triiodide to form Iodide ions, and travels to the activated sensitizer. It transports an electron back to the dye forming Triodide, reconstructing the ground
state dye which is ready for the next photon. Construction of the solar cells using berry juices and its performance will be presented.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP) Program

COMMUNICATION DISORDERS & DEAFNESS

CAREY ABLEDEA
Faculty Advisor: Mahchid Namazi
The Impact of Reading Expressiveness on the Listening Comprehension of Storybooks by Pre-kindergarten (ELL) Children

The purpose of this study was to determine the effect of oral reading expressiveness on the comprehension of storybooks by 4-and 5-year-old pre-kindergarten (ELL) children. Method: Four Tagalog-English speaking pre-kindergarten children (2 male, 2 female) with no history of speech, language, and hearing difficulties participated in the study. Each child listened to 1 expressive and 1 inexpressive recording of 2 similar themed stories. Story comprehension was assessed through 12 cued recall questions. Results: Previous research by Mira & Schwanenflugel (2013) indicates that expressive readings result in better comprehension of storybooks by pre-kindergarten children. Therefore, it is predicted that expressive readings will also facilitate comprehension of storybooks by pre-kindergarten (ELL) children. Conclusion: If expressive reading is shown to facilitate listening comprehension with pre-kindergarten (ELL) children it can be used as future intervention in preschool classrooms.

BRIANNA BARONE
Faculty Advisor: Jeannine Carlucci
The Planning Process of Caregiver Support Groups

There are currently 5.4 million people living with Alzheimer’s disease and an estimated one million people in the United States with aphasia (National Institute on Deafness and Other Communication Disorders, 2008; Thies, Bleiler, & Alzheimer’s Association, 2013). The people who care for a person with AD or aphasia experience high levels of stress related to emotions, nursing home placement, and end-of-life care. They also reported that the physical stress of caring for a person with AD or aphasia is high and they are at a higher risk for other chronic diseases (The National Aphasia Association, 2009). Caregiver burden and stress are significant factors in the recovery of stroke survivors and quality of life of a person with Alzheimer’s disease (Mittleman, Roth, Coon, & Haley, 2004; Rombough, Howse, & Bartfay, 2006). The purpose of this study is to identify any trends in the planning process of caregiver support groups and to identify strengths and weaknesses of these support groups. Identifying trends in this experience may provide useful information to improve the planning, running, and assessing of caregiver support groups. This ethnographic study consisted of nine participants, four stroke and five dementia caregiver support group facilitators, who were interviewed on an individual basis using interview questions created by the principal investigator. Identified trends included basing the group planning on the members’ needs, facilitator training programs, and utilizing indirect goals. Strengths of caregiver support groups included providing members with emotional support, providing members with hope, and maintaining the relationship with the members’ loved ones. Further research should be conducted with a larger sample size and to develop a group facilitator training program for stroke and aphasia caregiver support groups.
**Leetal Birger**  
Faculty Advisor: Mary Jo Santo Pietro  
*Factors Predicting Speech-Language Pathology Graduate Students’ Ability to Interpret Nonverbal Cues*

Previous studies examined the role of nonverbal communication in patients’ judgment of clinical services, perceived clinical competence of clinicians, therapy outcomes, and overall interpersonal skills. In a related study, no relationship was found between knowledge of nonverbal cues and age, coursework, or clinical experience. Because previous research analyzed general knowledge of nonverbal cues, the current study aimed to identify factors contributing to true decoding competence rather than knowledge. The current study was a “survey and test” research design that aimed to identify correlations and interactions between survey demographics and scores on the Mini Profile of Nonverbal Sensitivity (Mini-PONS) test. Participants included 59 graduate students enrolled in Speech-Language Pathology graduate programs across the nation. Selected survey questions pertained to participants’ community setting, language experience, age, graduate program, credit hours, courses completed, estimated GPA, and clinical experience. Results of the study revealed that of all the variables measured, GPA was shown to have the highest probability of determining sensitivity to nonverbal cues. Although there was no interaction between completed coursework and scores on the test, type of instruction should be further investigated to determine optimal training programs that aim at improving the ability of speech-language pathologists to interpret nonverbal communication.

**Sean Bobal**  
Faculty Advisor: Mahchid Namazi  
*The verbal effects of concussions in collegiate lacrosse players*

The present study examined the relationship between sport-related concussions (SRC) and verbal working memory (VWM) and language memory (LM) in collegiate men and women lacrosse players. Results revealed a trend towards significant differences between VWM scores; the results showed that there was a statistically significant difference in LM (p<.05) on the Recalling Sentences subtest of the CELF-5 in the cohort of athletes with two or more concussions (<1.00) than those with a zero to single concussion histories. The same group of athletes scored lower on the Following Directions subtest than those with one concussion. The implications of this study in the academic performance of athletes with 2 or more concussions will be discussed.

**Emily Carangelo**  
Faculty Advisor: Barbara Glazewski  
*Data Collection Skills of Speech-Language Pathology Graduate Students*

The purpose of this research study was to obtain information regarding the data collection skills among students in a graduate level Speech-Language Pathology program. Eight students participating in their first on-campus clinical practicum were compared to 15 students participating in their second on-campus clinical practicum. Demographic data was obtained and students were asked to collect data on a goal after viewing a five-minute video of a therapy session. Results show that students participating in their second on-campus clinical practicum collected more accurate data. Data collection is a fundamental part of the therapeutic decision making process in speech and language therapy. It’s important that students are prepared to go out into the field and collect
accurate data during therapy sessions because the field of speech pathology is dependent on evidence-based practices.

EMMA CARRILLO
Faculty Advisor: Mary Jo Santo Pietro

Training Family Members as Conversation Partners for Adults with Chronic Aphasia Using ‘Supported Conversation for Adults with Aphasia (SCA)’: A controlled trial

The aim of this study was to demonstrate the effectiveness of training family members of adults with chronic aphasia as conversation partners through the use of Supported Conversation for Adults with Aphasia (SCA). A total of nine caregivers and persons with aphasia participated in a seven-week training program in SCA led by a clinician certified in the program. The participants were divided into five dyads consisting of an adult with chronic aphasia and his/her family member or caregiver. Pre- and post-training interviews were administered and analyzed using a Measure of Skill in Providing Supported Conversation for Adults with Aphasia (M (SCA)) developed by Aura Kagan. The skills measured by (M(SCA)) included; acknowledging competence, and revealing competence by ensuring the partner with aphasia understands. Within the latter category, further measures identified “ensuring the partner with aphasia has a means of responding”, and “verifying the person with aphasia understands.” In contrast to earlier studies on professionals and volunteers, the results of the conversation partners’ use of SCA indicated minimal improvement from pre-to-post training. Each of the participants improved in just one to two of the areas measured, and only by a single increment on a scale of 0-4. The conversation partners appeared to demonstrate a resistance to change in communication styles and approaches despite a six-session training. Additionally, none of the conversation partners demonstrated use of multimodal communication techniques (i.e., writing, drawing, or communication books).

SHENE CARROLL
Faculty Advisor: Jeannine Carlucci

Facilitators and Barriers of Social Isolation in Older Adults

The purpose of this study was to identify the factors that encourage social interaction, ultimately decreasing social isolation and the factors that hinder social interaction, ultimately increasing social isolation in older adults. Research in this area is important to the field of speech-language pathology in order to identify specific causes of social isolation, create effective assessment measures, understand the importance of creating an environment for older adults to have physical, social and emotional needs met, and develop strategies for prevention and intervention. A 30-minute interview was conducted where the researcher administered a set of questionnaires to adults ages 55 and over living in southern New Jersey. Preliminary results show that having someone to talk to/confide in is the number one facilitator of social interaction and having a physical health condition (e.g. vision, hearing, ambulation difficulties) is the number one barrier of social interaction.
LAUREN CASARETTI  
Faculty Advisor: Alice Chiarello  
An Analysis of Implementing Selective Mutism Training to Future Educators  
This study looks at students attending Kean University studying Education and their knowledge of selective mutism. Selective mutism is a rare disorder that is first detected when the child enters school, and is often mistaken for shyness. It is important that future educators are aware of the characteristics of selective mutism and what they can do to ensure that their students get the help they need. The objective was to examine students’ knowledge before and after information on selective mutism was provided. Two classes at Kean University were randomly assigned to receive either a PowerPoint presentation or a handout. Each class completed a pre-assessment questionnaire, received their respective intervention, and then completed a post-assessment questionnaire. Results showed Group A had a higher increase between the pre-assessment and post-assessment mean; however, Group B had higher initial scores overall. The difference in the total means for Group A was not statistically significant, but the difference between Group B’s scores was statistically significant.

JOHANNA CHACON  
Faculty Advisor: Jeannine Carlucci  
School-based Speech-Language Pathologists’ training and preparedness in providing counseling for children with communication disorders  
The purpose of this research project was to investigate current knowledge and training, in addition to comfort levels felt amongst school-based speech-language pathologists, when providing counseling to children with communication disorders and their families. The methodology of the current study proposed a non-experimental mixed design that included a demographic data sheet in order to analyze any correlations between data analysis and results. Findings of this research indicated that half of participants surveyed reported feeling comfortable when providing counseling, however the remaining half did not. Furthermore, a large majority of participants reported high interest levels in gaining continuing education in counseling strategies as it pertains to the field of communication disorders. The lack of training found amongst the participants suggests a significant lack of training in the area of speech-language pathology, which may pose a negative threat to the effectiveness of speech and language services provided within the school setting. Keywords: school-based speech-language pathologists, counseling, education, American-Speech-Language and Hearing Association (ASHA), role of the speech-language pathologist, communication disorders

KELLENE COFFEY  
Faculty Advisor: Mahchid Namazi  
Implementing the iPad to increase communication in the elderly  
There has been limited research on why older people are not using the iPad. The purpose of this study asks the questions, “Does the implementation of an iPad into daily living of the elderly impact communication and quality of life?” Participants, age 65+ years, were recruited for four one-hour training sessions each covering a different topic once a week over one month duration. Results showed significant improvement by all participants in the areas of: confidence in relation to technology, increased efficiency, access to information, personal correspondence, communication with others, helped pursue hobbies or interests, opened or expanded friendships, and increased sense of well-
being. This study shows that the iPad has possibilities for bridging the technological communication gap between the generations and shows the need for mobile technology classes provided by community colleges and universities that meet the needs of the elderly in a relaxed and supportive environment.

**BRYAN CORONEL**  
Faculty Advisor: Mahchid Namazi, Jeannine Carlucci

*Factors that Influence Students to Pursue an Allied Health Profession as a Career*

This research was created to provide insight into the factors that deter students from allied health graduate professional preparation programs (physical therapy and occupational therapy) from choosing Speech-Language Pathology (SLP) as a professional career. An online survey was created using “Qualtrics”, a third-party survey platform, and distributed to graduate students in OT and PT departments of collegiate institutions across the United States. A total of 47 students participated in this study, 29 students from PT and 18 students from OT. Quantitative and qualitative results were gathered and analyzed. Results demonstrated that the top five factors that hindered graduate students from choosing SLP were: lack of interest in speech, lack of interest in communication disorders, emphasis on speech/language classes, type of work you would do as a SLP, and the scope of practice.

**BRITTNI DEMIZIO**  
Faculty Advisor: Alice C. Chiarello

*The Effects of Fast Mapping in Children with Cochlear Implants*

In this study, the fast mapping skills of a child implanted during the sensitive period of language acquisition was compared to a child implanted after the sensitive period of language acquisition. Fast mapping is a hypothesized process enabling children to rapidly learn new vocabulary having only brief exposure to a word and its referent. Children were observed for three sessions. During the training phase, the principal investigator determined which words were familiar and unfamiliar. During the exposure phase, the participants played briefly with objects that represented target words and selected target objects as they were named by the principal investigator. The generalization phase followed the same format as the exposure phase; however, this phase determined if the unfamiliar words were retained from previous sessions. The time allotted between the exposure phase and generalization phase was two weeks. Both children demonstrated fast mapping of unfamiliar words, although the child implanted after the sensitive period of language acquisition obtained a lower percentage score than the child implanted during the sensitive period of language acquisition. Future research in the area of fast mapping with children with cochlear implantation is warranted to achieve more definitive conclusions.

**MELISSA DE VRIES**  
Faculty Advisor: Jeannine Carlucci

*Nurses’ Perception of Communication Barriers and Facilitators in Patient Care*

In order for the Speech-Language Pathologist (SLP) to be prepared to facilitate communication, knowledge of the most common communication barriers and the types of facilitators used is essential to prepare and provide the best quality care. Nurses (RNs) in the hospital setting have a significant amount of exposure to patients and are knowledgeable of the patient’s persistent or newly acquired communication barriers. A survey was conducted in order to determine the most frequently occurring
communication barriers and facilitators within adult inpatient care from a sample of RNs within the state of New Jersey. Results indicated the most frequently occurring communication barriers were language differences, cognition, family members, and medications currently being taken. The most frequent communication facilitators used in adult patient care were family members, giving extra processing time, and using simplified language. Further implications and future research recommendations for SLPs are discussed.

**JAMIE DICE**
Faculty Advisor: Mahchid Namazi

*Accent Modification in Small Groups*

This study aimed to determine the efficacy of accent modification services in a small group, with individuals who speak different languages. Four participants attended eight 60 minute accent modification sessions, which were conducted using a phonological approach. Four target phonemes were chosen for each participant, based on her individual needs. Participants worked with partners during each session and were provided recordings for home practice. Participants improved their ability to discriminate between sounds, learned new English words, and identified words they pronounced incorrectly. Ten listeners used recordings to rate speech of participants in terms of accentedness and comprehensibility, using a Likert-type scale.

**AMANDA DORAN**
Faculty Advisor: Jeannine Carlucci

*The Relationship between Structures Physical Activities and the Ability to Follow Directions*

This study was developed to explore two objectives concerning the ability to follow directions in children ages 5; 6 through 7; 6: (1) if the enrollment in structured physical activities impacted the ability to follow directions, and (2) if there was a correlation between a determined impact and the years of experience, and/ or the variety of enrollment in structured physical activities. Structured physical activities involve constant rehearsal of motor sequences, which suggests an opportunity for advancement in the procedural memory system of athletes, enhancing their ability to follow more complex directions than their age-matched peers who are not enrolled in a program. Eighteen child participants, 1 boy and 17 girls, from two different facilities in Central New Jersey offering structured physical activity programs, and 18 parent/caregivers, one for each child participant, were recruited for participation in this study. The Following Directions subtest of the Clinical Evaluation of Language Fundamentals – 5th Edition (the CELF-5) was administered to each child participant to assess their ability to follow directions, and a parent/caregiver questionnaire was developed and completed by the 18 parents/caregivers to collect a brief case history. It was determined from the data collected that 14 out of the 18 child participants achieved scores that were above the normed data, and one child participant obtained a score that matched the normed data. A positive correlation was determined between the variety of enrollment and the ability to follow directions, and the period of enrollment and the ability to follow directions.
Ahuva Erreich
Faculty Advisor: Mary Jo Santo Pietro

How knowledgeable and comfortable do New Jersey school-based speech-language pathologists feel when treating dysphagia cases in the school setting?

The purpose of this study was to investigate how comfortable New Jersey school-based Speech-Language Pathologists (SLPs) feel when treating feeding and swallowing cases given their current skill set, and to determine whether they feel they need additional training. According to the requirements mandated by federal and NJ state laws, medically fragile students must now be treated in mainstream classrooms, and SLPs are expected to manage their cases. The current study conducted a survey of school-based clinicians based on a questionnaire created in 2011 to survey school-based SLPs in Vermont. The survey was replicated with permission from authors Hutchins, Gerety, and Mulligan. Sixty-four participants were recruited through the New Jersey Speech Language and Hearing Association website. Results revealed a variety of reported comfort levels. Notable trends included reports of low levels of supports and intervention procedures put in place by school districts. Most agreed that dysphagia management is within their scope of practice, and is their responsibility. Further research should aim to identify the comfort levels of SLPs in specific areas of feeding and swallowing disorders to identify specific areas of training that need to be emphasized.

Regina Facchino
Faculty Advisor: Barbara Glazewski

Aphasia Knowledge and Awareness in Bartenders and Servers

This study will aim to answer the following questions: Will aphasia training increase bartenders/servers’ awareness and knowledge of aphasia, will aphasia training improve bartenders/servers’ comfort and confidence levels with regard to interacting with guests who have aphasia, and will aphasia training improve bartenders/servers’ confidence levels with regard to their ability to recognize guests who have aphasia? In increasing aphasia awareness in this population, bartenders/servers may learn strategies to enhance interactions with guests who have aphasia, thus improving quality of life. The methodology of this study followed a mixed design with no control group that compared the performance of the bartenders/servers’ performance on a pre-test and post-test after training utilizing an informational aphasia video and an aphasia training PowerPoint. The brief aphasia training program increased bartenders/servers’ awareness of aphasia, increased bartenders/servers’ knowledge of aphasia, and improved bartenders/servers’ confidence levels with regard to recognizing a guest with aphasia. The training did not improve the bartenders and servers’ comfort and confidence levels with regard to interacting with guests with aphasia indicating that a more intense training program may benefit future participants.

Research Supported by: National Institutes of Health (NIH)
MICHELLE FRIED  
Faculty Advisor: Barbara Glazewski  
The Assessment of Vocal Fry in Speech-Language Pathology Graduate Students

The typical speaker utilizes three main registers in everyday voice production. Vocal Fry is a term used to describe the register containing the lowest fundamental frequency and is often classified as a clinical voice disorder because it is frequently related to abnormal laryngeal output. Recently, the habitual use of vocal fry has been described as a new vocal pattern that has crept into the speech of young adult women. This research project was undertaken in order to assess the prevalence of vocal fry in 34 female and 2 male speech-language pathology (SLP) graduate students entering their first and second year of a master’s program. Live voice samples were screened and analyzed using the Visi-Pitch tool in order to provide a quantitative measure of vocal fry exhibited in each sample. A corresponding survey was then administered to each participant and was comprised of qualitative measures via a Likert Scale in order to determine self-reported stress levels, vocal hygiene awareness/practices, graduate courses completed, and demographic information. Statistical analysis was implemented and indicated that first year students produced a voice sample containing significantly more vocal fry than in second year samples. Survey results suggested that first year students when compared with second year students appeared to partake more often in vocally abusive behaviors. Additionally, first year students were significantly less likely to have taken or be currently enrolled in the Voice Disorders course in comparison to second year SLP students. An important implication for future speech-language pathologists is to become aware of and limit their use of vocal fry in order to prevent the development of future voice disorders in addition to providing an appropriate and effective voice model to clients in therapy.

KATHRYN GARDEN  
Faculty Advisor: Barbara Glazewski  
The Reading Comprehension of Preschoolers Who Read a Book in Print vs. a Book on a Tablet

The purpose of this research study is to determine how technology, specifically stories on tablets, affects the reading comprehension of preschoolers. A large majority of the future generation, about two-thirds of American children, are leaving elementary school with significantly weak reading skills. There are two major modalities used to read in today’s society: print using a physical book and technology such as tablets, computers and smartphones. The 2013 Joan Ganz Cooney Center National Parent Survey found that 55% of children in our country have access to tablets. In today’s technologically advanced society, it is important to determine if technology can be beneficial to developing literacy skills of preschoolers. Which leads to the research question: Does an eBook on an iPad increase reading comprehension of preschoolers compared to a book in print?

JULIE GOLDBERG  
Faculty Advisor: Barbara Glazewski  
The Siblings’ Perception of the Public’s Perception of Autism

The purpose of this thesis was to identify the siblings’ perception of the public’s perception of autism. The clinical relevance to the field of Speech-Language Pathology is that the researcher identified the communication between the public and children with autism as well as the communication between the sibling and the child with autism. Twenty siblings of children with autism and 20 parents of children
with autism were interviewed. They discussed their interactions with their siblings and the interactions that their siblings with autism had with the public. The researcher found that there is no one single perspective from the opinion of the sibling about the public’s awareness of autism. This means that depending on the siblings’ opinions, some of the siblings felt that the public was more aware and understanding, while other siblings felt that the public was not educated on this subject.

**Julianne Habell**

*Faculty Advisor: Jeannine Carlucci*

**Aphasia Awareness Among Assistant Medical Staff**

Studies have shown that training programs on dementia educating assistant medical staff in nursing homes/assisted living centers have been effective and these individuals’ knowledge of dementia has increased. Twenty percent of residents in nursing homes/assisted living centers have aphasia and the assistant medical staff members working in these facilities are the main communicators with these residents. It is crucial for staff members to be informed of aphasia and effective communication strategies to use when working with these individuals to increase their quality of life and repair communication breakdown. This study evaluated the amount of knowledge 10 assistant medical staff members working in nursing homes/assisted living centers have on aphasia before and after a training course on the nature, signs and symptoms, and communication strategies to use when working with individuals with aphasia. The mixed method pre and post tests given to participants before and after the training included demographic information, basic facts about aphasia, signs and symptoms of aphasia, and communication strategies to use when working with individuals with aphasia. These pre and post test questions correlated with the information presented during the training course. Results showed that assistant medical staff members’ knowledge of aphasia increased after receiving a training program on aphasia. Participants also reported that the aphasia training program resulted in an increase in knowledge when communicating with individuals with aphasia. It is important for speech-language pathologists to utilize training programs on aphasia to educate assistant medical staff members on aphasia in all nursing homes/assisted living centers.

**Aviva Hamburger**

*Faculty Advisor: Mahchid Namazi*

**Drawing or Typing as Self Cueing for Word Retrieval in Aphasia**

Objective: To investigate if using an orthographic cueing system such as a keyboard to self-cue will facilitate more accurate verbal naming than using drawing to self-cue for people who have word retrieval difficulties as a result of having aphasia. Participants: One male and two females with aphasia. Method: This was a multiple baseline study. The participants partook in three 1-hour individual sessions. In each session participants viewed three different video clips (from TED.com) and discussed each one with the researcher. The researcher took note of word retrieval difficulties and prompted participants to use a keyboard/typing or drawing to cue word retrieval. Results: Only one participant demonstrated some progress using these techniques. The keyboard/typing was found to elicit more words. Conclusions & Implications: These techniques can also be convenient and helpful for other populations that have word finding difficulties, such as persons with Alzheimer’s Disease and Epilepsy.
**ROAIDA HAQ**  
Faculty Advisor: Mary Jo Santo Pietro  

*Is there a cognate advantage for typically developing pre-school aged Spanish speaking English-language learners?*

Cognates are words, which are phonologically similar in two languages. These words are defined as translation pairs with greater than 70% overlap on a phonologically based scale, developed by Kohnert (2004). For example, “radio” and “radio” are cognates, which have 100% phonologically similar in both languages, where “dog” and “perro” are non-cognates, which have 0% phonological overlap in both languages. This study aimed to examine whether there is an advantage to using cognates when teaching typically developing Spanish-speaking pre-school aged English-language learners (ELLs) vocabulary in English. Five Spanish-speaking preschoolers were recruited from a childcare center in New Jersey. The Expressive One Word Picture Vocabulary Test, third edition (EOWPVT-3), was administered to test the participants’ expressive vocabularies in English and the Peabody Picture Vocabulary Test, third edition (PPVT-3), was used to test their receptive vocabularies in English. A Spanish-English bilingual graduate student in Speech-Language Pathology administered both tests. Final analysis is expected to show that the use of cognates will help bilingual children with language development in both languages. In addition, it might prove helpful for monolingual speech-language pathologists to use cognates to assess children in a language that the SLPs do not know.

**BARBARA IANDORIO**  
Faculty Advisor: Mahchid Namazi  

*Communication among Twins and a Singleton*

The purpose of this study is to investigate the communication differences between twins and singletons when communicating with their caregiver. Participants will be in the age range of 2 - 4.5 years old with typical development. Both types of communication, nonverbal and verbal will be observed and video recorded. Participants will be administered the Clinical Evaluation of Language Fundamentals — Preschool 2 (CELF-P2) to establish a baseline and to rule out any suspected language delays. In addition, the parents will complete a questionnaire that is geared specifically to their child’s early language development. After obtaining the language samples, the Principal Investigator will transcribe and record the different communication markers of each child participant. The goal of this study is to establish, understand and compare the similarities and differences that arise in the interactions between the groups of children, twins and singletons, when interacting with their caregivers.

**DRUCILLA JIMENEZ**  
Faculty Advisor: Alice Chiarello  

*The Effectiveness of Spanish-English Instruction of Vocabulary on Typically-Developing Spanish-Speaking Bilinguals, Ages Three to Five Years*

This study compared the effectiveness of language of vocabulary instruction during shared storybook reading, on lexical acquisition, in typically developing DLL preschoolers. The following research question guided this study: Does English instruction enhanced with Spanish bridging yield greater results in lexical acquisition than English-only vocabulary instruction, during a storybook reading intervention, in DLLs, ages three to five years? Data was collected from 14 typically developing Spanish-English bilingual preschoolers; six males and eight females with a mean age of 52.29 months. The participants
were randomly assigned to one of two conditions: bilingual vocabulary instruction or English-only vocabulary instruction. The intervention consisted of shared storybook reading, using four children’s books. Outcome measures included expressive and receptive researcher-made measures of target vocabulary as well as a standardized measure of basic concepts in English. Data was recorded and analyzed using Independent Samples T-Tests. Results reveal that there was significant vocabulary growth between pretest and posttest scores. In addition, results indicate that bilingual vocabulary instruction results in greater lexical acquisition, when compared to vocabulary instruction in English only, though the improvement was not significant. These findings provide additional evidence that shared storybook reading, particularly when combined with Spanish, facilitates English lexical acquisition, in DLLs.

**NAILA KHATRI**

Faculty Advisor: Jessica Scheuer

*Bilingual Advantage in Children with Specific Language Impairment*

Specific Language Impairment (SLI) is a disorder characterized by deficits in language skills. However, individuals with SLI may also exhibit deficits in executive functions including working memory (e.g., Montgomery, 2003), inhibition (Spaulding, 2010), and interference control (Marton, Campanelli, Eichorn, Scheuer, & Yoon, 2014). The purpose of this study was to examine if a bilingual advantage exists in children with SLI. Bilingual advantage refers to the hypothesized benefit seen in specific cognitive skills in individuals who are bilingual. We examined if bilingual children with SLI demonstrated stronger interference control abilities than monolingual children with SLI. Participants included 4 monolingual and 4 bilingual children with SLI aged 8-11. The participants completed 3 computerized inference tasks where they were presented with lists of words and had to determine if a given word was previously included in the lists. We hypothesize bilingual participants with SLI will perform better on the presented tasks than monolingual participants with SLI.

**CAROLINE KLING**

Faculty Advisor: Mary Jo Santo Pietro

*Examining the Role of Social Workers in Case Management and Counseling for Persons with Aphasia: A Systematic Review of Related Literature*

The aim of this meta-analysis was to (1) demonstrate that treatment of persons with aphasia is affected by social workers, (2) demonstrate that social workers have limited knowledge about aphasia, (3) explore the perceptions stroke clients and their families have of social workers, and (4) provide recommendations for future training programs for social workers. This review utilized a variety of databases such as EBSCO host, ERIC and ProQuest. Key terms used in the search included “social work and aphasia,” “social work and stroke,” “social work in hospitals,” and related variations. Results of the review showed that treatment of persons with aphasia is in fact affected by social workers, particularly at hospital discharge; social workers do have limited knowledge of aphasia and are not trained effectively to communicate with clients with aphasia; and stroke clients and their families have poor perceptions of social workers. Recommendations for future training programs are made with caution because improvement would require implementing a system-wide change and shift in perspectives.
VIKTORIA KORNEEVA  
Faculty Advisor: Mahchid Namazi  
Selective attention in musically trained bilingual children

This research was guided by two questions: 1. Does exposure to early musical training enhance bilingual child’s ability to switch attention from attribute based rules to new attribute based rules? 2. Do musically trained bilingual children demonstrate ability to discriminate emotions in speech prosody of unfamiliar language better than their non-musically trained counterparts? Data was collected from nineteen Russian-English bilingual children consisting of ten girls and 9 boys with or without musical training. Two tasks were administered to each participant — Dimensional Change Card Sort Task (DCCST), and listening to the recording of the phrase “It’s nice to be outside when it’s raining” spoken by school age children in Russian, English, and Persian in three emotional inflections – sad, neutral, and happy. Results indicate that musical training significantly improves bilingual children’s ability to switch attention from task to task and their ability to discriminate extreme emotions in an unfamiliar language.

DANIEL KULIK  
Faculty Advisor: Alice Chiarello  
Speech-Language Pathologists’ Knowledge of Assessment and System-Selection for Augmentative and Alternative Communication and Autism

Objective: This study looks at the knowledge and competencies of speech-language pathologists (SLPs) with regard to the assessment of students with autism spectrum disorders (ASD) for augmentative and alternative communication (AAC). First, the study aims to determine whether or not SLPs feel competent assessing students with ASD for AAC. Additionally, the study examines which factors in the assessment process are likely to be neglected in order to determine how to better educate SLPs, thus improving outcomes for students. Two methods of SLP education, including written and video summaries of a literature, were also tested for effectiveness. Method: A sample of SLPs in Northern New Jersey working in school settings was taken and participants were randomly assigned to one of two groups. Participants completed a pre-assessment questionnaire, received their respective intervention, and completed a post-assessment questionnaire. Results: Both groups reported gains after receiving their respective interventions. However, individuals receiving the video literature review intervention experienced statistically significant gains whereas the written literature group’s gains were not statistically significant.

KRISTA LAGUARDIA  
Faculty Advisor: Mary Jo Santo Pietro  
Impact of a Yoga Communication Group on an Adult with Aphasia: A Case Study

A yoga communication group is an innovative and effective approach that promotes relaxation and increases speech output in adults with aphasia. A yoga communication group for adults with aphasia was developed during the 2014 summer semester at the Kean University Center for Communication Disorders. The group included five adult clients with severe expressive aphasia, two graduate student SLP clinicians, and a yoga instructor who was also a speech-language pathologist. During six weeks of yoga group speech therapy, the progress of one severely aphasic apraxic client in simultaneous individual therapy was carefully documented. This case study revealed a significant positive correlation
between growth in yoga relaxation skills and an increase in spontaneous utterances in individual therapy. The group was offered again during the 2014 fall semester and drew an increased enrollment. All participating clients with aphasia have reported benefits from the yoga communication group and carryover of the techniques outside of the group. Yoga practice is known to be effective for persons with conditions including anxiety, ADHD, depression, hypertension, post-stroke rehabilitation, stuttering, voice care, dysarthria and dysfluencies in Parkinson’s disease, and many more disabilities. Now, yoga incorporated with speech therapy appears beneficial for adults with aphasia.

RONALD LOVELY
Faculty Advisor: Barbara Glazeswski
Recreational Participation and Social Communication in Adults with Developmental Disorders

An investigation was conducted examining factors that facilitate, or create barriers to, recreational participation and social communication for adults with Developmental Disorders (DD). This topic of investigation is important to the field of speech-language pathology since ASHA Principle of Ethics III states: “Individuals shall honor their responsibility to the public by supporting the development of services designed to fulfill the unmet needs of the public…” The research design utilized was a non-experimental mixed method study. A thirty question survey comprised of discrete questions with corresponding response prompts linked to a Likert scale and open ended questions that required extemporaneous response probed the participants’ experiences regarding availability of recreational and social communication opportunities. The investigation found that the adult special needs social recreational group, (SNSRG), facilitated peer based social communication and provided communicative support through the modification and enhancement of the communication environment. Therefore, providing advocacy and support for Adult SNSRGs are appropriate endeavors for Speech-Language Pathologists as these programs can facilitate social communication and provide communicative support to an underserved population.

RACHEL LUDWIG
Faculty Advisor: Mahchid Namazi
Interprofessional Collaboration: What SLPs and Other Professionals Need to Know

The purpose of this study was to identify the components of successful team collaboration between speech-language pathologists (SLPs) and professionals from other disciplines. Currently, the limitations of collaborative practice and interprofessional education programs hinder the potential for optimal therapeutic outcomes. To assist in the development of effective interprofessional education programs, the following questions must be answered: What specific competencies should interprofessional programs teach and emphasize? What barriers to collaboration should be addressed? A survey was completed by 100 SLPs across various collaborative work settings. Participants provided information about teamwork experiences, including personal opinions about the knowledge, skills, and attitude competencies required for collaboration, as well as barriers to teamwork. Overall, there was much agreement about the most significant competencies for teamwork and barriers faced frequently in collaboration. The prominence of these barriers in the field today reinforces the need for adequate interprofessional education programs. To aid in the development of effective interprofessional training programs, the important competencies reported in this study may be targeted to address the challenges to successful teamwork.
**MOLLY MALAR**  
Faculty Advisor: Mahchid Namazi  

*The relationship between dynamic seating and expressive language in preschool children with a language delay*

Once children begin preschool, they are often expected to sit in a chair at a table during speech-language therapy. Prior research suggests that preschoolers with developmental disabilities demonstrate an improvement in academic performance and in-seat behavior when seated on therapy balls as opposed to regular classroom chairs. In this study, a single-subject, multiple-baseline design was used to investigate what, if any, effect sitting on a therapy ball has on the expressive language of preschool children with a language delay. The participants were three preschool children who presented with a moderate expressive language delay. Three 2-minute language samples were collected (1 narrative retell, 1 play-based, and 1 conversational) under two conditions: while the participants were seated on a chair and while they were seated on a therapy ball. Results indicate that MLU increased for all participants when seated on the ball during the narrative retell task.

**CAROLYN MASO**  
Faculty Advisor: Jeannine Carlucci  

*Bolus Trial Assessment in Neurogenic Patients: Speech-Language Pathologist Trends in Protocol*

The purpose of this study was to identify speech-language pathologists’ (SLP) preferences for the texture and order of bolus (food/liquid) trials administered to neurogenic patients during both clinical-bedside evaluation and instrumental dysphagia (swallow) assessment. Since specific preferences have not been determined for bolus administration in the neurogenic population, this study sought to provide information on current clinical practice and judgment. A non-experimental, cross-sectional study was conducted through a Qualtrics survey sent via email to members of the New Jersey Speech-Language-Hearing Association. Results indicate a significant variation among the 15 SLP participants in terms of bolus trial administration and protocol. Survey responses also indicate that clinical judgment of SLPs supersedes protocol recommendations.

**JILL MICHAEL**  
Faculty Advisor: Mary Jo Santo Pietro  

*Differential Diagnosis of Spasmodic Dysphonia and Muscle Tension Dysphonia by Speech-Language Pathology Graduate Students*

Spasmodic dysphonia (SD) and muscle tension dysphonia (MTD) are two voice disorders that are difficult to distinguish from one another due to subtle perceptual, acoustic, physiological, and laryngoscopic signs and similar patient demographics and case histories. However, the differential diagnosis is critical due to distinct differences in treatment and the disorders’ impact on the patients’ social and professional lives. Speech-language pathology graduate students were asked diagnose stroboscopic videos of SD and MTD first without any information and secondly after viewing a short research-based tutorial about SD and MTD perceptual and stroboscopic signs. Results showed that although there was some significant improvement among some participants, more in-depth training is needed to equip speech-language pathology graduate students with the skills necessary to make a differential diagnosis between the disorders.
ADRIANA MILLAN  
Faculty Advisor: Mahchid Namazi  
Gender Differences: Communication Breakdown and Online Communication  

Different groups of people are successfully engaging in online communication and have been noted to have independently reached communicative competence within this communication mode. Previous research on online communication has looked into the areas of language form and language content, but not within the area of language use. Online communication has also been observed to be its own unique communication mode with specific factors governing its use. Prior studies also yielded that males and females act in accordance to their gender roles within online communication. Thus, the current study investigated the differences between genders in regards to the repair in communication breakdown within online communication.

MEGAN PAPANDREA  
Faculty Advisor: Mahchid Namazi  
Manual Sign (MS) Versus Speech-Generating Device (SGD) and the Influence of Expressive Language for Children with Down Syndrome (DS)  

This study explores the expressive language for children with Down syndrome (DS) through use of augmentative and alternative communication (AAC). Specifically, this study considers the use of speech-generating devices (SGD) (e.g. iPad application) versus the use of manual signing (MS) as communicative modalities of AAC. The purpose of this study was to determine if a child would use words more functionally and/or with greater frequency when taught with SGD or MS, and if he would develop a preference for one method of AAC over the other. With this knowledge base, different methods of AAC can be implemented earlier and help provide young children with DS alternative ways for communication. This could help for more effective communication and increased expressive vocabularies for young children with DS. The study conducted was a single-subject, within-subject, experimental study with a withdrawal design. This study sought to teach five new words in each modality (SGD and MS) to two four-year old males with a diagnosis of DS. The study indicated that each participant was able to acquire some use of both modalities, but had a clear preferred method of communication. The results suggest that children with DS can learn words more functionally or with greater frequency from either method, depending on a variety of factors including personal preference. These results show that SGD and MS are effective methods of AAC for young children with DS.

LIA PAZUELO  
Faculty Advisor: Mahchid Namazi  
The utility of iPad apps in the treatment of social communication deficits in children with Autism  

New technologies such as the iPad are revolutionizing visual communication tools for children with Autism. One goal of Ipad’s apps for children with Autism is to teach various social communication skills, however there are no efficacy studies that have systematically investigated the effectiveness of the iPad apps for improving these skills. The goal of the current project was to study the effects of using three iPad apps as means of improving social communication skills in two children with Autism, following an 8-week intervention program. Pre and post-intervention data of the children’s use of the targeted social communication skills (communicative initiations, eye gaze, and number of appropriate
turn taking) was collected in two, 10 minute intervals as they interacted with an adult and during a game with a peer. An increase in socially appropriate communication was observed. This exploratory study suggests that these iPad’s apps: “Face-cards C with iGaze” (version 2.0), “Look in my eyes”, and “Stories 2 learn” implemented in a structured and meaningful way, by a skilled clinician, can improve social skills in children with Autism.

PAMELA WELCH-REINOSO
Faculty Advisor: Mary Jo Santopietro

Review and Evaluation of Social Media Resources for People with Aphasia and Their Caregivers

Aphasia has a profound effect on the daily social interaction of those suffering from it and their caregivers; many studies have shown its socially isolating effects. Support groups for this population are scarce and require financial and travel resources. In consideration of those challenges, the aim of this research was to determine what online support groups were available to people with aphasia and their caregivers, how often those online resources were used and by whom. Internet search engines were used to find online social support groups and forums that targeted people with aphasia or stroke survivors. Membership, number of posts and comments were tracked for a convenience sample. Content analysis was conducted for public aphasia specific Face Book groups. This study found only a very small percentage of the population of people with aphasia was accessing online social media sites. Stroke specific groups had very little discussion of language challenges and addressed more general challenges of daily life. Since content analysis was limited to public groups, more study is suggested on discussion topics among this population. Further, no surveys were done to determine if this population feels their quality of life has been improved by the use of social media. More research into social support for people with aphasia through online social media is recommended.

KARLA ESTRADA SABORIO
Faculty Advisor: Jeannine Carlucci

Criteria Used by Monolingual English-speaking Speech-Language Pathologists when Referring Bilingual Students for Speech-Language Services

The purpose of this study was to collect information about the criteria utilized by monolingual English-speaking speech language pathologists (SLPs) when referring bilingual students for a speech-language evaluation. This study sought to identify the barriers and facilitators that these clinicians experience during the referral process. A non-experimental study was conducted through an online Qualtrics survey sent via email to members of the New Jersey Speech-Language Specialists (SLSs). Results indicate that participants refer students to bilingual clinicians or assess them with a bilingual individual to ensure appropriate provision of services. The reduced amount of bilingual clinicians to assess students was considered as a significant barrier. Having more access to bilingual clinicians was considered as a significant facilitator. Based on this study, increase in training about dialectal differences and assessment protocols when assessing bilingual students might be a suitable strategy to ensure high-quality services in this field.
SUSAN SCARPA
Faculty Advisor: Alice Chiarello

Specific Social Skills Parents Deem Important For Children with Autism

Social skills deficits in children ranging from elementary through high school were examined to determine relative importance in children of three different age groups based on the perceptions of the children’s parents. The participants were parents of children who receive special services in school. Five parents completed the study, zero from the preschool group, one from the elementary school age group and four from the middle school and high school age group. Parents ranked each social skill using a Likert Scale based on how important/unimportant it was to improve that behavior. The results revealed that the overall averages of each social skill did not justify any significant differences among the social skills deficits of each age group, however when individual skills were examined further, the deficits relating to conversational skills were important to both groups and tended to be more important for parents of children in the middle school and high school age group who rated these skills as extremely important in contrast with the parents of the elementary school group who rated them as important. All of the parent(s) in both groups reported that their children have had opportunities to generalize social skills learned at home and in the community. The results of the study indicated that those social skills deficits deemed to be most important to parents of elementary school children and the middle school and beyond group revolve around conversational skills. Parents of the elementary school group gave many of these skills a rating of important and parents of the middle school and beyond group rated many of them as extremely important. With the rise of autism and increased need for social skills training programs, continued and extensive research in this area is warranted. Keywords: Autism spectrum disorder (ASD), Asperger’s Disorder, Pragmatic Language.

ROBYN SOMERS
Faculty Advisor: Mary Jo Santo Pietro

Does the Choice of Print Font Affect Reading Comprehension in Adults with Aphasia?

Conventional text presentation styles for persons with aphasia include simple sans serif fonts, spacing modifications and picture inclusion to aid in comprehension. Recent studies have shown that use of a more visually complex Monotype Corsiva font has improved reading comprehension in dyslexic teens more than a simpler Ariel font (French, Blood, Bright, Futak, Grohmann, Hasthorpe, … & Tabor, 2013). This study presented portions of the reading comprehension subtests from four commonly used aphasia diagnostic tests in both the original font used (Ariel and Times New Roman) and in Monotype Corsiva. Ten adults with a diagnosis of aphasia completed a pretest questionnaire to gather personal attributes, and initially answered 20 reading comprehension questions randomly assigned in either original or experimental font, in version A or B. One week later the same participants completed 20 different reading comprehension questions in the “untested” font and version, and a posttest questionnaire to gather data on their testing experience and font preference. All spacing between letters, words, and lines of text remained constant when presenting items in the experimental font, isolating the font style as the dependent variable. The response time for answering the 20 comprehension questions was recorded. Posttest questionnaire “likeability” results revealed 70% of participants reported the original font easier to read; 50% stated they preferred the original font; and 20% believed they scored higher on the original font test version. However, when using the experimental font, participants’ test scores improved overall by 7.8%; overall response time decreased by 4.2%; and 70% of participants achieved higher scores, demonstrating a 15.2% increase in reading comprehension. A possible explanation for these results is
that slightly harder-to-read fonts (such as Monotype Corsiva) require additional cognitive processing that increases the retention of material read by adults with aphasia.

**JESSI STEINBERG**  
Faculty Advisor: Mahchid Namazi  
*The Effects of a Concussion Video and the Likelihood that Male Lacrosse Players will Report Concussion-like Symptoms*

Concussions have been a long-standing debate for all different sports at all different levels. Recently, the crippling and detrimental effects of concussion on individuals later in life have prompted the spiral of concussion education and concussion mandates. In the NCAA, although there is a mandate in play that requires concussion education to athletes, there is not specific way to introduce it. On top of that, it is up to the athlete in majority of cases to report concussion symptoms and thus follow the strict protocols in place. However, many athletes don’t report symptoms in fear that they will miss out. What they don’t fear, is the life they will live if they continue to play despite concussion symptoms. How can individual athletes feel compelled to report symptoms? Specifically in men’s lacrosse, does seeing a video of one recovering from a concussion increase the likelihood that they will report concussion symptoms? And does the varying level of play (DI, Ivy-League, Professional), relationship status, age, past education, number of concussions have an effect on whether or not they will return to play?

**MARIELLA STERLACCI**  
Faculty Advisor: Alice Chiarello  
*Determining the Influences of Social Story Presentation for Individuals with Developmental Delays*

Social Stories were developed by Gray (1993) to accurately describe a situation, skill or concept, which serve as a technique to facilitate social skills. A study by Flores, et al., (2012) found that employing the iPad to teach a specific skill garnered positive results in communication. Research determining the influences of Social Story presentation for individuals with Autism Spectrum Disorder (ASD) will provide benefits to those individuals and to speech-language pathologists in facilitating positive social behavior. Therefore, the purpose of this study was to determine the most effective learning technique for teaching Social Stories, specifically greetings, to individuals with developmental disabilities. The design of this study was an in-between group, pre-assessment, post-assessment randomized quasi-experimental design. Participants were recruited via a flyer and obtained by a sample of convenience. The study aimed to measure if a Social Story about greetings presented on an iPad would influence an increase in pragmatics in young adults with Autism spectrum disorder (ASD). Results of the study indicated that both the control and experimental groups exhibited an increase in appropriate greeting behaviors and a decrease in inappropriate greeting behaviors. However, the experimental group, who received the Social Story on the iPad, demonstrated maintenance of the appropriate social skills over time. Despite the lack of statistical significance in the results, qualitative findings displayed higher levels of engagement due to visual stimulation to those in the experimental group who were presented with the Social Story on the iPad.
MELISSA TINAPHONG  
Faculty Advisor: Barbara Glazewski  
*The Relationship between Scoliosis and Dysphagia*

Speech-language pathologists play a significant and active role in a constantly evolving dynamic field, where they treat a broad range of speech, language, voice, feeding, and swallowing disorders. Focusing on the feeding and swallowing aspect, what happens when a patient presents with comorbidities, such as scoliosis (a spinal disorder) and dysphagia (a swallowing disorder?) Both disorders are widespread and have high incidence rates in terms of assessment and management, yet the relationship between the two is sparse in the literature. The following study has been conducted to explore the relationship between scoliosis and dysphagia, which could provide information regarding awareness, repercussions, current practices, and available modes of treatment, thereby adding to the knowledge base of the field of speech-language pathology.

BRITTANI TOMA  
Faculty Advisor: Jeannine Carlucci  
*Early Childhood Educators’ Knowledge and Awareness of the Developmental Sequence in Phonological Awareness*

This study aimed to determine whether or not early childhood educators were able to successfully place the sequence of phonological awareness into its correct order of development. With this knowledge base, early detection may be established and children with phonological delays will receive proper assistance, provided by the classroom teacher or speech-language pathologist. With early intervention, children will have a better chance of obtaining the intervention help they need to prevent future reading disorder/delays. The study performed was a non-experimental mixed-methods cross-sectional survey research design, where the participants were assessed based on their performance on the survey. The survey was distributed to 10 early childhood educators including both teachers and teachers’ aides. This study did not result in statistically significant data given the limited amount of participants involved in the study. However, the results did show a clear impediment in the extent to which early childhood educators are taught phonological awareness.

JILLIAN UTTER  
Faculty Advisor: Mahchid Namazi  
*Actions Speak Louder Than Words: Dance and Movement in Children’s Story Retelling*

A study of the effectiveness of pairing dance and movement with story presentation in children with and without language impairments was conducted to determine the efficacy of the holistic approach and add to the dismal body of research on the incorporation of dance into the field of speech-language pathology. Two participants, one with and one without a language learning difficulty participated in this research study. Participants were tested with the Clinical Evaluation of Language Fundamentals-4th Edition (CELF-4) to determine the absence or presence of a language learning impairment and determine a baseline measure of language functioning. Each participant was presented two stories from the “Frog, Where Are you?” series by Mercer Mayer; one with the visual of dance and movement added to the story and the other with just the primary investigator mouthing the words to the story. Story retelling were then recorded and analyzed with SALT software to determine whether the dance and movement facilitated the retelling of more complex stories, as measured by the number of words used.
Results indicated that dance and movement incorporated into story retelling tasks did not increase the number of words used by children in the study. However, results did suggest that dance and movement aided the use of more specific words, increased MLU in words and morphemes, and decreased the number of mazes and word-level errors produced by the participant who presented with a language learning difficulty. Keywords: dance, movement, language learning difficulties, story retelling

EMILY WALSH
Faculty Advisor: Barbara Glazewski
Understanding Graduate Students’ Views of Interprofessional Education

The field of Speech-Language Pathology has progressively shifted from one of independence to one of a team. In order to be responsive to current healthcare and educational reforms, the implementation of interprofessional education (IPE) is necessary. The views of current Speech-Language Pathology graduate students regarding interprofessional education were obtained via an anonymous online survey hosted by Qualtrics. A total of 69 students participated in this non-experimental descriptive cross-sectional survey. Students indicated they believed IPE was necessary to facilitate the development of effective speech-language pathologists. Students also identified clinical experiences, service-learning, cultural opportunity, didactic seminars, electronic simulation, and reflection as necessary components of an IPE program. Of the IPE components, students selected clinical experiences, service-learning, cultural opportunity, didactic seminars, and reflection as components they believe would benefit their own education. Components involving field experience were ranked as more important than components that do not. The findings suggest the implementation of IPE within the educational field of Speech-Language Pathology is necessary.

LINDSEY WATTS
Faculty Advisor: Jeannine Carlucci
The Use of Technology by Elementary School Teachers

Mainstream technology is not only playing an increasingly dominant role in society but also throughout educational practices. The purpose of this research project was to analyze current trends in technology use among teachers in an elementary school. By analyzing technology use across grade levels, speech-language pathologists may more effectively consult teachers and more successfully provide collaboratively planned speech-language services inside and outside the classroom. Thirty-two elementary school teachers from a public suburban school district in central New Jersey ranging in age from 20 to 55+ participated. The study used a survey in order to explore how participants utilized technologies within their classroom practices as well as how they evaluated the effectiveness of their technology use. Results of the survey revealed teachers utilized various technologies within their classroom practices, especially during literacy related activities. Technologies are used most frequently to personalize learning experiences and as reinforcement and motivation, and participants strongly agree they notice a difference in teaching outcomes/carryover by using technology. Furthermore, after implementation of technology, more than half of participants evaluated the effectiveness. Effectiveness measures included observation, student feedback, appropriate content, ease of use, student engagement/motivation and/or previewing the apps. Participants ranked recommendations from colleagues as the most used procedure to find apps, followed by searching the app store, and utilizing online resources. Results of this study suggest teachers have already begun integrating technology into the classroom. Because general education teachers are primarily responsible for student curriculum
and instruction, it is essential that speech-language pathologists and teachers work together in order to support an ongoing vision for educational technology practices.

Caitlin Wescott
Faculty Advisor: Alice Chiarello
Communication Training For Co-workers of Individuals with Developmental Disabilities in the Workplace

Individuals with developmental disabilities frequently possess complex communication needs, such as difficulty understanding normal social cues, expressing their own emotions, and socializing with others due to deficits in social skills. Communication impairments are often the most common and influential barriers of employment. As a result, adults with developmental disabilities have difficulty maintaining employment and need consistent communication supports within the workplace to assist with job tasks and interactions with community members. Co-workers who are non-disabled are often the primary communication partners and often do not receive formal training regarding how to effectively communicate with their disabled coworkers. This quasi-experimental research design investigated the effectiveness of communication training for coworkers of employees who were developmentally disabled. Intervention was implemented in the form of 10 minute PowerPoint presentation with the opportunity for a question and answering period or an informational handout only, along with a question and answer period. Eighteen employees volunteered for this study and were randomly divided into two groups, Group A and Group B. Group A received a formal intervention with a PowerPoint presentation and informational handout; while Group B received an informational handout only. Pre/posttest questionnaires were administered to the participants and their scores were analyzed and compared. Results indicated statistically significant increases of scores for both methods of intervention, however; Group B, who received the informational handout and question and answer period, yielded greater increases in pre and post test scores. Implications for practice are discussed.

Alexandria Zilz
Faculty Advisor: Alice C. Chiarello
The Efficacy of Group versus Individualized Therapy for Clients with Neurogenic Communication Disorders

Group therapy has become an increasingly popular approach for individuals with aphasia and neurogenic communication disorders. There is limited research determining if group therapy or individual therapy is more effective; therefore, the aim of this retrospective study was to determine which approach resulted in greater linguistic progress. This study contained three participants and the researcher analyzed three previously recorded individual and group therapy sessions and documented the number of times discourse was initiated, percentage of CIUs, and reviewed the chart to see if the semester goals were achieved. Results depicted that initiation of discourse and the percentage of correct information units (CIUs) were slightly greater in a group therapy environment. The results of this study also suggest that both an individual therapy regimen and a group therapy regimen yields linguistic improvements and are an effective approach.
COMMUNICATION STUDIES

LATOYA HARTE
Faculty Advisor: Dr. Christopher Lynch

Stryker Corporation

Stryker Corporation symbolizes strong leadership as it relates to their corporate culture and the overall success of the organization. Stryker’s strong leadership connects their possibility to successfully accomplish their goals; it’s important for a communication scholar to have similar qualities that consist of a leader’s ability to think critically, explore intellectual curiosity, and problem-solve. I decided to use the cultural approach that recognizes an organization’s unique sense of place, including metaphors, heroes, performances, stories, and values. As a result, I was able to determine Stryker’s ability to maintain and sustain success over the years. Stryker has a strong culture that consists of defined strategic management combined with the synchronized efforts of their employees. Stryker’s culture consists of leadership that requires accepting challenges and having the self-confidence to implement changed vision.

COMPUTER SCIENCE

SHIREESHA BHETHI, YULIA ROSSIKOVA
Faculty Advisor: Juan J. Li

A comparison of two prediction methods: K - Nearest Neighbors and The Circle of Neighbors

We propose a new method of simple prediction, called The Circle of Neighbors. We are planning to prove that this method is more accurate and stable than the method of K-Nearest neighbors (NN) with which we will compare by estimating prediction errors of both. We are planning to build our simulations on different values of K for NN and various R (the radius of the Circle). We will use the training set of 100 sentences in English, which length and frequency are known. We will translate them into three foreign languages: Yoruba, Russian and Telugu using Google Translate and evaluate the quality of this translation by our own expertise. The scale of translation correctness is as follows: 0 - almost incorrect; 1 - partially correct; 2 - completely correct. Following, we will apply both methods and compare their results. We will use uniform distributions of lengths and frequencies.

ALEXANDRA BORRERO, DUVAN CARMONA, LUIS LUNA
Faculty Advisor: Malcolm A. Wabara

I.R.T. “Iris Recognition Technology”

The project I.R.T (Iris Recognition Technology) is an image/pattern recognition application that will scan a specific image, and then deploy digital information to the user’s computer screen, mobile device or wearable. The information will be secure, requiring the user to enter a passcode in order to access it. Digital information, including the scanned image (the iris) will be designed and edited in Adobe Photoshop, and the I.R.T application will be developed using Metaio Creator Augmented Reality (AR) software, and JavaScript. AR is the basis of I.R.T., which is an important asset for gaining access to
digital information without the use of computer input peripherals. The information can be stored online on a server or locally on a hard drive. I.R.T will improve accessibility of information and enhance computer security for facilities that require a more sophisticated and an extra level of authentication.

**ROGER BURGOS**  
Faculty Advisor: Juan J Li  
*A case study of a precision system requirement specification tool*  
Because of its unambiguous precision, formal specification is critical to correcting the design and implementation of a system. One of Kean’s other team research members constructed a tool to help with writing and understanding formal specifications. The research that I will do is to create a case study of using the tool and to validate its effectiveness of the tool. Pointing out areas for improvement to this tool and identifying new research topics related to requirement specification improvement is the goal of this research project.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP)

**STEPHANIE EORDANIDIS**  
Faculty Advisor: Carolee Stewart-Gardiner  
*The Role of Story in Games to Teach Computer Science Concepts to Middle School Girls*  
Computer science concepts, principles, and logical thinking are becoming more prevalent in our everyday lives. There is a growing need for the youth of today to become more interested and aware of this, and begin adapting to this change by learning to think more like a computer scientist. What better way to do this than through the use of games. This study is part of a larger research endeavor funded by the NSF DRL-AISL research Grant (Award Number:1421806), and focuses on how to teach computer science concepts to middle school aged females specifically with the use of story in educational computer science games. We aim to discover if story in educational CS games are a help or hindrance in either appealing to middle school aged girls or teaching them computer science and computational thinking. To accomplish our goal, we began by researching, testing, and documenting existing computer science and educational games of both digital and analog format. The data we gathered from this was then used to narrow down and determine which games should be used in the next stage of the research, which were the focus groups. We held several focus groups with middle school aged girls to determine what game features and concepts they found interesting or enjoyable, along with other information such as their interests, favorite television shows, and books. The information gathered from the focus groups will be used to design and create our games at a later date as stated above.

Research Supported by: National Science Foundation (NSF)

**JOSEPH GALINDO, JEREMY MCALLISTER**  
Faculty Advisor: Patricia Morreale  
*Digital Multimedia Design for Broadening Participation and Access to Historical Archives*  
The Department of Computer Science has designed a digital multimedia repository to visually present a collection of more than 800 World War II-era letters from Kean students serving in the war. The content included in the archive is grouped into three media types: a static text transcription of the original letters,
a collection of image scans of the original documents, and an interactive map of author paths based on their correspondence. The research goal was to design an appropriate contextual interface that presents the data in an intuitive, accessible, and engaging way for the average user with appropriate historical and geographical context. Research obstacles included incomplete portions of the dataset. Unknown authors, partial dates, and location approximations were common occurrences when making the translation from data set to database implementation. The research contributions of this work include a natural language search function, a timeline which provides historical and geographical context interleaved, and exposition of individual WWII experiences to a worldwide community. This research is unique in that the interface development was completed through close collaboration with the end users. We believe that this project will serve as a model for user interface designers who design for the “everyman”. This project answers the unique challenge of showcasing a variety of media in an easy to grasp form.

MYLES MCHUGH, PETER ABBATE, IVAN MAZO
Faculty Advisor: Juan J. Li 

Notification Service Attack Detection and Shielding (NSADS)

Most social networks, such as Facebook and Twitter, provide notification of events or news, a popular application with high volume of users. These notification services alert large communities of important or emergency events in a timely manner. Intrusion against notification services uses attacks to break into or to bring down the service that could impact a large number of users. As an initial stage of the research to prevent intrusions to such critical notification services, we propose to study protections from one type of intrusions, a Denial of Service (DoS) attack that slows down or chokes the notification service. Notification services are especially vulnerable to DoS attacks due to their sensitivity to latency. The proposed approach will inject a very small number of test notifications into the service at various load profiles to detect performance anomalies.

Research Supported by: Kean University’s Students Partnering with Faculty (SPF), Summer Research Program and the National Science Foundation (NSF)

JEREMY MCALLISTER, THEJASRI DOWLURI, SHRUTI MISHRA
Faculty Advisor: Patricia Morreale

Turning leaf: eco-visualization for mobile user engagement

Awareness of environmental trends and global warming is widespread, but personal knowledge of energy consumption is not provided in real-time or in an actionable manner to individual consumers. Using recent work in eco-visualization, an innovative mobile application prototype has been developed, depicted with a turning leaf. The illustration of a household’s electricity use in a mobile hand-held device is designed to improve awareness while encouraging personal conservation. Additional user motivation may be present, with the turning leaf symbolizing turning over a new leaf or encouraging positive social behaviors. The mobile application is illustrated, with an analysis of the motivation and behavior which would be expected from energy-aware users. To support the extension of electricity monitoring to the mobile app market, persuasive design models were created to target major factors which would appeal to consumers, such as saving money and environmental impact. The models were shared with a sample population to determine the probability of mobile app adoption by consumers, anticipated usage patterns, interface usage rankings, and motivations.

Research Supported by: Kean University’s Students Partnering with Faculty (SPF), Summer Research Program
GERMAN MONTENEGRO
Faculty Advisors: Juan J. Li and Patricia Morreale
Distribute Software Product Line (DSPL)

Software systems are pervasive in and critical to our society, and will become more so. Organizations that produce complex software systems today use teams that are dispersed and often widely separated by geography, culture, language, skills, and time zones. The reason for the distributed development comes from the false perception that outsourcing reduces cost. Distributed development in fact imposes challenges to the development productivity and quality. Many companies struggle with distributed development and find that it does not provide them with the gains they expected. One reason is that few software engineering researchers have the chance to observe and experiment with distributed software projects. A second reason is that few software engineering students have the opportunity to participate in distributed software development and to learn how to cope with the problems it brings. As a result, companies must create their own training programs and conduct their own experiments to find what distributed processes, methods, and tools work for them optimally. We are not proposing to get rid of distributed development and replace it with traditional one-site development as we understand the benefits of distributed development, such as the diverse talents it can exploit, the ability to provide various product versions to accommodate different culture, languages, and skills. We propose to improve the distributed development processes and to educate students to be ready for real world software development. Kean University’s multiple-campus setting provides a unique environment for conducting this research of distributed software development.

Research Supported by: National Science Foundation (NSF) and Louis Stokes Alliance for Minority Participation (LSAMP)

DANIEL PAREJA, ANTONIO FERNÁNDEZ-ANTA (IMDEA NETWORKS, SPAIN), CHRYSSIS GEORGIOU (UNIV. OF CYPRUS)
Faculty Advisor: Miguel A. Mosteiro
Algorithmic Mechanisms for Reliable Internet-based Task Computing under Collusion

We consider a computational system in which a master processor assigns a task for execution to workers that may collude. We model the workers’ decision of whether to compute the task or cheat the master to save the computation cost as a game among workers, making the assumption that they are rational in a game-theoretic sense. We identify analytically the parameter conditions for a unique Nash Equilibrium where the master obtains the correct result while optimizing its utility. Aiming to attain better reliability-profit trade-offs, we evaluate experimentally mixed equilibria. For a wide range of parameter values that may be used in practice, our simulations show that, in fact, both master and workers are better off using a pure equilibrium where no worker cheats, even under collusion, and even for colluding behaviors that involve deviating from the game.

YULIA ROSSIKOVA
Faculty Advisor: Jing-Chiou Liou
Kean University Online Training and Examination System

As a part of our Graduate CAPSTONE project we are building a Kean University Online Training and Examination System that might change the way Computer Science students at Kean University are getting essential programming skills and making progress toward their breaking through into IT Industry. Our main goal is to ease the first touch of Java Language for them and potentially increase
the scope of our project to cover more advances in Computer Science disciplines. The key point of our system is the possibility of taking practice quizzes and exams, including the questions, that were used as real questions for exams for the previous years and allowing our students to get familiar with the key language constructs in a sort of game when no one judges how well they are doing, but instead their faculty motivates them to practice this way even more.

**YULIA ROSSIKOVA, PRUDENCE W. H. WONG (UNIV. OF LIVERPOOL, UK.)**

Faculty Advisor: Miguel A. Mosteiro

*Station Assignment with Reallocation*

We study a dynamic allocation problem that arises in various scenarios where mobile clients joining and leaving the system have to communicate with static stations via radio transmissions. Restrictions are a maximum delay (or laxity) between consecutive client transmissions and a maximum bandwidth that a station can share among its clients. We study the problem of assigning clients to stations so that every client transmits to some station, satisfying those restrictions. We consider reallocation algorithms, where clients are revealed at its arrival time, the departure time is unknown until they leave, and clients may be reallocated to another station, but at a cost proportional to the reciprocal of the client’s laxity. We present negative results for related previous protocols that motivate the study; we introduce new protocols that expound trade-offs between station usage and reallocation cost; we determine experimentally a classification of the clients that best balances those orthogonal goals; we prove theoretically bounds on our performance metrics; and we show through simulations that, for realistic scenarios, our protocols behave even better than our theoretical guarantees.

Research Supported by: National Science Foundation (NSF)

**BRANY SUERO, HENRY CHOQUE**

Faculty Advisor: Ching-Yu Huang

*Identify the Relationship between Geotagged Images and Facilities*

The research goal is to develop an algorithm that can identify the relationship between geotagged images and facilities. In order to test the method, many geotagged images will be taken at Kean’s campus, and campus buildings GPS coordinates will be derived by Google Map. This research will calculate the relationship between the polygon points of buildings and the geo-information on images, and then determine whether the building could be shown on the images or not.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP)

**JASIYA TARIQ, JOHN KOLIBAS, JESSE BENJAMIN**

Faculty Advisor: Malcolm A. Wabara

*Robot’s Navigation and Sensor System for the Blind*

Our goal is to build a robot that can serve as a guide for individuals who are blind. It is able to guide people in the dark and recognize obstructions in the surrounding environment. The robot can also be used as a cleaning device that is able to sweep any path in which it traverses. This unit will serve as a valuable assistant as robots will have a much greater presence as we progress into the future.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP)
**ROMA VACHHANI, JAMES FARHIT, BRIAN FULLER, TEJAS PATEL**

Faculty Advisor: Juan Jenny Li and Patricia Morreal

*Precision System Requirement Specification*

In a Computer Systems course (Tech2920), we learn that requirement analysis and specification is the first step in designing a viable system. Most requirements are specified in natural languages with some support of diagrams. We all know that natural languages are ambiguous, which could cause misunderstanding and discrepancy between the design and requirements. To overcome this problem, we propose to use a formal mathematical specification to define requirements. Formal specifications might be difficult for people with less CS training to comprehend and master its usage. We created a tool to help with writing and understanding of formal specifications with visual aids. This work is a joint research with students from the CS dept of Iowa State University (ISU). The tool was originally developed by a Ph. D student from ISU and we successfully ported it to Kean’s environment.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP)

**LUIGI VINCENZO, A. FERNÁNDEZ ANTA (INST. IMDEA NETWORKS SPAIN), D. KOWALSKI (U. OF LIVERPOOL, UK), P. H. WONG (U. OF LIVERPOOL, UK)**

Faculty Advisor: Miguel A. Mosteiro

*Station Assignment with Applications to Sensing*

We study an allocation problem that arises in multiple scenarios. For instance, a health monitoring system where ambulatory patients carry sensors that must periodically upload physiological data. Another example is participatory sensing, where communities of mobile device users upload periodic information about their environment. We assume that devices or sensors (generically called clients) join and leave the system continuously, and they must upload/download data to static devices (or base stations), via radio transmissions. The mobility of clients, the limited range of transmission, and the possibly ephemeral nature of the clients are modeled by characterizing each client with a life interval and a stations group, so that different clients may or may not coincide in time and/or stations to connect. The intrinsically shared nature of the access to base stations is modeled by introducing a maximum station bandwidth that is shared among its connected clients, a client laxity, which bounds the maximum time that an active client is not transmitting to some base station, and a client bandwidth, which bounds the minimum bandwidth that a client requires in each transmission. Under the model described, we study the problem of assigning clients to base stations so that every client transmits to some station in its group, limited by laxities and bandwidths. We call this problem the Station Assignment problem. Rather than a focus on resource minimization, our concern is the impact of the rate and burstiness of the arrival of clients on the solvability of the problem. To carry out a worst-case analysis we assume the presence of an adversary that controls the arrival and departure of clients. The adversary is limited by two parameters that model the rate and the burstiness of the stations load (hence, limiting the rate and burstiness of the client arrivals). We obtained upper and lower bounds on the rate and burstiness of the arrival for various client arrival schedules and protocol classes. Currently, we are carrying out simulations of the protocols studied to evaluate the performance in practice. To the best of our knowledge, this is the first time that the Station Assignment problem is studied under adversarial arrivals.
KEVIN ZAKI, DARIUSZ KOWALSKI (UNIV. OF LIVERPOOL)
Faculty Advisor: Miguel A. Mosteiro

Dynamic Multiple Message Broadcasting in the Affectance Model

We study a dynamic version of the Multiple-Message Broadcast problem, where packets are continuously injected in network nodes for dissemination throughout the network. Our performance metric is the ratio of the throughput of such protocol against the optimal one for any sufficiently long period of time since startup. We present and analyze a dynamic Multiple-Message Broadcast protocol that works under an affectance model, which parameterizes the interference that other nodes introduce in the communication between a given pair of nodes. As an algorithmic tool, we develop an efficient algorithm to schedule a broadcast along a BFS tree under the affectance model. To provide a rigorous and accurate analysis, we define two novel network characteristics based on the network topology, the affectance function and the chosen BFS tree. The combination of these characteristics influences the performance of broadcasting with affectance (modulo a polylogarithmic function). We also carry out simulations of our protocol. To the best of our knowledge, this is the first dynamic Multiple-Message Broadcast protocol that provides throughput guarantees for continuous injection of messages and works under the affectance model.

CRIMINAL JUSTICE

ANGELINA CALAFIORE
Faculty Advisor: Constance Hassett-Walker

The Effectiveness or Ineffectiveness of Bullying Laws in Today's Modern Society

In recent years, the issue of bullying has become a pressing matter due to high profile cases in the news. Violent acts such as the Columbine High School shooting and the suicide of Rutgers University student Tyler Clementi forced the topic of bullying into the spotlight. With many similar cases surfacing all over the United States of teenagers committing suicide to escape bullying, this is a subject of serious importance. A new form of bullying, cyber-bullying, is taking in-school harassment to the next level. States need to work on ways of preventing bullying from taking place. This research will review literature and suicide cases caused by bullying and cyber-bullying, as well as a review of state laws. The main focus that needs to be addressed is how serious are the bullying laws throughout the states. In addition, what steps need to be taken to insure proper punishments are implemented? This poster presentation will address these issues.

ERICA SCHWARTZ, NYA NOZIERE
Faculty Advisor: Constance Hassett-Walker

An Examination of Health Issues among Women in the Criminal Justice System

In order to learn more about the reasoning behind addiction, specifically heroin addiction, we explored previous research as well as research of our own. Our hypothesis is that the majority of women have been through some form of addiction before being incarcerated. Their prior state before being incarcerated can be characterized by ‘warning signals’ that, in a sense, foreshadowed their current state. The team downloaded and analyzed existing data from the National Longitudinal Survey of Youth (NLSY97), as well as searched in YouTube for videos about women heroin users, and videos made by
heroin users. Key variables included heroin, crack/cocaine, imprisonment, age of first use, parents, addiction, recreational/situational/habitual, arrests. The team’s findings were as follows: As we suspected, the NLSY97 data corroborated our hypothesis and led us to some interesting correlations between variables. For example, there was a significant correlation between family life (i.e. lack of parental presence/involvement, unstable home life, etc.) and drug use. Also, the age of when they first abused drugs appears to have had a significant impact on the length of time that individuals were addicted to drugs. In addition, imprisonment was oftentimes not a long-term deterrent in getting individuals to stop abusing drugs and especially heroin. In the case of the data collected from the YouTube videos, we collectively found that most female heroin addicts showed signs of addiction, had no prior incarcerations, very few prior arrests, and in most cases lengthy addictions. An interesting finding that we discovered was that, in many cases, a prescription pain medication addiction was oftentimes a precursor to heroin addiction in individuals. Pain pill addicts would turn to heroin because it was much more easily accessible (i.e. bought on the street) and cheaper than prescription pain medication that requires an actual written prescription from a doctor. In all, the research that we as a team have done has been extremely interesting and informative. It is apparent that drug addiction is a multi-faceted entity that must be addressed not only individually but on social, political, and economic levels as well.

Research Supported by: Kean University, Students Partnering with Faculty (SPF) Summer Research Program
JON MUI, BRITTANY NUTT
Faculty Advisor: Robin Landa
The Sentinel Human Rights Poster Campaign

John Prendergast of the Sentinel Project/Enough Project asked us to design a campaign for use by human rights student groups across the nation. Our concept focused on little known facts about human rights violations and atrocities to call people to action on behalf of the Sentinel Project. We coupled specific images with prescient facts to create synergistic visual communication. The Director of Communication at the Enough Project thought this poster campaign captured the campaign’s essence and said the design makes the viewer feel as if we’re looking at the images through the eyes of the Sentinel.

ELISABETH PRIESE
Faculty Advisor: Greg Riestenberg
Non-traditional Applications of Paper Pulp in Consumer Products

This series of material and fabrication studies examines the use of paper pulp as a construction medium for a variety of consumer products. Specifically, the goal is to explore its use beyond packaging and focus on its potential as a primary structural component of the products themselves. By combining aspects of both paper-making and traditional casting, I have expanded on the possibilities for the application of these inexpensive and sustainable materials. Durability and biodegradability were key factors in determining the product line and the possible methods of production.

ENGLISH

MATTHEW JACOBI, CHRISTINA MASTROENI
Faculty Advisor: Kathryn Inskeep
Changing the Idea of the Writing Center in 140 Characters or Less

We sought to determine how writing centers adapt their mission statements to social media outreach in the 21st century. Because it is a constant struggle amongst writing center professionals to clarify to their clients and colleagues alike what it is exactly that we do, our research can help answer very pertinent questions about how to craft the public image and direct the public discourse surrounding a university writing center. We investigated one group of schools with widely recognized and successful writing centers, and another group of schools that matched Kean for a variety of criteria including region and size, and analyzed their social media output on Twitter, Facebook, and Instagram. We then identified posts that had the most and least traffic from each group. From this analysis, we were able to identify several components most often present in the most successful posts, as well as some features of the least successful posts. We can use these conclusions to inform our own campaign of social media outreach here at Kean, in the hopes of duplicating some of the successes of our exemplary colleagues at other institutions.
Assessing the invasive lionfish interactions on shallow patch reefs

This project will examine the interactions between the invasive Indo-Pacific lionfish, native predators and key herbivorous fish on patch reefs in the lagoons of Little Cayman. It is well known that parrotfish and other herbivores maintain an important healthy balance between macroalgae (fleshy algae) and corals within the reef ecosystem. With the invasion of lionfish into the Caribbean, scientists have measured a major reduction in native fish populations. Unfortunately, parrotfish are a preferred prey fish for lionfish. This study examines the abundance of macroalgae and coral recruitment in shallow reef zones where lionfish are not abundant. Data collected will provide an important new baseline that describes relationships between parrotfish, native predators (jacks, groupers, barracuda, etc), lionfish and the abundance of fleshy algae, coral recruitment in the lagoon reef zone. Results will be used as a measure of the current interactions and threats of lionfish on shallow coral reefs.

Marine Invasions and the impact the Pacific Lionfish have on Native Caribbean Fish Populations

Field research during the School of Environmental and Sustainability Sciences spring travel learn course to study “Coral Reefs and Coastal Systems” in the Cayman Islands will focus on the impact the invasive lionfish has on the local coral reefs. Invasive species cause drastic ecological damage worldwide; they displace native species and disturb natural environments. This project will use existing records from Long-term Assessment and Monitoring Program (LAMP) surveys to determine whether native fish assemblages have experienced significant temporal variations. Results will be compared to lionfish catch-per-unit-effort rates to determine if potential covariations occur. This research is an opportunity to improve our understanding of the impact marine invasions has on native, ecologically important fish populations.

A Sustainable and Collaborative Approach to Developing Plans for the Liberty Hall Farm

Through the Independent Practicum for Sustainability (SUST 4300), 17 students worked together in a manner similar to an environmental consulting firm on a shared project with the goal of incorporating...
information learned over our undergraduate careers in the fields of Environmental Biology and Sustainability Science. We adopted Groundwork Elizabeth as our client, with Jackie Park Albaum as our primary contact. We designed proposals based on the client’s requests to improve the sustainability and productivity of Liberty Hall Farm. The class divided into six groups, each with a specific project: 1) water management plan; 2) permaculture plan; 3) farm records keeping; 4) soil management plan; 5) medicinal plant garden design; and 6) educational curriculum development. The class also had a designated Project Manager and Technical Editor to ensure consistency among the groups and that the deliverables met the client’s needs. Over the course of the semester, we worked both in groups and as one large firm to improve the sustainability of this urban farm while simultaneously developing skills in writing, teamwork, and problem solving.

KATHERINE HAWKINS, AMANDA SUGATAN, JOHN FEATHERSTONE, DANIELLE DAVIS
Faculty Advisor: Daniella Shebitz

Restoring the Shores of Little Cayman with Culturally Significant Plants

With global threats of rising sea level and increased coastal development, the impacts to vegetation need to be considered. On Little Cayman Island, this is particularly true of culturally significant plants that affect not only the local diversity, but also the cultural and natural heritage of the area. This project aims to identify culturally significant native plants that are the most threatened and use these species to develop a demonstration site at the Little Cayman Research Center. The objective is to raise awareness of the importance of these plants and better understand the current status of the coastal vegetation. Samples of culturally significant plants used as medicines will be collected, processed, and tested for antimicrobial activity.

NONI HODGES-FLAKES
Faculty Advisor: William Heyniger

Low Temperature Trends in Union, NJ

The lowest temperatures of the day have been an interesting factor to many atmospheric researchers, and the general public. These low temperatures have dictated how people dressed, and planned their activities throughout their day. Depending on the season, these low temperatures have allowed frozen precipitation to stick or melt on contact with the ground or other surfaces and have played a serious part in predicting the weather for the next day, or at the least have pointed atmospheric researchers in the direction of finding another change in patterns of the weather. The timespan for the project has been from January 1st – March 4th for the years of 2011-2015. For this project, the goal was to see if the weather had an impact on the temperatures, and to study if global warming has had an effect on them. However, to say that greenhouse gases have impacted the low temperatures will take more extensive researching. As for now, the study will focus on the trends over the set years. The goal is to see if there is a significant change in these temperatures over this timespan.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP) Program
KRISTEN IORIO, MICHAEL MUCCIA  
Faculty Advisor: Daniela Shebitz  
*Antibacterial Properties of New Jersey Invasive Plants*

The purpose of this research was to apply a common technique used in herbal medicine to determine if four invasive plants found in New Jersey have any antibacterial properties. The invasive plants used in this study were common reed (Phragmites australis), mugwort (Artemisia vulgaris), Japanese knotweed (Fallopia japonica) and Japanese stiltgrass (Microstegium vimineum). This process involved many steps, including: locating the plants in the wild, removing the leaves of each plant to be tested, drying the leaves and then grinding them to a fine powder, creating extracts, performing assays, and recording zones of inhibition (if any). Methanol and ethanol alcohols were used as the extraction solvents. Assays were performed by testing these extracts against common microorganisms. The three microbes used in this research were two bacteria (Escherichia coli and Bacillus subtilis) and one fungus (Candida albicans). An antibiotic (Ampicillin) was used as the control to compare the results of the zones of inhibitions of the plants to it. Different dilution mediums were used and modified to produce accurate spreading of the microbes on the petri plates. Some of these mediums included: SOC, Phosphate and Saline (salt + distilled water). Antibacterial properties have been found in Japanese knotweed and mugwort.

MILFRE JIMENEZ, AILEENE BALLY  
Faculty Advisor: Juyoung Ha  
*Nanoparticles effect on cells*

Nanoparticles (NPs) are particles in the size range of 1 and 100 nanometers. NPs have unique properties such as enhanced surface sorption capacities and reduced band gap, and these properties have been studied and applied in engineering and other scientific fields. Despite the successful and useful application of NPs for creating new types of analytical tools for biotechnology and life sciences as well as for new engineering and energy materials, studies have identified an importance of understanding the fate and transport behavior of NPs in natural environments and the subsequent effects of them on ecosystems. For example, toxicological investigations of NPs on bacteria and living organisms have shown that they pose a significant adverse impact over a wide range of microbial communities. For example, penetration and accumulation of NPs in the organism cells have been studied and suggested that NPs pose significant toxic effects on living organisms. However, the behavior and effect of nanoparticles in an organism’s cell have been insufficiently study and requires further systematic investigation. With increasing applications and demands on NPs, it is utmost important to learn more about how nanoparticles change ecosystems and impact metabolic activities of cells. Therefore, this study will investigate the impact of nanoparticles on one of the most abundant microorganisms in natural environment in order to enhance our understanding of nanoparticle impact on natural environments.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP) Program
Nisha Mahase
Faculty Advisor: Amy Sprinkle

Using campus compost to increase crop growth and yield of radishes

Compost can be defined as a mixture of various decomposed organic materials, such as dead leaves or manure, which can be used as a soil amendment. Compost improves the structure and texture of soil by increasing nutrient retention, moisture, and air space. Kean University, located in Union, New Jersey, has been operating a composting facility since 2010, composting food scraps from the dining halls then applying this compost to the campus vegetable garden at the Liberty Hall Farm. The purpose of this study was to determine if the campus compost would increase crop growth and yield of (Raphanus sativus) radishes. A 100% soil, 100% compost and a 50/50 mixture of compost and soil were used to determine which treatment would produce the most nutritious plant. The radishes were grown in a greenhouse over a five week period. Radish root length, mass, color and taste were measured at harvest. Samples of plant tissue from each treatment were sent to Penn State, College of Agricultural Sciences lab for foliar analysis. Soil and compost were tested prior to planting the radishes and at harvest to determine the following chemical properties: pH, nitrogen, potassium, magnesium and calcium. Plant tissue analysis was also determined for elements such as iron and copper.

Rafael Nunez, Willan Jumbo
Faculty Advisor: Paul Croft

Renewable Energy Effects on GDP

As a society we have developed an economic system that allows us to set and determine the value of products and services by making use of various scales and measurement approaches. For instance, in order to measure the amount of money earned and the progress per year of either a state or country, the Gross Domestic Product (GDP) is calculated. The GDP determines the health of the economy and it is affected by several factors, one of those being the amount of renewable energy produced. Renewable energy is defined as energy obtained from renewable sources such as water, wind, biomass and solar energy. This project aims to study the impact of renewable energy produced by state in their GDP. For that purpose, the information about the GDP of 2013 of each of 50 states of the United States was obtained, including the percentage of renewable energy produced. The statistical results showed a linear regression of 0.11 and a P value of 0.478, which indicate a poor correlation between the GDP (dependent variable) and the amount of renewable energy per state (independent variable), which is not enough to support the hypothesis. In addition, the linear model explained only 1% of the independent variable. However, this does not represent enough evidence to reject my hypothesis since GDP is affected by various factors and does not take into account the value of the natural resources. Thus, it is recommended for further research the inclusion of other approaches such as Genuine Progress Index (GPI), which incorporates externalities such as water pollution, soil degradation and damage caused to the environment.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP) Program
RAFAEL NUNEZ, MAXIMILIAN SUNDERMANN, ERICA M. CENTRELLI
Faculty Advisor: Dongyan Mu
A Life Cycle Assessment of the School of Environmental and Sustainability Sciences (SESS) at Kean University

Life Cycle Assessment (LCA) is a widely used tool for sustainability analysis and can be applied in various areas from scholarly institutions to industries. It provides quantitative and holistic analysis of resource use and environmental impacts as well as ways to improve environmental performance. The presented project focuses on calculating life cycle impacts of the School of Environmental and Sustainability Sciences (SESS) at Kean University. The analysis follows the ISO 14000 standards and includes several impact categories: fossil fuel use, greenhouse gas (GHG) emissions, eutrophication, acidification, ozone depletion, toxic release, land use and freshwater use. The findings are expected to identify the hotspots relating to the environmental impacts within the department, and also provide solutions to reduce impacts and improve sustainability.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP) Program

CHARLINE RIVERA
Faculty Advisor: Kikombo Ngoy
Invasive Plants and Climate Change in New Jersey

Several non-native species have been brought to New Jersey. These species include plants, animals, fungi, and microbes. The increasing number is threatening people, the urban environment, as well as the natural environment. This study will focus on plant species. To address the growing concerns about them I will evaluate their historical development, their current status in New Jersey, and their impacts on the ecosystems. I will address these four questions: 1) Is the special extent of these species widening? 2) Why are they extending their space? 3) Could the extension be related to climate change? 4) How has the climate changed in New Jersey? Improving the understanding of the spatial pattern of the extension of these species will help manage the New Jersey environment.

NINA FAYE SAMPILO
Faculty Advisor: Amy Sprinkle
Using Campus Compost as a Soil Amendment to Support the Growth of Elf Sunflowers (Helianthus annuus)

As the human population increases, soil and its natural properties are continuously altered due to agricultural dependence. Transitioning to using compost as a soil amendment has become universally recognized due to its ability to improve soil structure and retain water and nutrients for a longer period of time. Compost is a mixture of different organic materials that are rich in nutrients and can contribute to healthy and improved soil and plant development. Many different components can be used in compost such as leaves, vegetable or fruit scraps, or eggshells. Compost can be used as a soil amendment in lieu of synthetic fertilizers, which can be costly, as well as harmful to the environment. Recycling organic wastes conserves landfill space and it holds no pesticide or chemicals that can be damaging to the ecosystem. The purpose of this study was to determine if food scrap compost from the Kean University Composting Facility could be used as a soil amendment to grow elf sunflowers (Helianthus annuus). The
following treatments were used: 100% soil, 100% compost, and a 50/50 mixture of soil and compost. Over a 5-week period, qualitative observations were taken, as well as plant height measurements. Sunflower leaf samples from each treatment were sent to the Penn State Agricultural Analytical Services Lab for foliar analysis to determine macronutrient and micronutrient levels of nitrogen, phosphorus, sodium, calcium and magnesium. Soil and compost were also tested prior to planting and at harvest to determine pH levels and other nutrients such as iron, copper, boron, and zinc.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP) Program

**JOSEPH SHULACK**  
Faculty Advisor: Feng Qi  
*Using GIS to Investigate Spatiotemporal Patterns of Children’s Influenza-like Illness in Wuhan City, China.*

Around the world, high-density cities have a reputation for intensive disease transmission. In developing countries such as China, an unfavorable environment may be created for their most vulnerable, specifically children. The purpose of this study is to detect spatiotemporal trends of Influenza-like Illness among children in Wuhan, China. The original raw data source was the Wuhan CDC. The raw data was then converted into a spreadsheet layout, which was input to ArcGIS. In ArcGIS, the datasets were analyzed for geographic distribution per virus, occurrence per time of year, occurrence per year, total occurrence per virus, and comparative virus frequencies. The outcome of this analysis is a series of maps which may be used to identify spatiotemporal trends with respect to each virus. The findings may be useful to Wuhan city officials to better gauge and direct treatment efforts.

**THEODORE THOMPSON**  
Faculty Advisor: Feng Qi  
*Visualizing Queen Conch Density in Little Bahama Bank, Bahamas*

Harvesting of queen conch in Bahama waters is an integral part of life for many fishermen in the Bahamas; the conservation of queen conch, Strombus gigas, is equally important. In 1992, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) listed queen conch as a threatened species. In reply, the Bahamian government launched a campaign to align research, educational and outreach efforts to spur better management efforts of the queen conch. One such effort is the Community Conch Project. Their effort is to promote the sustainable harvesting of queen conch through thoroughly surveying the density of queen conch in the Bahamas. The goal of this research is to visually illustrate, via Geographical Information Systems, the data collected by the hardworking volunteers and scientists of the community conch project on the conch population in the Little Bahama Bank. The visual representation of the density of queen conch will allow government officials to determine the density of the queen conch in the Little Bahamas Bank and make the appropriate action to conserve its population. Spatial Interpolation tools will be used to predict the density of Queen Conch in the Little Bahama Bank, Bahamas.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP) Program
T H E O D O R E  T H O M P S O N  
Faculty Advisor: Carrie Manfrino, Kristi Foster

Marine Protected Areas and the Protection of EDGE (Evolutionarily Distinct and Globally Endangered) Species on Coral Reefs

EDGE (Evolutionarily Distinct and Globally Endangered) species are defined as species that have a unique evolutionary history and often morphological distinction that make them important to the function of an ecosystem. This project will use existing records from Atlantic and Gulf Rapid Reef Assessment (AGRRA) surveys to determine whether coral assemblages within eight sample sites differ within and outside the Marine Protected Area. Annual records dating back to 1999 will be evaluated to determine whether these coral assemblages experienced significant temporal variation. Results will be integrated into a spatial database using ArcGIS. Understanding the population structures in which EDGE species naturally settle may assist resource managers in the determining the functionality of Marine Protected Areas as tools for protecting important threatened species.

A L E S S A  V I N D A S - C R U Z ,  K A T H E R I N E  A N D R A D E  
Faculty Advisor: Daniela Shebitz

Causes of bromelia pinguin dominance in lowland wet forests and its effects on plant diversity in Costa Rica

Bromelia pinguin is a plant species found in the northern area of Costa Rica at the Maquenque National Wildlife Refuge (MNWLR), where the lowland wet forests are severely threatened. B. pinguin transforms the understory by growing in dense patches. This study determined what environmental variables contribute to B. pinguin forming dense monocultures and how its dominance influences other plants. A survey was conducted to measure the dimensions of each B. pinguin patch within 1 km² of primary forest. The recorded B. pinguin patches ranged from 6.7m² to 2082m². Abiotic variables and plant data suggest that B. pinguin dominant patches (BDPs) are most pronounced on south facing slopes. Ten randomly selected BDPs were extensively studied in their center, edge and outside of the plot. Center plots had significantly less species diversity while simultaneously having a greater total percent cover of understory. Interestingly, diversity recovered immediately at the edge and outer plots, suggesting that the effects of B. pinguin are restricted just to where it is the dominant species.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP) Program

H I S T O R Y

G A B R I E L  K I S S O O N  
Faculty Advisor: Jonathan Mercantini

Student Soldiers: the U.S. Military and its Deployment of Students during WWII

During World War II, Nancy Thompson, librarian of Newark State Teacher’s College, preserved over four hundred letters received from students serving our country. Today, these letters continue to serve many purposes for many people. For some, these letters allow the opportunity to study various aspects of the war including social issues like race relations and gender roles. For others, these letters allow the opportunity to delve deeper into the personal lives of the men and women who served our country. For us,
these letters reveal how a local community was changed by a global event and by mapping this network seventy years later; we are able to re-capture the movement of hundreds of people and ideas across the country and around the globe. Through analyzing these letters, referencing city directories and census records, I will be examining the demographic makeup of Newark State Teacher's College and how it compares with the population of the city of Newark, NJ. By doing so, questions such as the impact of military service on assimilation and how their college preparation was evaluated, appropriated and deployed by the military in making use of their skills can be addressed.

D A V I D  L E W I S
Faculty Advisor: Catherine Nicholson

The Horological Collection at Liberty Hall and its Reflections on the Kean Family

In the summer of 2014, I inspected, photographed, researched, and cataloged the collection of the Horological instruments or in the John Kean Collection at Liberty Hall. The question at the beginning of my internship was “How do these instruments reflect on the family’s wealth, reputation, and relationship to historical events?” My work at Liberty Hall is important as it not only displays the feats of Horological genius but it emphasizes the importance of preserving the Kean family’s artifacts so that our community can learn about their lifestyle throughout the years and how these instruments reflect that lifestyle. The main conclusion that I came away with was that the Horological instruments represented the Kean family’s wealth based on the complications of the watches and clocks and that the instruments themselves represented the change in fashion over the years as well as historical events like the First World War.

H O L O C A U S T  &  G E N O C I D E  S T U D I E S

H O L L Y  R O B Y N  B E I N
Faculty Advisor: Brian Regal


Eugenics can be defined as the science of selective breeding, claiming that it is possible to control the inheritance of traits and characteristics of an individual’s offspring, be they physical, mental, emotional, etc. It was therefore possible to produce offspring with “desirable” qualities while those possessing “undesirable” qualities could be monitored, and in time starved out and eliminated entirely. Proposed methods of culling the “germ plasm” included segregation and restrictive marriages of those deemed “unfit,” sterilization, and in more extreme cases, euthanasia. While the pinnacle of the eugenics movement can be seen during the T4 euthanasia program of Nazi Germany (1939-1941), the idea and practice of human betterment first made landfall in the United States during the beginning of the 20th century. Prior to the coining of the term in 1883, many educated and noteworthy individuals propagated theories and ideas that promoted the ill treatment of those they deemed “lesser” or “unfit.” What were those ideas influencing man to turn on his fellow neighbor? How was the value of an individual’s genetics to be weighed as “desirable” or “undesirable?” And finally, how did the United States carry out their eugenic agenda as effectively as it did?
REBECCA POSNA  
Faculty Advisor: Catherine Nicholson  
*A Great Test of Faith: 1933-1948*  

The events of the Holocaust put the religious values of its victims to the test. While some desperately clung to their faith, others denounced it altogether. Using interviews, written first-hand accounts, films, and literature, I will investigate the latter.

MATHEMATICS  

PANZY HARVEY, PHILIP NZIOKA  
Faculty Advisor: Wolde Woubneh  
*A Statistical Analysis of Immigration Data and Impact on Economic Growth of Selected States*  

There is a controversy in the United States’ political landscape concerning the issue of immigration. There is a pressure from the public for immigration reform and many immigration policies have been proposed and never adopted by the US congress. Several states have adopted varied policies on immigration. There is no doubt that with so many outríes, the most important debate is whether immigration has a positive or negative effect on the local economy and on the economic growth of our country as a whole. The purpose of this research is to examine the relationship between immigration and economic growth in selected states of the United States. We will compare economic and immigration data from states with an open immigration policy and states with hostile immigration policies. The data will be based over a 10 year period of the states involved in our study. We will compare Gross Domestic Product (GDP) growth. Our hypothesis is that there is significant difference in GDP between states with open immigration policies and those states that do not have open immigration policies. The source of the data is the US census and Immigration and Naturalization Service (INS) of the US and other state immigration reports. SAS software will be used to analyze the data.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP)

ISAAC MAROKO  
Faculty Advisor: Wolde Woubneh  
*The Effect of the Cultural Inheritance of Widowed Women on the Spread of the HIV Virus in East Africa*  

Inheritance of widows in some African cultures is a common and widespread practice that has highly contributed to risk of HIV transmission. This research will present a baseline data designed to investigate, tabulate and analyze the association between widow inheritance and HIV infection. The selection of the subjects is a random sample from a broad population of widowed women from three ethnic communities in Kenya and Uganda. Responses of questionnaires from widows and their inheritance experience will be tabulated to help determine if they are at a high risk of HIV infection due to inheritance practice. The current study involves 200 widows who were randomly interviewed about their cultural status of inheritance and their sexual intimacy when they were tested for HIV infection. About 50% of the women in the study were inherited. The study will also include widows who were
inherited by relatives for sexual purpose. We will show that HIV prevalence among inherited widows vary by the why they were inherited and by whom they were inherited.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP)

JOHAN MOLINA
Faculty Advisor: Louis Beaugris

Fibonacci-like Sequences and Various Properties

There have been countless occurrences of Fibonacci numbers in nature. Numbers such as Lucas numbers, Pell numbers, and Pell-Lucas numbers with similar properties have been studied. These series of numbers exhibit unique integer patterns. We will study these sequences of numbers further and explore more mathematical properties and applications in science.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP)

PATO RICK SER PICO
Faculty Advisor: Wolde Woubneh

Two Dimensional Applications of Mathematical Art

This research will focus on explaining and acknowledging how two dimensional designs are artistically done through a mathematical approach. People see these two dimensional design applications of mathematical art every day and do not realize that it is mathematics at work. What my research will focus on is two dimensional artistic applications of how mathematics is used in everyday society. The mathematical applications of design include clothing pattern designs and necktie designs.

Research Supported by: Louis Stokes Alliance for Minority Participation (LSAMP)

MUSIC

NICOLE O LEARCHIK, CONNOR COFFE Y
Faculty Advisor: Lyn Schraer-Joiner

Collaborative Mentoring and Music Teaching Opportunities with Students who are Deaf and Hard of Hearing

During the spring 2014 semester, the Kean University music education program introduced collaborative mentoring into its music education methods coursework. This collaboration paired pre-professional and introductory field students in order to promote open communications between all field students. In addition to sharing their teaching experiences, the pre-professional field students offered support in the areas of lesson planning, observation journal writing, assessment, and Teacher Work Sample (TWS) development. In 2015, the program will augment to include a collaborative music teaching project for the deaf and hard of hearing population at a local public high school. This project will endorse co-teaching whereby the pre-professional and introductory field students will develop, plan, and execute their lessons together in the public school setting. Such an experience will provide much needed exposure to special needs populations prior to professional internship and will provide opportunities for peer-mentoring and teaching within the music education program as well as guided teaching experiences for introductory field students (Colwell, 2000, 2003, 2006a; Darrow, 1999; 2006; Hammel,
2001; Hickey & Rees, 2002; McCord, 2006; McCord & Watts, 2006; Schraer-joiner, 2014). This poster will highlight the initial research and planning for the collaborative music teaching project with special emphasis upon the Teacher Work Sample as well as a final concert.

**NEW JERSEY CENTER FOR SCIENCE, TECHNOLOGY AND MATHEMATICS**

**SARAH AZIZ, SHELLY MANIAR, SHRUTI NANDKARNI**
Faculty Advisor: Yazhou Sun

*Novel transcript detection pipeline with RNA-seq data*

The Human Genome Project, along with other similar endeavors, aimed to create a reference genome. However, only a small percentage of the human genome is currently annotated with known functions. Previously, the large portions of the genome without known functions were considered as insignificant, and were once referred to as “junk” DNA. The latest experimental data and computational analysis results have revealed that the majority of the human genome could actually be functional, and these potentially functional parts could lead to new discoveries in biology and new applications in medicine.

One way to identify functional segments of the genome is by studying the transcriptomes. Currently, a transcriptome can be captured as nucleotide sequence data with RNA-seq, a method based on the Next Generation Sequencing (NGS) technology. This project will use the RNA-seq data from Geuvadis consortium, a multinational collaboration closely related to the 1000 Genome Project. With the current sequence analysis technology and the Geuvadis data, there is an opportunity to detect novel transcripts and potentially new functional elements in the human genome.

**NICHOLAS BANERJEE**
Faculty Advisor: Yazhou Sun

*Evaluation of the Current Human Genome Annotation Datasets*

There are currently several major annotation datasets for the human genome (e.g., those from Gencode, UCSC, and RefSeq). Although they all mark important functional information of the human genome such as gene names, functions, and coordinates, each annotation dataset has its unique rules on what should be included in the annotation, and all these datasets are constantly being updated and evolving towards different directions. As a result, there are substantial differences between these annotation datasets. For a complete and accurate picture of all currently known functional segments of the human genome, these datasets need to be evaluated, and the information contained therein needs to be combined systematically. This project will utilize bioinformatics tools to evaluate the differences between these different annotation datasets, and study the methods to create a single uniform source comprising of all datasets. Public RNA-seq datasets will be used to assess the completeness of these annotations.

**AUTUMN BOWERS**
Faculty Advisor: Yazhou Sun

*RNA-seq quality data distribution and its application in data compression*

The goal of this project is to study the FASTQ quality data distribution in the current RNA-seq data, and to investigate its impact on FASTQ data compression. This involves analyzing Next-Generation...
Sequencing (NGS) data from transcriptome studies. NGS has been widely used to study genomic variation, transcription regulation, and the genetic basis for various diseases. Each NGS experiment can generate gigabytes of sequence data, making data management, transmission, and analysis challenging. The FASTQ format encodes the numerical quality data for each sequenced nucleotide in a special format for data compression. A FASTQ file, containing both nucleotide sequence data and the corresponding quality data, could be further compressed. Dedicated FASTQ data compressors typically require the quality data distribution for optimized compression. With the help of my faculty mentor Dr. Yazhou Sun, I will review the current methods used in other studies for the compression of FASTQ quality data, and study the quality data distribution and its impact on data compression. About 30 public data sets from one of the largest RNA-seq studies will be obtained, and the quality data distribution will be analyzed by custom-developed Java programs.

BEATRICE CAPPUCCHIA, KATHERINE THOMAS  
Faculty Advisor: James R. Merritt  
Solid-phase Synthesis of Sulfamides via Optimization of the Mitsunobu Reaction for Chemistry on Resin

Library collections of “drug-like” compounds are often utilized in the drug discovery process as a preliminary screening method for potential hits against desired biological targets. Using combinatorial chemistry techniques on polystyrene resin beads, a set of profilers was synthesized in-line with a larger library. To create the profilers for initial screening, the Mitsunobu reaction was modified through optimization of reagents and reaction conditions. Quality control samples were also synthesized in-line with library synthesis to determine success in the library, using HPLC, LCMS, and NMR for further analysis and structural confirmation of the desired compounds.

JUI CHAUGULE, JACQULYN CALI, ALYSSA BELLOMO  
Faculty Advisor: Dil Ramanathan  
Comparison of Identification and Analysis of Leachable Compounds Using Headspace GC-MS and UHPLC-HRMS

Although the use of plastic has become a staple in everyday life for several decades, we have only recently begun to learn of the damage it may be doing to our bodies. In the past few years, research has found that harmful chemicals and compounds can leach from plastic containers into the products they were meant to protect, including food, water, and even medications. The purpose of this study is to identify and analyze any leachable compounds found within products and their plastic containers using Headspace GC-MS as well as UHPLC-HRMS. Some of the compounds found to have leached are known to be neurotoxins, while there are others that mimic estrogen hormones in the body. The full effects of these and other leachable compounds are still unknown. During this study, samples from food, drink, and over-the-counter drugs will be analyzed. For headspace analysis, raw samples of plastic containers and their products will be analyzed. For analysis using the Autosampler GC-MS as well as the UHPLC-HRMS, products will be extracted using liquid-liquid extraction to obtain cleaner samples for analysis. The instrumentation used will be a Perkin Elmer GC-MS with headspace capabilities, as well as a Thermo Scientific LTQ Orbitrap (UHPLC-HRMS). Compounds found from the GC analysis are to be profiled, analyzed, and compared to those obtained using UHPLC-HRMS.
Profiling of herbal medicines using headspace GC-MS and UHPLC-HRMS

With the growing concern regarding the side effects caused by prescription drugs, it is no surprise that people are turning to herbal medications as an alternative. Many people have started using herbal medicines to boost their health and believe them to have fewer toxins when compared to conventional medicine. The well-known and widely used herbal medicines are Kava Kava, Licorice, Ginseng, Aloe Vera, Echinacea, Garlic, Ginko Biloba, Feverfew, St. John Wort, and Goldenseal. These herbal medicines are used for multiple purposes such as an immune stimulant, to improve blood circulation, suppress depression, serve as respiratory tonic, and to heal migraines, to name a few. These herbal medicines’ components remain unknown, even though they are believed to be beneficial for humans. The aim of this project is to profile all the compounds present in these popularly used herbal medicines. Analytical instruments such as Gas Chromatography-Mass Spectrometry (GC-MS) of Perkin Elmer™, as well as a Thermo Scientific LTQ Orbitrap (UHPLC-HRMS) were used as an analytical instrument for sample profiling. The analysis was done by introducing the samples through an Autosampler or Headspace and these results were compared. Headspace was used for the analysis of aromatic compounds whereas the Autosampler was used for the analysis of semi-aromatic compounds present in each sample. For analysis using the Autosampler GC-MS as well as the UHPLC-HRMS, products were extracted using liquid-liquid extraction to obtain cleaner samples. The results obtained through the Autosampler and Headspace GC-MS will be compared.

Wave Propagation and Ultra Short Pulses

Partial Differential Equations (PDEs) is a branch of mathematics fundamental to all fields of science, as they describe phenomena that vary in both space and time. A good understanding of them is especially critical to making significant progress in physics and engineering. Our progress has allowed us to complete the following: produced an EJS program packaged with several different PDE’s is running using a spectral transform algorithm, examined relationships between the height and inverse width of pulses to produce the best model possible, and tested parameters in a coupled PDE that would allow for pulses with two frequencies lock up together temporally but remain spectrally separated. In essence, we have created mathematical models in Easy Java Simulations (EJS) and Matlab in order to simulate wave propagation. Also, we constructed Ordinary Differential Equations (ODE’s) that should allow for single or dual pulse solutions as shown in a pre-existing PDE model. These ODE models are useful because they are simple to analyze, and run much faster than the PDE.

Role of NF-KB in Microglia Stimulate Invasion of Glioma

Microglia is small glial cells found in the brain and spinal cord. Glioma is type of cancer which starts in the brain or spine. Glioblastoma is the most clinically challenging tumor of CNS. It is mostly known as glioblastoma multiforme, grade 4 type of brain tumor. It is always fatal because it is fast-growing,
the most aggressive, uncontrolled proliferation of cells and arising from the glial cells of the brain. There are many molecular pathways involved behind that, but our laboratory is investigating the NF-κB (nuclear factor kappa-light-chain enhancer of B cell) transcription pathway as playing role in that and brain microglia stimulate glioma invasion. NF-κB is a protein which regulates transcription of DNA and plays a key role in regulation of immune response. Some signals activate IκB kinases which phosphorylate inhibitory protein IκB. So, ubiquitination and degradation of IκB happens and results in translocation of NF-κB from cytoplasm to nucleus and expression of some genes done by NF-κB. Incorrect regulation of NF-κB leads to autoimmune disease, cancer and inflammatory disease. We are hypothesizing that NF-κB plays a role in microglia stimulated glioma invasion using a combination of NF-κB pathways with specific inhibitors like IKK 16 (Inhibitor of kappa B kinase) by performing various experiments using biotechniques like tissue culture, gel electrophoresis, western blotting, etc.

QUINTIN FERRARIS
Faculty Advisor: Dil Ramanathan
Evaluation of High Resolution Mass Spectrometry for Integrated Quantitative and Qualitative Analysis of Loratadine and its Metabolites in Rat Plasma and Urine

Recent high resolution mass spectrometer (HRMS) advances in high mass resolving power, stable mass accuracy and data acquisition speed combined with the availability of reasonably priced HRMS systems have sparked interest in utilizing HRMS for integrated quantitative and qualitative (Quant/Qual) bioanalysis. In this integrated approach, ultrahigh-pressure liquid chromatography (UHPLC) and full scan HRMS data acquisition are utilized to combine pharmacokinetic (PK) analysis and metabolite scouting. Improvements in sensitivity, S/N and selectivity were achieved by combining HRMS full scan acquisition with single ion monitoring (SIM). The PK assay performance was evaluated using plasma and urine collected following a single 8 mg/kg oral administration of Loratadine (LOR) to rats.

Research Supported by: Kean University, Students Partnering with Faculty (SPF) Summer Research Program

STEPHANIE FIALLOS
Faculty Advisor: Salvatore Coniglio
Use of Paramagnetic Nanoparticles as a Therapy for Glioblastoma

Glioblastoma is one of the most deadly human cancers with a median prognosis of 12 months survival following diagnosis. Despite advances in understanding the molecular biology of glioblastoma, there is still a desperate need for new therapeutic options. The following project will look at nano particles and their effectiveness in drug transport and delivery to the brain in brain cancer patients. Nano particles are being transported to the brain via magnets, this way, ensuring delivery of therapy drugs. In this study there are being tested different types of chemotherapy drugs, one of them being curcumin. Curcumin is a natural substance that shows cancer preventive effects. This is the product of interest in this study and so far it has shown better results than the other drugs being tested. Nano particles have been mixed with six different types of cancer therapy drugs, curcumin being one of them, and have been tested in a 96 well plate. The nano particles were numbered 1 through 6 and have been treated with U87 and GL cells, and in both cell lines they have showed similar results. The plate was divided so that we were able to test each cell line separately, have a control and also test the nano particles alone to observe any self-fluorescence. After a week of plating the cells with the nano particles, they were fixed to the plate and observed under a microscope. The cells were randomly counted,
wells were randomly chosen. Overall, all counts showed varied results but they all showed less growth. The control cell count was averaged to be 175.5, compared to this number, nano particle #6 showed the most decrease in cell growth, the cell count being 64. The next more effective one was nano particle #2, that resulted in a cell count of 80.

ROGER GARCIA, KIMBERLY SHANKS
Faculty Advisor: David Joiner
A Consistent Orbital Stability Analysis for the HD 10180 System

Discrepancies in the number of planets orbiting the solar-type star HD 10180 existed among scholars studying these unique multi-planet systems. Using radial velocity data obtained from the HARPS spectrograph at La Silla Observatory (Chile), we apply a combination of N-body modeling techniques and automated data fitting with Monte Carlo Markov Chain (MCMC) uncertainty analysis of Keplerian orbital models to determine long term stability of the system. In particular, we show that neither a 6- nor a 7-planet fit are substantially altered by the constraint of system stability, and both are stable down to small values of the system inclination. Our studies show that the 9-planet model proposed by Tuomi (2012) is not stable.

Research Supported by: Kean University’s, Students Partnering with Faculty (SPF), Summer Research Program

DAVID MCLEOD, MICHAEL NOTARMASO
Faculty Advisor: James Merritt
Synthesis of Squarate Derivatives using Solid-Phase Combinatorial Chemistry Techniques on Resin

Combinatorial chemistry techniques on polystyrene resin beads have proven to be an effective method of building large libraries of drug-like compounds to be screened against a desired target. Using established combinatorial chemistry techniques, a group of squarate derivative compounds were synthesized to be used as profilers for a 10,000 compound library. Reaction conditions for the squarate derivatives were optimized through the profilers prior to the library’s syntheses. Alongside the library synthesis, quality control samples were synthesized and analyzed in order to confirm the structures of the desired compounds by means of HPLC, LCMS, and NMR.

SARA MAASS
Faculty Advisor: Salvatore Coniglio
Role of IL1 Family in Glioblastoma Associated Microglia Polarization

Glioblastoma is an extremely deadly brain cancer. Glioblastoma tumors recruit macrophages/microglia which in turn promotes cell invasion and immune escape. Macrophages play an important role in the body’s immune system. In the brain the macrophages are called microglia. There are two major types of macrophage states: m1 and m2. The m1 response induces inflammation while m2 reduces inflammation and promotes tumor spread. Interleukins also play a role in the immune response. The IL-1 family induces fever and inflammation. They also act as both m1 and m2 responses. We have been looking at IL-1B, IL-1RA and IL-18. Using Quantitative Real Time PCR (QRT-PCR) and immunoblotting we have observed that conditioned media from the murine glioma cell line GL261 is able to induce both IL-1B and IL-1RA expression in microglia. The role of each of these cytokines in macrophage/microglia polarity and stimulation of glioma invasion will be assessed.
JOSE R. MATAILO  
Faculty Advisor: Salvatore Coniglio  
*Role of Cathepsin L Molecule in Glioblastoma Invasion*

Brain cancer is one of the most devastating diseases. Glioblastoma cancer is the most dangerous type with minimal treatment options. The nature of cancer is still not defined its rapid progress with little efficacy of chemotherapy. One major aspect of glioblastoma pathology is its ability of this cancer to rapidly invade normal brain tissue and spread throughout the brain. An understanding of its mechanism of invasion will help us provide a rich knowledge to help patients with a new therapeutic option to improve their condition. Our laboratory has discovered that microglia (brain macrophages) stimulate glioblastoma cell invasion by 5-10 fold. KIF9 gene encodes a kinesin motor protein. Kinesins are associated with trafficking of cellular components along microtubules. KIF9 overexpression is correlated with reducing survival time of glioma cells. The laboratory of Jeffrey Segall discovered found that several proteases including matrix degrading enzymes including ADAM8, cathepsin L (CTSL1) and Matrix Metalloprotease 1 (MMP1) were more strongly secreted by control shRNA cells after coculture with MG compared to KIF9 shRNA cells. We are focusing on the role of Cathepsin L (a cysteine protease) in microglia/macrophage stimulated invasion. Differentiation of the human macrophage cell line THP1 results in an increase in CTSL expression as measured by quantitative real time PCR. In addition, we have seen that blockade of CSF-1R using pharmacological inhibitors inhibits Cathepsin L protein synthesis and secretion by THP1 macrophages. We will analyze the effect of CTSL concentrations using ELISA assays and test the role of CTSL in glioma invasion using CTSL-specific inhibitors.

KATARINA MLADENOVIC  
Faculty Advisor: Salvatore Coniglio  
*Role of CCR1 in Stimulating Microglia Invasion*

Glioblastoma is a cancer that has a poor survival rate due to the invasive properties of the cancer cells. Unfortunately, the survival rates are low and there are limited treatments for this dangerous disease. The microglia (macrophages of the brain) have been found to be important in stimulating glioblastoma cell invasion (both in vitro and in vivo). The current focus of the project is to characterize the mechanism which glioma cells use to mobilize associated microglia. The experimental approach will involve searching for glioma cell factors which potentially stimulate microglial cell motility. I will measure cell motility using chemotaxis assays and time lapse microscopy in the presence of glioma cell conditioned media from mouse (GL261) or human (U87, U251 and GBM6) glioma cell lines. I will test various pharmacological inhibitors to measure which pathways are the most important. Our initial focus will be on the CSF-1/CSF-1R and CCL3/CCR1 pathways for which we have inhibitors readily available. Depending on the contribution of the CCR1 pathway to microglial mobilization, I may also test novel CCR1 antagonists being synthesized in the laboratory of Dr. James Merritt. As such, assays created during this project may be used for future screening for the activity of these novel compounds.
**Brendan Vercammen, Stefany Osorio, Steven Hernandez**

Faculty Advisor: Salvatore Coniglio

*Signaling Pathways Upstream of JAG1 in Macrophage induced Breast Carcinoma Intravasation*

Metastasis to vital organs is the cause of mortality due to advanced stage breast cancer. One of the first steps in metastasis is entry of the carcinoma cells into blood vessels around the tumor, a process called ‘intravasation’. Breast cancer cells however seem to require tumor associated macrophages during intravasation and metastasis. In the laboratory of Jeffrey Segall at Albert Einstein College of Medicine, experimental trials in vitro, breast cancer cells placed in medium were not able to migrate through a barrier of endothelial cells (which mimic the blood vessel lining). However, when macrophages are cocultured with cancer cells, the cancer cells were able to migrate through the barrier. The evidence shows that there is a strong relationship between the metastasis of cancer cells and macrophages. It was further shown that the protein Jagged1 (JAG1; a member of the delta family of notch ligands) is induced in macrophages by exposure to conditioned media from the metastatic human breast carcinoma cell line MDA-MB-231. Blockade of Notch signaling prevented macrophage-induced intravasation in in vitro assays. Cytokines, growth factors, and other chemical messengers provide pathways of communication between these two types of cells. Our project seeks to (a) identify which factors are secreted by breast cancer cells and (b) determine which intracellular signaling pathways are responsible for induction of JAG1 in the BAC macrophage line. We first treated BAC macrophages with MDA-231 conditioned media or with recombinant growth factors heregulin (HRG) and CSF-1 (either alone or in combination). We then performed SDS PAGE to determine if the following pathways were activated in BAC macrophage cell line: ERK, JNK, STAT3, p38, NF-κB and AKT. The involvement of each of these signaling pathways on JAG1 mRNA and protein expression was assessed using a panel of pharmacological inhibitors.

**Occupational Therapy**

**Michelle Avena, Orah Jooyandehtnik, Julia Zelig, Erica Pirak**

Faculty Advisor: Mariann Moran

*Is There Really an App for Everything? Goniometry?*

This quantitative study seeks to assess the reliability and validity of GetMyROM, a smartphone goniometer application when measuring range of motion (ROM) of the wrist and forearm, on a normal population. Goniometry is used by many healthcare professionals, especially occupational therapists, and serves as a valid and reliable tool for measuring joint range of motion. Sixty to one hundred healthy employees and students from Kean University’s main and east campuses will be recruited for this study. The measurements of the 6 3/4 inch 180 degree semi-circle clear plastic goniometer will be compared to the measurements of the GetMyROM smartphone application, in order to assess the concurrent validity of the smartphone application. Inter-rater reliability will be determined by having four Kean University occupational therapy student researchers obtain participants’ active wrist flexion and extension and forearm pronation and supination ROM measurements using the two instruments, over one session. This study is not complete. We will determine whether the smartphone GetMyROM
application is or is not a valid and reliable tool for measuring wrist and forearm range of motion. If we conclude that the smartphone application is a valid and reliable tool for measuring ROM, we will recommend its use in clinical practice by a variety of healthcare professionals and clients.

MICHELE CORDARO, MARIA SCIANDRA, JESSICA LISTHAUS, MARLEE LYNCH
Faculty Advisor: Mary Falzarano

The Effectiveness of Incorporating a Young Athletes Program Educational Training Module for Families of Children with Intellectual Disabilities

The purpose of this study was to discover the effectiveness of pairing an exercise program, based on the Young Athletes Program (YAP), with a training module for parents of children with intellectual disabilities (ID). Children, ages 2-7, are in the process of developing the necessary skills for play and social interactions. Children with ID generally have a challenging time developing these skills when compared to typically developing children. The focus of YAP is to assist in developing the child’s gross and fine motor skills. In addition, the foundation of YAP strongly emphasizes family interaction during implementation of the program. However, there is a lack of research in the effectiveness of a home-based program incorporating the YAP components. The researchers sought to discover if the training module would increase the parents’ comfort levels implementing the program in their homes, as well as an increase in their perceptions of their child’s physical activity level. Parents of children with ID were randomly assigned to either the experimental condition or the control condition. All participating parents completed a pre-test survey to identify their perceptions of their ability to incorporate the YAP into family play and to identify their perceptions of their child’s current physical activity levels. Participants in the experimental condition received an educational training session discussing the elements of the YAP and received informative examples and tips. All participants were encouraged to engage in the YAP at home with their children during the 4-week period. After this time period, researchers will contact all parents to complete a post-test survey. It is hypothesized that the participants who receive the YAP educational training session will feel more comfortable implementing the program into their home than parents in the control condition. It is also hypothesized that parents in the experimental condition will report more positive changes in their perceptions of their child’s physical activity and a more frequent engagement in the YAP activities when compared to the control condition. Results are pending as researchers currently continue to collect data. This research is expected to have clinical significance, especially when relating the YAP activities to the foundational skills for development of occupations for childhood. Through the use of the educational training module, the research aims to empower parents and families by improving their perception of their ability to implement the YAP. Ultimately, the goal of this research is for parents to feel comfortable implementing developmentally-based activities within naturally occurring activities at home and in the community.

YOCHVED GREENBERG, MACKENZIE KRUGER, MARISSA LORENZO, ELIZABETH RICE
Faculty Advisor: Mary Falzarano

Music and Movement Based Handwriting Programs for Children who are Non-Writers

This retrospective pilot-study aimed to identify the effectiveness of Connect Experience Write (CEW), a music and movement based handwriting program, developed for children who are considered non-writers. CEW uses a multisensory approach incorporating both music and movement as a learning tool.
CEW is primarily a development-based program serving to meet the needs of students with various learning styles, teaching the importance of spatial relationships and letters for handwriting through use of a movement activity incorporating the whole body prior to pencil and paper writing. To date, no research has been conducted exploring the utility of a music and movement based handwriting intervention for this population. Researchers used a cohort retrospective study design to analyze secondary data collected from ten child participants (n = 10). All of the participants have a diagnosis of Autism Spectrum Disorder (ASD) and received the CEW program intervention at their school in Northern, NJ. Intervention was implemented by the on-site occupational therapist, three-times per week for nine weeks. To determine the impact of the program, researchers collected secondary data from participant’s pre and post scores from the following: the CEW pre-test and post-test, handwriting samples of the letters L, F, and E and the Beery-Buktenica Developmental test of Visual-Motor Integration (Beery VMI) and it’s two supplemental tests evaluating Visual Perception and Motor Coordination. Researchers analyzed data using descriptive statistics revealing improvement among six participants, from the initial pre-test to the post-test Beery VMI. Supplemental VMI tests revealed improvement among eight participants’ post-test Beery Motor Coordination scores and four participants’ post-test Visual Perception scores. Despite the limitation of the small sample size, which limits generalizability, results of this pilot study suggest CEW may be a viable handwriting intervention program for children with ASD, who are classified as non-writers. Keywords: handwriting, intervention, occupational therapy, non-writers, music, movement, multisensory, Autism Spectrum Disorder

TOVAH GOLDSSTEIN, ALYSSA ZARETSKY, KENIA AMAYA, LAVANYA NAYAR, ANNA DOBRINA
Faculty Advisor: Mariann Moran

Measuring outcomes within breast cancer rehabilitation: Comparison of a patient reported quality of life measure to the Disabilities of Arm, Shoulder, and Hand (DASH)

This retrospective study compares two patient-reported outcome measures (PROMs) used with breast cancer rehabilitation clients receiving occupational therapy (OT). Upper extremity limb lymphedema is increasingly prevalent in breast cancer survivors, and yet to date there exists no consensus on the best method for assessing and monitoring this condition. This study aims to investigate if a correlation exists between the scores of a well-known, region-specific functional PROM (the DASH) and a new, condition-specific quality of life PROM (the LYMQOL) in order to better understand the clinical implications of using either to measure meaningful client outcomes and the efficacy of OT intervention. Both PROMs were administered at initial and re-evaluation to clients receiving breast cancer rehabilitative services at an outpatient occupational therapy clinic. Spearman’s correlation will be used to determine if a relationship exists between the two PROMs’ ability to measure outcomes achieved over the course of OT services. It is expected that through the findings of this research there will be a justifiable recommendation for an outcome measure that best captures the experiences of breast cancer survivors and their responses to rehabilitative therapy.
Tarah Jedziniak, Melissa Gross, Alisha Sheridan, Natanya Lutsky, Leora Ohevshalom
Faculty Advisor: Claire Mulry

An Assessment of the Prevalence of Spatial Neglect in Stroke Survivors with Aphasia with Option of a Prism Adaptation Treatment (PAT) Protocol

The prevalence and treatment of spatial neglect, a neurocognitive disorder, has not been adequately studied in left-brain stroke survivors with aphasia. Spatial neglect can result in a number of functional deficits that impact participation in meaningful daily activities. Occupational therapists provide intervention to increase performance in activities that occupy the client’s time. Thirty-nine participants with chronic aphasia from a community aphasia center following a left brain stroke were assessed for spatial neglect using the Kessler Foundation Neglect Assessment Process for the Catherine Bergego Scale, the conventional Behavioral Inattention Test, the Barthel Index, and the Life Space Questionnaire. Three of the participants, who were found to have spatial neglect, consented to take part in the prism adaptation treatment phase of the study. Participants received ten treatment sessions, lasting 30-60 minutes each, which were conducted over a two-week period. At this time, data analysis is in progress and will be reported at a later date.

Research Supported by: National Institutes of Health (NIH)

Emily Moscoe, Leanne Suero, Danielle Kearns, Pat O'Toole, Pamela Harder
Faculty Advisor: Jennifer Gardner

Sensory Preferences of Adults with Mental Illnesses Attending Community Wellness Centers

The aim of this descriptive research study was to explore the sensory preferences of individuals with mental illness who attend peer lead community wellness centers in the northeast region of the United States. After an extensive review on the current literature, gaps have been identified regarding the sensory preferences for individuals with mental illness. Specifically, the gap exists between the sensory preferences for individuals with mental illness and its use in self-help centers. Participants completed a demographic survey and the Adolescent/Adult Sensory Profile (AASP). Results of the AASP were analyzed in order to primarily identify correlations between diagnoses of mental illness and sensory preferences as well correlations between other demographic criteria. The findings of this study will increase the limited body of knowledge regarding sensory preferences among those with mental illness and help clinicians formulate treatment plans when working with individuals living in the community diagnosed with mental illnesses.

Laura Valente, Theodora Church, Ariane Ackerman, Vanessa Rios
Faculty Advisor: Jennifer Gardner

The Physical Limitations on Occupation Engagement for those with Mental Illness Attending Community Wellness Centers

This research study was designed to explore the physical limitations that impact the pursuit of valued occupations among individuals diagnosed with mental disorders who are served by the public mental
health system. Although literature has demonstrated that physical limitations, such as pain, fatigue, and muscles weakness, do exist among this population the effect of these limitations on meaningful, everyday activities has not been explored. Seven community wellness centers from the Collaborative Support Programs of New Jersey were randomly selected and visited over a span of six weeks. At each center, members diagnosed with a mental illness were given three self-report surveys: a demographic questionnaire, an occupational engagement survey, and the Short Form-36 Health Survey (SF-36). The demographic questionnaire obtained personal background information from the participants. The occupational engagement survey was designed by the researchers to focus on what physical limitations were affecting engagement in activities performed throughout the day. Lastly, the SF-36, an established and well-known evaluation, assessed each individual’s quality of life. This study is in progress; therefore, the findings are to follow. Researchers are predicting a correlation between physical limitations and their impact on occupations as well as health related quality of life. Ultimately this knowledge can assist in the development of interventions that are more holistic in nature, by addressing both the emotional and physical needs of this population.

PHYSICAL EDUCATION, RECREATION AND HEALTH

OMARA CARDOZA, JENIFFER MORENO, MELISSA CHEUNG
Faculty Advisor: Consuelo Bonillas
Implementing a Teen Pregnancy Prevention Program in High Schools - Year 3 Results

This study evaluated the longitudinal effectiveness of the program “Reducing the Risk - Building Skills to Prevent Pregnancy, STDs and HIV”, an evidence based program designed to decrease adolescent pregnancy and sexually transmitted infections in two New Jersey state identified, high risk municipalities. The data that will be presented is from Year 3 of the program. During the 2013-2014 academic year, the curriculum was implemented in high school health classes with a high percentage of African-American and Hispanic students. The curriculum was taught by ethnically diverse college research assistants. A cohort of 604 predominantly tenth grade students participated in the program. Participants completed baseline, post and 3-month follow-up surveys. The study used randomized control and intervention groups of students in three high schools in New Jersey. The total participants in the intervention groups in Year 3 were 302, and the total participants in comparison groups in Year 3 were 302. Among a subsample of 96 sexually inexperienced program participants who were surveyed before the program began and at the end of the program, 66.7% reported that they were much less likely or somewhat less likely to have sexual intercourse in the next 6 months. This subsample was also asked whether they had engaged in sexual activity by the end of the program. Eighty-nine percent reported that they had continued to delay initiation of sexual intercourse. Out of the 130 program participants that answered, “Would you say that being in the program has made you more likely to use a condom if you are sexually active in the next 6 months?”, 86.9% reported that they were much more likely or somewhat more likely to use a condom if they engaged in sexual intercourse in the next 6 months. Overall, the Reducing the Risk program was effective in reducing the risk to adolescent pregnancy and protecting against HIV and other STDs by increasing participants’ intentions to abstain or use a condom if sexually active.

Research Supported by: New Jersey Department of Health, Personal Responsibility Education Program
Sara Garner
Faculty Advisor: Ray Divirgilio

Iliotibial Band Syndrome in a Collegiate Volleyball Player

A 21 year old female volleyball player suffers from Iliotibial Band Syndrome (ITBS), a condition caused by inflammation and tightness of the IT band. Pain was experienced in her right hip over her tensor fasciae latae (TFL), and a popping over her hip joint when she used the stairs after practicing. A tingling sensation down the lateral side of her leg and tenderness was described. Her ATC determined through manual muscle testing that both complaints were a result of ITBS. Lower body injuries are not as common in volleyball players, but in this case the athlete’s position was a hitter, requiring constant jumping to hit the ball overhand. In this case study, it is demonstrated how improper mechanics, and muscular imbalances can alter an athlete’s kinetic chain predisposing them to injury. It is shown that an athlete’s injury can be unique to their position on the court, and how the athletic trainer can guide the athlete through muscle reeducation, based on the condition and its presentation.

Mark Hung
Faculty Advisor: Walter Andzel

Physiological Profile and Self-Reported Training Methods of Recreational Mixed Martial Artists

The goal of this study is to examine and compare the physiological profile and self-reported training methods of recreational mixed martial artists. Determining these profiles and training methods could provide insight on the physiological demands, relative fitness levels, and current training methods that may be required for recreational mixed martial arts (MMA). Participants consisted of male and female MMA practitioners of recreational, amateur, professional, former amateur, and former professional competitive status older than the age of 18 years. Each was given a full physiological profile measuring body composition, power, strength, VO2 max, and flexibility.

Joseph Lentini, Edyta Drobiewska, Ana Diaz
Faculty Advisor: Norma Bowe

Be the Change: Changing the Landscape for Peace One Garden at a Time

Newark is the largest city in New Jersey, with a population of 277,140. The crime rate in Newark is considerably higher than the national average across with a rate of 46 crimes per one thousand residents. Newark has 3.65 acres of parkland per 1,000 residents; National standards call for 325-500 acres for a population of this magnitude. Other high-density cities (New York, San Francisco, Chicago, Boston, Philadelphia, Miami, Baltimore and Los Angeles) averaged at 7.17 acres per 1,000 residents. “Be the Change” Kean University is actively engaged in peace efforts by “adopting” vacant lots in dangerous Newark NJ neighborhoods and turning them into “peace gardens”. These efforts have been highly successful in “bringing unity to the community” as one resident said and creating a dialogue regarding peace and non-violence as well as demonstrable drops in violent crimes. These gardens promote visual improvements to city neighborhoods, empower residents to take back their streets and to understand the role that they can have in local issues that affect their quality of life and promote food justice. The pilot study showed a significant decrease in violent crime in the Garden Impact Area (a radius of 5 blocks in all directions).
**Stephanie Lewis, Victoria Baxter**  
Faculty Advisor: Kim Spaccarotella and Walter Andzel  
*College Students’ Knowledge of Recovery Beverage Serving Sizes*  
Chocolate milk is an effective post-exercise recovery beverage, yet it is unclear whether athletes and future health professionals can serve the recommended amount. This study examined college students’ knowledge of serving sizes for protein powder and chocolate milk. Students poured the amount of protein powder and chocolate milk (Milk 1) they would consume the hour after exercise. After reviewing a serving size guide, they poured the suggested amount of milk (Milk 2). Most poured less than the recommended amount of milk. Athletes were significantly closer to the recommendation than non-athletes (p=0.016 Milk 1 and p=0.035 Milk 2). Athletes and men served themselves significantly more protein powder than non-athletes (10.3 ± 5.2 g vs. 13.0 ± 5.3 g, p=0.047) and women (9.8 ± 4.4 g vs. 12.5 ± 6.0 g, p=0.041). Most found the guide easy to read and rated it 3.8 ± 1.0 out of 5 for helpfulness. Recovery beverage serving size may be an important topic to cover with athletes and future health professionals.

**Emily Maggi**  
Faculty Advisor: Ray Divirgilio  
*Flexor Hallucis Brevis Tear in a Collegiate Football Player*  
While performing a blocking drill under the chute at practice, an 18-year-old male collegiate football player tore his right flexor hallucis brevis. When all of his weight was dropped onto his right foot, he felt a pop under his big toe, leading to significant pain when applying any pressure on that foot. Evaluation of the injury found severe point tenderness and swelling on the bottom of the athlete’s foot, he also had limited, painful range of motion of his big toe. The athlete began to rehab the injury to control the pain and swelling until an MRI was scheduled a week later as symptoms did not improve. The MRI found a possible partial tear of the flexor hallucis brevis. Along with that, the flexor hallucis longus was irregular and thickened and fluid had accumulated in the right metatarsophalangeal joint. Flexor hallucis brevis tears are extremely rare in athletes, usually only seen in traumatic circumstances, such as stepping on broken glass. Furthermore, the athlete had no previous injuries to this area that would have left him more susceptible to the tear. He had performed this drill numerous times with no issues or pain before the injury. This particular case shows that some injuries come without warning, and more severe injuries can occur even without a traumatic mechanism.

**Katherine Nadelberg**  
Faculty Advisor: Walter Andzel  
*Acute Effects of Stretching Conditions on Anaerobic Performance*  
The purpose of this study was to determine which stretching method, or no stretching method, is the most effective in producing the greatest anaerobic capacity through administration of the Wingate cycle ergometry test (WAnT) for the collegiate-age population. Eleven men (n = 11) and eleven women (n=11) for a total of twenty-two participants (n=22) participated in this study. During the course of the 4-week intervention, participants randomly completed each of the four warm-ups; no stretching, static stretching, dynamic stretching, and self-myofascial release (SMR), followed by performance of the WAnT. Highest peak power, lowest peak power, peak power output (PPO), relative peak power output (RPP), anaerobic fatigue (AF), and anaerobic capacity (AC) were calculated and recorded based upon the results of the WAnT protocol performance. A repeated-measures ANOVA was used for statistical analysis.
with a confidence level of \( p < 0.05 \) to determine any difference between the stretching protocols performed before performance of the WAnT. No significant differences were found between the protocols, indicating that one type of the four warm-up protocols performed before the WAnT was not more successful in eliciting better anaerobic performance than another. Even though there were no statistically significant differences between the four warm-up protocols, results of this study are important because they imply that there may or may not be a best warm-up technique to perform before engaging in anaerobic activities. Although not statistically significant, the SMR protocol yielded the least amount of fatigue compared to the other protocols, potentially indicating that SMR should be used to have the least amount of fatigue during performance of the anaerobic activity.

**Eliza Piech**
Faculty Advisor: Dr. Walter Andzel

*Correlations of Physical Activity Levels and Balance*

The goal of this study is to see if there is a positive correlation between balance and amount of physical activity. Balance affects everyday life and becomes more of an issue as you get older. Balance training along with physical activity cannot only help rehabilitate injuries but also can help prevent them. Balance has only been looked at in regards to two extremes, the elderly and athletes. There is a correlation between poor balance and the elderly and excellent balance and athletes. Research however in regards to amount of physical activity at a recreational/noncompetitive level has not been looked at. Twenty Kean University students, who were physical education majors, were used as the participants in this study. They were divided into three groups based on their physical activity levels. The Star Excursion Balance Test and the Balance Error Scoring Test were used to test the participants balance. The study found that participants with higher activity levels had better balance than the participants that did not engage in as much physical activity.

**Jane Sweeney**
Faculty Advisor: Ray Divirgilio

*Stress Fractures of Tibia and Fibula in Collegiate Lacrosse Player*

During her freshman season, a 19 year-old female lacrosse player suffered from stress fractures in both her tibia and fibula on her left leg. Upon initial assessment, swelling and point tenderness were found along the medial shaft of the tibia. The athlete complained of pain with all phases of ankle motion, weakness was also noted with ankle inversion, and pain with compression. A MRI was taken a few days later and confirmed a stress fracture in her left tibia. The athlete was then withheld from all participation and placed in a walking boot for four weeks. During the summer after her freshman year her doctor then diagnosed her with a stress fracture in her fibula of the same leg as well. Stress fractures are common among athletes especially those who perform a great deal of running and cutting. A possible explanation for the development of these stress fractures is the athlete was not use to the increased demand of her sport transitioning from the high school to collegiate level. Also, the athlete was already suffering from an injury on her right lower leg and could have been compensating for the injury on her right leg placing more stress on her left.
**Brand Loyalty and Bottled Water**

Brand loyalty is defined as faithfulness to a particular brand and making repeated purchases of that brand. Studies have shown that the internet and social media play a role in brand loyalty. A consumer may choose to be loyal to one brand over another because of their personality, a celebrity endorser, consumer involvement, trust, and one brand being considered more luxurious than its competitor. The present study was designed to examine brand loyalty of bottled water. Three bottles, representing three different brands of water, will be filled with one brand different from the three-labeled bottles of water. The goal is to determine if any one of the labeled brands of water will be rated higher in quality. It was hypothesized that the more expensive brand label will be rated higher even though the type of water is the same in all three bottles.

**Relationship between Brand Strength and Logo Recognition**

Logos are prominent features in society and exist to increase brand recognition and product awareness. Companies spend millions of dollars for that recognition, utilizing marketing strategies and following consumer patterns. Some consumers choose brands with distinct logos because they suggest a certain socioeconomic or class status. Logos can be very powerful in influencing consumer choice. This present study was designed to measure recognition of national and international brand logos and generic logos. It is hypothesized that national and international brand logos will be better recognized than generic brand logos and that some categories of consumer goods will be better recognized than others.

**Branding, Product Placement and Recall**

Many factors may influence the choice of a name brand item from among other alternatives. Generic brand items have been rising in popularity and are known to be more affordable than the name brand version. Participants in this study were asked to select a photograph of a party scene they find most appealing. The scenes are differentiated based on the presence of a bag of name brand potato chips and a generic brand. The purpose of this study is to see if brand recognition influences choice.

**Branding in Perception of Lotion Quality**

Brand loyalty is the tendency for consumers to continue buying the same brand of goods rather than competing brands. Companies spend a lot of money to convince costumers that their brand is more favorable than others. For instance, the Pepsi vs Coke war was one of the first rivalries for brand loyalty.
Over the past several years, store brands and generic brands have become more popular. However, store brands and generic brands are less likely to spend the same amount of money on advertising as national brands. To test brand loyalty, the present experiment is designed to see if consumers are more likely to be loyal to national brand products compared to the more inexpensive, lesser known, counterparts.

**SUSAN-ANN DELA CRUZ**  
Faculty Advisor: Verneda P. Hamm Baugh  
*Physical Appearance and Ratings of Personal Characteristics*

This experiment examined how style of dress affects a female's approachability in daily social interactions. This study examined how societal constructs influence our way of thinking when meeting people. Three groups of males with 20 participants each were asked to take a survey to assess how a women’s physical appearance influences perception of her personal characteristics. It was hypothesized that the more revealing a female is dressed, the more positively she will be rated. Results found that the image of the female dressed in an outfit which showed more skin was judged to be more approachable than the image of the female in less skin-revealing clothing. The image of the female in less skin-revealing clothing was judged to have more Facebook friends compared to the other two females who wore revealing and slightly revealing clothing.

**NICOLE DEPOORTERE**  
Faculty Advisor: Richard Conti  
*Fish Consumption, Handedness, and Aggression*

Recent research has suggested that there is a negative correlation between the intake of omega-3 from fish consumption and aggression. Higher rates of fish consumption have also been linked to positive social functioning such as lower rates of depression, higher levels of motivation, and stable interpersonal relationships. Previous research has found deficiencies in docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) result in lower levels of serotonin that impact limbic system regulation by the frontal cortex, which is impaired in many violent offenders. The frequency of left-handedness also tends to be greater in offender populations. This study explores the correlation between fish consumption, handedness, and aggression in a non-clinical population. Participants were asked about their weekly fish consumption and completed handedness and aggression measures. It was hypothesized that higher levels of fish consumption and stronger right-handedness will be associated with lower levels of aggression.

**CHRISTINE FORD**  
Faculty Advisor: Verneda P. Hamm Baugh  
*Consumer Loyalty to Brand Name*

This research focuses on consumer loyalty to brand name products when the brand extends its product line. When a brand name gains consumer loyalty, through good quality, the consumer stays loyal to that brand even through brand/line extension (a continuation of the brand). Participants viewed pictures of different brand names and their brand extension products. They were asked to complete a questionnaire about their potential purchasing habits of the company/manufacturer brand name products and their loyalty to them. Undergraduate college students participated in the study. It is hypothesized that when a brand name gains consumer loyalty, through good quality, the consumer stays loyal to that brand even through line extension.
SARAH MCCARTHY
Faculty Advisor: Verneda P. Hamm Baugh
Influence of Brand Loyalty on Technological Preference

Brand loyalty plays a strong role in our choice of purchases without us even realizing it. For instance, one brand of laptop can prove to be better than others based on specifications like RAM, GB, and hardware, but if it is not made by the brand the customer was looking for, they may not purchase that item. The present study was designed to examine whether brand name alone influences laptop computer choices. This study also examined how certain brands are viewed and which qualities those brands attempt to represent. It was hypothesized that more people will choose a laptop based only on the brand name as opposed to the computer’s specifications.

KEISHA MODESTE
Faculty Advisor: Verneda P. Hamm Baugh
The Effect of Organic Certification on Consumer Purchasing Behavior

Consumers are increasingly bombarded with messages from food companies claiming that their products are healthier, fresher, and more natural. Food labels that contain words such as “natural” and “homemade” imply a superior product; however, these terms are not monitored and may be used at the discretion of manufacturers. The term organic is monitored by the United States Department of Agriculture (USDA) and may only be used with approval of the USDA. The present study analyzes the effect of the USDA logo on consumer purchasing behavior. Participants will choose between certified organic food products and non-certified organic food products without cost being a factor. It is hypothesized that the USDA certification seal will have no significant effect on consumer purchasing behavior.

GREGORY MORINO
Faculty Advisor: Verneda P. Hamm Baugh
Clothing Brand Recognition and Dating

A common euphemism about life is “you are what you eat.” This simple outlook on our existence is one with considerable merit. The question exists in whether this rule applies to a broader issue like outfit selection. Today there is great emphasis on the power of marketing and brand recognition. The great debate is what influences societal decision-making regarding product choice and consumption. The goal of this study is to determine whether branding extends into decision making in the specific area of mate selection. It was hypothesized that prestigious clothing brand recognition will have an effect on decisions regarding romantic pursuits.

 STELLA ONYIUKE
Faculty Advisor: Lydia Kaplan
The Influence of Socioeconomic, Safety and Environmental Factors on Physical Activity

The purpose of this study is to examine the relationship between socioeconomic, safety (security) and environmental factors on physical activity. Several studies have shown that an individual’s neighborhood, economic status, safety and environmental factors can help hinder their physical activity and lifestyle. Since lack of leisurely and vigorous physical activity among individuals is a risk factor
for being overweight, this can also lead to subsequent cardiovascular diseases, obesity, and several health and psychological related issues. This study involved sixty-six undergraduate students of Kean University, aged seventeen years and above, consisting of thirty-six students residing on campus and thirty students off campus. Participants in this study completed the survey. Some of the surveys were given to classmates during class period, and some was done, and accessed through Survey Monkey; while other random students were interviewed in person by the researcher. Participants were provided with a brief description of the survey. The objective of this study was to determine the association of socioeconomic, safety, and environmental factors on physical activity level among the undergraduate students of Kean University. The results showed a significant negative correlation between physical activity level and their self-perceived socioeconomic status. This study concluded that a greater percentage of participants were low active and somewhat active. Students that reside on campus have higher physical activity levels than those that reside off campus. Socioeconomic status has significant negative correlation with physical activity levels of undergraduate students of Kean University.

**JENNIFER PALACIOS**

Faculty Advisor: Richard Conti

*A Comparison of Child Custody Issues: Civilian vs. Military*

The present study examines the complexities and legal issues of child custody pertaining specifically to military families. Previous research and case law describes the difficulties military families face while seeking stable child custody agreements with their child(ren)’s other parent due to the unique culture, challenges, and responsibilities that military families face. Due to the distinct nature of military life, military parents face difficulty when approaching sensitive issues such as child custody. In comparison to their civilian family counterparts, military families face an array of unusual circumstances that differ greatly from a consistent statewide residence. Participants in this study read a vignette describing a child custody case and were presented with one of four parental conditions: (a) both parents civilians; (b) both parents active military; (c) mother active military, civilian father; and (d) father active military, civilian mother. After reading the vignette, participants were asked to answer questions regarding the case and give custody recommendations. Results indicated that participants were less likely to award sole custody to either military parent compared to civilian parents.

**GIOVANNI PIGUING**

Faculty Advisor: Verneda P. Hamm Baugh

*Power of Brand Recall in Visual Stimuli*

Brands are a marker for quality, consistency, and purpose. They assist people in associating certain characteristics with a particular product. They are also a powerful tool that allows us to differentiate one item from another, giving them a unique identity and personality. Companies spend a great deal of their money on advertising and other forms of communication for the sole purpose of making their products stand out from their competitors. One of the most notable rivalries between products was Coke versus Pepsi. It was one of the first instances when companies truly demonstrated just how far they would go to obtain an advantage over their adversaries. The purpose of this study was to investigate the true power of brand recognition when immersed in visual stimuli. Participants viewed one of two identical videos in which a can of cola was placed to determine the likelihood of recognizing the brand of soda. The recognition of Coke was compared to the recognition of a store brand cola.
Samantha Vo
Faculty Advisor: Verneda P. Hamm Baugh
Age, Brand Recall, and Brand Recognition

A company’s objective when starting a clothing line in the retail industry is to establish recognition and recall of the brand. Marketers emphasize that the most defined characteristic of status is branding. The goal of marketers is to influence consumer preference often through the use of advertisements and celebrity endorsements to aid in the creation of higher brand preference, brand awareness and familiarity. The present study was designed to examine how product placement will influence brand recognition, which then influences brand recall. It was hypothesized that product placement and knowledge of previous brand endorsements by marketers will aid in recognition and recall.

Wendy Alfaro, Christina Bueno
Faculty Advisor: Constance Hassett-Walker
Racial Profiling, Effective Policing and Drug Related Crimes

The proposed study will examine police use of force in arresting individuals suspected of using or possessing drugs, and how race – of individuals and of officers – may or may not play a role. Research finds that various kinds of police aggression are used disproportionately against minority populations (Brunson and Miller, 2006). Some perspectives suggest that the race of citizens is a factor that contributes to the use of police aggression, and both conscious and unconscious processes may trigger this choice (Holmes and Smith, 2012). The extent to which Blacks and Hispanics have been targets of police use of excessive force is of particular interest. Findings of independent commissions suggest that minority communities are the focus of excessive physical force problems (Independent Commissions on the Los Angeles Police Department, 1991). In addition, some studies have found that racial minorities generally have a more negative perception of police than whites (e.g., Jefferis, Butcher & Hanley, 2011, Cochran & Warren, 2012). Thus, this study will identify if participants’ racial background contributes to level of acceptability of police use of force. This study will focus on excessive use of force toward individuals suspected of drug offenses. Plenty of research has centered around the excessive use of force by police, however researchers have often neglected the area of police apprehension of drug offenders. The current study will examine 1) college students’ perceptions of acceptable levels of police force with drug offenders, 2) how those perceptions change with different-race suspects and police officers and 3) if the participants’ race mediates the relationship between acceptable use of force by police on drug offenders of varied races.

Sejal Brahmbhatt, Samantha Varon, Corrine McCarthy
Faculty Advisor: Donald Marks
Emotional Learning Processes Associated with Worry: An Implicit Relational Assessment Procedure Study of Responses to Emotion

Generalized anxiety disorder (GAD) is a mental health condition in which a person is often worried or anxious and finds it difficult to control his or her worry (Lee et al., 2010). Past research has found that
people with GAD show avoidance of unwanted private events, including aversive emotions such as nervousness or anger (Borkovec, Alcaine, & Behar, 2004). The current study sought to explore emotional responding processes that potentially contribute to avoidance of private events in people who endorse worry. To examine these processes, the study employed the Implicit Relational Assessment Procedure (IRAP), a behavioral method for assessing and quantifying relationships and learned associations. The IRAP uses a speeded “forced-choice” task paradigm to bypass efforts at impression management or response suppression (Nicholson & Barnes-Holmes, 2012). In the current study, the IRAP was used to assess participants’ timed responses when pairing “positive” and “negative” emotion words from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) with the labels of “good” and “bad” respectively. Participants were 27 undergraduate students at a public university located in the northeastern United States. Differences in endorsement of worry symptoms were assessed using the Penn State Worry Questionnaire (PSWQ; Meyer, et al., 1990), with a score of 40, shown to have the highest sensitivity in identifying GAD (Behar et al., 2003), used to differentiate between high and low worry groups. It was hypothesized that individuals endorsing high levels of worry (n = 7) would differ in their response times from participants endorsing lower worry (n = 22) on tasks that paired negative emotion words (e.g., “jittery,” “guilty”) with “bad” and on tasks that paired negative emotion words with “good.” No differences were expected between groups on pairing tasks that involved positive emotion words. Bootstrapped t-tests (2,000 samples) with bias-corrected accelerated confidence intervals were used to compare mean response times of the high worry and low worry groups. As predicted, the high worry group had smaller mean response scores on tasks pairing negative emotion words with the label “bad,” -0.29, BCa 95% CI [-0.562, -0.016], p = .04. No significant differences were found between groups, however, on tasks that paired negative emotion words with “good,” -0.12, BCa 95% CI [-0.404, 0.150], p = .38; positive emotion words with “good,” 0.11, BCa 95% CI [-0.212, 0.477], p = .49; or positive emotion words with “bad,” -0.07, BCa 95% CI [-0.303, 0.015], p = .57. Implications of these findings for understanding emotional responding associated with worry will be discussed.

SARA GLAZER, CORRINE MCCARTHY, DASA JENDRUSAKOVA
Faculty Advisor: Daniela Colognori

Impact of a Teacher Training Program on Identification of Anxiety and Depression in Youth

Given the “invisible” nature of internalizing behaviors, parents and teachers may lack awareness of symptoms (Campbell, 2002). Teachers have the unique potential to identify problems, yet research on teachers’ ability to identify internalizing disorders is lacking. The aim of the present study is to evaluate the effectiveness of a teacher training program designed to improve the identification of anxiety and depression symptoms in the classroom setting. As part of a larger study on the feasibility of a school-based intervention in two parochial schools, teachers were asked to nominate students they believed to be anxious or depressed and rate each nominated student on the Behavioral Assessment System for Children, Second Edition (BASC-2). Prior to this process, teachers in one of the schools participated in a training program and a pre- and post-knowledge test. Teachers in the second school participated in the nomination process without attending the teacher training. Analyses focused on teacher knowledge change after the training, as well as whether the training had an impact on teacher skill in identifying internalizing symptoms and nominating students. Data on satisfaction with the training was also examined. Results suggest that training may have increased some knowledge, but likely did not impact teachers’ confidence or skill in identifying children with anxiety and depression.
CORRINE MCCARTHY, DASA JENDRUSAKOVA, SARA GLAZER, JOSHUA GOLDSSTEIN  
Faculty Advisor: Daniela Colognori  
*Teachers’ Roles in School-based Mental Health: Attitudes and Identification of Internalizing Disorders*

Childhood internalizing disorders have been associated with substantial interference, yet service utilization remains very low. School personnel may play an important role in detecting internalizing symptoms, yet little is known about teachers’ attitudes or skill for identifying such problems. This study will evaluate whether teachers’ attitudes about school-based mental health predict accuracy of identification of anxiety in students. Two-tailed Pearson correlations were used to explore the relationship between attitudes and number of nominations each teacher provided. Additional correlation analyses were used to explore the relationship between attitudes and ability to accurately nominate children at risk for anxiety, defined as a positive screen for a nominate student. Results indicate that accuracy in identifying anxiety in children might have an inverse relationship with attitudes regarding the school’s acceptance of school-based mental health services.

SABLE ODOEMENA  
Faculty Advisor: Richard Conti  
*Analysis of Gender Differences in the Employment of Emotional Reasoning*

The following study was designed to examine gender differences between women and men in terms of the use of their emotional state when making judgments pertaining to the level of threat in a specific situation. A total of fifty participants, including an equal number of women and men, were asked to complete both a deductive reasoning task and an emotional reasoning task. Upon completion of the two tasks, participants’ responses to both anxiety evoking and non-anxiety evoking scripts, characterized by varying degrees of threat, were recorded. The results of this experiment can be applied to both phobia research and studies concerning cognitive factors that maintain fears in individuals within the general population.

HEATHER TRAICHTA, JUSTINE BENEDICKS  
Faculty Advisor: Dr. Jennifer Block-Lerner  
*Psychological Benefits of Artistic Activities in Adolescence and Emerging Adulthood*

This study investigates whether engagement in artistic activities is related to psychological wellbeing and mindfulness. Results revealed trends toward significance in which participants who reported engaging in artistic activities had higher scores on the Satisfaction with Life Scale, higher scores in mindful awareness, and lower scores in mindful acceptance than those who reported they did not. Limitations, suggestions for future research, and implications for the inclusion of artistic activities in school settings will be discussed.
RESEARCH AND TECHNOLOGY STUDENT SHOWCASE
2015

Presented by the Students and Faculty of GE202x,
Research and Technology

CAS Lobby
10 a.m. - 12 p.m. and 1 p.m. - 3 p.m.

Research and Technology is a required General Education foundation course that introduces students to research design and methodology as well as to disciplinary and interdisciplinary perspectives of the research process. The course is geared toward second-semester freshman and all sophomores and builds on previous coursework in writing, speech and quantitative reasoning. During this semester-long course, students engage in an original research project while learning about research overall. As part of the course, students select a topic, identify relevant research problems and sub-problems, review the literature on the issue, design a research plan, collect primary and secondary data, analyze and interpret the data, and arrive at logical conclusions. In addition to the final paper, students deliver a formal presentation to the class.

The Research and Technology Student Showcase is a Research Days event that presents a selection of student research projects. Started in 2013 as a way of showcasing student work in Research and Technology, faculty teaching Research and Technology invite students with strong research projects to participate.
STUDENT ORAL PRESENTATIONS SCHEDULE

Wednesday, April 28, 2015

8:30 a.m.  STEM 306  The Effect of Legalized Marijuana for Recreational Use on the State Level
            Lawrence Owens, Criminal Justice

8:50  STEM 306  How to Execute a Gallery Opening
            Jennifer Lee, Art History

9 a.m. - 10 a.m.  STEM 501  The Preservation of a Human Connection in a Time of War Through Letters
            Laura Hurley, Ksenia Starikov, David Lewis, History

9 a.m. - 11 a.m.  STEM 318  Psy. D. Dissertation Symposium

9:30 a.m.  STEM 306  Re-engineering Hoosierville
            Malyka Thelemaque, English

9:50 a.m.  STEM 306  Healthier Community
            Diana Betancourth, English

10 a.m. - 11 a.m.  STEM 501  The Experience of WWII New Jerseyan Soldiers
            Jon Cutler, Kevin Fette, Brie Gordon, History

10:10 a.m.  STEM 306  Hoosierville Gets Fit
            Kevin Solorzano, Terrell Ross-Pearson, English

10:30 a.m.  STEM 306  Engaged Learning: Digital Practices for Writing Instruction
            Gina Jorge, English

10:50 a.m.  STEM 306  Recruited or Brainwashed? How ISIS Radicalizes Young Western Women
            Jeanne Donohue, Political Science

1 p.m.  STEM 306  Plague: An Ancient Illness Causing Modern Malice
            Alan Pereira, Biology

1:20 p.m.  STEM 306  Assembly of Cellulosome-based Enzyme Display Arrays
            Vrajesh Patel, Chemistry

1:40 p.m.  STEM 306  Effects of a High Wind Storm on Coastal Pollution on Little Cayman
            Jonathan Davidson, Earth Science

2 p.m.  STEM 306  Exploring the Great White Sharks of Guadalupe Island
            Dennis Santos, Oceanography
2 p.m. - 3:15 p.m. STEM 501

The Newark State Teachers College World War II Letter Collection
Christina Leedy, Stephanie Valente, Joseph Galindo, Michael Collins, History

2 p.m. - 4 p.m. STEM 324

Robert Busch School of Design Student Research Panel

The Pineal Gland and the 24 Hour Wake Sleep Cycle
Sydney Buxton

The Neurology of Music
Michael Debisco, RBSD

The Enough Project: Congo Conflict Gold ‘Look Who’s Getting Engaged’ Human Rights Ad Campaign
Maria Finelli, RBSD

Design Fundamentals: An Innovative Approach to Learning from Textbooks
Max Friedman, RBSD

HIV PSA
Roxanna Gayosa, RBSD

3 p.m. STEM 306

“The Raven”: E-Lit Edition
Kristi Kulcsar, English

3:15 p.m. - 4:15 p.m. STEM 501

Africa: Lessons from the Aftermath of Genocide
Jaci Mayer, Tonya Hall, Ilyse Shainbrown, Holocaust & Genocide Studies

4:30 p.m. - 5:30 p.m. STEM 317

Ed.D. Student Research Panel

Best Practices for Successful Transition from High School to Adulthood for Individuals with Autism Spectrum Disorders
Maria Anderson, Educational Leadership

The Relationship between Teacher Evaluation Ratings and Student Performance
Natasha Baxter, Educational Leadership

The Other Side of the Desk: The Perceived Effectiveness of a Mentoring Program for Novice Teachers
Pamela Smircich, Educational Leadership

5 p.m. - 7 p.m. STEM 6th Floor

Early Childhood & Family Studies Graduate Colloquium
PSY.D. DISSERTATION SYMPOSIUM

AMANDA ASTER
Faculty Advisor: Donald R. Marks
Do Changes in Facets of Mindfulness Predict Decreased PTSD and Depressive Symptoms Post-Treatment in an Intensive Outpatient Group Trauma-Focused Treatment Program?

There has been significant recent interest in mindfulness-based interventions for posttraumatic stress disorder (PTSD) and depression (Bernstein et al., 2011; Owens et al., 2012; Vujanovic et al., 2011), but few studies have investigated the relationship between changes in facets of mindfulness and changes in PTSD and depressive symptoms in clinical populations. One recent study involving veterans (Boden et al., 2012) found that changes in two commonly recognized components of mindfulness (Baer et al., 2006; Bishop et al., 2004), acting with awareness and nonjudgmental acceptance, predicted reductions PTSD and depressive symptoms. The present study used archival clinical data from a community-based acute partial hospitalization and intensive outpatient program to examine associations between pre- to post-treatment changes in facets of mindfulness, PTSD, and depressive symptoms in adult women. The treatment program studied here was expressly informed by dialectical behavior therapy (DBT; Linehan, 1993), a form of cognitive-behavioral therapy that specifically incorporates mindfulness and related skills. The sample included 201 adult females, ranging in age from 18-64 years old. Two hierarchical multiple regression analyses (HMR) were conducted to test the primary hypothesis, that changes in facets of mindfulness predict PTSD and depression severity at discharge. Consistent with previous research (Boden et al., 2012; Owens et al., 2012), facets of mindfulness increased during treatment. Also, consistent with prior work (Bernstein et al., 2011; Vujanovic et al., 2011), changes in facets of mindfulness were associated with reductions in PTSD and depression severity, even after controlling for pre-treatment PTSD and depression severity, respectively, and length of treatment. Findings suggest that change in two commonly recognized core components of mindfulness, acting with awareness and nonjudgmental acceptance (Baer et al., 2006; Bishop et al., 2004), in addition to increased skills in observing and describing, may be useful predictors of PTSD treatment outcomes. Increases in mindfulness may guide patients in adaptively approaching, rather than habitually avoiding, trauma-related stimuli. Additional research is needed, however, to examine the role of mindfulness as a potential mediator of treatment outcomes.

JOHN “BRAD” FECHTER
Faculty Advisor: Donald Marks
Executive Functioning as a Predictor of Nonverbal Learning Disability and Attention-Deficit/Hyperactivity Disorder

Children with nonverbal learning disability (NLD) are often diagnosed with attention-deficit/hyperactivity disorder: predominantly inattentive type (ADHD-PI). While children with NLD and ADHD-PI may present similarly the etiology of attentional symptoms in each disorder may be very different, possibly necessitating different accommodations and interventions. The present study, which utilizes archival data, examines the differences in executive functioning between children and adolescents (anticipated n = 200) meeting neuropsychological screening criteria associated with NLD and ADHD-PI. Independent t-tests will examine differences between the ADHD and NLD groups on four NEPSY-II subtests that
measure executive functioning. Bootstrapped logistic regression will test models including the four NEPSY-II subtests as predictors of cases meeting NLD or ADHD screening criteria. The implications for assessment and diagnosis will be discussed.

AGNES LENDA
Faculty Advisor: Jennifer Lerner

*The Feasibility of Interprofessional Mindfulness- and Acceptance-based Workshops for Healthcare Professionals in Training*

Mindfulness-based interventions have recently been employed in numerous settings for many populations, including graduate students and healthcare professionals. The intrapersonal and interpersonal benefits reaped from mindfulness practice may also positively influence interprofessional functioning. Currently, education on the roles of other professionals outside of one’s own field is intended to promote similar elements as mindfulness-based training (e.g., awareness, values), but typically does not allow for access to professional others. Mindfulness-based workshops provided for students of various healthcare professional training programs may foster interprofessional learning, as well as provide benefits pertinent to students’ field work. This study of feasibility aims to determine the viability of conducting said mindfulness-based workshops. Specifically, expressed levels of interest and (if workshop implementation is possible) participation rates will be examined. Further, variables will be examined in an exploratory fashion to determine if certain characteristics are indicative of interest and/or participation in workshop. Data collection and analysis are pending.

RACHEL PESS
Faculty Advisor: Daniela Colognori

*The Acceptability and Feasibility of a Behavioral Parent Training and Acceptance- and Mindfulness-Based Intervention with Parents of Children with Autism Spectrum Disorder or Related Deficits*

Parents of children with Autism Spectrum Disorder (ASD) and related difficulties face a high level of stress. Interventions aimed at helping parents learn to manage these difficulties are beginning to emerge in the literature. The vast majority of interventions designed for parents are behavioral parent training (BPT) interventions, which have been shown to be effective in decreasing problem behavior in children by changing parenting behavior (Eyberg et al., 2008; Pelham and Fabiano, 2008), but do not directly target parents’ internal experiences. Mindfulness- and acceptance-based interventions may hold some promise as an alternative approach to parenting interventions. These interventions have been shown to be effective at reducing psychopathology and stress in adults (Ost, 2008; Powers, Vording et al., 2009; Ruiz, 2010), but there are limited studies evaluating parenting interventions consisting of these techniques. Two recent studies have investigated the use of Acceptance and Commitment Therapy (ACT) with parents of children with ASD, with results suggesting that this may be an effective approach for this population (Blackledge & Hayes, 2006; Kowalkowski, 2012). The current study aims to examine the acceptability and feasibility of a group parenting intervention incorporating both mindfulness/acceptance-based techniques as well as behavioral parent training in a clinic setting. Specifically, it will examine the acceptability by parents of two different types of parenting interventions by providing participants a small dose of each approach in a group setting and exploring attendance and satisfaction outcomes.
Marjorie Slass  
Faculty Advisor: Adrienne Garro  
*Emotion Regulation, Self Concept, and Quality of Life of Siblings of Children with Autism and Related Disorders*  

Among all human relationships it is the sibling relationship that typically lasts the longest. It is usually an egalitarian relationship, and it is unique in that it is assigned, not achieved (Cicirelli 1995). There has been little research on the psychosocial and emotional adjustment of non-disabled siblings of children with autism. Of the studies that have been done, the results have been inconsistent. Macks and Reeve (2007) found that the siblings of children with autism seemed to have a more positive self-concept than did the siblings of typical children. Verte et al., (2003) found that sisters of children with autism credited themselves with higher social competence and a more positive self-concept than sisters of typical children. On the other hand, Hastings (2003) found that siblings of children with autism are at higher risk for poor psychological adjustment compared to typical children. Using a sample of parents of children with autism and siblings of children with autism, this study looks at parent ratings of their child’s quality of life, emotion regulation skills, and self-concept. It is expected that the parents’ ratings of quality of life will be positively correlated with the siblings’ own ratings of self-concept. It is expected that the parents’ ratings of emotion regulation skills will be significantly correlated with their child’s self-ratings of emotion regulation skills. Thirdly, it is expected that the sibling’s self-concept ratings will be significantly correlated with his/her emotion regulation skills, as measured by self-report. Lastly, an exploratory analysis will be completed to see if the average self-concept of the sample of siblings in this study, as measured by a standardized instrument, will differ significantly higher from the mean self-concept of the standardization sample for this instrument. Practical implications for working with siblings of children with autism and related disorders will be discussed.

Rebecca Smith-Casey  
Faculty Advisor: Andrew Wolanin  
*Development of a Measure of Adjudicative Competency: The New Jersey Competency Assessment Tool (NJ-CAT)*

Assessment of competency to stand trial is a relatively common evaluation in the context of a criminal adjudication with the potential for significant consequences for the defendant and the criminal justice system as a whole. A wide variety of assessment measures have been developed to aid evaluators in competency assessments based on the standards set forth in Dusky v. United States, yet many of these measures have been criticized in recent years for a variety of reasons, including poor applicability to the competency standards set forth by individual states. The present study involves the initial development of a measure of competency specifically designed to assess competency based on the New Jersey standard. This validation study focused on development of scoring criteria for the New Jersey Competency Assessment Tool (NJ-CAT) based on review of previous competency evaluations in New Jersey and field testing with criminal defendants undergoing competency evaluations. It was hypothesized that the NJ-CAT scores would differ significantly for criminal defendants determined to be competent versus incompetent by expert evaluators, as well as significant differences in NJ-CAT scores for those adjudicated competent versus incompetent by the fact finder during a competency hearing. Implications for the use of this measure will be discussed, as well as directions for future research.
HEATHER TRACHTA
Faculty Advisor: David Brandwein

Childhood Trauma and Depression in Court Involved Parents and the Relationship to Adherence to Child-Parent Psychotherapy

Treatment adherence is the first step toward receiving and benefiting from a psychological intervention. The present study evaluated factors associated with attrition in 108 parents who have been court referred to complete Child-Parent Psychotherapy as a result of child abuse and neglect charges, with a focus on parents’ childhood trauma and parents’ depression symptoms at the time of intake. Parents’ experiences of trauma in childhood were assessed by a shortened version of the Adverse Childhood Experiences Questionnaire. Parents’ depression symptoms at the time of intake were assessed by the Beck Depression Inventory, 2nd Edition. Results found that parents who experienced a greater number of adverse childhood experiences such as abuse, neglect, and exposure to community violence had more symptoms of depression at the time of intake than those who had fewer adverse childhood experiences. Results additionally found that for parents who experienced four or more adverse childhood experiences, a higher number of adverse childhood experiences was predictive of parents attending fewer treatment sessions, and attending treatment sessions less frequently. Limitations and implications will be discussed.

ART HISTORY

JENNIFER LEE, GABRIELLA DEBONIS, ABRAHAM RIVERA
Faculty Advisor: Jacquelyn Stonberg

How to Execute a Gallery Opening

Executing an art gallery exhibition takes several months of research, writing and planning. In being tasked with such an honored responsibility, I along with my two classmates, Gabriella and Abraham have begun a long list of duties including securing gallery space, setting an opening exhibition date, studying the works of art to be exhibited, and researching, writing and designing an exhibition catalogue for publication. In the assurance of a successful opening, advertisement on campus and off campus is necessary as well. The largest challenge includes the research, writing and publications of the works in an exhibition catalogue. Through these in-depth exercises, we three will guarantee an efficacious gallery exhibition of a world-renown artist, Janise Yntema, at Kean’s own Dryfoos Gallery in October of 2015. In these several months that Gabriella, Abraham and I will labor through our beneficial consignment, we will have gained a vast insight to the field in which all three of us intend to make our careers in. It is with great honour that we have been assigned this job because we feel that not only will it be massively beneficial to all of our careers in the gallery and museum field but it will also prepare us for those job assignments we will have in our respective fields. The opening of this particular exhibition also highly benefits the students of Kean University. Because we are featuring Janise Yntema’s works, students of Kean University will have access to a famous New Jersey native artist who has been featured in famous galleries and museums throughout Europe and the United States. Janise Yntema’s artworks at Kean University will be educational as well as inspirational not only to Kean students but also to the community in the form of educating about an ancient and rare type of painting highly unseen in modern art: encaustic painting in wax. This class assignment is not just beneficial to the three of us but also as an outreach to the Kean and New
Jersey communities especially as the artist, who lives and works in Europe, originally grew up just a few miles from our university.

**BIOLOGY**

**ALAN PEREIRA**  
Faculty Advisor: Roxie James  
*Plague: An ancient illness causing modern malice*

This research is to remind the population about an ancient illness that is still alive and virulent to this day. The research aims to inform the population of the possibility of infection, the deadly effects of the disease, the cures, and the possibility for use as a bio terroristic weapon. In the presentation I will discuss, in both theoretical and actual cases, how the bacteria can spread and the implications of the outbreak. This is important to the discipline of biology due to its ability to affect multiple types of creatures; this research was assembled by reviewing existing research and exploring possible effects on a biological, societal, and cultural level.

**CHEMISTRY**

**VRAJESH PATEL**  
Faculty Advisor: Daniel Fried  
*Assembly of Cellulosome-based Enzyme Display Arrays*

The digestion of cellulose is the challenging task when it comes to form bio fuel from plant wastes. Researchers are focusing to formulate cellulosome-based enzyme complex that can digest cellulose from plant material. This project is designed to create assembly of cellulosome-based enzyme display arrays. To understand how to create large cellulosomes, it is important to understand how they assemble. Cellulosomes contain a unique assembly scheme and have been compared to molecular Legos. In a natural cellulosome, long protein scaffolds contain multiple protein modules called cohesins, which in a Lego-like manner bind another kind of module called dockerins. The enzymes important for breaking down cellulose are connected to the scaffold because they contain dockerin modules. The ultra-strong connections created between these proteins allows the creation of the complex and branching enzymatic architectures that are needed to break down cellulose. This project will use the solid-phase synthesis to create cellulosome-like enzyme arrays.
**C R I M I N A L  J U S T I C E**

**LAWRENCE OWENS**  
Faculty Advisor: Hassett-Walker  
*The Effect of Legalized Marijuana for Recreational Use on the State Level*

The legalization of marijuana has been a topic of conversation and much debate for many years. Whether pro or con to the issue of legalization, many would not have believed that marijuana would be legalized recreationally here in the United States. Well, until 2012 when two states, Colorado and Washington State went forward with ballot initiatives to legalize recreational use, both initiatives were passed. Thus Colorado and Washington State became the first two states to legalize the recreational use of marijuana for adults 21 and over. This happened despite marijuana being illegal at the federal level, and still classified as a scheduled one drug. Now these two states were able to move forward on legalization, because the Department of Justice issued a memo in 2013, outlining eight areas of concern they had. In order for a state to have recreational marijuana legal within their state they must follow the eight areas of concern outlined by the Justice Department. The Justice Department within the same memo still held the right to enforce federal law if the memo is not being followed. Since 2012, two more states have passed recreational marijuana laws, Oregon and Alaska. Moving forward my research will look into whether other states have legalized recreational marijuana. It would look into if teen usage which is an issue of concern for legalization has gone up, down, or stayed relatively the same, and to see whether crime rates for marijuana have risen or gone down since legalization in states that have legalized.

**D E S I G N**

**SYDNEY BUXTON**  
Faculty Advisor: Kim Spaccarotella and Elizabeth S. Blazer  
*The Pineal Gland and the 24 Hour Wake Sleep Cycle*

My research answers: why we sleep, what makes us sleep, and why we specifically sleep at night. It is very important to understand our human functions; it helps us to develop a lifelong plan for good health. My method of research consists of online scholarly articles and WebMD. I also checked in with professor, Kim Spaccarotella, to verify my research. Therefore, I can conclude that darkness of night coaxes the brain to sleep and sleep is vital to the body's growth, healing ability, mental stability, and long life.

**MICHAEL DEBISCO**  
Faculty Advisor: Elizabeth S. Blazer  
*The Neurology of Music*

In conjunction with the Kean University Science department, “The Neurology of Music” explains the psychoacoustics of how sound is processed by the ear and interpreted by the brain. Questions answered during this presentation include: Why is music so catchy? What makes us enjoy music? How does music affect our emotions?
**MARIA FINELLI, MAX FRIEDMAN, RIA VENTURINA, TIFFANY LOUIE, NICOLE TRUSA**

Faculty Advisor: Robin Landa

*The Enough Project: Congo Conflict Gold ‘Look Who’s Getting Engaged’ Human Rights Ad Campaign*

The Enough Project team was down to the wire heading into the launch of a significant and serious campaign. The issue they were addressing was “conflict gold” from the Democratic Republic of the Congo. “Conflict gold” comes from the illicit gold mining and smuggling in Congo, and currently funds and fuels armed groups that are responsible for terrible crimes and atrocities in eastern Congo, including child soldiers, rape and torture. But the campaign needed to take a constructive approach, since they were working to encourage the gold jewelry industry to play a positive role as the world’s biggest end users of gold. Jewelry companies have an opportunity and responsibility to get engaged to help support peace and free mining communities in the Congo from the control of these violent armed militias. The Enough Project decided to celebrate those jewelry companies taking a lead, with a play on the meaning of “engagement.” The Enough Project asked Robert Busch School of Design students to design and conceptualize the “engagement” ad campaign. The RBSD students designed a visual campaign that was pitch-perfect, professional and powerful. It was launched on Nov. 24, 2014 and is the centerpiece of the Enough Projects’ “Look who’s getting engaged” campaign (www.enoughproject.org/CongoGold) through the 2014 holidays and into 2015.

**MAX FRIEDMAN**

Faculty Advisor: Rose Gonnella

*Design Fundamentals: An Innovative Approach to Learning from Textbooks*

The purpose of this study was to investigate new methods of delivery of information for design textbooks and to develop an innovative method for increasing interest in the textbook and therefore retention of information. I am currently studying graphic design. This research project is directly related: how does visual communication enhance effectiveness (in this case, textbooks). Textbooks remain as they have been for years on end: a written lecture; paragraphs of grey type; a narrative designed in a good or bad grid; information unfolding the same page after page, with reproductions of historic and iconic design. Textbooks are necessary. The printed word reviews, reinforces, and references information presented in class. But do the students read books? Do textbooks work? This study sought to change the way students had seen and felt about textbooks in such a way as to positively alter a student’s perception of a textbook. Through a variety of study groups and dozens of sample designed pages it was found that students connected to the information, and connect to the content when it was presented on a more personal level. It was found that students connected most with books that held a certain level of human touch to them, via actual handwriting or hand illustrations etc. Conclusion: the design fundamentals series of textbooks (contracted for publication by Peach Pit / Pearson Publishing), put the personal touch to paper. The book series therefore contains both serious study points as well as a fantastical fully handwritten and hand drawn format that intrigue the viewer and at the same time encourages students to turn their own notebook into an engaging and memorable visual journal.
ROXANNA GAYOSA  
Faculty Advisor: Elizabeth S. Blazer  
HIV PSA

This presentation is a Public Service Announcement on the Human Immunodeficiency Virus or HIV. The goal is to inform and educate young adolescents with the purpose of preventing the virus from spreading, and to encourage them to get tested.

ENGELSH

DIANA BETANCOURTH, MICHAEL VEIKSANS, GREGORY PINHO, RICHARD MEROLA  
Faculty Advisor: Leonard Naturman  
Healthier Community

The officials of Hoosierville would like to make its residents healthier by encouraging them to have a more active lifestyle. In order for this to happen it is recommended that certain changes are made in our city. These changes are necessary so that people’s first instinct would be to walk or ride a bike rather than drive to their destination. These changes will be beneficial to the community by making citizens and their pets healthier and the community cleaner with less car pollution. For our citizens to become more active Hoosierville needs to undergo a transformation that presents safer and easier methods to move around town. To encourage bicycle riding we need to provide bike lanes and create a safe bike parking area for people to store their bikes when in town. To promote walking, old train tracks can be converted into modern walkways with beautiful gardens to sit by and small coffee shops to stop and take a break. With our over busy roads, walking bridges can be built which will allow our citizens a safe crossing. Revising health laws to allow pets to visit restaurants outdoor areas and establishing dog stations to facilitate easy pet cleaning will increase the number of citizens who do not have a reason to visit our town. We need to create a downtown area that will promote shoppers. Tax breaks will be given to small businesses so that they will want to invest in our town. Finally, having a low sales tax will attract buyers and help these businesses. Research has allowed us to conclude that these proposed changes will be beneficial to Hoosierville. First of all, our roads will have less traffic and will be safer and cleaner. The citizens will be healthier as well as their pets from all the exercise. As more small businesses open in the downtown area, the city’s economy would be boosted. More people will be attracted to our relaxed community. In the long term, the city’s real estate will be boosted because more people would want to live in Hoosierville.

GINA JORGE  
Faculty Advisor: Mia Zamora  
Engaged Learning: Digital Practices for Writing Instruction

In this thesis I will explore digital practices for teaching writing to undergraduate students, merging ground theory and the best practices for writing instruction. I will analyze ideas in pedagogy for interactive learning; making a case for digital tools to create a scholastic atmosphere, which promotes the teaching and learning of writing. This study will explore the effectiveness of digital writing practices compared to traditional post-secondary instruction. I will examine the use of technology as an educational tool,
thinking critically about technology and how to apply it effectively through interactive learning. Assessment will be comparative, based on literature in the field determining which efforts are most successful to improve not only how students write, but how teachers instruct and foster digital writing. All of my research can be found on my blog which is what I will present/display on research day.

KRISTI KULCSAR
Faculty Advisor: Mia Zamora
“The Raven”: E-Lit Edition

Electronic literature is a “work with important literary aspects that take[s] advantage of the capabilities and contexts provided by the stand-alone or networked computer” (ELO). It is a relatively new and evolving medium of literature that boasts a unique way of experiencing literature that is entirely multimodal, encompassing works that make use of all sorts of interactive tools from hypertext to chatterbots. This study identifies the benefits of electronic literature in conjunction with existing academic opinions on the use of technology in the classroom, and advocates for the use of electronic literature and digital interface in teaching canonical texts in secondary education literature classes. This presentation will focus on exhibiting an original remediation of Edgar Allen Poe's poem “The Raven” from print to a work of electronic literature and discussion of its uses in the classroom.

KEVIN SOLORZANO, TERRELL ROSS-PEARSON, ERIKA ESPIN, ASHLEY BUFIS, MASSIEL MARMOLEJOS
Faculty Advisor: Leonard Naturman
Hoosierville Gets Fit

The residents of Hoosierville have faced a host of place-based hazards and stressors such as pollution, weight issues, unhealthy trends and poor lifestyles, all of which have likely contributed to their poor health. In our research paper, we identify these health concerns and how to reverse its miserable fortunes by embracing a health policy strategy for community development. Research: Our primary research consists of observations conducted throughout a chosen city: its nutritious quality among food stands, the calorie intakes among fast-food restaurants, the amount of recreational parks available to its citizens, zoning between gyms and restaurants, how often people exercised and the city’s pollution. We also conducted a questionnaire about people’s thoughts towards the overall state of health in Hoosierville and any suggestions they would make to improve it. We also conducted interviews to various individuals with a specific set of questions focusing on fitness and the problem with obesity. Our secondary research consists of gathering sources such as: studies conducted about fitness levels among individuals who live in a close-proximity radius to unhealthy chain restaurants and decision making towards fitness, and other articles relating to the unhealthy state of urban culture. Methods: The city can organize a series of participatory planning projects with its residents, community activists, school officials, and others to make sure that the city takes its health concerns into account. Examples include marathons, cancer walks, festivals, and other events to get people active. Another method will focus on refining weight control by getting people to exercise and maintain a weight based on size as a policy. Failure to follow this policy will include a fine unless possessing a legitimate reason for poor health. Other methods will affect the food distribution based on its nutritional value to society; for example, banning soda drinks of more than 20 oz. in the city. Adding bicycle lanes, jogging terrains/paths will also be part of our environmental project to provide individuals with options to workout, even if it’s for a brief moment. Results: The end result was an approach mapped out to address the social causes of
health by directing development resources towards many vulnerable communities and by adopting a health policy or system to improve overall health. The process has contributed to rising levels of resident satisfaction about personal health, the direction the city is taking, and the quality of great health. Conclusion: Hoosierville’s experience suggests that using a health-improving strategy is the way to promote a healthy lifestyle in not only its city but to others as well.

MALYKA THELEMAQUE, IESHA WALKER, KEVIN ROMERO, JUAN ROMERO
Faculty Advisor: Leonard Naturman

Re-engineering Hoosierville

Mayor John Doe of Hoosierville is very concerned about the large amount of city people with diabetes, respiratory problems, and heart conditions. He thinks it would be beneficial if more people exercised and walked, or used bicycle to school or work. An issue for this problem is that many people usually work out of town, so they are not able to go walking or biking because it is a long distance. Another problem is disabled people that can barely walk or even exercise. The weather can be a major problem for those going to school or work. Advantages of walking to school are saving money on gas and also going green which means you are stopping air pollution from car fuels. The biggest benefit from re-engineering the city streets is that people can exercise and get fresh air every single day. The solutions are as stated, marked cross walks with free water fountains for every mile. Also, have Bike lanes for people traveling to work. Lastly, have long lights for pedestrians to walk across the streets. Mayor John Doe recommends everyone to exercise and walk more to prevent any disease and prevent any accidents relate to traffic. We have researched various conditions from several sources for this study.

ENVIRONMENTAL AND SUSTAINABILITY STUDIES

JONATHAN DAVIDSON
Faculty Advisor: Carrie Manfrino, Kristi Foster

Effects of a High Wind Storm on Coastal Pollution on Little Cayman

Over the past five-years, the world’s coastal pollution has increased dramatically with plastics being the lead contributor. With this problem increasing rapidly, it is becoming detrimental to both marine life and the coastal environment. The objective of this study was to quantify the marine debris/pollution that washes onshore during a high windstorm on Little Cayman. A 520ft² area was selected for study based on natural landmarks and debris patterns along the shoreline of the Jackson Point Cut and studied over a 4-year period. Marine debris was removed from both the tidal and backshore coastal zones where they were categorized and grouped into size categories. Before the storm 290 items were collected, ranging in size from 1mm to 2 feet, and totaled over 6lbs of garbage. After the storm 188 items were collected primarily from the tidal zone. Most items collected were less than 5mm in size. Non-local sources of plastic are the lead contributor to coastal pollution on Little Cayman and at many locations. The non-biodegradable nature of marine debris is of major concern to nesting sea turtles, seabirds, and marine invertebrates living in the coastal zone. Worldwide efforts to reduce the introduction of plastics into the ocean are required.
Dennis Santos
Faculty Advisor: Shanggeun Rhee

Exploring the Great White Sharks of Guadalupe Island

As a professional scuba diver and explorer, while working with non-profit agency Fins Attached, I participate in the research and study of Great White Sharks in the Pacific Ocean. This research includes taking tissue samples for genetic tracking and attaching tagging devices to monitor global roaming patterns of the Great White Shark, Carcharodon Carcharias. This elusive creature is not the man eater the general public makes them out to be. We have yet to ever see them mate, let alone capture any footage of the species mating. My work supports the research being conducted by Dr. Alex Antonio and Dr. Mauricio Hoyos Padilla of Fins Attached on location at Isla Guadalupe, Mexico. I intend to submit a scientific report and application for membership to the Explores Club.

History

Jonathan Cutler, Kevin Fette, Brie Gordon
Faculty Advisor: Jonathan Mercantini

The Experience of WWII New Jerseyan Soldiers

Wars don’t happen on their own; they involve whole chains of command and countless fronts operating at once on both the domestic and global levels. The soldiers in particular can be considered the basis of combative warfare. As in the case of the United States during World War II—which will be the focus of our presentations—soldiers played an imperative role in the outcome of the war, the victory of the Allies. But how were these soldiers preparing for war? What specific training did they receive? What psychological states of mind were they in while in training? These are the principal questions that will be addressed in our study. We will explore the psyche of these soldiers and understand the perspectives of feelings that these soldiers experienced and expressed while in training. This will be done by analyzing the WWII correspondence of former students and alumni of Newark State Teachers College who corresponded regularly with the school’s librarian. Throughout their letters specific patterns can be identified: indications of optimism and patriotism, doubt and complaints, and eager sentiments of progression while in training. The analyses of these soldiers may appear to be personal case studies, but they are actually microcosmic, and speak not only to the feelings of these men, but to the feelings that were shared by countless other soldiers. The importance of these stories offers us the background to the psyche of the soldiers and how the training, and the war itself, shaped them.

Laura Hurley, Ksenia Starlkov, David Lewis
Faculty Advisors: Jonathan Mercantini and Elizabeth Hyde

The Preservation of a Human Connection in a Time of War Through Letters

A connection with another human being is something we all crave. Through a letter one is able to convey emotions, feelings, and experiences. More importantly, letters are a way to maintain a connection with other humans and retain hope. Specifically, Nancy Thompson, the librarian at Kean University would send out a newsletter to her students who went away to serve in the Second World War. Through this newsletter, the students were able to keep in touch with faculty and staff at Kean, as well as each other. In the letters they wrote back to Nancy Thompson they convey how important her newsletter was
to them and how much they anticipated it. It is important to understand that during World War II, the letters that were exchanged between Nancy Thompson and the students provided a connection which otherwise would have been broken. To historians, these letters show that it was indeed possible for many people in many different locations to stay connected in an era before social media.

CHRISTINA LEEDY, STEPHANIE VALENTE, JOSEPH GALINDO, MICHAEL COLLINS
Faculty Advisor: Jonathan Mercantini

The Newark State Teachers College World War II Letter Collection - A Digital Humanities Endeavour

Kean University has the good fortune to possess a small but robust archival collection amongst which the Nancy Thompson Letter Collection was found a year ago. Since that time a team of History Honors students, in collaboration with a Kean Computer Science student, have transformed the collection from a stack of nearly nine hundred letters and pictures into a digital archive. Further steps have been taken to begin augmenting the collection by mapping the locations from which letters were sent, connecting letter writers with their student records, still contained in the Registrar's Vault, and through interviews with surviving correspondents. This exhaustive compilation of material relating the range of human experience – from the strain of war and pain of loss to the momentous marriages, graduations, and births; the lives of these Newark State Teacher’s College students has been arduously preserved for future generations to learn and study their achievements. A boon to historians studying the period, the collection offers much insight into the critical questions in American history, such as the impact of women on the war effort, the movement of men and women around the world during the war, and how educational outcomes and practices were affected by wartime experiences.

HOLocaust and genocide studies

JACI MAYER, TONYA HALL, ILYSE SHAINBROWN
Faculty Advisor: Sue Gronewold

Africa: Lessons from the Aftermath of Genocide

After taking the course on Comparative Genocides this fall, we have become particularly interested in genocides that have taken place in Africa. For research day, we would like to present the work we have done on African genocides and discuss why they happened and what the effects have been on these states post conflict. What we have found particularly interesting is the colonial causes of genocide and then how these countries had different experiences of decolonization. Using Rwanda in the 1990s, the Herero people of German Southwest Africa, and the Congo under Belgian rule, as specific case studies, we attempt to answer the questions, “How have different African states continued on after genocide and what have been the roles of different actors both internal and external?”
There has been a recent trend of young women in the West to become radicalized through extremely well-orchestrated networks of radicalized Islamists on the internet. The Islamic State of Iraq and Syria has been utilizing this mode to recruit female members into its ranks with great success. These young women are voluntarily giving up the privilege of political freedom and the liberation of women’s rights, to join this militant Islamic terror organization. In order to find a solution to the problem of radicalization of these young women, we must first understand the motives behind it.
ED.D. STUDENT RESEARCH PANEL

MARIA ANDERSON
Faculty Advisor: Soundaram Ramaswami

Best Practices for a Successful Transition from High School to Adulthood for Individuals with Autism Spectrum Disorders

Autism affects one in 49 children born in New Jersey. Thanks to I.D.E.A., these children attend school from age 3 to 21, receiving numerous therapies and training. However, transitioning to adult centers where they can continue to grow is a huge problem. This descriptive research tries to discover what the best practices for a successful transition from High School to Adulthood are, from the perspectives of parents, school personnel and intake coordinators at the adult service agencies. The results show that a combination of parental advocacy, student’s skills and behavioral profile, and school-adult agency relationship can ease the transition. Another important component is the government funding and case management from the State agencies. In addition, the perceptions of parents, schools and adult agencies are sought to ascertain the value of internships and other curriculum components of the transition plans.

NATASHIA BAXTER
Faculty Advisor: Soundaram Ramaswami

The relationship between teacher evaluation ratings and student performance

The Teach NJ Act mandated many requirements for the new statewide evaluation system linking the quality of teaching and student achievement. As a result, school districts were required to select one of four state approved evaluation systems to evaluate teachers. This mixed method study will examine the relationship between teacher evaluation ratings and student performance in a public school in Northern New Jersey, specifically evaluation ratings pertaining to preparation and delivery of instruction. A total of five elementary school teacher evaluation ratings will be analyzed during a course of two years, in grade four, to determine if there is a statistically significant relationship between teacher evaluation ratings and student performance.

PAMELA SMIRCICH
Faculty Advisor: Soundaram Ramaswami

The Other Side of the Desk: The Perceived Effectiveness of a Mentoring Program for Novice Teachers

For this presentation, this descriptive study will examine the perceived effectiveness of a beginning teacher mentoring program in a public school district in Northern New Jersey. Since research has begun to reveal the importance of beginning teacher induction and mentoring, programs have begun to be more commonplace in school districts across the United States. As a result, it has become necessary to implement ongoing systems of induction and mentoring program assessment. A total of 20 beginning teachers will be surveyed about the perceived effectiveness of the teacher mentoring program they experienced as well as suggestions for the program’s improvement. The primary means of assessment will be a 5-point scaled survey questionnaire based on New Jersey’s guidelines for teacher mentoring programs.
ERIN BUTTERLY  
Faculty Advisor: Sonja de Groot Kim  
*Providing Sensory Experiences for Preschool Children with Autism and Their Subsequent Behavior during Play in the Block Area*

This action research project took place in an integrated preschool classroom in a suburban town. The participants were two preschool age children, diagnosed with Autism Spectrum Disorder. The purpose of this study was to examine the effect of the children’s participation in sensory activities, and their subsequent behavior in the block center. During the pre-intervention period, the researcher utilized anecdotal records and a time sampling form to gather baseline data of the children’s actions. Data collection methods during the intervention period included time sampling and anecdotal records to track the physical, communicative, and social-emotional behaviors and actions of the two target children as they played in the block center. The results of the study and possible implications for practice will be discussed.

MARY GRACE GARCIA  
Faculty Advisor: Sonja de Groot Kim  
*Second graders experiencing numeracy through recreating a real life experience in the classroom*

This action research project took place in an urban elementary school classroom with second grade children. The purpose of the study was to examine how children gain an understanding of mathematical concepts by engaging them in real life experiences along with required, more structured activities. In the study, the researcher gathered information about her students’ prior knowledge of money by having the children identify coins. Her classroom then created a store center that sold school supplies. Students played the parts of cashiers and customers. The researcher incorporated the store in her daily lessons. Children were engaged in counting, adding, and subtracting, using manipulatives, as they participated in the real life experience of shopping. Data was collected using school-mandated tests, checklists, detailed anecdotal records, and a parent survey. The results of the study will be discussed.
MONIKA LEWIS
Faculty Advisor: Sonja de Groot Kim
An Examination of the Relationship between Story Telling, Story Acting and Young
Children’s Literacy Development

This action research project took place in an urban pre-k classroom with 13 three-year old children. The purpose of the study was to examine the relationship between storytelling, story acting and the children’s literacy development as well as the subsequent use of the library. Before conducting the study, the researcher documented the children’s use of the library. During the study, the children dictated, illustrated and dramatized their stories and a copy of each story was displayed in the library area, while another copy was sent home with a questionnaire for the caregiver. In addition, the children explained their story books to the teacher. Data collection methods included checklists, anecdotal records, and tape recordings. The results of the study will be discussed.

DIANE MATOS-REIS
Faculty Advisor: Sonja de Groot Kim
Mainstreaming a Bilingual Child in a General Education Classroom and its Effect on
the Child’s Social and Language Development

This action research project took place in an urban 2nd grade gifted & talented elementary classroom with an 8-year-old child. The purpose of the study was to examine how a child, moving from a completely Spanish-speaking classroom into a mainstream general education classroom, adapted to her environment, including her social interactions and communication with her peers. Before conducting the study, the researcher conducted observations to determine the child’s level of communication in whole group and in small group settings. During the study, the researcher documented specific verbal and non-verbal interactions of the child in two different settings: 1) a teacher-directed instructional setting and 2) a student-peers directed setting. Data collection methods utilized were checklists, anecdotal records, and tape recordings. The results of the study will be discussed.

KRISTEN MINGOIA
Faculty Advisor: Sonja de Groot Kim
Examining the Effect of Creating an Enriched Writing Center in a First Grade
Classroom

This action research project took place in an urban, public school first grade classroom. The classroom consisted of one teacher and 17 children, ages six to seven years old. The purpose of this observational study was to examine the engagement of the children using an enriched writing center. First, the researcher documented children’s participation before the enriched writing center was created. Next, the children personalized their own mailboxes which were then put together. The writing center incorporated additional writing and art materials for the children to use as they composed letters to their classmates. The researcher documented the extent of the children’s participation in the writing center. Data collection methods included pre-intervention and intervention check lists, anecdotal records, and a parent survey. The results of the study will be discussed.
MELISSA SAMOILOW  
Faculty Advisor: Sonja de Groot Kim  
An Examination of the Effect of Professional Development on a Teacher’s Interactions with Children in the Block Area  

This action research project took place in a suburban, private preschool classroom. The classroom consisted of one teacher, one teacher assistant and 11 children, ages four to five years old. The purpose of the study was to examine the teacher’s interactions and conversations with the children in the block area before and during engagement in professional development opportunities. During both the Pre-intervention and the Intervention periods, the researcher used a check list along with anecdotal records to document the teacher’s role during the children’s block play. During the Intervention period, the researcher and the teacher utilized media and journal to discuss and reflect on during regular meeting times. The results of the study and possible implications for practice will be shared.

MARISSA TORRES  
Faculty Advisor: Sonja de Groot Kim  
An Examination of the Role of Conflict in a Preschool Classroom  

This action research project took place in an urban preschool classroom with 15 four and five-year old children. The purpose of the study was to examine how boys and girls respond to conflict with their peers, as well as examine the teacher’s role in conflict situations. This observational study was conducted during children’s free choice play in the block center. Observations were conducted three times a week for a period of 30 minutes each time. Data collection methods included once a week audio taping, with subsequent transcription of incidents that occurred during the observation period, and a checklist. During the other two observation periods, data collection methods included a checklist and anecdotal records. The results of the study will be discussed.

JENNIFER YEE  
Faculty Advisor: Sonja de Groot Kim  
Creating a Print Rich Environment in the Block Center and Young Children’s Subsequent Engagement in Emergent Writing Activities  

This action research project took place in a suburban inclusion preschool classroom with four and five year old children. The purpose of the study was to examine the relationship between creating a print rich environment in the block center and children’s subsequent engagement in emergent writing activities. Materials included, but were not limited to: environmental print labels, rulers, clear tape, scissors, pencils, papers, clipboards, and crayons. Data collection methods included checklists, anecdotal records, and samples of children’s work. The results of the study will be discussed.
The Office of Research and Sponsored Programs acknowledges the national efforts of the Council on Undergraduate Research in promoting research collaborations by undergraduate students and faculty members. Kean University is an institutional member of the Council on Undergraduate Research.

The Office of Research and Sponsored Programs extends special thanks to the Garden State Louis Stokes Alliance for Minority Participation (GS-LSAMP) program, funded by the National Science Foundation, which provided support for 34 students participating in Research Days 2015. Kean University is a member of the GS-LSAMP, an alliance of nine colleges and universities in central and northern New Jersey, with the goal of increasing the number of underrepresented minority students who graduate with degrees in Science, Technology, Engineering and Mathematics.

The Students Partnering with Faculty (SpF) summer research program at Kean University, established in 2004, is designed to support and advance student-faculty research and creative activities. The SpF program is an intensive summer experience that continues into the next academic year and provides an opportunity for students to work together with a faculty mentor on a major project. The Kean University SpF program provided support for 14 students participating in Research Days 2015.
The Office of Research & Sponsored Programs provides assistance in all areas of external grant funding to the Kean University community. ORSP provides information, services and support to assist faculty and staff to compete successfully for external funding to conduct research and scholarship; engage in creative work; develop curriculum; advance student learning; aid recruitment and retention; and, support campus programming and community outreach.