Pittsburg State University

Student Research **Colloquium** Abstract Writings Spring 2016

Category A Poster Presentation # 1
Student: Muidh Albalawi
Student Status: Graduate
Major: Chemistry
Advisor: Dr. Ram Gupta
Title: Effect of Surfactant on Structural and Electrochemical Properties of Nickel Oxide

Abstract:

The increasing demand for energy in the world led to focus on more efficient energy storage devices. Energy can be stored in various kind of devices such as batteries, capacitors and fuel cells. Among them, supercapacitors are very attractive due to their high power densities, fast charge-discharge behavior and long life cycles. They can be used in hybrid cars and devices where high-power delivery is required. The objective of this work is to study the effect of morphology of nickel oxide on their electrochemical properties. The morphology of nickel oxide was modified using various surfactants. Structural characterization performed using scanning electron microscopy reveals the nanostructure of nickel oxides. The electrochemical properties of nickel oxide were studied using cyclic voltammetry and galvanostatic charge discharge measurements. A very high specific capacitance of about 315 F/g was observed at 5 mV/s in alkaline electrolyte. It was observed that charge storage capacity depends on morphology of nickel oxide.

Category A Poster Presentation # 2
Student: Abdullah Alghamdi
Student Status: Graduate
Major: Physics
Advisor: Dr. Serif Uran
Title: Study of UV absorption in Exfoliated Graphene

Abstract:

Two-dimensional (2D) materials such as graphene exhibit very unique electronic, thermal conductivity and optical properties due to changes in the electronic band structure. Graphene is the most electrically and thermally conductive material known with a mechanical strength stronger than steel. Because of that, it is considered to be the future of computing power, next generation transistors, energy storage and bio sensing. It has already found application in electric car batteries. Graphene is formed from one or a few layers thick, hexagonally connected carbon atoms. These carbon atoms are connected via covalent bonds. Multiple layers of graphene are held together by weak van der Waals forces. In our research we try to break the van der Waals forces using chemical solvents and sonication to isolate one or more layers of graphene. The samples are characterized with UV-Vis spectrometer and optical microscopy. In our presentation, we will discuss the absorption properties of graphene obtained from graphite powder, graphite rod and graphite sooth in acetonitrile. The results indicate the existence of strongly localized absorption doublet-peaks at about 223 nm and 273 nm in the UV region (4.78 eV and 4.44 eV photon energies respectively) with a line width range of 0.3-0.5 eV for graphite powder in acetonitrile. The other two samples give only single peak at about 273 nm. We will present our data for different sonication times and try to explain the existence of the 223 nm peak, which was not observed in all samples.

Category A Poster Presentation # 3
Student: Sonja Albright
Student Status: Graduate
Major: Doctor of Nursing Practice
Advisor: Dr. Cheryl Giefer
Title: Increasing the Number of Nurse Practitioner Preceptors by Increasing Preceptor Preparedness

Abstract:

Background: the healthcare provider shortage has resulted in increased enrollment in nurse practitioner programs. Traditionally, the clinical education of these students has occurred primarily in clinical settings with the guidance of a practicing nurse practitioner. There is currently a shortage of these preceptors. Research indicates part of the shortage may be attributed to hesitancy to precept due to feeling ill-prepared as a preceptor. It is proposed that a focus group will verify concepts found in the literature. In addition, creating a webinar to better prepare preceptors will result in an increase in prepared preceptors. Significance: The shortage of nurse practitioner preceptors not only impacts the student's ability to obtain quality clinical education, it also affects the universities; enrollment will decrease as available preceptors decrease. This will further negatively impact the healthcare shortage. Methods: A focus group was held to confirm the concepts found in the literature. Further, concepts gleaned from the literature and the focus group will guide the development of a preparation webinar for preceptors. Results: the focus group did confirm the barriers found in the literature. Discussion: The shortage of preceptors for nurse practitioner students impacts completion of the nurse practitioner program. Creating a webinar using data from the focus group and the literature will better prepare nurse practitioners to precept, thereby, resulting in an increase in the number of available preceptors.

Category A Poster Presentation # 4
Student: Nawrah Alghamdi
Student Status: Graduate
Major: Chemistry
Advisor: Dr. Jody Neef
Title: Biosensors Derived from Copolymers of Vinylferrocene with Various Para Substituted Phenylmaleimides

Abstract:

Smart Parking Lot is a product that allows the user to know how many parking spots are available and where that parking is located. The Smart Parking Lot provides convenience and flexibility to the student efficient parking. People may spend a long time looking for parking that may or may not be available. This project allows drivers to avoid this annoyance by displaying how many parking spots are available at the lot entrance. There will be an application for a cell phone that provides the availability of parking before checking arrival.

Category A Poster Presentation # 5
Student: Nada Aljehany
Student Status: Graduate
Major: Chemistry
Advisor: Dr. Ram Gupta
Title: Synthesis, characterization and applications of na

Abstract:

Graphene has attracted considerable research interest in different fields of research due to its unique properties such as high electrical conductivity, good mechanical flexibility, and high thermal and chemical stability. These unique properties make them very suitable for energy related applications such as fuel cells, supercapacitors etc. In this work, we have fabricated nanoribbons of graphene oxide by chemical oxidation of multiwall carbon nanotubes. The synthesized graphene nanoribbons were structurally and electrochemically characterized. The shift of (002) peak in graphene nanoribbons compare to MWCNT confirms unzipping of MWCNT and its exfoliation. MWCNT and graphene nanoribbons were electrochemically characterized using cyclic voltammetry and galvanostatic charge-discharge methods. Cyclic voltammetry was performed at various scan rates to understand the charge transport mechanism. The specific capacitance of the graphene nanoribbons decreases with increasing scan rate. The overall charge storage capacity of the graphene nanoribbons was higher than that of MWCNT. The higher charge storage capacity of graphene nanoribbons is due to enhance surface area. We are in process to synthesize and characterize the nanocomposites of graphene nanoribbons and polyaniline for their possible application as an electrode material for supercapacitors.

Category A Poster Presentation # 6
Student: Sara Alkhalaf
Student Status: Graduate
Major: Chemistry
Advisor: Dr. Ram Gupta
Title: Fabrication of nanofibers of metal oxides for energy storage applications

Abstract:

Nanostructured materials have attracted considerable research interest for their applications as catalyst, energy storage, fuel cells, etc. The main objective of this work is to synthesize and characterize nanofibers of metal oxides using electrospun technique and use them for energy storage applications. Various metal oxides such as NiMn2O4, CoMn2O4 and ZnMn2O4 were prepared as 1 dimensional (1-D) architecture using processable polymers and metal salts. The synthesized nanofibers were structurally and electrochemically characterized. The supercapacitive performance of these nanofibers was examined using cyclic voltammetry (CV) and galvanostatic charge-discharge techniques. The CoMn2O4 nanofibers showed a promising value of ~ 120 F/g in 3M NaOH. The effect of different electrolytes such as LiOH, NaOH and KOH on the electrochemical properties of these metal oxide nanofibers was also investigated. It was observed that the charge storage capacity depends on the electrolyte used. The supercapacitor device fabricated using these nanofibers showed that charge storage capacity increases with increase in temperature. Our results suggest that electrospun nanofibers could be used for energy storage applications.

Category A Poster Presentation # 7
Student: Hind Alquarashi
Student Status: Graduate
Major: Physics
Advisor: Dr. Serif Uran
Title: Metal Oxide Thin Film Solar Cells

Abstract:

Metal oxide photovoltaic cells are attracting considerable attention because of their non-toxic, cheaper and chemically stable characteristics for harvesting solar energy. We present our results on a TiO2/CuO and ZnO/CuO heterojunction solar cells entirely produced by thermal evaporation on fluorine doped tin oxide coated glass substrates, using aluminum as a back contact. The n-type, wide band gap (3.02 eV) TiO2 window layer and the p-type, 1.2 eV band gap CuO light absorber form a p-n junction, which creates electron-hole pairs. We will report on sample preparation, circuit voltage and short circuit current which is strongly dependent on the Cu2O thickness. A thickness of about 500 nm CuO is enough to absorb all photons with an energy above the optical transition of about 3.0 eV.

Category A Poster Presentation # 8
Student: Austin Bailey
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Judy Neef and Dr. Tim Dawsey
Title: Novel Non-Halogenated Flame Retardant Compounds

Abstract:

Two different boron compounds, bis(tetramethylammonium) decaborate, TMAD, and bis (tetrabutylammonium) decaborate, TBAD were studied as potential replacements for halogenated flame retardants. Current commercially available, halogenated flame retardants are not environmentally friendly and release strong acids upon burning. TMAD and TBAD were combined with triphenylphosphine oxide and cast in polyurethane films at varying levels. These samples were then cut into strips and burned in a UL-94 flame chamber. These samples were also tested via TGA for degradation temperature. These varying levels were tested via several Design of Experiments constructed within Minitab software. Results thus far have shown the potential for these compound combinations to be used as flame retardants. Studies to determine the optimal ratio of additives for flame retardancy will be presented

Category A Poster Presentation # 9
Student: Rachel Bechtold
Student Status: Graduate
Major: Microbial Ecology
Advisor: Dr. Anuradha Ghosh
Title: Bacterial Diversity of an Abandoned Mine Land Soil in Southeast Kansas

Abstract:

Acid mine drainage (AMD) is found in areas of abandoned coal mines in Southeast Kansas as a result of mine waste runoff resulting in low pH of groundwater, creating problems for both flora and fauna in the vicinity. Soil bacterial population acts as a reliable indicator of ecosystem health human-perturbed areas. The goal of the present study was to assess the bacterial diversity of AMD sites over a two-year period and to isolate acid-tolerant bacterial species for bioremediation purpose. In fall (2015), soil samples were aseptically collected from five distant sites representing diverse topography. Soil texture was evaluated and samples were subjected to biogeochemical analysis. Concentration of bacterial isolates was determined by counting CFUs after dilution plating on tryptic soy agar. Up to thirty morphologically different colonies are currently being identified using physiological and biochemical tests. Preliminary data showed that soil pH ranges from 2.5 to 6.8. Other biogeochemical analysis data are awaited. Total bacterial concentration varied from 102 to 108 CFU/g of soil. A total of 7, 5, 8, 3, and 7 selected isolates from 5 sites respectively, are being identified. The biochemical tests will be followed by confirmatory 16S rRNA gene sequence analysis. Future samplings will be done this summer (2016) and the data will be compared to fall sampling. A baseline measurement of bacterial diversity as well as soil chemistry of AMD sites in this region, is novel in its kind and the findings will have potential use in remediation of contaminated AMD sites.

Category A Poster Presentation # 10
Student: John Candler
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Ram Gupta
Title: Flexible Supercapacitive Energy Storage Devices

Abstract:

Supercapacitors are emerging as a promising technique of energy storage for their applications in consumer products such as mobile electronic devices by offering a rapid charging capability and long term cyclic stability. A high performance quasi solid state energy storage device was constructed using a "sandwiched" electrode design. Hydrothermally grown $CoMoO_4$ was used as an active material for this device. The device's electro-chemical properties were studied using cyclic voltammetry (CV) and galvanostatic charge-discharge methods. The CV plots show that the device exhibits pseudocapacitive behavior. The CV curves also demonstrate that there is no significant change (less than 0.5%) in the charge storage capacity of the device upon bending. This suggests that the fabricated device can be used as a flexible charge storage device. The charge-discharge studies display a nearly symmetric shape indicating good electrochemical reversibility and fast reaction kinetics. The effect of temperature on the charge storage capacity of the device was investigated for their applications in harsh conditions. The specific capacitance of the device significantly increased when the device temperature was raised from 10 to 70 C. The device showed an increase of ~ 386% in the specific capacitance when the working temperature of the device was increased from 10 to 70 C. This suggests that cobalt molybdate could be a suitable material for charge storage applications at elevated higher temperature. In summary, our study provides an ultimate facile method to synthesize cobalt molybdate for applications in the next generation of flexible energy storage devices.

Category A Poster Presentation # 11
Student: James Daniel
Student Status: Graduate
Major: Biology
Advisor: Dr. Dixie Smith
Title: The Effects of Clipping on the Biomass Production of Native Warm Season Grasses on Reclaimed Abandoned Coal Mine Soils

Abstract:

The effects of surface strip mining has highly disruptive impacts on the land that is being mined. Mine reclamation is a process in which the land and habitat is returned back as close as possible to its original condition. Not only is this important for habitat rehabilitation, but so is the management techniques that are to be implemented after the reclamation has been completed. Because the reclamation cannot completely restore the soils to their original state, management practices that would normally promote biomass production of grasses may not be as effective as they would be in undisturbed soils. The goals of this study are to determine 1) if biomass production in warm season grasses on reclaimed coal mines is promoted or inhibited by clipping compared to undisturbed soils and 2) at what frequency of clipping are these effects maximized or minimized compared to undisturbed soils Grass was clipped to simulate mowing and grazing at six study sites. Three of these were test sites and three were undisturbed control sites. Each site had ten randomly place sample points with three sub-points each at which samples were clipped one, two, and three times during the season of 2015. A total of 330 samples were collected. The samples were taken back to the lab and air dried. The samples are currently being dried in ovens to extract any remaining water. Once each sample has been sufficiently dried, the weight is recorded. Once all weights are obtained, they will be statistically analyzed to determine any significance in their differences.

Category A Poster Presentation # 12
Student: Bhanu Dhronavalli
Student Status: Graduate
Major: Physics
Advisor: Dr. Benjamin Tayo
Title: Radiative and non-radiative recombination in semiconducting nanostructures

Abstract:

According to the 2006 report by the International Energy Agency, lighting is responsible for 19% of electricity consumption and 6% of carbon emission. For our modern civilization today, energy-saving lighting is therefore increasingly important. The energy consumption used for lighting can be in principle reduced by 50% using solid state lighting based on Light Emitting Diodes (LEDs) if desired performance is met. In an LED nanostructure, light emission is accomplished by electroluminescence in which an external voltage is applied to the device to create a population of electron and holes in the active region of the device. Some of the excited electrons in the conduction band will de-excite by recombining with holes in the valence band. When the energy loss during the recombination is converted into photons, the process is called radiative recombination. If the recombination energy is absorbed by an electron in the conduction band and converted into kinetic energy, then the process is called non-radiative recombination (Auger effect). The Auger effect is the dominant mechanism which reduces radiative efficiency in LEDs when operated under high injection current density. In this presentation, we will discuss the radiative and non-radiative processes in semiconductor nanostructures. We also discuss various mechanisms that can be used for suppressing the Auger effect.

Category A Poster Presentation # 13
Student: Tracy Fry
Student Status: Graduate
Major: Nursing
Advisor: Dr. Cheryl Giefer
Title: The Effectiveness of a Worksite Lifestyle Management Program on the Glycemic Control of City Truck Drivers

Abstract:

This quantitative research study demonstrates the impact of a structured worksite lifestyle management program on glucose control and diabetes risk factors in a group of municipal employed truck drivers who comply with federal regulations governing a Commercial Driver's License (CDL). The purpose of this study was to determine if lifestyle interventions delivered through worksite programs could improve the participant's glycemic control and decrease the participant's risk factors for developing diabetes. The study included 18 volunteer CDL drivers employed by a city in Western Kansas. Participants were randomly selected and assigned to control and test groups. The methods used included pre and post testing of participant's glycosylated hemoglobin (HbA1c), fasting blood glucose (FBG), low density lipids (LDL), high density lipids (HDL), triglycerides, waist circumference, body mass index (BMI), blood pressure, and body fat percentage after six months. The lifestyle management program consisted of personalized face-to-face coaching sessions delivered to the test group by a nurse practitioner, registered dietitian, and certified fitness expert. The baseline lab and biometric values were compared to the six-month lab and biometric values of the test group and then of the control group. The results of the test group were found to be significantly more positive when compared to the results of the control group. The researcher concluded that while the six-month time frame of this study may not have been long enough to result in a statistically significant impact on the HbA1c, the test group did exhibit significant improvement and reduction of diabetes risk factors.

Category A Poster Presentation # 14
Student: Jai Guillory
Student Status: Graduate
Major: Nursing
Advisor: Dr. Cheryl Giefer
Title: Acceptability and Feasibility of Sit-Stand Desks

Abstract:

Modern day jobs are requiring less physical activity during the workday. There is growing evidence that sedentary behaviors are negatively associated with health outcomes such as cardiovascular disease, diabetes, and cancer. This is pivotal for desk-based workers as they are at a much higher risk for these negative outcomes. Research shows that small movements in during the day can reduce negative health outcomes. The use of a sit-stand desk (SSD), which is ergonomically designed, is becoming a modern day workplace trend. Much of the research on SSDs has been related to musculoskeletal health and physical discomforts. Few studies have documented participant perceptions regarding acceptability and feasibility of these desks. Significance: This project involves a qualitative analysis of the experiences and perceptions regarding use of SSDs. The purpose of this study is to describe the human experience. Methods: Data will be collected from participants in the Gorillas Stand Up for Working project at Pittsburg State University. The Varidesk, an ergonomically designed height-adjustable desk, were introduced to 32 faculty and staff volunteers from Fall 2015 through Spring 2016. The perception of acceptability and feasibility was measured after using the desk. Results: Preliminary results were obtained through a pilot study and reveal a very favorable response to the participant's acceptability and feasibility of the desks; this project is part of the ongoing study, Gorillas Stand Up for Working. Discussion: Small movements can equate to insurmountable changes in negative health outcomes. Incorporating some degree frequent physical activity is a necessity.

Category A Poster Presentation # 15
Student: Julie Hinds
Student Status: Graduate
Major: Nursing
Advisor: Dr. Karen Johnson
Title: Knowledge and Attitude about Palliative Care

Abstract:

Introduction:

Psychologically, most people fear and avoid anything related to death. There is often the belief that even acknowledging the possibility that one may die soon is harmful. There is no evidence to support this belief and recent evidence points to the possibility that palliative care may actually improve survival. Patients and their families need to know that with palliative care, one can continue to seek curative treatments while evaluating their goals and care needs. Palliative care education can be used to overcome the misconception that "palliative care is restricted to end of life", and endorse it as integral to the care of all seriously ill patients.

Purpose:

The purpose of this study was to conduct a needs assessment of the current level of Midwestern nurses' basic understanding of and attitude towards palliative care. Results of the study will allow nurse educators to assess the need for further education about palliative care, both in undergraduate and graduate nursing programs and in continuing education.

Material/Methods

A true/false survey and open-ended questionnaire was sent to RNs via an independent research company, Survey Monkey. A mixed methods design was used.

Results/Conclusions

Results from the quantitative portion indicated that nurses in this study have a good understanding of palliative care. The qualitative portion indicated more education is needed and that a clear definition of the word "palliative" is needed.

Category A Poster Presentation # 16
Student: Jyothi Kallu
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Santimukul Santra
Title: New MR Activatable Nanoprobe for the Multiparametric Imaging and Treatment of Prostate Cancer

Abstract:

An innovative activatable MRI probe is designed for the image-guided prostate cancer (PCa) diagnosis and monitoring of the treatment. This MRI probe is formulated in such a way that the T1 magnetic relaxation (spin-spin) will be activated only after internalization into cancer cells and a bright contrast is expected. In addition, combination therapy approach using doxorubicin and PARP-1 inhibitor, Olaparib, will be used for the effective treatment of prostate cancers. The PSMA receptor over-expressed PCa cells will be selectively targeted by conjugating A10 PSMA aptamer in order to reduce any off-target side effects. We will be using a robust Gd-DTPA encapsulating iron oxide nanoparticles as an activatable T1 MRI contrast agent, which will be activated and provide bright contrast once inside the tumor (1-3). This activatable MRI probe will be used to carry doxorubicin and Olaparib specifically to the PCa cells by conjugating A10 PSMA aptamer on the nanoprobe's surface, minimizing off-target delivery. Towards this end, Gd-DTPA-encapsulating iron oxide nanoparticle (IONP) will be formulated. We hypothesized that the T1 relaxation of Gd-DTPA is quenched upon encapsulation into the superparamagnetic IONPs. The T1 MR activation will be detected using bench-top magnetic relaxometer (0.47T, Bruker) in response to the oxidative stress and acidic pH inside the tumor microenvironment of prostate cancer. References: 1)
Santra, S. et. al., Small 2009, 5, 1862-1868. 2) Santra, S. et al., ACS Nano, 2012, 6, 7281-7294. 3) Kaittanis C, Santra, S. et. al., Nat. Commune. 2014, 5, 3384-3395.

Category A Poster Presentation # 17
Student: Shuguftha Naz
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Santimukul Santra
Title: Novel Drug Cock- Tail- Carrying Anti-Oxidant Nanoceria for the Treatment of Cancer

Abstract:

Department of Chemistry and Chemical Biology, Rensselaer Polytechnic Institute, Troy, NY 12180 Oncogenic K-RAS, one of the major histologic subtypes of Non-Small-Cell Lung Cancer (NSCLC) accounts for 25% of the lung cancer related deaths. Hsp90, a ubiquitously expressed molecular chaperone is considered to be a promising target for therapeutic intervention. It is known to interact with several client proteins that are important in the pathogenesis of the cancer. Ganetespib, an Hsp90 inhibitor has been shown to have superior anti-tumor activity in several K-RAS mutant NSCLC cell lines. In addition, lactonic sophorolipids (LSL), a class of chemo-enzymatically modified glycolipids, are known to be promising immunomodulators and have shown to decrease the mortality rate in rat model of sepsis by down-regulating pro-inflammatory cytokines. Recent studies have also demonstrated the anticancer activity of LSL on several cell lines including esophageal, lung and pancreatic cancer cells. Herein, unique drug cocktail comprising of ganetespib and LSL targeting Hsp90 signaling and inflammatory pathways will be used for NSCLC therapy. Owing to its redox active properties, nanoceria (NC) will be specifically used as the drug delivery platform to supplement the therapeutic potency of the drugs. In this study, LSL and ganetespib carrying nanoceria will be formulated for the targeted treatment of NSCLC. Detail experimental results including, targeted drug delivery, cytotoxicity, drug release and fluorescence microscopy will be discussed.

Category A Poster Presentation # 18
Student: Charith Ranaweera
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Ram Gupta
Title: Bio-waste derived high performance and flexible en
Presentation Time: 10am- 11am

Abstract:

To meet increasing demands for energy from sources other than fossil fuels, it is a perfect time to develop sustainable and reproducible energy storage devices. Recent efforts have focused on more efficient energy storage devices including supercapacitors which have high power densities, fast charge discharge capabilities and long life cycles. Such supercapacitors are aimed at emergency power systems, electric vehicles, and devices where high-power delivery is required, and several types of materials, such as metal oxides and conducting polymers have been used for their electrodes. However, most of these materials often suffer from low capacitance and high cost, so in this we attempted to use orange peel, a bio-waste, for electrochemical charge storage applications. Before using orange peels for supercapacitor applications, orange peel was pre-carbonized at 400 oC and followed by chemical activation using KOH to optimize the surface area/porosity of the orange peel. The electrochemical properties of the carbonized orange peel were investigated by cyclic voltammetry (CV) and galvanostatic charge discharge (CD) measurements in alkaline media. 1:1 ratio of carbonized orange peel and KOH showed the most promising results by yielding maximum specific capacitance of 489 F/g in 3 M KOH at a current density of 0.4 A/g. The cyclic voltammetry curves were of rectangular in shape, indicating ideal capacitive behavior. The effect of different electrolytes such as LiOH, NaOH and KOH on electrochemical properties of the carbonized orange peel was also investigated. The results showed almost 100% capacitance retention over 5000 cycles of charge-discharge. These electrodes show no degradation in capacitive properties upon bending, suggesting that it can be used for flexible energy storage devices. We believe that this study provides a facile method to convert bio-waste into a high performance material for applications in the next generation of flexible and cost-effective energy storage devices.

Category A Poster Presentation # 19
Student: Natalia Schneider
Student Status: Graduate
Major: Biology
Advisor: Dr. Neil Snow
Title: Preliminary Assessment of Spatial and Temporal Origins of Specimens in the Herpetology Collection at Pittsburg State University

Abstract:

Natural history collections (NHCs) are the primary source of biodiversity data. Containing specimens and historical data collected worldwide spanning 400 years, collections are used in in taxonomic, ecological, forensic, medical and municipal planning studies. The value of NHCs has increased significantly due to enhanced visibility of data online, and in tracking the decline of species and ecosystems caused by anthropogenic activities. Collections therefore must be properly curated and their data preserved electronically. This project represents a preliminary assessment of data retrieved from specimens of the Herpetological Collection through the analysis of spatial and temporal origins of specimens (which includes frogs, toads, salamanders, lizards snakes and turtles). Data were retrieved from an old but relatively complete written collections catalogue and from specimen tags. After data were transcribed into Excel, specimens then were confirmed against data in the catalogue and tags. The Herpetology Collection was established in 1967 and includes 1,355 specimens, representing 195 species and subspecies, including 21 US states and a few specimens from Canada and Mexico. Spatial analysis reveals that 59% of the specimens were collected in Kansas. The oldest specimen dates to 1926, the most recent to 2013. Three temporal analyses included annual, monthly and decadal studies. Annual collecting peaked in 1964 (145 specimens), whereas the monthly peak is April (451 specimens). The peak decade was the 1960's (332 specimens). This study is the first to analyze and compile data of nine decades available in the Herpetology Collection at PSU and provides a baseline for future research.

Category A Poster Presentation # 20
Student: Zhuo Wang
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Ram Gupta
Title: Carbon encapsulated MoS2 as an efficient electrocatalyst for the hydrogen evolution reaction

Abstract:

To meet the constantly rising requirement of energy other than traditional fossil fuel and environment protection, it is a perfect time to development low cost, and efficient materials for clean energy production. Hydrogen generation by water splitting is one of the cleanest ways to produce cheaper energy. Hydrogen evolution reaction (HER) is one of the key steps in water splitting process. Ideally, the thermodynamic potential for HER should be at 0 V (vs. SHE). However, without an efficient catalyst, this reaction occurred at higher potential, called overpotential. A good HER catalyst is needed to lower the overpotential and hence to improve the energy efficiency of this process. Presently, platinum is the most effective and durable catalyst for HER, but its wide spread use is precluded due to its cost as well as limited availability. Therefore, it is essential to develop low-cost and earth-abundant materials to replace precious-platinum based catalysts. In this work, a facile and scalable one-pot method has been developed to synthesize carbon coated MoS2. The carbon coated MoS2 is advantageous as this increases the electrical/ionic conductivity of MoS2. The structural characterization of MoS2 and carbon coated MoS2 was performed using x-ray diffraction and scanning electron microscopy. Hydrogen evolution reaction was studied in potential range of 0 to -0.7 V and observed that carbon coated MoS2 provide lower overpotential compared to uncoated MoS2.

Category A Poster Presentation # 21
Student: Tayita Abudu
Group Members: Megan Peters
Student Status: Undergraduate
Major: Biology
Advisor: Dr. Mandy Peak
Title: Analyzing the Gut Microbiome of Human Populations in Crawford County

Abstract:

Human microbiota is the collection of microbes living in and on our body. Microbial cells outnumber human cells by 10 to 1 in a healthy human body. Previous studies demonstrated the gut microbiome from human samples correlate with disease, diet, and other human characteristics. Three microbe families that are prevalent are Bacterioidaceae, Prevotellaceae, and Lachnospiraceae/ Ruminocooaceae. Even though studies have found a link between microbiome and health, the role in chronic diseases has yet to be elucidated. To determine the type of bacteria in the human microbiome, 16S rRNA gene sequence data is isolated and examined from human DNA. Wastewater serves as a source for human microorganisms. DNA is extracted from the microorganisms and isolated so the 16S rRNA is tagged and fragmented. Bacterial genome libraries are available to provide descriptions to match laboratory results of the unidentified sequenced DNA to known labeled bacterial sequences. Studies have been conducted in many cities and have identified diseases that correlate with human samples of microorganisms. There is interest in the gut microbiome of the residents in Crawford County, the role of the microbiome in chronic diseases, and the significant impact on human health. In our study, we will collect the influent wastewater from Pittsburg, KS and surrounding communities, and analyze the gut microbiome.

Category A Poster Presentation # 22
Student: Jennifer Bliss
Student Status: Undergraduate
Major: Nursing
Advisor: Dr. Barbara McClaskey
Title: Non-pharmacological Therapy for the Female Athlete

Abstract:

There are three defining characteristics of the female athlete triad: low energy availability, menstrual dysfunction, and low bone mineral density. All of these components are interconnected in that the triad usually begins with disordered eating, after a period of time amenorrhea occurs resulting in possible osteoporosis, resulting in a higher rate of injuries. It has been common practice to prescribe oral contraceptives and other medications that may not solve the underlying problem for the athlete. However, emerging evidence has shown that oral contraceptives are not able to counteract the hormone alterations made on bone health and may lead to harm. Exogenous estrogen replacement can cause premature closing of growth plates and lower bone mineral density when started at an early age. I am proposing that non pharmacological therapy be considered first before prescribing a hormone replacement. This is strictly a research project and has not been enacted yet. A few of my main sources come from Sports Health: A Multidisciplinary Approach, Current Sports Medicine Reports, and American College of Sports Medicine. First, the athlete should be evaluated to determine the cause of amenorrhea then the athletes can go through a series of non-pharmacological interventions such as: multidisciplinary team efforts, increasing nutrient and caloric intake, creating a healthier body image, and lowering their training regimen. If the athlete experiences osteoporosis and/or a history of multiple fractures, medication can be considered when there is no response to therapy after one year.

Category A Poster Presentation # 23
Student: David Cain
Student Status: Undergraduate
Major: Digital Media
Advisor: Mr. Jason Ward
Title: 3d Allosaurus arm scan

Abstract:

I have a 3d Scan of an Allosaurus arm that was done for a senior project. The arm involves using the 3d scanner to capture the three dimensional data to record the arm. The captured data can be used to 3d print the arm for display or study purposes. The data can also be used in 3d animations to help students study dinosaur anatomy, practice 3d animation and rendering, apply special effects to videos, and much more.

Category A Poster Presentation # 24
Student: David Cain
Student Status: Undergraduate
Major: Digital Media
Advisor: Jason Ward
Title: 3d Allosaurus arm scan

Abstract:

I have a 3d Scan of an Allosaurus arm that was done for a senior project. The arm involves using the 3d scanner to capture the three dimensional data to record the arm. The captured data can be used to 3d print the arm for display or study purposes. The data can also be used in 3d animations to help students study dinosaur anatomy, practice 3d animation and rendering, apply special effects to videos, and much more.

Category A Poster Presentation # 25
Student: Ashlyn Conner
Student Status: Undergraduate
Major: Pre-Pharmacy
Advisor: Dr. Jody Neef
Title: Biosensors from Copolymers of Vinylferrocene and 4-Vinylimidazolium

Abstract:

Ferrocene containing polymers have stable redox properties which make them attractive for various applications such as biosensors, energy storage, and as catalyst. Previous work within our lab with copolymers of vinylferrocene with vinylpyridine has shown that these materials are promising as biosensors for the selective detection of dopamine and serotonin. In this research, we have focused on replacing the pyridine moiety with an imidazole moeity followed by alkylation to the imidazolium. Chemically modified electrodes were prepared by solution casting these materials onto a platinum electrode for subsequent cyclic voltammetry or chronoamperometry studies using sodium chloride as the supporting electrolyte. In this study, we examined the ratio of ferrocene to imidazolium within the polymer and the resulting effects on the detection of dopamine.

Category A Poster Presentation # 26
Student: Lucas Epler
Group Members: Karen Stoehr, and Jared Simon
Student Status: Undergraduate
Major: Biology
Advisor: Dr. Joseph Arruda
Title: An Historical Comparison of the Effect of Acid Mine Drainage on Water Quality

Abstract:

The Monahan Outdoor Educational Center (MOEC), established in 1984, represents a cumulative effort to reclaim an abandoned coal mine site. Today, some environmental problems continue in the form loss of vegetation and poor water quality due to acid mine drainage on the north side of the property. This damage may relate back to gob piles and slurry ponds associated with mine operations of the time. The MOEC has provided an educational opportunity for Pittsburg State University undergraduate students to observe the impacts of runoff from the property through testing in the field and in the laboratory for key indicator pollutants of water quality. The objective of this report is to compare data collected from previously conducted water quality surveys in 1994, 2000, 2002, 2003, and 2013 along with new data collected during the Spring 2016 semester. The analysis indicates a continued problem with low pH (2.6 to 3.7 su), high specific conductance (2.35 to 5.18 mS/cm), total iron (153.3 to 1645 mg/L) and sulfate (986 to 3697 mg/L) concentrations at historically problematic locations. The Spring 2016 water quality survey at the MOEC continues as an educational opportunity for students to gain important understanding of field and laboratory techniques, as well as evaluation and analysis of data.

Category A Poster Presentation # 27
Student: Blaze Heckert
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Santimukul Santra
Title: Designer Polymeric Nanotheranostics for the Detection and Treatment of Lung Cancer

Abstract:

Design and synthesis of new polymeric nanomaterials is an emerging field with important applications in green chemistry, drug delivery, cancer targeting, imaging and treatment. It is also estimated that 221,200 new cases of lung cancer and 158,040 deaths from lung cancer will occur during 2015. The statistics indicates that lung cancer accounts for about 28% of all cancer deaths and so far the leading cause of cancer death among both men and women. Therefore, there is an urgent need for effective treatment of lung cancer. Herein, new polymeric nanoplatform for effective optical and X-ray imaging, and treatment of lung cancer will be reported.

This presentation will cover the facile synthesis of a new sulfur-containing hyperbranched polyester polymer and its theranostic nanoplatforms for the targeted optical, X-ray / computed tomography (CT) imaging and treatment of lung cancer. Solvent diffusion method was used to fabricate polymeric nanoplatforms in water, capable of encapsulating optical dyes, contrast agents and therapeutic drugs in one-pot. Surface carboxylic acid groups were conjugated with folic acid using water-based EDC/NHS chemistry, this allows for the targeted delivery of the cargos. The anticancer drug taxol encapsulating nanoparticles were able to target folate receptor expressing lung cancer cells (A549 cells) and more than 75% cell death was observed after 24 h of incubation. Interestingly, these polymeric nanoparticles exhibited enhanced X-ray contrast upon encapsulation with bismuth complexes (Bi-DOTA). The detailed optical and X-ray imaging, microscopic analysis, drug release kinetics and their potential theranostic applications will be presented in this work.

Category A Poster Presentation # 28
Student: Diana Laflin
Student Status: Undergraduate
Major: Biology
Advisor: Dr. Jody Neef
Title: Biosensors from Copolymers of Vinylferrocene and 4-Vinylpyridine

Abstract:

Biosensors from Copolymers of Vinylferrocene and 4-Vinylpyridine Diana Laflin and Charles J. Neef Pittsburg State University Previous work within our laboratory has shown that copolymers from vinylferrocene and 4-vinylpyridinium are promising materials in biological sensor applications. Sensitivity of these materials to dopamine or serotonin was dependent on the monomer ratio. Copolymers with a high ratio of vinylferrocene were selective to dopamine and copolymers with a high ratio of vinylpyridine were selective to serotonin. Continuing studies with these materials has focused on their sensitivity to dopamine as the supporting electrolyte is changed. Chemically modified electrodes were prepared by solution casting these materials onto a platinum electrode for subsequent cyclic voltammetry or chronoamperometry studies using various electrolytes as the supporting electrolyte. In this study, we examined various ratios of ferrocene to pyridine on sensor performance and supporting electrolyte and the use of these materials in biosensors for the detection of dopamine.

Category A Poster Presentation # 29
Student: Tim Morrison
Other Members: Keenan Simth and Peter Villa
Student Status: Undergraduate
Major: Engineering Technology
Advisor: Mr. Paul Herring
Title: Adaptable & Modular Rapid Prototyping Machine

Abstract:

3D printing and rapid prototyping is a technology that has changed the dynamic of the current maufacturing. Among these healthcare, areospace and education. By shortening the process from design to prototype and testing, rapid innovation and testing is possible. This has accelerated the engineering development process. Commercial rapid prototyping machines can cost $30,000 upwards to $150,000 with operating costs of $30- $100 per hour. As a student in engineering, creating prototypes for projects can have a great impact on both the students educational experience and the final grade. By reducing the cost of student- built prototypes, we have been able to enrich the technical educatioon of students across engineering, graphic arts, manufacturing and technology education departments. Because of high material cost, even a modest sized prototype can range from $40- $80. Because of this expense, few student prototypes were constructed outside of standard CAD curriculum projects. By producing plastic filaments in-house using recycled ABS materials, we have been able to consistently produce a viable plastic filament for less than $2/lb not including student labor costs. This is contrasted to the proprieatary filament supplied by the vendor whcich cost ~ $50/lb. The most common printed an engineering allloy of Nylon (which has a tensile strength of over 9,000 PSI). One of the major challenges in printing this material is its greater thermal capacity. By using a balsa wood printing base, we were able to overcome these challenges and manufacture strong, high percision pats. Additionally, we have adapted the processing parameters to print casting wax models for the investment casting process.

Category A Poster Presentation # 30
Student: Athena Meder
Student Status: Undergraduate
Major: Psychology
Advisor: Dr. Gwen Murdock
Title: The Big Evolutionary Bang

Abstract:
PROBLEM: How does the behavior in the situation comedy, The Big Bang Theory (Lorre, et al 2007) reveal themes about evolved psychological mechanisms (Buss, 2016)? What are the implications of those evolved psychological mechanisms to society as a whole? METHOD: A convenience sample of episodes from the past nine seasons of the show was used to evaluate the content on the basis of evolutionary psychology. The content was analyzed using the techniques in Literary Darwinism (Max, 2005). Analysis was done in an effort to identify the innate patterns of human behavior exhibited by the characters; Sheldon, Leonard, Raj, Howard, and Penny that are consistent with various evolutionary psychology theories. RESULTS: The analysis of the convenience sample revealed several psychological mechanisms present within the behaviors of characters in the show; Short Term Mating Theory (Fisher, 1989), Prime male (Hughes & Gallup, 2003; Snyder et al., 2011), Mate Selection Theory (Trivers, 1972), Theory of Genetic Diversity (Buss, 2016), Intrasexual Competition (Fisher, 2004) , Intersexual Competition(Prokosch, Coss, Scheib & Blozis, 2009), Male Mating Selection on Attractiveness (Johnston, 2006), Resource Commitment (Miller, 2007; Buss 1994), Mate Preferences: Intelligence (Buss et al., 1990), and Long Term Mating Strategy (Buss & Schmitt, 1993). CONCLUSIONS: To the extent that the show represents real life, evolved psychological mechanisms still exist in contemporary human behavior. The genius behind the show is that we as humans- relate to the show, without even realizing that the mechanisms that are being used are ones that we innately employ on a daily basis. The implication being that even though we feel we are changing the world, or doing something different than our ancestors were, we are in fact using mechanisms that evolved from the dawn of time. *Homo habilus* may not have initially known how to use fire, but he sure knew how to select his mate to ensure the survival of his genes. So here we are, *Homo sapiens*, with the full use of fire, basing our mate selection on ancient evolved psychological mechanisms, humorously revealed in the course of a nine season show about the love interests of three scientists and Howard: the engineer.

Category A Poster Presentation # 31
Student: Danner Naff
Group Members: Seth Humble
Student Status: Undergraduate
Major: Electronic Engineering Technology
Advisor: Mr. Clark Shaver
Title: AHA (Automated Hammock Adjusters)

Abstract:
The Automated Hammock Adjuster (AHA) system is a project that is intended to revolutionize the quality of Hammocking. The system will be made up of a two motor system that a user attaches their Hammock to. The user is able to adjust the positioning of their hammock without ever needing to leave the comfort of their hammock. The system is controlled by the user via Android phone application. The AHA system includes built in safety features for the user's protection. The positions the user can control are the height and tilt of the hammock.

Category A Poster Presentation # 32
Student: Austin Ramsey
Group Members: Shelby Mitchell
Student Status: Undergraduate
Major: Electronics Engineering Technology
Advisor: Mr. Clark Shaver and Dr. Jim Lookadoo
Title: Air Mouse 3D

Abstract:

The Air Mouse 3D will be a wearable interface device the user wears as a glove on one hand. It will connect to the computer wirelessly via Bluetooth and is battery powered. The Air Mouse 3D will control the computer's cursor as a mouse and allow for all basic mouse functions. The device will recognize when the user is typing so that the cursor is not moved unintentionally. Control of the cursor and mouse functions will be done by tracking the user's hand and finger gestures. Movement of the cursor will be determined by the device's on-board inertial measurement unit (IMU) that utilizes an accelerometer, a gyroscope, and a magnetometer, each having three axes. To determine if the user will perform a mouse click or enter another state such as scrolling, finger gestures will be determined by resistive flex sensors sewn into the glove. A microcontroller on the glove will be used for determining the movements and gestures as well as controlling the I/O of the device. The IMU contains a built in ARM processor to provide fusion data from its internal sensors to provide position and orientation data to the main microcontroller. The resistive flex sensors will be read by differential amplifiers on the main microcontroller to determine when the user bends their fingers to initiate a mouse click or scroll. Rapid prototyping and development boards will be used to design, test, and build an initial prototype for concept proof. The final prototype will have a custom printed circuit board and the enclosure will be 3D printed.

Category A Poster Presentation # 33
Student: Gage Rogers
Student Status: Undergraduate
Major: Graphic Communications
Advisor: Mr. Chauncey Huffman
Title: Determining typical human color difference thresholds between genders

Abstract:

Color preference studies between genders are common. However, finding difference thresholds between genders in regards to colors is unique. This study will focus on a measurement of color difference referred to as a Delta-E. The Delta-E measurement is widely regarded as the most common way of expressing color differences in regards to the L*A*B* color space, which is a digital representation of all of the colors a typical human can see. It is currently regarded that an average human can tell a difference in two colors if they have a color difference of 3 Delta-E's or greater. It is also regarded that an average human cannot see a difference between two colors with a color difference of 1 Delta-E or less. This study will focus on finding out if there is a difference between the color differences that one sex can detect versus the opposite sex. This study will directly affect the class in which it is being tied to (GIT 640.01 Color Reproduction) because there is a large project in this class which asks the students to create two separate printed materials that match with a tolerance of 3 Delta-E's. The results of this study may change the tolerance of that assignment, and will guide other curriculum changes in the class.

Category A Poster Presentation # 34
Student: Kyle Schwenker
Group Members: Vlad Jaso
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Jeanne H. Norton
Title: Effect of Processing on General Purpose and Engineering Thermoplastic Polymer Properties

Abstract:

Injection molding is the fastest growing process in the plastics industry with high production rates and low cycle times. This process allows production of complex and intricate shapes and allows multiple parts to be created in the same cycle. Previously processed material known as regrind is often used in injection molding. Successive rounds of processing can reduce molecular weight. Lower molecular weight can negatively affect properties of the final injection molded plastic part. In this study, we demonstrate that any plastic formulation we process via lab-scale extrusion is appropriate for injection molding. Two semi-crystalline polymers (polypropylene and nylon-6) and two amorphous polymers (polystyrene and polycarbonate) were processed by extrusion and subsequent injection molding. Thermal properties and mechanical properties were compared to virgin polymer properties and properties of samples processed by two rounds of injection molding.

Category A Poster Presentation # 35
Student: Tyler Shelby
Student Status: Undergraduate
Major: Biology and Chemistry
Advisor: Dr. Santimukul Santra
Title: Novel Magnetic Relaxation Nanosensors:
An Unparalleled "Spin" on Influenza Diagnosis

Abstract:

Influenza is well known for its ability to rapidly mutate, leading to the frequent emergence of pathogenic strains. Rapid detection and diagnosis of pathogenic strains would allow for expedited treatment, and quicker resolutions to the ever-arising flu pandemics. Vital to the rise of pathogenic strains is the mutation of viral genes coding for hemagglutinin, the influenza-associated glycoprotein responsible for viral binding and entry. Slight mutations allow the protein to adopt new binding affinities, granting it access to new cell receptors. Considering this, we propose the development of novel functional magnetic relaxation nanosensors (MRnS) for the rapid detection of influenza through targeted binding with hemagglutinin. A group of small molecule ligands and entry blocker (EB) peptides with known binding affinities for hemagglutinin variants were conjugated to iron oxide nanoparticles (IONPs) to develop functional MRnS. Positive detection of various hemagglutinin (H1N1 and H5N1) HA1 subunits was easily possible with protein concentrations as little as 1.0 nM using sialic acid (2,6- and 2,3-sialic acid, respectively) and entry blocker peptides (EB Peptide, ALRPL and Ste) conjugated MRnS. Most importantly, detection using functional MRnS was achieved within minutes, and was able to differentiate between various influenza subtypes. Current methods used to diagnose influenza, such as RT-PCR, ELISA, and viral culturing, while largely effective, are complex, time-consuming and costly. As well, they are not as sensitive or specific, and have been known to produce false-positive results. In contrast to these methods, targeted MRnS is a robust, point-of-care diagnostic tool featuring simple, rapid and low-cost procedures. These qualities, as well as high sensitivity and specificity, and low turnaround times, make a strong case for the diagnostic application of MRnS in clinical settings.

Category A Poster Presentation # 36
Student: Joshua Selbe
Group Members: Natalia Schneider
Student Status: Undergraduate
Major: Cellular Biology
Advisor: Dr. Jim Triplett
Title: Ichthyology collection contains enormous biodiversity

Abstract:

Unbeknownst to most students and faculty, there lies within the walls of Pittsburg State University a vast and diverse collection of fish. Starting back in 1962, the ichthyology collection at PSU has grown and contains data that has been used in guide books, research, and teaching lessons. Unfortunately, the ichthyology collection has been relocated several times, resulting in disorganization and sometimes, loss of specimens. The first movement of specimens occurred in the late 1970s, as the collection was transported from Carnie Hall prior to its demolition. Due to the need for space to accommodate the growing Nature Reach program, the collection was sent to the basement of Heckert-Wells in the early 80s. It remained there in a fairly inaccessible state, until finally, in 2014, the collection was sent to Hartman Hall where it is being actively curated. There are two separate collections: the teaching collection and the scientifically cataloged collection with 41,840 specimens, both in need of curation. In addition, there are many buckets and jars full of specimens waiting to be entered into the collection. Only two students, over the last two semesters have drastically improved the fish collection, with work that includes: digitized catalogs onto Excel, fluid changes, specimen rehydration, fresh publicity, pre-organization and curation of the teaching collection, and more. The ichthyology collection contains very important aspects of biodiversity and history that need to be maintained through proper protocols and supervision. Curating the fish collection will continually involve faculty, students, and funding efforts.

Category A Poster Presentation # 37
Student: Karen Stoehr
Student Status: Undergraduate
Major: Biology
Advisor: Dr. Hermann Nonnenmacher
Title: Observations of insect foragers on tall thistle, Cirsium altissimum, (L.) Spreng. and investigation of their pollen loads

Abstract:
Tall Thistle, Cirsium altissimum (L.) Spreng. (Asteraceae) is a native plant species found in bloom in late summer and early fall in southeast Kansas. In 2015, sites in Cherokee and Montgomery Counties, Kansas were selected to observe and collect foragers on C. altissimum in stands that had one or two plants and stands of several plants, with all stands receiving no shade. Pollen washes of foragers were made with ethanol and then stained with Calberla's fluid to study pollen load compositions as part of an ongoing investigation into forager guilds and annual changes in their relative oligolectic or polylectic foraging. From September 07 to September 26, 2015, a total of 57 foragers (Cherokee County: n=16; Montgomery County: n=41) were collected and washed. Out of 57 washes, 47 (82%) showed a mixture of asteraceous and other pollens, with proportions ranging from less than 1% other to more than 80% other.

Category A Poster Presentation # 38
Student: Shoukath Sulthana
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Santimukul Santra
Title: New Functional Magnetic Nanosensors for Rapid and Specific Detection of E.coli O157:H7

Abstract:
In today's world, foodborne ailments associated with enterohemorrhagic E. coli O157:H7 present a serious threat to human health. While conventional bacterial detection methods including polymerase chain reaction (PCR), fluorescent immunoassays and ELISA exhibit high sensitivity and specificity, they are often time consuming, laborious, and require sophisticated instruments. As well, these methods often demand extensive sample preparation and have lengthy readout times, which prevent prompt response and disease containment. Considering this, nanotechnology presents a great opportunity to develop rapid, accurate and cost effective diagnostics for the detection of pathogenic infectious agents. Herein, we have designed surface functionalized super paramagnetic nanosensors for the quick detection of E. coli O157:H7 in various spiked samples. Using solvent diffusion method and EDC/NHS chemistry, iron oxide nanoparticles were loaded with DiI dye and surface- conjugated with an antibody specific for E. coli O157:H7. Through magnetic relaxation and fluorescent imaging, our quantitative data showed promising results in specifically targeting E.coli, and allowing for quantitative pathogen concentration analysis. In conclusion, our novel antibody- conjugated magnetic nanosensors featured (1) high sensitivity (2) specificity and (3) rapid detection within only a few minutes. Together, these qualities promise a means for early detection of pathogenic contamination in samples ranging from environmental aquatic reservoirs to commercially produced food.

Category A Poster Presentation # 39
Student: Chongmin Yuan
Student Status: Graduate
Major: Physics
Advisor: Dr. Benjamin Tayo
Title: First-principle studies of Mo(1-x)WxS2 alloy for optoelectronic applications

Abstract:

Transition metal dichalcogenides (TMDCs) are semiconducting materials consisting of a transition metal covalently bonded to two chalcogen atoms forming a hexagonal lattice structure very similar to graphite. The structural formula for TMDCs is expressed as MX2 where M = Molybdenum (Mo) or Tungsten (W), and X = Sulfur (S) or Selenium (Se). In the bulk, TMDCs exhibit an indirect band gap, making them unsuitable for optoelectronic applications. However, exfoliated two-dimensional monolayers exhibit a direct band gap, which makes them suitable for various optoelectronic applications. In this project, we focus on the alloy material Mo(1-x)WxS2 formed by substitutional doping of MoS2 in which some of the Mo atoms have been replaced by W atoms. Here, x is the doping concentration which varies from 0 to 1.The advantage of an alloy material lies in the ability to tune their properties by simply varying the alloy composition x. Our goal is to fully characterize this material by performing the following calculations: structural characterization and optimization to obtain the equilibrium structure of the alloy; electronic structure calculation to obtain vital information about band structure, band gap, electron and hole effective masses, and exciton binding energies. These parameters are crucial material parameters that influence the use of the alloy for optoelectronic applications. The computation method employed is first-principle density functional theory (DFT). This work is done in collaboration with Prof. Hui Zhao (associate prof. of physics at KU) whose group is carrying out experimental studies for the alloy material in question.

Category A Poster Presentation # 40
Student: Brian Walker
Group Members: Kyle Schwenker
Student Status: Undergraduate
Major: Plastics Engineering Tech
Advisor: Dr. Jeanne H. Norton
Title: Determining the Compounding Effectiveness of Extending Filler and Thermoplastics by Extrusion and Injection Molding

Abstract:

The practice of plastics compounding consists of preparing plastic formulations by blending polymers in the melt with additives. Additives may include anti-oxidants, UV-stabilizers, strengthening components, or extending fillers. For optimum material properties, it is critical to achieve a homogenous blend of additives with the base polymer. Compounding is usually done by extrusion and twin screw extruders are the most commonly used compounders in the plastic industry. In this study, the Process 11, a lab-scale twin screw extruder, was used to compound titanium dioxide extending filler with acrylonitrile-butadiene-styrene (ABS) copolymer blend. Compounded filled ABS was then processed by injection molding into test bars. Compounding effectiveness was evaluated using thermogravimetric analysis of extruded material and test bars. Tensile testing of injection molded test bars was also performed. Filled ABS properties were compared with unfilled ABS as a control.

Category A Poster Presentation # 41
Student: Jacob Wylie
Student Status: Undergraduate
Major: Chemistry
Advisor: Dr. Jody Neef
Title: Electronic Properties of Copolymers Containing Hexylthiopene and Dibenzo[a,c] Phenazine

Abstract:

Thiophene containing polymers continue to receive considerable attention within Donor-Acceptor-Donor (D-A-D) conjugated systems for their potential use in photovoltaic cells, energy storage devices, and sensors. A potential useful electron acceptor for D-A-D systems is dibenzo[a,c]phenazine. Our lab has focused on the synthesis and electronic properties of copolymers of 2,5-dibromo-3-hexylthiophene with 2,7-dibromodibenzo[a,c]phenazine. Copolymers were synthesized at various ratios of thiophene to phenazine to evaluate the effect of varying monomer ratio on the electronic properties of the materials. Synthesis, electrochemistry, and UV spectra will be presented.

Category A Poster Presentation # 42
Student: Kalee Woody
Student Status: Undergraduate
Major: Biology
Advisor: Dr. Santimukul Santra
Title: Hsp90 Inhibitor Carrying Magnetic Nanotheranostics for the treatment of Non-Small-Cell Lung Cancer

Abstract:

K-RAS is the most common mutated oncogene associated with Non-Small-Cell Lung Cancer (NSCLC). So far there are no effective therapies available for the direct inhibition of K-RAS. The standard course of treatment for patients with advanced NSCLC, often includes combination therapy using therapeutic drugs. However, repeated failure of these therapies due to multi drug resistance (MDR), indicated the urgent need for molecularly targeted therapies. In this presentation, we have introduced a novel drug delivery system with newer combination of drugs, a heat shock protein (Hsp90) inhibitor (ganetespib) and polymeric platinum complex, Pt(MCO)2 to target K-RAS driven NSCLC. Ganetespib has been shown to have superior antitumor activity for advanced NSCLC in clinical trials. The Pt(MCO)2 will be used for the first time as an alternative to the known platinum drug Cisplatin and we hypothesized that Pt(MCO)2 complex will be highly cytotoxic to the cancer cells, compared to the Pt(MCO)2. Towards this end, folate decorated theranostic iron oxide nanoparticles were formulated to target NSCLC. The drugs and inhibitors were encapsulated using unique solvent diffusion method. The formulated multimodal theranostic nanomedicine was used for the targeted treatment of NSCLC, in vitro. The targeted drug delivery and the drug homing were monitored using optical and MR imaging. Results showed that the formulated nanoplatforms are non-toxic (without the drug) and highly toxic while carrying drugs. Detailed characterizations and in vitro results will be discussed in this presentation.

Category B Poster Presentation # 43
Student: Muidh Albalawi
Student Status: Graduate
Major: Chemistry
Advisor: Ram Gupta
Title: Effect of Surfactant on Structural and Electrochemical Properties of Nickel Oxide

Abstract:

The increasing demand for energy in the world led to focus on more efficient energy storage devices. Energy can be stored in various kind of devices such as batteries, capacitors and fuel cells. Among them, supercapacitors are very attractive due to their high power densities, fast charge-discharge behavior and long life cycles. They can be used in hybrid cars and devices where high-power delivery is required. The objective of this work is to study the effect of morphology of nickel oxide on their electrochemical properties. The morphology of nickel oxide was modified using various surfactants. Structural characterization performed using scanning electron microscopy reveals the nanostructure of nickel oxides. The electrochemical properties of nickel oxide were studied using cyclic voltammetry and galvanostatic charge discharge measurements. A very high specific capacitance of about 315 F/g was observed at 5 mV/s in alkaline electrolyte. It was observed that charge storage capacity depends on morphology of nickel oxide.

Category B Poster Presentation # 44
Student: Christian Bedore
Student Status: Graduate
Major: Master of Science in Nursing
Advisor: Dr. Cheryl Giefer
Title: Gorillas Stand Up for Working: Stand Up for Comfort

Abstract:

This project involved the introduction of the workplace trend, ergonomically-designed sit-stand desks (SSDs). Research in this area has concluded that for optimal health people should sit less and move more. Studies indicate the negative effects of prolonged sitting cannot be negated even by an hour of physical activity each day. Purpose: Prolonged sitting time has been identified as a health risk factor and musculoskeletal discomforts (MSDs) are reported by 60% of office workers. SSDs allow office workers to alternate between sitting and standing throughout the working day. Therefore, the intention of this study was to indirectly affect the health and wellbeing of participants through quantitatively evaluating the before and after musculoskeletal discomforts in the neck, shoulder, back, and arms in those using. Methods: The project began through the distribution of 16 SSDs around the campus of Pittsburg State University. A MSD pre-survey was completed with a post-survey completed after an 8-week trial. SSDs were then redistributed to another 16 participants; the data acquisition was repeated. The study was guided by a research team consisting of two graduate students in nursing and three undergraduate students from nursing, biology, and accounting. Results/Conclusion: Preliminary results from the pilot study are favorable to the subject's perceived sense of wellness as well as a decrease in MSDs. Final results will be available April 7, 2016. The key to improving health and well-being is about making small movements throughout the workday, this can include moving from sitting to standing.

Category B Poster Presentation # 45
Student: Heather Caldwell
Student Status: Graduate
Major: Clinical Psychology
Advisor: Dr. Sean Lauderdale
Title: Stigmatizing Attitudes Towards Men and Women Veterans With Combat-Related PTSD

Abstract:

Veterans with PTSD experience stigma and discrimination. The extent to which women combat veterans with PTSD may experience stigma and discrimination has yet to be investigated. This is critical given the increasing number of women veterans exposed to combat and combat trauma. To assess this, 121 undergraduate students (men, n = 69) were randomly assigned to view videos of a man or woman veteran describing combat experience and their PTSD symptoms. It was predicted: 1) The man veteran will be seen as more dangerous, fear-provoking, needing to be segregated, and anger-provoking than the woman veteran. 2) The veterans will be perceived as being to blame for their PTSD. 3) Level of familiarity will be negatively correlated with attributions of blame, anger, dangerousness, and fear. In a series of between groups 2 (participant gender) x 2 (veteran gender) ANOVAs, the men veteran was appraised as more dangerousness, feared, and anger-provoking than the woman veteran. Need for segregation was higher for the man veteran than for the woman veteran. There was no effects for participant gender or a participant gender x veteran gender interaction. For Hypothesis 2, a 2 (participant gender) X 2 (veteran gender) ANOVA was used. The results suggested a main effect for participant and veteran gender. The interaction of participant gender x veteran gender was not statistically significant. Women participants were less blaming than men, but the woman veteran was blamed more than the man. Level of familiarity with veterans was found to have statistically significant and negative correlations with anger, dangerousness, and fear. In a regression model assessing the prediction of blame by level of familiarity in which gender was held constant, familiarity was not predictive of blame.

Category B Poster Presentation # 46
Student: Sacha DeGraffenreid-Yates
Student Status: Graduate
Major: Nursing
Advisor: Dr. Jennifer Harris
Title: Partnering to improve patient outcomes:
A qualitative study of fadult patient experiences with othopedic surgical care

Abstract:

The purpose of this study was to explore adult orthopedic surgical patient experiences during their preoperative, perioperative and postoperative care; utilizing the results to discuss specific interactions in care that produced positive or negative outcomes. Partnering with patients to understand shared decision making and patient centered care has been previously researched in literature. The Centers for Disease Control and National Center for Health Statistics (2015) reports total knee and hip joint replacement surgeries of more than one million yearly. The large patient population magnifies the need to understand patient experiences during their orthopedic surgical care and is essential to guide improvements that encourage the patient-healthcare provider partnership. A qualitative design based on the content analysis approach was used to collect and analyze the experiences of the 10 study participants. All of the participants had either total knee arthroplasty or total hip arthroplasty at Premier Surgical Institute in Galena Kansas between September 2014 and December 2014, were English speaking and understanding, cognitively intact, and able to meet for the audio recorded interview. A letter of invitation was mailed to 150 potential study participants whom met the criteria with 10 patients consenting to participate. A semi structured topic guided audio recorded interview was held for data collection until saturation was achieved. Four main themes developed that influenced the patient experience and affected outcomes: healthcare provider attentiveness, patient education, patient need for control, and consideration of the patient's whole life experiences.

Category B Poster Presentation # 47
Student: Trudy Hansen
Student Status: Graduate
Major: Career and Technical Education
Advisor: Dr. Julie Dainty
Title: Critical thinking skills assessment crucial in development of clinical problem solving in Physical Therapist Assistant Students.

Abstract:

As baby boomers age, their healthcare needs increase. Healthcare in the United States continues to meet the demands by providing safe and professional care. Looking specifically at Physical therapist, it is imperative physical therapy students rise to the need and embrace the responsibilities in the patient's continuum of care. The role of the Physical Therapist Assistant (PTA) student is in demand to help administer safe, effective patient care. Clinical Instructors (CI) are tasked with assessing how a PTA student critically thinks within the patient care setting. The instrument the CIs use is called the Physical Therapy Assistant Clinical Performance Instrument, to assess the PTA student. Does this instrument clearly define critical thinking? Is rapport, intuition, and the student's physical therapy intervention knowledge, enough for the CI to give a fair and accurate representation of how the PTA student clinically problem solves? This study aims to collect data from CIs across the state of Kansas. The data collected will be processed and analyzed as phenomenology qualitative research. The themes that emerge will guide in discovery how a CI can accurately assess a PTA student's critically thinking skills. Bloom's taxonomy is the adopted framework that progresses a learner through the higher levels of cognitive domains, in which thinking critically is considered.The American Physical Therapy Association (APTA) implements the Bloom's Taxonomy when a therapist participates in credentialing their Clinical Instructor skills through a course offered by the APTA. This study will reveal attributes the CIs look for in a PTA student and base recommendations from the CIs to better guide the students towards the crucial skill of clinical problem solving.measured after using the desk. Results: Preliminary results were obtained through a pilot study and reveal a very favorable response to the participant's acceptability and feasibility of the desks; this project is part of the ongoing study, Gorillas Stand Up for Working. Discussion: Small movements can equate to insurmountable changes in negative health outcomes. Incorporating some degree frequent physical activity is a necessity.

Category B Poster Presentation # 48
Student: Jiahong Wang
Student Status: Graduate
Major: English
Advisor: Dr. Sandra Cox and Dr. Casie Hermansson
Title: Fresh Off the Boat: Meeting Whose Expectations?

Abstract:

Asian Americans seldom lead on the TV screen, and TV shows featuring an entire Asian American family are even more rare.The last time an American audience had a TV show featuring an Asian American family was All- American Girl in 1994. Twenty years later in 2015, ABC premiered a second of this kind: Fresh Off the Boat, a sitcom adapted from the memoir of Eddie Huang, who is an American restaurateur and a second generation American born Chinese. The TV show makes its indisputable contribution in bringing Asian American culture into dominant American society again, however, as the producer of the adaptation and the writer of the memoir, Huang protests that the show turns his memoir into â€œa cornstarch sitcom and him a mascot for America (Huang Bamboo- Ceiling. Based on the comparison between the television adaptation and the memoir, Huang's comments indicate that fidelity matters to the writer whose work is adapted. Further, a faithful adaptation is also important to the audience. I would argue that Fresh Off the Boat is not only an unfaithful adaptation, but, more importantly, a measurable subversion of the memoir's original values. It softens the racial struggles and conflicts depicted in the original text, and presents a typical model-minority Asian American family, which misleads its audience by further enhancing the stereotypes that Huang fights against in his memoir. I would further argue that fidelity is crucial in the adaptation of Asian American literature and other works alike. Without the basic fidelity, the adaptation becomes a pure reinvention or creation.

Category B Poster Presentation # 49
Student: Stephanie Potter
Student Status: Graduate
Major: Communication
Advisor: Dr. Alicia Mason
Title: Father's gender role portrayals in children's book

Abstract:

Using the semiotic method, the research seeks to find culturally created gender roles of fathers by looking at the illustrations and text in children's picture books published in the United States from the decades 1970's and 2000's using the Children's Core Collection as a guide. The research seeks to find a deeper understanding on how these meanings create expectations of fathers. The purpose of this research is to examine the way fathers gender roles are portrayed in children's picture books. The analysis concludes that fathers' roles have not changed between the 1970's and 2000's. Despite the fact that in Mr. Large in Charge the father is portrayed as the caregiver of the day, it did not show the father in a good light. It only portrayed fathers as incapable of caregiving and nurturing.

Category B Poster Presentation # 50
Student: Marla Batten
Group Members: Veronica Snider and Kristina Mayhue
Student Status: Undergraduate
Major: Social Work
Advisor: Ms. Hyejoon Park
Title: Understanding the Perceptions of Low-Income Mothers and Childcare Givers: Exploratory Analysis of Relative Care

Abstract:

Employing in-depth interview-based exploratory study, the project will examine to understand low-income working mothers using relative care overall, and locate their distinctive perceptions on asking for childcare to relatives by race/ethnicity. The outcome will draw recommendations to social workers in low-income rural areas who need to help increase the self-sufficiency of low-income and ethnic-minority families. At the same time, this study will offer insight to policy-makers who are interested in improving childcare issues and job efficiency of low-income families in rural areas.

Category B Poster Presentation # 51
Student: Alivia Broadway
Student Status: Undergraduate
Major: Communication
Advisor: Dr. Janet Zepernick
Title: M*A*S*H and the Nation Brand Image of South Korea

Abstract:

The international reputation of a country, or in marketing terms a nation's "brand image," has important economic consequences for the country as a whole (Govers & Go, 2009). Brand image influences a country's economic outcomes in four areas: ability to attract foreign investment, marketability of a country's exports, ability to attract a highly educated foreign workforce, and desirability as a tourist destination (Govers & Go, 2009). Various factors have been identified as contributing to a nation's brand image, including peacefulness and political stability (Aronczyk, 2013, p. 76); modern infrastructure, relatively open regulatory climate, and relative absence of corruption (Aronczyk, 2013, p. 78). In a study of U.S. opinion leaders, Lee, Toth, and Shin (2008) identified the American television series M*A*S*H (1972-1983) as a significant factor in creating the international brand image of the Republic of Korea in the second half of the 20th century.

The series can be thought of as a major touchstone between Americans and Koreans. The overall portrayal of Korea in M*A*S*H is grim and highlights the poverty level, lack of education, absence of masculinity, and the nonexistence of history or culture within Korean society. The series then portrays individual Korean characters as destitute victims, money hungry criminals, or ruthless enemies. It presents viewers with an at home look of what Korea was like based on the views of biased producers and writers. Founded on this representation, Korea can be perceived as nothing more than a war torn region with no hope for improvement without the

Category B Poster Presentation # 52
Student: Garrett Eckols
Student Status: Undergraduate
Major: Mathematics Education
Advisor: Dr. Craig Fuchs
Title: The Flipped Classroom

Abstract:

The purpose of this research is to experience a flipped classroom. The flipped classroom is a hot topic among educators today and is a technology centered form of instruction. The research will be conducted over the course of a unit in a high school mathematics classroom. This project will give insight to the perceived effectiveness of the flipped classroom. This information will be utilized to determine if the benefits in terms of student achievement justify the additional time and resources spent by educators and schools.

Category B Poster Presentation # 53
Student: Kathryn Giffin
Student Status: Undergraduate
Major: Sociology
Advisor: Harry L. Humphries
Title: Is the Gift of Life a Resonant Frame?
A Comparison of Factors Involved in Non-Directed Kidney Donor Motivation for Social Workers and Nurses

Abstract:

This research examines kidney donor motivations using a research design from prior investigations evaluating the persuasiveness of the National Kidney Foundation's (NKF) altruistic gift of life frame. Because previous studies produced mixed results, showing, in particular, substantially more support for material incentives among an international sample of nursing professionals as compared to a convenience sample of college students, we compared, in this study, the motivations among practitioners in the fields of nursing and social work. A total of 159 social workers and nurses participated in a survey that addressed the relationship between material incentives, social distance and motivation to donate as well as work-related burnout and compassion fatigue as structural factors that might reduce non-directed kidney donor motivation. The results show a significant negative relationship between altruism and donor motivation as measured by social distance between donor and recipient and a strong lack of support for direct cash incentives as a complement to living kidney donation. The results also show little support for the notion that compassion fatigue or burnout accounts for these results. Social workers are somewhat more altruistic than nursing practitioners but the differences between the two groups are not meaningful. However, low support for living donations to unrelated others, coupled with high support for limited material incentives for both groups, suggest a continued need to explore alternatives to the current framing of kidney donations as giving the gift of life.

Category B Poster Presentation # 54
Student: Andrea Hucke
Group Members: Trevor Clarke
Student Status: Undergraduate
Major: Communication
Advisor: Dr. Alicia Mason
Title: The Trump Effect: Examining how exposure to political campaign messages impacts emerging adults' perceptions of Donald Trump as a political candidate

Abstract:

With the 2016 presidential election approaching, news coverage of the candidates is increasing. These messages have the potential to positively or negatively affect voters' attitudes and sway their voting decisions in the coming election. U.S. Election Atlas (2015) reported that on average in the past three presidential elections, approximately 128 million American citizens voted. According to Paul Capriotti, instructor at the University of Ravira Virgili, the mass media plays an important role in shaping perceptions and attitudes. In the political context media exposure has a significant influence on public opinion (Capriotti, 2007). Our study examines reactions to political campaign messages regarding Donald Trump (i.e., negative attack ads, positive attack ads, satirical videos, positive statements, and a neutral/control video.) The goal our study is to measure participants' reactions to these political campaign messages in order to more fully understand the impact on emerging adult voters perceptions of crediblity, self-efficacy and political participation. Discussion, limitations and future directions are provided.

Category B Poster Presentation # 55
Student: Brianna Laver
Group Members: Cole Sullivan, and Ryan Martin
Student Status: Undergraduate
Major: Accounting
Advisor: Dr. Michael Davidsson
Title: The Mid-City Renaissance Project

Abstract:
Introduction
We have been developing an analysis of the current economic state of Pittsburg, regarding the building space of the city and how it is being utilized. The Census Bureau reports that 65.7 percent of the jobs in the City of Pittsburg are filled by people who do not live in the city, but commute into the city for work. Furthermore, approximately 19.1 percent of the jobs in the city are filled by long-distance commuters from other counties in the state or other states, such as the Joplin area in Missouri.

Purpose of Project
The City of Pittsburg received a grant from the EPA to develop approximately 350 acres of land in the middle of the city. We are exploring market demands within the city such as multi-family residential, office space, retail space, and industrial land usage with separate surveys. Combining these separate markets into one study is and will continue to provide us with a pretty well rounded view of the economic demographics and what Pittsburg is lacking.

Materials/Methods
We are doing an inventory on the stock of respective buildings by working through a list of buildings in the Pittsburg Area furnished by the Crawford County Assessor's Office. We are deploying a survey to analyze the needs for respective types of space that would be most conducive to economic growth and making the city attractive to people that commute for work to the city.

Results/Conclusions
All results and conclusions will be presented during the presentation at the Colloquium.

Category B Poster Presentation # 56
Student: Anicia Lindsey-Robinson
Group Members: Maebry Woods and Richard B. Robinson
Student Status: Undergraduate
Major: Communication
Advisor: Dr. Alicia Mason
Title: Memorial Auditorium and Convention Center Comparative Analysis

Abstract:

Once Pittsburg State University inaugurated the Bicknell Family Center for the Performing Arts, the surrounding entertainment venues faced challenges related to visibility and distinguishing performance types.To better contend for public attention, Pittsburg Memorial Auditorium and Convention Center (MACC) has delegated the task of strategic planning to the Department of Communication's COMM 765 Strategic Campaign class. The purpose of this project is to analyze the strengths and weaknesses of MACC, provide a comparative analysis of all auditoriums and event centers within a 60-mile radius, asses the attitudes of the Pittsburg public, and the satisfaction of MACC's internal staff. A SWOT analysis will be created to develop new objectives for the facility by putting the stakeholders first, understanding its internal structure, and acknowledging its advantages and weaknesses of Pittsburg's MACC. We utilized several research instruments to measure stakeholders perceptions and inform the development of our strategic plan. We have consulted each auditorium and event center to record and compare its qualities with similar venues, including MACC. In addition, we have created and disseminated an online survey to several hundred Pittsburg residents and statistically analyzed their perceptions of the attractiveness, repulsiveness, and awareness of MACC. We will present the findings and outcomes of this group project.

Category B Poster Presentation # 57
Student: Rachel Magathan
Group Members: Lucas Tuckel
Student Status: Undergraduate
Major: Sustainability, Society and Resource Management
Advisor: Alicia Mason
Title: Gauging Student Support for a PSU Green Fee Initiative

Abstract:

Sustainability is one of seven core values listed in Pittsburg State University's strategic plan for 2015-2020. As students in the sustainability program, we wanted to look into the implementation of a green fee which would fund sustainability initiatives on campus through a small increase in student fees each semester. Creating a sustainability office on campus would be the main goal of this student fee, while also promoting student awareness and knowledge of sustainable practices on campus. A survey was created to gauge students' opinions on whether the green fee should be implemented and, if so, how much students would be willing to pay each semester toward the green fee. During the spring semester of 2016, a quantitative analysis of willing participants at PSU was performed to examine their levels of support for incorporating a green fee into student fees in the future. Discussion, limitations and future directions are provided.

Category B Poster Presentation # 58
Student: Haley Mona
Student Status: Undergraduate
Major: Psychology
Advisor: Dr. Julie Allison
Title: Eating Disorder Symptoms & Childhood Sexual Abuse

Abstract:

The purpose of this research was to assess the relationship between Eating Disorder (ED) symptoms (as opposed to diagnosis) and Childhood Sexual Abuse (CSA) within non-clinical samples of both males and females. Females (n=149) and males (n=98)) enrolled in a general psychology course at a regional Midwestern University participated in this research. All participants completed the Eating Disorder Examination Questionnaire (EDE-Q; Cooper & Fairburn, 2008) and the Sexual Abuse Questionnaire (SAQ; Locke, Levis, & Rourke, 2005). To examine differences by gender on scores obtained from the SAQ and each of the EDE-Q subscales, one-way analyses of variance were performed. Results revealed significant differences between males and females on the SAQ ($F(1,230)= 5.49$, $p=.02$) as well as on each of the subscales of the EDE-Q (all p's = .000). Females were more likely to have experienced CSA (M=.74) than males ((M=.71) Females also reported greater restraint behavior than males (M's=1.69 and.82), concerns with eating (M's=1.06 and .39, respectively), and shape (M's=2.76 and 1.28, respectively). Correlational analyses by gender revealed significant and positive correlations between CSA scores and scores on concerns for eating, shape, and weight for both males and females (all p's = .001). Females who scored higher on the SAQ were more likely to report restraint in eating behavior ($r=.33$, $p=.000$); this pattern was not found among males (r=.06, n.s.) These results further suggest that women may be more vulnerable to developing an eating disorder than men. This research supports the importance of including men in research on ED and CSA and the importance of including both symptoms and diagnostic criteria in research examining ED.

Category B Poster Presentation # 59
Student: Viet Nguyen
Student Status: Undergraduate
Major: Economics
Advisor: Dr. Bienvenido Cortes
Title: Determinants of U.S. Stock Market Performance

Abstract:

Since 2009, the U.S. economy has recovered well, with the unemployment rate falling from 10% to 4.9% in 2016 (Bureau of Labor Statistics). On the other hand, the stock market have been experienced negative growth, losing more than 12% in 2015 and nearly 10% since the beginning of 2016 (CNN Money). The objective of this study is to identify and measure the effects of macroeconomic variables, commodity prices, and political factors on U.S. stock market performance (as measured by the Down Jones Industrial Average Index (DJIA) for the period 1985-2015. The study applied multiplied regression technique on the economic model with growth rate of DJIA as dependent variable, and with U.S. GDP grow rate, Unemployment rate, federal funds rate, inflation rate, change in oil and gold price, and political opinion index as independent variables. The preliminary results show that U.S. GDP growth rates, FED fund rate, inflation rate, and the Conservative Population have a positive correlation with the rate of return of Dow index. However, there is also a strong negative correlation between the unemployment rate, inflation rate, and change in commodity price (gold and oil) and the performance of Dow index.

Category B Poster Presentation # 60
Student: Megan Thurston
Group Members: Jasmyn Turner
Student Status: Undergraduate
Major: Finance International Business
Advisor: Dr. Kevin Bracker
Title: Investment Analysis of Compass Minerals International

Abstract:

Headquartered in Overland Park, Kansas, CMP provides salt and plant nutrition products in North America and the United Kingdom. CMP owns the largest rock salt mine in the world, located in Canada and are the largest sulfate of potash producer in North America. The purpose of the investment analysis is to issue a buy, sell, or hold recommendation for CMP stock, through an evaluation of the business organization, industry and competitive positioning, financial analysis, valuation, and investment risks. Key methods used to evaluate the investment included a Porter's Five Forces analysis, DuPont Analysis, Discounted Cash Flows model, Sum of Parts model, and EV/EBITDA model, and a risk matrix. CMP's investor relations materials were used for this analysis. The conclusion of each of the evaluation methods resulted in a buy recommendation of CMP stock, priced at $85.35 - a 24.19% upside to the price at which it was trading on March 1, 2016.

Category B Poster Presentation # 61
Student: Lucas Tuckel
Student Status: Undergraduate
Major: Sustainability, Society and Resource Management
Advisor: Dr. Alicia Mason
Title: Changes in Environmental Literacy of PSU Students Over Time

Abstract:

As a part of PSU's 2007-2015 Strategic Plan, sustainability was added as one of the six strategic goals of the university. This goal aimed to promote research on PSU's environmental impact and involve students in sustainability efforts through education. Following the addition of this goal, research was conducted in order to gauge student environmental literacy. Throughout the fall of 2013, a quantitative analysis of incoming freshmen at PSU was performed in order to examine their levels of behavior, attitudes, and knowledge in regards to the environment. During the spring 2016 semester, a second quantitative analysis was done involving junior class students who had originally taken the same survey as freshmen. Results from the junior data collection will be the first data set that will show trend analysis. This will show whether student experiences at PSU have influenced their attitudes, knowledge, and behavior regarding the environment. Discussion, limitations and future directions are provided.

Category B Poster Presentation # 62
Student: Heidi Villa
Group Members: Christian Bedore and Jai Guillory
Student Status: Undergraduate
Major: Accounting
Advisor: Dr. Cheryl Giefer
Title: Gorillas Stand Up For Working

Abstract:

This project involves the introduction of a new workplace trend, ergonomically-designed sit-stand desks (SSDs). Modern use of computer technology has placed many people sitting during the cognitive portion of their day which has led to an increase in deskbound workdays. Screen technology is on the rise as are musculoskeletal discomforts. The perils of sitting also affect those who participate in vigorous exercise on a regular basis. Significance: Formal study has determined that for optimum health people should sit less thus move about more. Analysis on extended sedentariness has signposted it as harmful even in people who participate in physical moderate intensive movement and those who partake in highly intense exercise on a steady routine in their leisure. Methods: Through the use of the Varidesk, an ergonomically-designed SSD, the â€œGorillas Stand Up for Working project has introduced a change in the traditional office to 16 faculty and staff volunteers at Pittsburg State University. A second cohort of volunteer subjects began participation in the study on January 11, 2016. The perception of musculoskeletal discomfort was measured before and after using the desks. Results: Preliminary results were obtained through a pilot study and reveal a very favorable response to the subject's perceived sense of wellness as well as a decrease in the subjective symptoms of back pain, musculoskeletal fatigue involving the neck, shoulders, arms and legs. Discussion: Improving health and well-being is about making small movements throughout the workday; complete data for both cohorts will be available on March 11, 2016.

Category C Poster Presentation # 63
Student: David Cain
Student Status: Undergraduate
Major: Digital Media
Advisor: Mr. Jason Ward
Title: 3d Character

Abstract:

Three dimensional character concept of a DC Comics character. The model was built in zbrush and 3ds Max. Demonstrates the ability to take a two dimensional design and make it into 3d. The character can be rigged for animation or posed to create 3d prints.

Category C Poster Presentation # 64
Student: Donna Cunningham
Student Status: Undergraduate
Major: Social Work
Advisor: Ms. HyejoonParks
Title: Homeless in Rural Areas

Abstract:

The goal of this study is to locate the specific need of the homeless in rural areas. It has been little research conducted about the homeless in rural areas. Because of this situation, there is no enough knowledge of what the homeless in rural communities need and the resources required to aid the homeless. In order to achieve the study goal, I employed a structured qualitative method with 7 questions. I asked those questions to a 44 years old female homeless staying in a day care center in the rural city, P. Based on her interview, I found that she has been satisfied with diverse services provided by the center. However, she responded that she would be more satisfied if she can get more assistance to find a job soon and stay at the center at night. My research finding implies that even though the local services are met for the need of the homeless in rural areas, they still face issues of providing jobs and shelter during the night for homeless people's safety. However, it should be noticed that my sample was only one female homeless and targeted one single rural area. These conditions do not allow my research finding to be transferrable to the other rural homeless.

Category C Poster Presentation # 65
Student: Morgan Ebbs
Group Members: Gage Rogers
Student Status: Undergraduate
Major: English
Advisor: Dr. Jamie McDaniel
Title: Scare Solutions Professional Writing Game:
Procedural Rhetoric and Meaningful Play Experiences

Abstract:
Students don' t fully understand the breadth and depth of opportunities available to liberal arts majors generally and in the field of Professional Writing specifically. Consequently, many students go a more traditional route in English (studying primarily literature) and only later come to the realization that an education in Professional Writing is actually better for helping them achieve their personal and occupational goals. Therefore, we have produced a Professional Writing card game informed by Ian Bogost's concept of procedural rhetoric to offer a persuasive 'meaningful play experience.' The game gives an idea of the roles available in Professional Writing as well as the knowledge/skills and kinds of projects completed in the field. Scare Solutions puts the players in a professional atmosphere filled with ghosts, demons, zombies, mummies, shapeshifters, vampires, werewolves, and aliens all seeking to provide 'quality scares' for their clients. Modeled after the game mechanics in Smash Up! and Lords of Waterdeep, the game gets players to team up two individual factions to show the power of collaboration in Professional Writing. Each faction of monsters possesses a special power that reflects a skill used in Professional Writing. For example, the ghosts serve as editors, using their power to get rid of cards and increasing their potential victory points. Players compete to complete minor and major Professional Writing projects, such as composing grants or writing social media posts. The goal of this artistic endeavor is to more fully inform potential PSU Gorillas on the variety of opportunities in Professional Writing, a field whose occupational outlook is quite positive.

Category C Poster Presentation # 66
Student: Cayley Fenoughty
Group Members: Kadecha Gueary
Student Status: Undergraduate
Major: Social Work
Advisor: Ms. Hyejoon park
Title: How social, economic, and educational factors influence a college students success to graduate

Abstract:

This study is to find whether social capital (e.g., parental support) and college students' working while in school affect students' academic success (e.g., GAPs). In order to proceed our study, we employed quantitative methods, using survey monkey with 10 questions. We distributed them to 20 students for one day. One-Way ANOVA analysis to compare the mean differences was utilized. Our study found that there was no association between students' employment status and their GPAs. Our research implies that students are not necessarily discouraged by their financial situation which lead them to work while pursuing their college success. However, our study findings should be carefully used to similar studies because we collected samples targeting only undergraduate students in one university.

Category C Poster Presentation # 67
Student: Lauryn Hastert
Group Members: Luis Calderon, Lauren Downing, Brianna Harris, Jared Jennings, Ithaca Marlier, Shandara Richardson, Aaron Skapik, Leslie Van Loenen, Sarah Walden, Brittney Walton, and Nanxuan Zheng
Student Status: Undergraduate
Major: BFA- 2-D
Advisor: Mr. James Oliver
Title: Practice-based investigation of large-scale client based artwork production.

Abstract:

This practice-based research aims to develop unique knowledge in the areas of experience and representational learning through the design and execution of 4 large- scale client based artworks. While supporting the mission of the Department of Art, the arts on campus, and creative research this project will culminate by bringing artwork into the Axe Library. The project allows students to merge their artistic skillsets with the demands of the client utilizing a practice- based visual output as both material and creative representations of knowledge. This investigation will engage aspects of student visual research and design, input from the client, and knowledge of artistic skilsets, both from prior experiences and those gained from the execution of the project. Through developing visual strategies in the design and execution phases of the work this study will explore how the resulting paintings might support the representation of knowledge in the field. Central to this investigation will be the development of material knowledge through learning new craft based skills and how the development of this knowledge or skillsets might influence future artwork creation on the part of the collaborators.

Category C Poster Presentation # 68
Student: Peter Villa
Student Status: Undergraduate
Major: Engineering Technology
Advisor: Mr. Norman Philipp
Title: Octavius: An Open Sourced Tonal Training For Very.

Abstract:

Octavius: An Open Sourced Tonal Training For Very Young Children Using an open Sourced, closed-Loop electronic systems. Early childhood musical training has been linked to accelerated cognitive development in non-musical abilities. Tonal-specific education programs are typically absent from typical early childhood development models. Perfect pitch is a skill most easily developed at an early age and is a common factor among high-performing musicians. Utilizing pressure sensors in conjunction with an open feedback loop programmed in an Arduino microcontroller, a novel real-time tonal training device is created. Designed to teach fundamental harmonic intervals to very young children, Octavius is designed with a very non-threatening appearance. A cute and friendly Octopus is used to ensure there is no intimidation to the child. This type of system has the potential to give very young children a constant and real-time pitch training system. Acting as a kind of stuffed animal, the tones generated are effected by the child squeezing the toy. Once the target tone is reached, a reward melody and series of flashing lights cue the child that a harmonic match was made. As part of a holistic research paradigm, a survey of the toy and industry is completed to build an understanding of the framework that successful toys are ideated, designed, manufactured, marketed and distributed. This was accomplished by attending an industry conference, attending industry professional seminars, and publication research. Open-sourced models of distribution have an advantage by allowing free and open access to a technology without the barriers to entry typically suffered by low-income/low-education demographics. By focusing on distribution channels such as these, the widest range of people can potentially have access without the need of financial resources. Limitations and advantages of this design were found pertaining to distribution, usability and reliability. Mass market distribution models favor instant-gratification interaction models with shallower interaction systems. Alternatively, open-sourced distribution models provide appropriate avenues for free and open distribution. Avenues of future development include mobile and digital applications created on the android and iOS platform using the Unity Game Development Engine. Digital distribution allows fast international contact to a variety of demographics with few barriers to entry.

Category D Poster Presentation # 69
Student: Benjamin Cochran
Student Status: Graduate
Major: Nursing
Advisor: Dr. Amy Hite
Title: Building ALLAS: Creation of an Asthma and Allergies App

Abstract:

39 million Americans carry a diagnosis of asthma and 50 million Americans are allergy sufferers. While there are currently over 100 mobile applications for asthmatics, none of them meet all eight identifiable criteria for evidence-based education and none had an asthma action plan that was modifiable. The two prevailing factors in the research were a desire to self-manage and one respiratory tract, one disease. Purpose: To determine the factors lacking in apps currently available and create an all-encompassing app that addresses aspects needed for asthma and allergies self-management and proper treatment. Method: Creation of an app from idea through development to successful app ready for beta testing. Balsamiq.com will be used for wireframing, design, and final HD design. Firebase will be utilized for database storage and construction. Future Research: The app will be created through this project and then released for beta testing. Pending successful testing and appropriate enhancements, the app will be released in a large general release after a significant social media campaign.

Category D Poster Presentation # 70
Student: Cara Russell
Student Status: Graduate
Major: Nursing
Advisor: Dr. Amy Hite
Title: Implemening ACL Injury Prevention Programs

Abstract:

Implementing ACL Injury Prevention Programs for Female Athletes The number of female athletes has risen drastically since the implementation of Title IX forty years ago. In the college arena alone, female participation has increased by more than 500%. Due to the rise in female athletes and mechanical differences between males and females, there has also been a parallel rise in anterior cruciate ligament (ACL) injuries. This research project focused on the question of why implementing an ACL injury prevention program was important and what the top programs were and consisted of. ACL injury prevention programs have been shown to decrease injury from 74-88%, but even with these valuable prevention programs available, female ACL injury has continued to rise. This draws into question the knowledge of the coaches of female athletes in regards to prevention programs and why they are vital to their sports program. A presentation using a PowerPoint and brochure handout will be given to area female sport coaches and health science instructors as a way to educate them about programs that can have the greatest impact on their athletes' health and longevity.

Category D Poster Presentation # 71
Student: Charith Ranaweera
Other Members: Hyun Young Jung, Majid B. Karimi, Myung Gwan Hahm, Pulickel M. Ajayan and Yung Joon Jung
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Ram Gupta
Title: Transparent, flexible supercapacitors from nano-engineered

Abstract:

Recently there has been significant interest in using carbon based nanomaterials as supercapacitor electrodes due to several advantages of carbon such as light weight, high electrical conductivity and electrochemical surface area. There is a large number of interesting possibilities in creating new designs for such energy storage devices if the carbon electrodes can be tailored and engineered to fit new functionalities. Here we demonstrate the design and fabrication of flexible and transparent supercapacitors using a highly structured carbon thin film, structured inside porous templates by chemical vapor deposition. These carbon films consist of arrays of periodic and interconnected nano-cup morphologies of few layer graphitic structure (from now, termed as carbon nanocups- CNC) and are used as thin film electrodes for the supercapacitor devices. CNCs are architectures percisely engineered from graphitic carbon, within porous templates, having up to 10^5 times smaller length/ diameter (L/D) ratios compared to conventional nanotubes, and have unique nanoscale cup morphology. Our CNC films- polymer electolyte composites have three remarkable features for the use as a solid state, thin-film supercapacitor device. First, a CNC film has the high surface area offered by arrays of controlled nanoscale cup structures and highly disordered graphitic layers that are keys for the effective permeation of the polymer electrolyte in supercapacitors. Second, unique nanoscale structural and morphological features of CNC films enable the easy access and faster transport of ions at the electrode/ electrolyte interface resulting in higher power capability. Finally, high current cerrying capability, substantial mechanical strength, and small effective electrode thickness (10 nm) allow us to build multifunctional (optically transparent and mechanically flexible) reliable thin- film energy storage devices.

Category D Poster Presentation # 72
Student: Christina Platt
Student Status: Undergraduate
Major: Psychology
Advisor: Dr. Jamie Wood
Title: The Variables of Drug Court with Possible Impacts on Short and Long Term Recidivism Rates

Abstract:

This research will examine the elements of Drug Court Treatment (DCT) and its effects on short and long term recidivism. When dealing with such complex topics, it is important to understand the prediction. Any explanation for the occurrence of recidivism among substance abusers is significant. Previous studies have examined the relationships between behavior and drug court participants. However, the proposed study focuses on DCT and recidivism after graduation from the program. Using archival data collected from each DCT participant, researchers will analyze the correlation between the completion or termination of DCT and recidivism. Analyzing archival data from participants, researchers can see if human factors, such as ethnicity, age, marital status, and mental health diagnosis affect DCT recidivism rates. Although this study has not been conducted, the researcher hypothesizes that there will be a significant connection between human factors and DCT success.

Category D Poster Presentation # 73
Student: Echo Mills
Student Status: Graduate
Major: Nursing
Advisor: Dr. Amy Hite
Title: Blood Loss Management Post Total Knee Arthroplasty

Abstract:

The purpose of this study was to examine the use of tranexamic acid (TXA) in managing postoperative blood loss anemia with total knee arthroplasty (TKA) to determine if its use was successful in minimalizing blood loss by evidence of comparing hemoglobin levels preoperatively and postoperatively and whether it limited or eliminated the need for blood transfusions. The study selected 153 patients from a local surgical hospital that underwent primary TKA within a six month period. The study examined if the patient received TXA intraoperatively or not; preoperative and postoperative hemoglobin levels; and if they did or did not receive a blood transfusion. Barriers to this research were examined, such as lack of congruency in standard protocols among surgeons, possible errors with lab results, and limited area of population for data collection. This study concluded that TXA was effective in stabilizing hemoglobin levels on postoperative day one, but was inconclusive as to its overall effectiveness in preventing the need for blood transfusions. The study also concluded that hospital wide protocols and global standardization was relevant to blood loss management, opening the door for future studies in prevention and evidence based practice.

Category D Poster Presentation # 74
Student: Jasmyn Turner
Student Status: Graduate
Major: General Administration
Advisor: Dr. Kevin Bracker
Title: Experiential Learning in the Pedagogy of Finance

Abstract:

The pedagogy of finance has recently faced considerable criticism. For instructors, there is a constant challenge to bridge the gap between learning experiences and the complexity of the real world. Students must learn how to deal with imperfect information, complex tasks, and linking abstract theory to actual situations. Thus, there has been a movement towards experiential learning, which is known to link students' learning to the outside world. The purpose of this paper is to investigate the value of experiential learning in the finance curriculum. The consensus suggests that experiential learning has been shown to help overcome many of the limitations in the traditional methods. It also stresses an essential need of change that the pedagogy of finance must move towards.

Category D Poster Presentation # 75
Student: Jennifer Dey
Student Status: Undergraduate
Major: Nursing
Advisor: Dr. Barbara McClaskey
Title: Fall Prevention: Bed Alarms

Abstract:

Falls that occur during inpatient hospitalization can be devastating. They cause trauma and an increased hospital stay to the patient. To the hospital, they can cause liability and financial issues. Medicare and Medicaid classify falls as a "never" event. They will not reimburse the hospital for falls that occur during hospitalization. This research project examines interventions to decrease fall rates, primarily with the use of bed and chair pressure alarms. These alarms are placed beneath the patient when they sit or lie in bed. The alarm is activated when it detects pressure due to the weight of the patient. When the patient rises, the alarm senses a decrease in pressure, and an audible siren is activated. Studies do not reveal that bed alarms are effective in preventing falls. There is no consistent trend shown between the bed or chair alarm intervention and control groups. However, the studies do show that a long-term exercise and rehabilitation plan, along with Vitamin D and calcium supplements, are effective in helping decrease falls.

Category D Poster Presentation # 76
Student: Jeremiah Reece
Student Status: Undergraduate
Major: International Studies
Advisor: Dr. Lauren Balasco
Title: Deforestation and Destruction: Effects on Indigenous Communities in Brazil

Abstract:

This paper analyzes the impact of deforestation on indigenous communities in Brazil, and the Brazilian government's attempts at protecting these vulnerable groups. Deforestation is one of the contributing factors in the current environmental crises. The deforestation of the Amazon rainforest has global effects today, but the clearing of the Amazon has had disastrous effect on those whose have lived in this forest for a millennia. The indigenous of the Amazon are under attack, there are roughly around four hundred tribes that each have their own identity, thus they also have their own wants and desires. The Brazilian government has globally announced economic promises to sanction parts of the Amazon rainforest, as well as adoption of the United Nations Declaration on the Rights of Indigenous Peoples, but the government rarely enforces any rule or regulation with consistency. This has led to the peaceful protest of many, with organizations forming to spread awareness about these unjust actions. Consequently, these land grabs have also led to a rising number of armed conflicts throughout the rainforest.

Category D Poster Presentation # 77
Student: Jesse Henderson
Student Status: Graduate
Major: Psychology
Advisor: Dr. Sean Lauderdale
Title: Using Sensititve Movement Procedures to Predict Cognitive Impairment

Abstract:

Research has concluded that movement dysfunction can be predictive of cognitive impairment in older adults. Hsu et al (2014) speculated that neurodegeneration associated with disruptions in neural networks supporting both cognitive functioning and motor control. They found less connectivity between the primary motor-sensory network and fronto-parietal network, which was significantly associated with greater decline in both cognitive function and mobility. They concluded that participants with a history of multiple falls might be experiencing sub-clinical changes in brain function and increased risk for cognitive decline. Current research has yet to make a definitive comparison between fine, complex, and gross motor impairments in the prediction of cognitive impairment. Gross motor movement is evaluated through motor tasks that assess grip strength, balance, and gait (Kluger et al., 1997). Fine motor functioning can be assessed through tasks that evaluate minute movement of the fingers, hands, and fingertip dexterity (Kluger et al, 1997). Complex motor movement has been less well defined but typically is assessed through tasks requiring sequences of movements as well as simultaneous and bilateral movements of the hands. In a review by Kluger and colleagues (2008), it was suggested that cognitively impaired older adults might show impairment in complex and fine motor functioning before impairment in gross motor functioning. This review will provide an overview of the available evidence regarding whether gross, fine, or complex movements are more strongly associated with cognitive impairment in older adults. It will conclude with a research design to compare the relationship between movements and cognitive impairment.

Category D Poster Presentation # 78
Student: Jessica Dalton
Student Status: Graduate
Major: Doctor of Nursing Practice
Advisor: Dr. Cheryl Giefer
Title: Telemedicine in Rural Emergency Department

Abstract:

Background: Increasing shortages of primary care physicians has resulted in the use of Family Nurse Practitioners for staffing of rural Emergency Departments throughout the United States. Although the majority of these Family Nurse Practitioners have not been formally trained in emergency medicine, they are placed in the role. The majority of nurse practitioners have not received training for these critical situations. It has been proposed that telemedicine may be utilized to reduce costs by decreasing unnecessary transfers which in turn will improve revenue for the rural hospital, as well as improve outcomes for the patients and decrease mortality. Significance: The significance of the phenomena of the physician shortage is that Nurse Practitioners are the lone providers managing every situation that comes through the Emergency Department doors of rural hospitals as a result of the physician shortage. Emergent situations require quick assessment, diagnosis, and treatment to decrease the rate of mortality. Nurse Practitioners may use telemedicine to obtain an expert opinion for patients requiring a specialist in Emergency Medicine. Methods: Data will be obtained from a retrospective chart review on every patient where telemedicine was utilized since the initiation of telemedicine in April 2015 at Wilson Medical Center's Emergency Department. Results: Ongoing. Discussion: The increasing shortage of physicians has increased the use of Family Nurse Practitioners trained in Primary Care to staff Emergency Departments. Telemedicine is a way that Nurse Practitioners may obtain immediate consultation with a specially trained physician in an effort to improve patient outcomes and decrease mortality.

Category D Poster Presentation # 79
Student: Johara Al Dream
Student Status: Graduate
Major: Chemistry
Advisor: Dr. Ram Gupta
Title: Facile Fabrication of Reduced Graphene Oxide/Polypyrrole Composite Hydrogels with Excellent Electrochemical Performance and Compression Capacity

Abstract:

We report a facile method to fabricate reduced graphene oxide/polypyrrole hydrogels (rGO/PPy) simply by combining the self-assembly process at room temperature with oxidation polymerization at elevated temperature. The asprepared composite hydrogels possess a cross-linked 3D hierarchical porous structure and show a compression-tolerant property and a high specific capacitance of 473 F g-1 at 1 A g-1. In particular, 82% of the capacitance value has been maintained after charge-discharge for 5000 cycles, suggesting the great potential applications of the rGO/PPy hydrogels in high-quality energy storage devices. This study provides a novel reference way for the self-assembly of other conducting polymer and graphene sheets for different applications.

Category D Poster Presentation # 80
Student: Katie Roseberry
Student Status: Undergraduate
Major: Nursing
Advisor: Dr. Barbara McClaskey
Title: Preventing Post-Op Infections in Joint Replacement Patients

Abstract:

Post-operative infections in patients after joint replacements are a major concern. Deep infections can be a devastating complication after these replacements as they can lead to the need for joint revisions as well as the long hospital stays that come along with them. Antibiotic loaded bone cement can be an effective way of providing a prophylactic dose of antibiotics directly into the replacement site. With antibiotics present in the cement, there is a direct action against any microorganisms that could have the potential to cause an infection. There are many different variations of the combination of cement and antibiotics that can be used in replacements. These different blends allow for surgeons assess the patient and any risk factors that they may have that might lead to infection and use the right combination on them. There currently is not enough research on antibiotic cement and whether there are possible problems with its use. There is still some controversy towards its use due to cost, possible mechanical changes to the cement, resistance to antibiotics, longevity of the replacement with use of cement, and the development of any allergic reactions. However, the research that has been done shows there is more benefit from using the antibiotics in the cement than by not using any. Until more research can be done, surgeons performing joint replacements should use the antibiotic loaded cements as an infection preventative.

Category D Poster Presentation # 81
Student: Katie Russell
Student Status: Undergraduate
Major: Nursing
Advisor: Dr. Barbara McClaskey
Title: Hemodialysis vs Peritoneal Dialysis

Abstract:

The number of people with end stage renal disease continues to grow every year resulting in more individuals needing some form of dialysis. There are two common types: peritoneal dialysis and hemodialysis. Although mortality rates are nearly the same, the costs of the two procedures are significantly different. Hemodialysis is far more expensive, however some patients are unable to do peritoneal dialysis for various reasons. Some individuals are not capable of doing peritoneal dialysis, because it requires the patient to be fairly independent with good hand eye coordination. Many patients have no option other than hemodialysis because their kidney failure has made them too weak to do the skills needed for peritoneal dialysis. Hemodialysis not only costs more, but also requires the patient to travel to a dialysis center or hospital. At these centers nurses set up and monitor the dialysis equipment that cleans their blood rather than the patient being able to administer the cleansing process at home. In addition, hemodialysis requires access to their blood through a fistula whereas in peritoneal dialysis the cleansing fluid is inserted into the peritoneal cavity via a tube. There are pros and cons to both but neither one is necessarily better than the other in regards to outcomes. Considering the difference in cost and convenience for the patient and family, more information needs to be provided to potential patients and health care providers on the option of peritoneal dialysis. They're both amazing, life-saving procedures for our patients with severe kidney disease.

Category D Poster Presentation # 82
Student: Kayla Kenne
Student Status: Undergraduate
Major: Nursing
Advisor: Dr. Barbara McClaskey
Title: Animal- Assisted Therapy

Abstract:

This review of the literature explored if the use of animals in a heath care setting facilitates the reduction of stress and pain. Alternative therapies as part of health care have become more prevalent in our society. In the 1960's Dr. Boris Levinson, a practicing child psychologist, theorized that his patients were less anxious and had less resistance to therapy when his dog, Jingles, was involved. Over the last 30 years, more studies have offered evidence that interacting with companion animals contributes to good health, psychosocial well-being, and recovery from serious conditions. Studies have evaluated the physiological impact on blood pressure and heart rates, changes in neurophysiological stress markers (reductions in serum and salivary cortisol), and impact on emotions and social interactions. There is evidence that animal therapy may help lower blood pressure, increase the immune system, decrease feelings of loneliness and depression, decrease anxiety, serve as a distraction, and decrease the need for pain medications. More research studies need to be done as much of the reports are based on anecdotal evidence and small studies. However, considering the potential benefits of animal-assisted therapy, health care providers should consider that the presence of a companion animal or therapy animal may be a worthwhile addition to the care setting, with potential benefits for patients, visitors, and staff.

Category D Poster Presentation # 83
Student: Kelcey O'Daniel
Student Status: Undergraduate
Major: Nursing
Advisor: Dr. Barbara McClaskey
Title: Myelomenigocele - Open Fetal Surgery versus Traditional Newborn Management

Abstract:

Spina Bifida is a neural tube defect that occurs during fetal development and results in incomplete closure of the spine. Myelomeningocele is the most debilitating and severe form of Spina Bifida in which the spinal cord and meninges, the membranes that cover the spinal cord, protrude from the back. This specific neural tube defect has a long term survival rate, but often comes with severe disability. This review of literature explored the use of fetal surgery as a treatment option rather than the more traditional neonatal surgery. The typical treatment has been for the newborn with myelomeningocele to have surgery within a few days of birth to close the defect to prevent infection and prevent further damage to nerves. However, the nerves that have been damaged prior to birth due to exposure cannot be repaired and loss of function may be permanent. Open fetal surgery is the process of performing surgery on the fetus while in utero. During the surgery, the surgeon repairs and covers the neural tube, allowing for correction and growth of the tube. If the surgery is successful and the neural tube remains repaired and intact, the quality of life increases immensely as nerve function is maintained. Although there are risks to the fetus and the mother, the use of open fetal surgery may be the stepping stone in enhancing well-being and may help give a child the opportunity to lead a more normal life.

Category D Poster Presentation # 84
Student: Laura Howard
Student Status: Undergraduate
Major: English
Advisor: Dr. Phillip W. Rudd
Title: Sentence Analysis of 'The Hitchhiker's Guide to the Galaxy'

Abstract:

There are many techniques that can be used to analyze the finer details of writing like diction and sentence combinations; however, these forms of analysis require an advanced study of literary theory or discourse analysis that an undergraduate student in a class like English Linguistics (ENGL 308) does not yet possess. Instead, this study will look at the writing style of Douglas Adams in The Hitchhiker's Guide to the Galaxy in search of his specific sentence structure by analyzing twenty-five sentences from his novel. In this paper, the study is conducted through the use of phrase structure rules and phrase structure trees to allow for visual examples of the sentence structures. The findings show that Douglas Adams mostly used compound-complex, declarative sentences in the simple past tense while using the pattern seven structure and the active voice.

Category D Poster Presentation # 85
Student: Lauren Wainscott
Student Status: Undergraduate
Major: Nursing
Advisor: Dr. Barbara McClaskey
Title: Neurocognitive Testing in Sports-Related Concussions

Abstract:

In the incidence of sports-related concussions, does the use of computerized neurocognitive testing reduce the occurrence of consecutive concussions, and therefore, decrease the risk of long-term side effects? Computerized neurocognitive testing is a way to determine cognitive abilities of individuals by testing their verbal and visual memory, their reaction time, and visual motor processing speed via computerized concussion program software. These programs are used in pre-season to obtain baseline data on the athletes. Athletes who become concussed throughout the season are then tested again against their own baseline. Through the results of those tests, health providers are able to achieve a more accurate diagnosis of severity of the head injury. Those test results then help determine the most appropriate time frame for the athlete to abstain from sports related activities.The research suggests that by being able to gain a better knowledge of the athlete's post-concussed condition, and getting a more appropriate "return to play" date, the risk of consecutive head injuries and long term side effects decrease substantially. My research has been strongly based on the specific program: ImPACT or Immediate Postconcussion Assessment and Cognitive Testing. This software is the most widely used and scientifically validated computerized concussion evaluation system. My recommendation is that programs like ImPACT be required by all levels of athletic play, high school, college, and professional, to decrease the incidence of premature return to play for athletes with sports-related concussions. By doing so, I believe we, as providers of care, can decrease long-term complications and successive injuries.

Category D Poster Presentation # 86
Student: Samiyah Aloqayli
Student Status: Graduate
Major: Chemistry
Advisor: Dr. Ram Gupta
Title: Extraction of Naphthinc Acid from highly acidic oil using Hydroxide-based ionic liquids

Abstract:

The isolation and recovery of naphthenic acid from highly acidic model oil was performed using hydroxide-based ionic liquids. An extremely low ionic liquid/oil ratio was used to completely deacidify the model oil. Tetraalkylammonium and tetraalkylphosphonium hydroxide ionic liquids were employed in this study. Tetraalkylammonium-based ionic liquids are more efficient than tetraalkylphosphonium-based ionic liquids. The recyclability of the ionic liquids for the extraction of naphthenic acid was also studied. The regeneration of the extracted naphthenic acid was achieved.

Category D Poster Presentation # 87
Student: Sarah Nelson
Student Status: Undergraduate
Major: Psychology
Advisor: Dr. Regan Slater
Title: The Effectiveness of Cognitive-Behavioral Therapy

Abstract:

Through a literature review, the effectiveness of Cognitive-Behavioral Therapy (CBT) was examined for the treatment of depression, anxiety, and posttraumatic stress disorder (PTSD). CBT focuses on adjusting the thoughts and behaviors of the client in order to address undesired symptoms of disorders. After reviewing the history and vital components of the therapy, the effectiveness of CBT for individuals with depression was reviewed. With the focus of changing malignant behaviors and encouraging desired behaviors, CBT was considered to be a valid treatment option. In comparison to Acceptance and Commitment Therapy (ACT), CBT was found to produce a similar reduction in symptoms, but showed a greater result for depression symptom improvement. The effectiveness of CBT in individuals with anxiety disorders was also reviewed. CBT was found to be a valid treatment in both an individual and group setting. For individuals with PTSD, the effectiveness of CBT was also measured. There are several variations of CBT that are used to treat this particular disorder.

Category D Poster Presentation # 88
Student: Taira Williams
Student Status: Undergraduate
Major: Nursing
Advisor: Dr. Barbara McClaskey
Title: Anesthetics Prior to Peripheral IV Catheter Insertion:
To use or not to use?

Abstract:

Insertion of a peripheral IV catheter causes pain, no matter how small the gauge of needle, and pediatric patients report IV catheterization pain as secondary to their disease. Research has shown that the stress and apprehension increases the pain associated with the intervention. Furthermore, increased pain is reported in those procedures following an unpleasant procedural experience. There have been a number of studies performed using different types of anesthetics as a means to eliminate or reduce pain. While all methods did show some degree of effectiveness, only those that were injected under the skin proved to be favored by patients. Therefore, it is recommended that intradermal anesthetics be used prior to IV catheterization. Studies show that buffered lidocaine proves to be the most effective in pain reduction and its use is an expected intervention in some medical centers. However, should buffered lidocaine not be readily accessible, bacteriostatic normal saline is a suitable alternative. With reduction or elimination of pain as the goal, all eligible patients receiving a peripheral IV line should be pre-treated with buffered lidocaine prior to IV catheterization. Not only will this encourage patient satisfaction, it will also help meet The Joint Commission's mandate that patients report little to no unnecessary pain.

Category D Poster Presentation # 89
Student: Zoraida Price
Group Members: Linda Muffoloetto, Alexis McKinnon and Stephanie Spitz
Student Status: Graduate
Major: Clinical Psychology
Advisor: Dr. Jamie Wood
Title: Motivations and Traits of College Students Who Divert Their Stimulant Medications: A Meta-Analysis

Abstract:

An investigation reviewed studies published since 2000 to detect patterns in traits or behaviors among college students who divert (sell or give away) their stimulant medication. Methods: Investigators conducted an initial search using the following databases: PsychINFO, PsychARTICLES, MEDLINE, and Science-Direct, with specific key terms. Articles were subjected to the following additional restrictions for inclusion: experimental or quasi-experimental research, participants from North America, and a minimum sample size of 20. Two hundred, thirty-nine results fit the required stipulations. Upon further examination only 15 of the articles specifically addressed diversion. Results: Our review identified common motivations to give away or sell prescription stimulants, e.g., to help a friend with academic performance or to stay awake. The most common trait, previous non-medical use of prescription stimulants (NMUPS), was linked to diversion in 7 of these studies, i.e. those with a prescription who misused their medication were more likely to divert. Implications: Our findings about diversion, although not conclusive, demonstrate a lack of proper prescription drug use among college age individuals. There is room for further inquiry about the motivations to divert and the traits correlated with diversion not only at the college level, but in secondary school settings as well. Knowledge of such factors can assist educators and other professionals in addressing and preventing non-medical use of prescription drugs.

Category D Poster Presentation # 90
Student: Aissa Barro
Student Status: Undergraduate
Major: International Studies
Advisor: Dr. Lauren Balasco
Title: Access and Opportunity: Assessing the Factors Contributing to Wome's Education in West Afrieca

Abstract:

Through initiatives such as the Millennium Development Goals and Camfed, women's access to education has been a main priority of intergovernmental and nongovernmental organizations alike around the world. But how successful are international, national, and local campaigns to support women's access to education? What factors contribute to the success rate of women's opportunity for education in West Africa? This project will identify the factors that contribute to women's access and opportunity to education in West Africa, by analyzing country data, national surveys, and reports from various intergovernmental organizations and nongovernmental organizations. Specific focus will be given to Guinea, Niger, and Mali as case studies. I will focus on factors which contribute to the gender gap in education such as cultural norms and practices, poverty, maternal health, and poverty. Finally, this project will offer recommendations for how women's access and opportunity to education can be improved in West Africa.

Category D Poster Presentation # 91
Student: Haley Kepley
Student Status: Undergraduate
Major: Nursing
Advisor: Dr. Barbara McClaskey
Title: Odon Device

Abstract:

The purpose of the study and research that is still in continuation is the use of the Odon device during complicated vaginal deliveries such as prolonged stage two labor. With current trials underway in China, India, South Africa, and Argentina and the hypothesis of safety and success is currently being tested. The current trials underway are being examined to determine if the Odon device is as safe and effective as compared to current forms of tools used for complicated labors including forceps and vacuum extraction. The study is also currently testing to prove cost effectiveness and uses for rural areas in which maternal mortality rates as well as neonatal mortality rates are increasingly high due to complicated labor and limited resources. With this study making its advancements in modern Obstetrics the researchers and data hope to prove success by adding the Odon device to the list of Obstetric tools available for use.

Category D Poster Presentation # 92
Student: Jordan Wiedemann
Student Status: Undergraduate
Major: Nursing
Advisor: Dr. Barbara McClaskey
Title: Emerging Use of Ketamine in Traumatic Brain Injury

Abstract:

History has held a stigma against the use of Ketamine for anesthesia in patients with traumatic brain injuries (TBI) due to the concern of increasing intracranial pressure, causing devastating complications. Recent studies have challenged this stigma, attempting to identify Ketamine instead as a neuroprotective agent for patients with traumatic brain injury. Recent literature was inspected regarding the use of Ketamine in TBI patients dating from 1962-2012, using a cluster sampling method. References from chosen literature underwent further examination and study in correlation to the subject. Randomized controlled trials implemented the use of Ketamine in patients with TBI. Results were taken from the information provided by controlled trials, and then analyzed to determine the efficacy of Ketamine use in TBI patients. Variables measured throughout the randomized controlled trials were intracranial pressure (ICP), mean arterial pressure (MAP), and cerebral perfusion pressure (CPP). Controlled variables throughout trials were a diagnosis of TBI, current intubation and mechanical ventilation, and a starting Glascow Coma Scale (GCS) score of less than 9. After analyzation, current studies showed promising signs that the use of Ketamine in TBI patients acted as a neuroprotective agent. Twofold increases in Ketamine concentrations during surgical procedures in TBI patients presented with no relative increase in intracranial pressures. Ketamine use was found to have hemodynamic maintenance advantages, as well as increased tolerance of enteral nutrition post-operatively. Thus far, data is too sparse to provide firm guidance at this time. Adequately powered randomized controlled trials performed in patients undergoing surgery for TBI is necessary.

Category D Poster Presentation # 93
Student: Kimberly Byler
Student Status: Graduate
Major: Nursing
Advisor: Dr. Karen Johnson
Title: How Patient Satisfaction Affects Patient Safety

Abstract:

A Literature Review Customer service is an important aspect of any industry. In a free market society, competition provides consumers with better products and services. Clients utilize many sources to find the best products and services through many forms of customer reviews. Patrons in all fields are more informed than ever. As a result of this phenomenon, there is increasing focus in healthcare on patient satisfaction. It has become so important, in fact, that patient outcomes and clinical standards are no longer the only measures utilized for reimbursement. Partial funding is now dependent upon satisfaction scores on surveys. Although patient satisfaction surveys provide a voice to patients to rate their healthcare experiences, little is known about how this tide in healthcare is affecting healthcare cost, healthcare job satisfaction, patient outcomes, and patient safety. While patient satisfaction scores drive better customer service in healthcare, more research is needed in order to support it as a reimbursement measure. A review of the current literature was conducted to begin to detect themes related to this issue. Topics in the literature review included: opinion of professionals about the focus on patient satisfaction, factors affecting satisfaction in specific populations, the discussion of a tool that promoted satisfaction but may not have provided best patient outcomes, the impact of patient satisfaction on physician care, the effects of patient satisfaction on the nursing workforce, and the effects of patient satisfaction on healthcare utilization, expenditures, and mortality.

Category D Poster Presentation # 94
Student: Trina Larery
Student Status: Graduate
Major: Doctor of Nursing Practice
Advisor: Dr. Barbara McClaskey
Title: Combating Childhood Obesity with Education

Background: The increased incidence and prevalence of childhood obesity coupled with significant morbidity and financial burden, suggest the need for educating primary care providers with current clinical practice guidelines. Recent studies indicate it is possible that this generation of children will be the first in history to have a shorter lifespan than the previous generations. Childhood obesity affects 12.7 million children.

Purpose: This project aimed to evaluate if educating primary care providers on childhood obesity guidelines would increase their knowledge of the 5210 components, labs and comorbidities along with improving their accuracy in applying diagnostic criteria based on current practice guidelines in childhood obesity. Providers that participate in obesity related CE, were found to be more familiar with the recommendations and have better adherence to current guidelines.

Methods: The Target population was recruited from the 4State APN nurse practitioner conference in March 2016. A pretest was given to participants followed by a power point presentation and concluded with a posttest. Once the surveys were complete a question and answer period followed. A paired t test was conducted on the pretest and posttest results.

Results: The study concluded with statistical significance ($p < 0.05$) that the education provided increased the knowledge of the providers with current practice guidelines on childhood obesity. All respondents (n=41) had an increase in posttest scores after the education was provided. This study indicates that many providers do not routinely order labs on children or have knowledge on current practice guidelines for children who are obese or overweight.

Category D Poster Presentation # 95
Student: Kachi Ogbodo
Student Status: Graduate
Major: Technology
Advisor: Dr. Jeanea Lambeth
Title: The Perceptions of Nigerian Teachers About the Integration

Abstract:

The inclusion of Problem Based Learning (PBL), and STEM (Science Technology Engineering and Mathematics) programs in the school curriculum of Nigeria, would not only improve learning, but would also foster development in various sectors of the economy and in turn promote economic growth of the country at large. The purpose of this literature review is to foster the development of a STEM laboratory at the College of the Immaculate Conception (C.I.C), Enugu for use by students, teachers and the community to potentially help grow possibilities of development of technical and vocational skills in adolescents beginning at age 12. It is proposed that through surveys, qualitative interviews and focus groups, the inital study would investigate the teachers' understanding and perception of the significance of integrating STEM education and Problem Based learning in the school curriculum. This investigation is intended to offer insight into how the education system in Nigeria can be Improved through STEM and Problem- based learning programs, and ways it can improve learning. The study aims to focus on the need for Problem- based learning and strategies on developing STEM laboratories in secondary schools across the country that will have a substantial impact on the sustainability of the future workforce in Nigeria.

Category D Poster Presentation # 96
Student: Megan Eagle
Student Status: Undergraduate
Major: Spanish
Advisor: Dr. Lauren Balasco
Title: When Law is in a Drought: Reforming the 1944 Water Treaty between Mexico and the United States

Abstract:

The United States and Mexico share two major river basins, the Rio Grande and Colorado rivers. These rivers provide water for people throughout the United States and Mexico to use in agriculture and preservation of ecosystems. Since these rivers provide an essential resource in a transnational setting, it is important to provide parameters for usage. The Treaty of 1944 was designed specifically to allocate the waters of the Rio Grande, Colorado, and Tijuana Rivers. It has successfully kept the two countries sated on issues regarding the river. The treaty outlines specific usages for both the United States and Mexico, separating and allocating each river basin independently. It also created the International Boundary and Water Commission (IBWC) to mediate disputes between the two countries. But with recent droughts, the practicality and relevancy of the treaty is coming into question. Water as a resource is becoming scarce all over the world. The Treaty of 1944 has served well so far as the governing body for problems with the boundary waters, but it may not be enough. With Mexico's water debt, tensions between the United States and Mexico are rising. Can the Treaty of 1944 adapt to be revalent to today's issues, or should other alternatives be considered? This project assesses both the merits and flaws of the treaty in today's context of climate change and water shortages. Finally, it will offer recommendations for how Mexico and the United States can work together and address the challenges of droughts and water supply.

Category D Poster Presentation # 97
Student: Racheal Gathoni
Student Status: Undergraduate
Major: International Studies
Advisor: Dr. Lauren Balasco
Title: Kenya's Long Game: The Survivor's Fight for Justice after the 2007-08 Post-Electoral Violence

Abstract:

In 2007, the country of Kenya erupted into a full-scale post-electoral violence after incumbent President Mwai Kibaki was declared the winner of the presidential election on the 27th of December. Over the next few weeks, more than 1,100 were killed and 650,000 were displaced from their homes. This paper explores whether – and if so how – justice has been achieved for the victims and survivors of Kenya's 2007-08 Post-Election Violence (PEV). The main purpose of this research is to investigate how justice is defined by Kenya's survivors and then determine if their idea of justice has been achieved. Therefore, this paper will examine the role of Kenya's national justice system as well as the actions taken by the International Criminal Court on behalf of victims' pursuit of justice. Lastly, this paper will explore how Kenya has since tried to stabilize its democratic system and prevent ethnic conflict in the future. This project contributes to the larger question of how victims achieve justice in the face of genocide, war crimes, and crimes against humanity.

Category D Poster Presentation # 98
Student: Sarah Larson
Student Status: Undergraduate
Major: Nursing
Advisor: Dr. Barbara McClaskey
Title: VBAC versus Repeat Cesarean

Abstract:

The purpose of this research was to identify if a vaginal birth after a cesarean delivery would increase maternal and fetal safety. The incidence of cesarean deliveries has been increasing since the late 1990s; today 90% of mother's with previous cesarean deliveries will have a repeat delivery. In some instances, a previous cesarean is the only medical indication. The greatest risk for a VBAC is uterine rupture; however, new studies show having multiple cesareans can be even more harmful. Multiple cesareans increase risk of placental problems; the initial repeat cesarean may not affect the baby but subsequent births are at mothers a higher risk. Though vaginal delivery is optimal in most situations, it is important for the provider and the patient to analyze all of the factors before coming to a delivery decision. Nurses must be patient advocates and be sure the obstetrician is aware of abnormal labor patterns, non-reassuring fetal heart changes, patient concerns, and patient wellbeing. Currently, there is still not enough research to clearly state which intervention is safest. I propose that health care professionals need to give pregnant women the risks and benefits for both interventions; and help them through the decision process.

Category A Oral Presentation # 99
Student: Abdullah Alghamdi
Student Status: Graduate
Major: Physics
Advisor: Dr. Serif Uran
Title: Study of UV absorption in Exfoliated Graphene
Presentation Time: 9am- 10am

Abstract:

Two-dimensional (2D) materials such as graphene exhibit very unique electronic, thermal conductivity and optical properties due to changes in the electronic band structure. Graphene is the most electrically and thermally conductive material known with a mechanical strength stronger than steel. Because of that, it is considered to be the future of computing power, next generation transistors, energy storage and bio sensing. It has already found application in electric car batteries. Graphene is formed from one or a few layers thick, hexagonally connected carbon atoms. These carbon atoms are connected via covalent bonds. Multiple layers of graphene are held together by weak van der Waals forces. In our research we try to break the van der Waals forces using chemical solvents and sonication to isolate one or more layers of graphene. The samples are characterized with UV-Vis spectrometer and optical microscopy. In our presentation, we will discuss the absorption properties of graphene obtained from graphite powder, graphite rod and graphite sooth in acetonitrile. The results indicate the existence of strongly localized absorption doublet-peaks at about 223 nm and 273 nm in the UV region (4.78 eV and 4.44 eV photon energies respectively) with a line width range of 0.3-0.5 eV for graphite powder in acetonitrile. The other two samples give only single peak at about 273 nm. We will present our data for different sonication times and try to explain the existence of the 223 nm peak, which was not observed in all samples.

Category A Oral Presentation # 100
Student: Sara Alkhalaf
Student Status: Graduate
Major: Chemistry
Advisor: Dr. Ram Gupta
Title: Fabrication of nanofibers of metal oxides for energy storage applications
Presentation Time: 9am- 10am

Abstract:

Nanostructured materials have attracted considerable research interest for their applications as catalyst, energy storage, fuel cells, etc. The main objective of this work is to synthesize and characterize nanofibers of metal oxides using electrospun technique and use them for energy storage applications. Various metal oxides such as NiMn2O4, CoMn2O4 and ZnMn2O4 were prepared as 1 dimensional (1-D) architecture using processable polymers and metal salts. The synthesized nanofibers were structurally and electrochemically characterized. The supercapacitive performance of these nanofibers was examined using cyclic voltammetry (CV) and galvanostatic charge-discharge techniques. The CoMn2O4 nanofibers showed a promising value of ~ 120 F/g in 3M NaOH. The effect of different electrolytes such as LiOH, NaOH and KOH on the electrochemical properties of these metal oxide nanofibers was also investigated. It was observed that the charge storage capacity depends on the electrolyte used. The supercapacitor device fabricated using these nanofibers showed that charge storage capacity increases with increase in temperature. Our results suggest that electrospun nanofibers could be used for energy storage applications.

Category A Oral Presentation # 101
Student: Hind Alqurashi
Student Status: Graduate
Major: Physics
Advisor: Dr. Serif Uran
Title: Metal Oxide Thin Film Solar Cells
Presentation Time: 9am- 10am

Abstract:

Metal oxide photovoltaic cells are attracting considerable attention because of their non-toxic, cheaper and chemically stable characteristics for harvesting solar energy. We present our results on a TiO2/CuO and ZnO/CuO heterojunction solar cells entirely produced by thermal evaporation on fluorine doped tin oxide coated glass substrates, using aluminum as a back contact. The n-type, wide band gap (3.02 eV) TiO2 window layer and the p-type, 1.2 eV band gap CuO light absorber form a p-n junction, which creates electron-hole pairs. We will report on sample preparation, circuit voltage and short circuit current which is strongly dependent on the Cu2O thickness. A thickness of about 500 nm CuO is enough to absorb all photons with an energy above the optical transition of about 3.0 eV.

Category A Oral Presentation # 102
Student: Tracy Fry
Student Status: Graduate
Major: Nursing
Advisor: Dr. Cheryl Giefer
Title: The Effectiveness of a Worksite Lifestyle Management Program on the Glycemic Control of City Truck Drivers
Presentation Time: 9am- 10am

Abstract:

This quantitative research study demonstrates the impact of a structured worksite lifestyle management program on glucose control and diabetes risk factors in a group of municipal employed truck drivers who comply with federal regulations governing a Commercial Driver License (CDL).
The purpose of this study was to determine if lifestyle interventions delivered through worksite programs could improve the participants glycemic control and decrease the participants risk factors for developing diabetes. The study included 18 volunteer CDL drivers employed by a city in Western Kansas. Participants were randomly selected and assigned to control and test groups. The methods used included pre and post testing of participants glycosylated hemoglobin (HbA1c), fasting blood glucose (FBG), low density lipids (LDL), high density lipids (HDL), triglycerides, waist circumference, body mass index (BMI), blood pressure, and body fat percentage after six months. The lifestyle management program consisted of personalized face-to-face coaching sessions delivered to the test group by a nurse practitioner, registered dietitian, and certified fitness expert. The baseline lab and biometric values were compared to the six-month lab and biometric values of the test group and then of the control group. The results of the test group were found to be significantly more positive when compared to the results of the control group. The researcher concluded that while the six-month time frame of this study may not have been long enough to result in a statistically significant impact on the HbA1c, the test group did exhibit significant improvement and reduction of diabetes risk factors.

Category A Oral Presentation # 103
Student: Michael Giffin
Student Status: Graduate
Major: Chemistry
Advisor: Dr. Jody Neef
Title: Ferrocene containing polyurethanes for improved flame-retardant properties
Presentation Time: 9am- 10am

Abstract:

Flame retardant polyurethanes are needed for various commercial and industrial applications; toward that end ferrocene derivatives with multiple hydroxyl groups were synthesized for incorporation into polyurethane thin films for testing. The derivatives synthesized were di-(2,3-dihydroxypropyl) ferrocene 1-1-dicarboxylate and 2,3-dihydroxypropyl ferrocene carboxylate. These compounds were characterized using FT-IR spectroscopy, 1H-NMR and 13C-NMR spectroscopy. These derivatives were incorporated into a commercially available polyol mixture at various weight percentages, mixed with toluene di-isocyanate, and cast as thin films on glass plates. Each film was tested for flame retardance using a standard burn test chamber and thermal stability in both nitrogen and air. Volatile organic compounds testing were also performed on selected films. In addition, potential synergistic effects of the ferrocenyl polyols with triphenyl phosphine was studied.

Category A Oral Presentation # 104
Student: Jai Guillory
Student Status: Graduate
Major: Nursing
Advisor: Dr. Cheryl Giefer
Title: Acceptability and Feasibility of Sit-Stand Desks
Presentation Time: 10am- 11am

Abstract:

Modern day jobs are requiring less physical activity during the workday. There is growing evidence that sedentary behaviors are negatively associated with health outcomes such as cardiovascular disease, diabetes, and cancer. This is pivotal for desk-based workers as they are at a much higher risk for these negative outcomes. Research shows that small movements in during the day can reduce negative health outcomes. The use of a sit-stand desk (SSD), which is ergonomically designed, is becoming a modern day workplace trend. Much of the research on SSDs has been related to musculoskeletal health and physical discomforts. Few studies have documented participant perceptions regarding acceptability and feasibility of these desks. Significance: This project involves a qualitative analysis of the experiences and perceptions regarding use of SSDs. The purpose of this study is to describe the human experience. Methods: Data will be collected from participants in the Gorillas Stand Up for Working project at Pittsburg State University. The Varidesk, an ergonomically designed height-adjustable desk, were introduced to 32 faculty and staff volunteers from Fall 2015 through Spring 2016. The perception of acceptability and feasibility was measured after using the desk. Results: Preliminary results were obtained through a pilot study and reveal a very favorable response to the participants acceptability and feasibility of the desks; this project is part of the ongoing study, Gorillas Stand Up for Working. Discussion: Small movements can equate to insurmountable changes in negative health outcomes. Incorporating some degree frequent physical activity is a necessity.

Category A Oral Presentation # 105
Student: Jacob Heil
Student Status: Graduate
Major: Biology
Advisor: Dr. Dixie L. Smith
Title: A Measurement of Historical and Contemporary Function
Presentation Time: 10am- 11am

Abstract:

In 1984 a portion of the Monahan, a PSU Biology field site, was reclaimed in order to establish a native grassland community and to prevent runoff of acidic groundwater. In the years since then, several student projects have analyzed the vegetation community on the site, estimating the species diversity found there. In this study, conducted in 2014, the biodiversity of the Monahan was measured using four indices of function diversity. Functional diversity describes the variety of ecological functions in a community; functional diversity indices measure and describe these functions instead of individual species. Results from two past graduate theses were included in this analysis and compared to the 2014 findings. The results of this comparison showed that the Monahan reclaimed grassland had generally increased in functional diversity (and by extension biodiversity) over time, but the dominant facets of diversity have been variable in each sample. In the first samples taken after the reclamation (Vickers, 1989) the community became more functionally even and divergent; that is, the species found were evenly spread across the community functional groups. A sample taken in 1994 revealed that the grassland had become less functionally even and divergent but more functionally dispersed, or were more widely spread across the functional groups (Yates, 1996). The survey conducted for this thesis in 2014 revealed that the grassland is at the highest level of functional richness ever recorded, but is less functionally diverse than 1994 by all other indices. Overall, since the initial 1984 reclamation, the grassland has actually increased in all areas of functional diversity.

Category A Oral Presentation # 106
Student: Charith Ranaweera
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Ram Gupta
Title: Bio-waste derived high performance and flexible en
Presentation Time: 10am- 11am

Abstract:

To meet increasing demands for energy from sources other than fossil fuels, it is a perfect time to develop sustainable and reproducible energy storage devices. Recent efforts have focused on more efficient energy storage devices including supercapacitors which have high power densities, fast charge discharge capabilities and long life cycles. Such supercapacitors are aimed at emergency power systems, electric vehicles, and devices where high-power delivery is required, and several types of materials, such as metal oxides and conducting polymers have been used for their electrodes. However, most of these materials often suffer from low capacitance and high cost, so in this we attempted to use orange peel, a bio-waste, for electrochemical charge storage applications. Before using orange peels for supercapacitor applications, orange peel was pre-carbonized at 400 oC and followed by chemical activation using KOH to optimize the surface area/porosity of the orange peel. The electrochemical properties of the carbonized orange peel were investigated by cyclic voltammetry (CV) and galvanostatic charge discharge (CD) measurements in alkaline media. 1:1 ratio of carbonized orange peel and KOH showed the most promising results by yielding maximum specific capacitance of 489 F/g in 3 M KOH at a current density of 0.4 A/g. The cyclic voltammetry curves were of rectangular in shape, indicating ideal capacitive behavior. The effect of different electrolytes such as LiOH, NaOH and KOH on electrochemical properties of the carbonized orange peel was also investigated. The results showed almost 100% capacitance retention over 5000 cycles of charge-discharge. These electrodes show no degradation in capacitive properties upon bending, suggesting that it can be used for flexible energy storage devices. We believe that this study provides a facile method to convert bio-waste into a high performance material for applications in the next generation of flexible and cost-effective energy storage devices.

Category A Oral Presentation # 107
Student: Henry Thomas
Student Status: Graduate
Major: Chemistry
Advisor: Dr. Jody Neef
Title: Electrical properties and DFT studies of copolymers from 3- phenyl[5] ferrocenophane- 1,5- Dimethylene and various para- substituted phenylmaleimides
Presentation Time: 11am- 12pm

Abstract:

Ferrocene containing polymers are of considerable attention due to their well understood chemistry and stable redox responses. Our research has focused on understanding the spatial arrangement and electrical properties of alternating copolymers from 3-phenyl[5]ferrocenophane-1,5-dimethylene with various para substituted phenylmaleimides. Cyclic voltammetry using these chemically modified electrodes with aqueous sodium perchlorate showed two redox waves indicating electronic interaction between the ferrocenyl and maleimide moieties. To better understand the electronic interactions, UV spectra were obtained and first-principle studies using density functional study (DFT) was used to obtain the optimized geometries. DFT studies clearly showed the ferrocenyl moiety in close proximity to the maleimide moiety, suggesting that electronic interactions could result between these two moieties.

Category A Oral Presentation # 108
Student: Zhuo Wang
Student Status: Graduate
Major: Polymer Chemistry
Advisor: Dr. Ram Gupta
Title: Carbon encapsulated MoS2 as an efficient electrocatalyst for the hydrogen evolution reaction
Presentation Time: 11am- 12pm

Abstract:

To meet the constantly rising requirement of energy other than traditional fossil fuel and environment protection, it is a perfect time to development low cost, and efficient materials for clean energy production. Hydrogen generation by water splitting is one of the cleanest ways to produce cheaper energy. Hydrogen evolution reaction (HER) is one of the key steps in water splitting process. Ideally, the thermodynamic potential for HER should be at 0 V (vs. SHE). However, without an efficient catalyst, this reaction occurred at higher potential, called overpotential. A good HER catalyst is needed to lower the overpotential and hence to improve the energy efficiency of this process. Presently, platinum is the most effective and durable catalyst for HER, but its wide spread use is precluded due to its cost as well as limited availability. Therefore, it is essential to develop low-cost and earth-abundant materials to replace precious-platinum based catalysts. In this work, a facile and scalable one-pot method has been developed to synthesize carbon coated MoS2. The carbon coated MoS2 is advantageous as this increases the electrical/ionic conductivity of MoS2. The structural characterization of MoS2 and carbon coated MoS2 was performed using x-ray diffraction and scanning electron microscopy. Hydrogen evolution reaction was studied in potential range of 0 to -0.7 V and observed that carbon coated MoS2 provide lower overpotential compared to uncoated MoS2.

Category A Oral Presentation # 109
Student: David Cain
Student Status: Undergraduate
Major: Digital Media
Advisor: Mr. Jason Ward
Abstract:

Starting with a 3d scan of my head, I was able to design a helmet in 3ds max to fit around the scan. The helmet was printed out using the 3d printer, smoothed using a filler primer, and painted. The design features a fully movable back which swings inside the helmet when the user wants to remove it. This allows for a firmer fit on the wearers head.

Category A Oral Presentation # 110
Student: Elysia Kim
Group Members: Alexandra Perez, Austin Regier, Kevin Meier, Kyle Sooter, Tony Weiss
Student Status: Undergraduate
Major: Mechanical Engineering Technology
Advisor: Dr. David Miller
Title: Handcycle
Presentation Time: 11am- 12pm

Abstract:

Hello! We are the HandCycle team, from the Engineering of Technology Department. For our senior capstone we have designed and built a hand cycle, that will accommodate those with physical limitations such as paraplegics, quadriplegics and amputees.

The purpose for this project is to incorporate the hand cycle into the Therapeutic Recreation Program's lessons, by giving the students a hands on teaching and experience when practicing for their professional aspirations.

We incorporated the design methods and teachings taught to us in our ETECH program to develop our design for the hand cycle and used the facilities at the technology center as a station to build it. For material we used a 1020 Steel Tubing and plates, traditional bicycle materials, and the necessary safety precautions with guards, covers reflectors and flag.

As a result of our senior capstone, we have successfully designed and built a functioning hand cycle to accommodate various types and sizes of riders.

Category B Oral Presentation # 111
Student: Randee Baty
Student Status: Graduate
Major: English
Advisor: Dr. Paul McCallum
Title: Bertie Wooster
Presentation Time: 9am- 10am

Abstract:

English literature has a tradition of tales about chivalrous knights, such as Sir Gawain and the Green Knight, Le Morte d'Arthur, and The Idylls of the King. These stories contain characters who are strong, brave, and devoted to their chivalric code. Sidling nonchalantly into this illustrious line of British heroes is the seemingly incongruous Bertie Wooster. Though writing for comic effect, P. G. Wodehouse places Wooster firmly in the chivalric tradition as Bertie demonstrates the characteristics of those earlier knights with his adherence to his code, The Code of the Woosters. Wodehouse wrote The Code of the Woosters in 1938, using it to look back to the 1920s. By then, England had experienced the most devastating war in their history. Life in the WWI trenches was nightmarish for the soldiers and created wide-spread disillusionment among the British. The war poets such as Wilfred Owen used their talent to bring the devastation of the war home and the Modernists such as T.S. Eliot were writing of a London that was brown and desolate. Wodehouse' s characterization of Bertie as a hero in the mold of the Knights of the Round Table is a repudiation of what the Modernists were writing and an antidote to the despair of the war poets. Wodehouse, through Bertie Wooster, reminds the reader of the history of England traditions and literary heroes. Bertie Wooster reminds England that they have and will come through demanding times and the traditions that carried them through are still alive and well.

Category B Oral Presentation # 112
Student: Christian Bedore
Student Status: Graduate
Major: Nursing
Advisor: Dr. Cheryl Giefer
Title: Gorillas Stand Up for Working: Stand Up for Comfort
Presentation Time: 9am- 10am

Abstract:

This project involved the introduction of the workplace trend, ergonomically-designed sit-stand desks (SSDs). Research in this area has concluded that for optimal health people should sit less and move more. Studies indicate the negative effects of prolonged sitting cannot be negated even by an hour of physical activity each day. Purpose: Prolonged sitting time has been identified as a health risk factor and musculoskeletal discomforts (MSDs) are reported by 60% of office workers. SSDs allow office workers to alternate between sitting and standing throughout the working day. Therefore, the intention of this study was to indirectly affect the health and wellbeing of participants through quantitatively evaluating the before and after musculoskeletal discomforts in the neck, shoulder, back, and arms in those using. Methods: The project began through the distribution of 16 SSDs around the campus of Pittsburg State University. A MSD pre-survey was completed with a post-survey completed after an 8-week trial. SSDs were then redistributed to another 16 participants; the data acquisition was repeated. The study was guided by a research team consisting of two graduate students in nursing and three undergraduate students from nursing, biology, and accounting. Results/Conclusion: Preliminary results from the pilot study are favorable to the subject's perceived sense of wellness as well as a decrease in MSDs. Final results will be available April 7, 2016. The key to improving health and well-being is about making small movements throughout the workday, this can include moving from sitting to standing.

Category B Oral Presentation # 113
Student: Abhinay Bodimani
Student Status: Graduate
Major: General Administration
Advisor: Dr. Bienvenido Cortes
Title: Determinants of Automobile Sales in the U.S.A
Presentation Time: 9am- 10am

Abstract:

The period from 2000 to 2016 has included many economic fluctuations. This makes it a particularly fruitful period for studying sales of major consumer goods. The U.S. economy was greatly affected by the global financial crisis of 2007-2009. To recover from the crisis, the U.S. Federal Reserve took extraordinary steps to maintain economic growth, primarily by keeping low interest rates till 2014 and raising them to 0.25% in December 2015. Such actions have lead to rising employment, easy money or loans for startups or loans. The Automotive Industry was severely affected by this crisis. The access to automobile credit loans was almost frozen due to the financial crisis resulting a big 40% drop in sales. Now the industry is profitable and creating more jobs at faster pace, even big companies like GM and Chrysler recovered from bankruptcy due to financial crisis. This article, will study how the automobile sales have changed over the period of time. An economic model is developed and tested with automobile sales as dependent variable, and with real disposable per capita income, consumer price index for new and used cars, financing, gasoline price, and population characteristics as independent variables. Multiple regressions technique is applied to the model using data collected from St. Louis Federal Reserve FRED database for the period 2000-2016 to the economic model. The Preliminary results are showing that income and the, consumer price index for used new cars have a positive correlation with automobile sales. However, there is also a strong negative correlation between car sales and both the consumer price index of new cars and of gasoline price index and automobile sales.

Category B Oral Presentation # 114
Student: Rachael Sachs
Student Status: Graduate
Major: Mathematics
Advisor: Dr. Cynthia Huffman
Title: Wallpaper Groups of the Baby Taj Mahal
Presentation Time: 9am- 10am

Abstract:

The presenter will talk about the wallpaper groups she saw at the Baby Taj Mahal (Tomb of I'timad-ud Daulah) in Agra, India. The Mughal mausoleum is also known as the jewel box, and is covered in geometric patterns formed from inlaid semi-precious stones. We will look at the wallpaper groups represented in the patterns of this tomb and why a certain rotation is used.

Category B Oral Presentation # 115
Student: Sacha DeGraffenreid-Yates
Student Status: Graduate
Major: Nursing
Advisor: Dr. Jennifer Harris
Title: PARTNERING TO IMPROVE PATIENT OUTCOMES: A QUALITATIVE STUDY OF ADULT PATIENT EXPERIENCES WITH ORTHOPEDIC SURGICAL CARE
Presentation Time: 9am- 10am

Abstract:

The purpose of this study was to explore adult orthopedic surgical patient experiences during their preoperative, perioperative and postoperative care; utilizing the results to discuss specific interactions in care that produced positive or negative outcomes. Partnering with patients to understand shared decision making and patient centered care has been previously researched in literature. The Centers for Disease Control and National Center for Health Statistics (2015) reports total knee and hip joint replacement surgeries of more than one million yearly. The large patient population magnifies the need to understand patient experiences during their orthopedic surgical care and is essential to guide improvements that encourage the patient-healthcare provider partnership. A qualitative design based on the content analysis approach was used to collect and analyze the experiences of the 10 study participants. All of the participants had either total knee arthroplasty or total hip arthroplasty at Premier Surgical Institute in Galena Kansas between September 2014 and December 2014, were English speaking and understanding, cognitively intact, and able to meet for the audio recorded interview. A letter of invitation was mailed to 150 potential study participants whom met the criteria with 10 patients consenting to participate. A semi structured topic guided audio recorded interview was held for data collection until saturation was achieved. Four main themes developed that influenced the patient experience and affected outcomes: healthcare provider attentiveness, patient education, patient need for control, and consideration of the patient' s whole life experiences.

Category B Oral Presentation # 116
Student: Stephanie Potter
Student Status: Graduate
Major: Communication
Advisor: Dr. Alicia Mason
Title: Fathers gender role portrayals in childrens book
Presentation Time: 10am- 11am

Abstract:

Using the semiotic method, the research seeks to find culturally created gender roles of fathers by looking at the illustrations and text in childrens picture books published in the United States from the decades 1970' s and 2000' s using the Childrens Core Collection as a guide. The research seeks to find a deeper understanding on how these meanings create expectations of fathers. The purpose of this research is to examine the way fathers gender roles are portrayed in children' s picture books. The analysis concludes that fathers' roles have not changed between the 1970' s and 2000' s. Despite the fact that in Mr. Large in Charge the father is portrayed as the caregiver of the day, it did not show the father in a good light. It only portrayed fathers as incapable of caregiving and nurturing.

Category B Oral Presentation # 117
Student: Jiahong Wang
Student Status: Graduate
Major: English
Advisor: Dr. Casie Hermansson and Dr. Sandra Cox
Title: Fresh Off the Boat: Meeting Whose Expectations?
Presentation Time: 10am- 11am

Abstract:

Asian Americans seldom lead on the TV screen, and TV shows featuring an entire Asian American family are even more rare.The last time an American audience had a TV show featuring an Asian American family was All- American Girl in 1994. Twenty years later in 2015, ABC premiered a second of this kind: Fresh Off the Boat, a sitcom adapted from the memoir of Eddie Huang, who is an American restaurateur and a second generation American born Chinese. The TV show makes its indisputable contribution in bringing Asian American culture into dominant American society again, however, as the producer of the adaptation and the writer of the memoir, Huang protests that the show turns his memoir into a cornstarch sitcom and him a mascot for America (Huang Bamboo- Ceiling). Based on the comparison between the television adaptation and the memoir, Huang' s comments indicate that fidelity matters to the writer whose work is adapted. Further, a faithful adaptation is also important to the audience. I would argue that Fresh Off the Boat is not only an unfaithful adaptation, but, more importantly, a measurable subversion of the memoir' s original values. It softens the racial struggles and conflicts depicted in the original text, and presents a typical model-minority Asian American family, which misleads its audience by further enhancing the stereotypes that Huang fights against in his memoir. I would further argue that fidelity is crucial in the adaptation of Asian American literature and other works alike. Without the basic fidelity, the adaptation becomes a pure reinvention or creation.

Category B Oral Presentation # 118
Student: Garrett Eckols
Student Status: Undergraduate
Major: Mathematics Education
Advisor: Dr. Craig Fuchs
Title: The Flipped Classroom
Presentation Time: 10am- 11am

Abstract:

The purpose of this research is to experience a flipped classroom. The flipped classroom is a hot topic among educators today and is a technology centered form of instruction. The research will be conducted over the course of a unit in a high school mathematics classroom. This project will give insight to the perceived effectiveness of the flipped classroom. This information will be utilized to determine if the benefits in terms of student achievement justify the additional time and resources spent by educators and schools.

Category B Oral Presentation # 119
Student: Abbigail Epperson
Student Status: Undergraduate
Major: English Education
Advisor: Dr. Phillip W. Rudd
Title: Sentence Analysis of Stephen Chbosky
Presentation Time: 10am- 11am

Abstract:

Literature intended for young audiences is often overlooked with regard to the complexities of its sentence structure and style; however, this genre of literature deserves a rightful place in the advanced study of discourse analysis due to its present and possible future relevance in literary theory. The goal of this study is to determine the writing style that Stephen Chbosky employs in his book, Perks of Being a Wallflower, and to discover the deep sentence structure this author chooses to use in terms of kernel sentences. The technique applied to this paper involves traditional diagramming to deliver a visual representation of the common sentence structure and style of the book. The findings of this study indicate that Stephen Chbosky mostly used compound-complex, declarative sentences in the active voice and a combination of the simple past and simple present tenses.

Category B Oral Presentation # 120
Student: Kathryn Giffin
Student Status: Undergraduate
Major: Sociology
Advisor: Dr. Lauren Balasco
Title: Learning to Manage a Refugee Crisis: A Comparative Analysis of State Policies towards Syrian Refugees in the Middle East
Presentation Time: 10am- 11am

Abstract:

After more than four years of strife, almost half the population of Syria' s roughly 22 million people are either refugees in other countries or displaced inside their own. Children account for more than half of these refugees and IDPs. Just a few years ago, Syria was a major host country for Iraqi and Palestinian refugees. Today, Lebanon, Turkey, and Jordan have taken on the largest numbers of Syrian refugees and have all implemented different governmental mechanisms to provide for their welfare. Each of these receiving countries has tried to manage the refugee crisis in different ways and to varying degrees. An analysis of policies shows an increase in protection of basic humanitarian concerns which include: construction of formal refugee camps, access to clean water and nutritional assistance, and cash assistance programs for the most vulnerable refugees. Furthermore, policies have been established to ensure access to education and medical care for Syrian refugees registered within the host state. In light of these challenges, this paper addresses the following questions. First, what impact does public opinion have on the policies adopted by states and intergovernmental organizations? Second, have there been any efforts by these countries to learn from the challenges they and their neighbors have confronted with past refugee influxes? Lastly, what policies and funding is needed in order to successfully incorporate refugees into their host countries? This paper contributes to the growing literature on transnationalism and diffusion in the field of International Relations.

Category B Oral Presentation # 121
Student: Andrea Hucke
Group Members: Trevor Clarke
Student Status: Undergraduate
Major: Communication
Advisor: Dr. Alicia Mason
Title: The Trump Effect: Examining how exposure to political campaign messages impacts emerging adults' perceptions of Donald Trump as a political candidate
Presentation Time: 10am- 11am

Abstract:

With the 2016 presidential election approaching, news coverage of the candidates is increasing. These messages have the potential to positively or negatively affect voters' attitudes and sway their voting decisions in the coming election. U.S. Election Atlas (2015) reported that on average in the past three presidential elections, approximately 128 million American citizens voted. According to Paul Capriotti, instructor at the University of Ravira Virgili, the mass media plays an important role in shaping perceptions and attitudes. In the political context media exposure has a significant influence on public opinion (Capriotti, 2007). Our study examines reactions to political campaign messages regarding Donald Trump (i.e., negative attack ads, positive attack ads, satirical videos, positive statements, and a neutral/control video.) The goal our study is to measure participants' reactions to these political campaign messages in order to more fully understand the impact on emerging adult voters perceptions of credibility, self-efficacy and political participation. Discussion, limitations and future directions are provided.

Category B Oral Presentation # 122
Student: Brianna Laver
Group Members: Cole Sullivan and Ryan Martin
Student Status: Undergraduate
Major: Accounting
Advisor: Dr. Davidsson Michael
Title: The Mid-City Renaissance Project
Presentation Time: 11am- 12pm

Abstract:

Introduction

We have been developing an analysis of the current economic state of Pittsburg, regarding the building space of the city and how it is being utilized. The Census Bureau reports that 65.7 percent of the jobs in the City of Pittsburg are filled by people who do not live in the city, but commute into the city for work. Furthermore, approximately 19.1 percent of the jobs in the city are filled by long-distance commuters from other counties in the state or other states, such as the Joplin area in Missouri.

Purpose of Project

The City of Pittsburg received a grant from the EPA to develop approximately 350 acres of land in the middle of the city. We are exploring market demands within the city such as multi-family residential, office space, retail space, and industrial land usage with separate surveys. Combining these separate markets into one study is and will continue to provide us with a pretty well rounded view of the economic demographics and what Pittsburg is lacking.

Materials/Methods

We are doing an inventory on the stock of respective buildings by working through a list of buildings in the Pittsburg Area furnished by the Crawford County Assessor's Office. We are deploying a survey to analyze the needs for respective types of space that would be most conducive to economic growth and making the city attractive to people that commute for work to the city.

Results/Conclusions

All results and conclusions will be presented during the presentation at the Colloquium.

Category B Oral Presentation # 123
Student: Morgan Lynnes
Group Members: Austin Latshaw and Rashid Bey
Student Status: Undergraduate
Major: Communication
Advisor: Dr. Alicia Mason
Title: Strategic Planning Project
Presentation Time: 11am- 12pm

Abstract:
Once Pittsburg State University inaugurated the Bicknell Family Center for the Performing Arts, the surrounding entertainment venues faced challenges related to visibility and distinguishing performance types.To better contend for public attention, Pittsburg Memorial Auditorium and Convention Center (MACC) has delegated the task of strategic planning to the Department of Communication's COMM 765 Strategic Campaign class. The purpose of this project is to analyze the strengths and weaknesses of MACC, provide a comparative analysis of all auditoriums and event centers within a 60-mile radius, asses the attitudes of the Pittsburg public, and the satisfaction of MACC's internal staff. A SWOT analysis will be created to develop new objectives for the facility by putting the stakeholders first, understanding its internal structure, and acknowledging its advantages and weaknesses of Pittsburg's MACC. We utilized several research instruments to measure stakeholders perceptions and inform the development of our strategic plan. We have consulted each auditorium and event center to record and compare its qualities with similar venues, including MACC. In addition, we have created and disseminated an online survey to several hundred Pittsburg residents and statistically analyzed their perceptions of the attractiveness, repulsiveness, and awareness of MACC. We will present the findings and outcomes of this group project.

Category B Oral Presentation # 124
Student: Rachel Magathan
Group Members: Lucas Tuckel
Student Status: Undergraduate
Major: Sustainability, Society and Resource Management
Advisor: Alicia Mason
Title: Gauging Student Support for a PSU Green Fee Initiative
Presentation Time: 11am- 12pm

Abstract:
Sustainability is one of seven core values listed in Pittsburg State University's strategic plan for 2015-2020. As students in the sustainability program, we wanted to look into the implementation of a green fee which would fund sustainability initiatives on campus through a small increase in student fees each semester. Creating a sustainability office on campus would be the main goal of this student fee, while also promoting student awareness and knowledge of sustainable practices on campus. A survey was created to gauge students' opinions on whether the green fee should be implemented and, if so, how much students would be willing to pay each semester toward the green fee. During the spring semester of 2016, a quantitative analysis of willing participants at PSU was performed to examine their levels of support for incorporating a green fee into student fees in the future. Discussion, limitations and future directions are provided.

Category B Oral Presentation # 125
Student: Viet Nguyen
Student Status: Undergraduate
Major: Economics
Advisor: Dr. Bienvenido Cortes
Title: Determinants of U.S. Stock Market Performance
Presentation Time: 11am- 12pm

Abstract:

Since 2009, the U.S. economy has recovered well, with the unemployment rate falling from 10% to 4.9% in 2016 (Bureau of Labor Statistics). On the other hand, the stock market have been experienced negative growth, losing more than 12% in 2015 and nearly 10% since the beginning of 2016 (CNN Money). The objective of this study is to identify and measure the effects of macroeconomic variables, commodity prices, and political factors on U.S. stock market performance (as measured by the Down Jones Industrial Average Index (DJIA) for the period 1985-2015. The study applied multiplied regression technique on the economic model with growth rate of DJIA as dependent variable, and with U.S. GDP grow rate, Unemployment rate, federal funds rate, inflation rate, change in oil and gold price, and political opinion index as independent variables. The preliminary results show that U.S. GDP growth rates, FED fund rate, inflation rate, and the Conservative Population have a positive correlation with the rate of return of Dow index. However, there is also a strong negative correlation between the unemployment rate, inflation rate, and change in commodity price (gold and oil) and the performance of Dow index.

Category B Oral Presentation # 126
Student: Lucas Tuckel
Student Status: Undergraduate
Major: Sustainability, Society and Resource Management
Advisor: Dr. Alicia Mason
Title: Changes in Environmental Literacy of PSU Students Over Time
Presentation Time: 11am- 12pm

Abstract:

In Pittsburg State University's 2007-2015 Strategic Plan, sustainability was added as one of the six strategic goals of the university. This goal aimed to promote research on PSU's environmental impact and involve students in sustainability efforts through education. Following the addition of this goal, research was conducted in order to gauge student environmental literacy. Throughout the fall of 2013, a quantitative analysis of incoming freshmen at PSU was performed in order to examine their levels of behavior, attitudes, and knowledge in regards to the environment. During the spring 2016 semester, a second quantitative analysis was done involving junior class students who had originally taken the same survey as freshmen. Results from the junior data collection will be the first data set that will show trend analysis. The purpose will be to examine whether student experiences at PSU have influenced their attitudes, knowledge, and behavior regarding the environment. Discussion, limitations and future directions are provided.

Category B Oral Presentation # 127
Student: Lindsey Viets
Student Status: Undergraduate
Major: Communication
Advisor: Ms. Megan Westhoff
Title: 'Distressed Damsel or Dauntless Dame?'
Presentation Time: 12pm- 12:30pm

Abstract:

Distressed Damsel or Dauntless Dame was a thirty-minute oral presentation given to the COMM 307 Advanced Speech class last spring and consisted of a comparison and contrast between the movies 'Divergent' and 'Confessions of a Shopaholic' through a feminist lens. Based on the original inspiration of gender relations in film, research began with an investigation of the Feminist Theory as it relates to media. The views of the authors and filmmakers were researched to discover what their intent was in sending messages that either encouraged or discouraged gender stereotypes in their films. The theory was then applied to the lead female protagonists in these two films in order to better understand how the stereotypes were communicated to the viewer from the artists behind the films. The presentation involved an explanation of findings, a critique of the stereotypes that were encouraged, and praised the stereotypes that were broken. Both key senders behind these messages were analyzed with respect to human relations, perception, and communication to discover that Veronica Roth (author of 'Divergent') sought to break the 'damsel in distress' stereotype, whereas Jerry Bruckheimer (producer of 'Confessions of a Shopaholic') played upon the 'fashionista' and the 'damsel in distress' stereotypes to garner humor and interest in the audience. The presentation concluded with a call to action for students to take a stand against stereotypes and develop non-judgmental perceptions of other members of the human race. Beyond this presentation, further research must be done on the new stereotypes that are being created in modern media such as the 'attractive aggressive female.'

Category B Oral Presentation # 128
Student: Heidi Villa
Group Members: Christian Bedore and Jai Guillory
Student Status: Undergraduate
Major: Accounting
Advisor: Dr. Cheryl Giefer
Title: Gorillas Stand Up For Working
Presentation Time: 12pm- 12:30pm

Abstract:

This project involves the introduction of a new workplace trend, ergonomically-designed sit-stand desks (SSDs). Modern use of computer technology has placed many people sitting during the cognitive portion of their day which has led to an increase in deskbound workdays. Screen technology is on the rise as are musculoskeletal discomforts. The perils of sitting also affect those who participate in vigorous exercise on a regular basis. Significance: Formal study has determined that for optimum health people should sit less thus move about more. Analysis on extended sedentariness has signposted it as harmful even in people who participate in physical moderate intensive movement and those who partake in highly intense exercise on a steady routine in their leisure. Methods: Through the use of the Varidesk, an ergonomically-designed SSD, the Gorillas Stand Up for Working project has introduced a change in the traditional office to 16 faculty and staff volunteers at Pittsburg State University. A second cohort of volunteer subjects began participation in the study on January 11, 2016. The perception of musculoskeletal discomfort was measured before and after using the desks. Results: Preliminary results were obtained through a pilot study and reveal a very favorable response to the subject's perceived sense of wellness as well as a decrease in the subjective symptoms of back pain, musculoskeletal fatigue involving the neck, shoulders, arms and legs. Discussion: Improving health and well-being is about making small movements throughout the workday; complete data for both cohorts will be available on March 11, 2016.

Category B Oral Presentation # 129
Student: Dylan Clay
Student Status: Undergraduate
Major: Economics
Advisor: Dr. Bienvenido Cortez
Title: Determinate's of US exports to China
Presentation Time: 12pm- 12:30pm

Abstract:

The US and China are two of the world' s largest economies and are highly interrelated via trade in goods, services, capital, and people. The Chinese economy is slowing down and the monetary policy and fiscal policy will loosen (Wharton). Following Bahmani-Oskooee and Wang (2008), this study examines the effects of relative GDP, relative money supply, price index, and government spending on US exports to China. The study' s main focus is on the relative impacts of China' s fiscal policy and monetary policy on US exports. An economic model is developed and tested using multiple regression technique (EViews) for the period 1980-2015 and data gathered from the St. Louis Federal Reserve (FRED database). The preliminary results showed US exports are positively related to China' s GDP and money supply.

Category B Oral Presentation # 130
Student: Alivia Broadway
Student Status: Undergraduate
Major: Communication
Advisor: Dr. Janet Zepernick
Title: M*A*S*H and the Nation Brand Image of South Korea
Presentation Time: 12pm- 12:30pm

Abstract:

The international reputation of a country, or in marketing terms a nation's "brand image," has important economic consequences for the country as a whole (Govers & Go, 2009). Brand image influences a country's economic outcomes in four areas: ability to attract foreign investment, marketability of a country's exports, ability to attract a highly educated foreign workforce, and desirability as a tourist destination (Govers & Go, 2009). Various factors have been identified as contributing to a nation's brand image, including peacefulness and political stability (Aronczyk, 2013, p. 76); modern infrastructure, relatively open regulatory climate, and relative absence of corruption (Aronczyk, 2013, p. 78). In a study of U.S. opinion leaders, Lee, Toth, and Shin (2008) identified the American television series M*A*S*H (1972-1983) as a significant factor in creating the international brand image of the Republic of Korea in the second half of the 20th century.

The series can be thought of as a major touchstone between Americans and Koreans. The overall portrayal of Korea in M*A*S*H is grim and highlights the poverty level, lack of education, absence of masculinity, and the nonexistence of history or culture within Korean society. The series then portrays individual Korean characters as destitute victims, money hungry criminals, or ruthless enemies. It presents viewers with an at home look of what Korea was like based on the views of biased producers and writers. Founded on this representation, Korea can be perceived as nothing more than a war torn region with no hope for improvement without the

Category C Oral Presentation # 131
Student: Desiree King
Student Status: Graduate
Major: Creative Writing/Poetry
Advisor: Ms. Laura Washburn
Title: In the Driftless
Presentation Time: 9am- 10am

Abstract:

This selection of poems is a transformative narrative that begins with the poet experiencing and interacting with the larger, natural world and slowly ascends into the landscape of the interior, the psyche, as stones and stream beds morph into associations inspired by imagination.

Category C Oral Presentation # 132
Student: Cayley Fenoughty
Group Members: Kadecha Gueary
Student Status: Undergraduate
Major: Social Work
Advisor: Ms. Hyejoon Park
Title: How social, economic, and educational factors influence a college students success to graduate
Presentation Time: 9am- 10am

Abstract:

This study is to find whether social capital (e.g., parental support) and college students' working while in school affect students' academic success (e.g., GAPs). In order to proceed our study, we employed quantitative methods, using survey monkey with 10 questions. We distributed them to 20 students for one day. One-Way ANOVA analysis to compare the mean differences was utilized. Our study found that there was no association between students' employment status and their GPAs. Our research implies that students are not necessarily discouraged by their financial situation which lead them to work while pursuing their college success. However, our study findings should be carefully used to similar studies because we collected samples targeting only undergraduate students in one university.

Category C Oral Presentation # 133
Student: Lynzee Flores
Group Members: Zoraida Price
Student Status: Undergraduate
Major: Spanish
Advisor: Dr. Grant Moss
Title: Media Tools for Undergraduate Language Acquisition
Presentation Time: 9am- 10am

Abstract:
This presentation focuses on how undergraduates used media applications to reinforce learning about Spanish culture and language. In a typical classroom setting, students research about a topic and deliver a presentation in class. However, with the documentary method, students demonstrated their question of interest with the use of a movie maker. This allowed students to experience software recording and editing. As a result, students presented in a way that was more fluid than an in-class speech. Two students from MLL 450: Readings in Hispanic Literature and Civilization II and MLL 475: Latin American Culture and Identities offer examples of their documentaries and share their opinions about the pros and cons of the documentary approach.

Category C Oral Presentation # 134
Student: Brianna Harris
Group Members: Luis Calderon, Lauren Downing, Lauryn Hastert, Jared Jennings, Ithaca Marlier, Shandara Richardson, Aaron Skapik, Leslie Van Loenen, Sarah Walden, Brittney Walton, Nanxuan Zheng
Student Status: Undergraduate
Major: BFA- 2-D
Advisor: Mr. James Oliver
Title: Practice- Based Investigation of Large Scale Client Based Artwork Production
Presentation Time: 9am- 10am

Abstract:
This practice-based research aims to develop unique knowledge in the areas of experience and representational learning through the design and execution of 4 large- scale client based artworks. While supporting the mission of the Department of Art, the arts on campus, and creative research this project will culminate by bringing artwork into the Axe Library. The project allows students to merge their artistic skillsets with the demands of the client utilizing a practice- based visual output as both material and creative representations of knowledge. This investigation will engage aspects of student visual research and design, input from the client, and knowledge of artistic skillsets, both from prior experiences and those gained from the execution of the project. Through developing visual strategies in the design and execution phases of the work this study will explore how the resulting paintings might support the representation of knowledge in the field. Central to this investigation will be the development of material knowledge through learning new craft based skills and how the development of this knowledge or skillsets might influence future artwork creation on the part of the collaborators.

Category C Oral Presentation # 135
Student: Libby Shay
Group Members: Megan Reed
Student Status: Undergraduate
Major: Communication
Advisor: Dr. Joey W. Pogue
Title: Feminists Respond to a Male Who Laments His Addiction to Pornography in the Key of C
Presentation Time: 9am- 10am

Abstract:

Pornographic, para-social relationships are prevalent in Western culture. Generating billions of dollars annually, pornography addiction, experienced primarily by men, is common. In the song Brand New Girlfriend, a narrative emerges of a man who struggles with his dependence on mediated objectifications of women. This paper analyzes the responses of feminists who decode the song and, using Delia and Burleson's Constructivism Theory, it typologizes the degrees of empathy these women feel toward the male's dilemma.

Category C Oral Presentation # 136
Student: Megan Reed
Group Members: Brianna Hancock
Student Status: Undergraduate
Major: Communication
Advisor: Dr. Joey W. Pogue
Title: Exploring the Conceptual Power of John Bowlby's Attachment Theory on Film
Presentation Time: 10am- 11am

Abstract:

John Bowlby's Attachment Theory opens up new ways to conceptualize and understand the profound effects that patterns of communication which children experience with their parents during early childhood can have on the rest of their lives. To read or hear about the theory provides one level of comprehension opening doors for remediation. However, to see the tenants of Bowlby's theory depicted artistically on film provides a much more comprehensive picture thereby enabling a much more reflexive approach toward solving the problems. In this short film, students show three manifestations of Bowlby's work complimented with their own critique of the content when, in between each depiction, they break the fourth wall. Their work shows the potential of art eliciting talk about difficult subject matter.

Category C Oral Presentation # 137
Student: Austin Vanbecelaere
Student Status: Undergraduate
Major: Communication
Advisor: Dr. Joey W. Pogue
Title: Transcending Hegemonic Masculinity's Alexiythymic Curse: Externalizing The Unspeakable in a Minor Key
Presentation Time: 10am- 11am

Abstract:

While lip service is often given to the idea of men openly disclosing feelings of inadequacy regarding sexual performance, because the language to disclose does not always appear to exist, few men reveal the affect they experience. In She Wants Me to be Dangerous, a male laments the role of the bad boy in the bedroom. Following the live performance of this song, a male responds to its statement with his performance of a monologue which sheds further light on masculine ontology in the sexual arena.

Category C Oral Presentation # 138
Student: Peter Villa
Student Status: Undergraduate
Major: Plastics Engineering Technology
Advisor: Mr. Norm Phillip
Title: Octavius: An Open Sourced Tonal Training For Very.
Presentation Time: 10am- 11am

Abstract:

Octavius: An Open Sourced Tonal Training For Very Young Children Using an open Sourced, closed-Loop electronic systems. Early childhood musical training has been linked to accelerated cognitive development in non-musical abilities. Tonal-specific education programs are typically absent from typical early childhood development models. Perfect pitch is a skill most easily developed at an early age and is a common factor among high-performing musicians. Utilizing pressure sensors in conjunction with an open feedback loop programmed in an Arduino microcontroller, a novel real-time tonal training device is created. Designed to teach fundamental harmonic intervals to very young children, Octavius is designed with a very non-threatening appearance. A cute and friendly Octopus is used to ensure there is no intimidation to the child. This type of system has the potential to give very young children a constant and real-time pitch training system. Acting as a kind of stuffed animal, the tones generated are effected by the child squeezing the toy. Once the target tone is reached, a reward melody and series of flashing lights cue the child that a harmonic match was made. As part of a holistic research paradigm, a survey of the toy and industry is completed to build an understanding of the framework that successful toys are ideated, designed, manufactured, marketed and distributed. This was accomplished by attending an industry conference, attending industry professional seminars, and publication research. Open-sourced models of distribution have an advantage by allowing free and open access to a technology without the barriers to entry typically suffered by low-income/low-education demographics. By focusing on distribution channels such as these, the widest range of people can potentially have access without the need of financial resources. Limitations and advantages of this design were found pertaining to distribution, usability and reliability. Mass market distribution models favor instant-gratification interaction models with shallower interaction systems. Alternatively, open-sourced distribution models provide appropriate avenues for free and open distribution. Avenues of future development include mobile and digital applications created on the android and iOS platform using the Unity Game Development Engine. Digital distribution allows fast international contact to a variety of demographics with few barriers to entry.

Category C Oral Presentation # 139
Student: Desiree King
Student Status: Graduate
Major: Creative Writing/Poetry
Advisor: Mr. Phil Rudd
Title: I Don't Think It Memes What You Think It Memes: Richard Dawkins'"Memes" and Its Journey into Social Media (1970s-2010s)
Presentation Time: 10am- 11am

Abstract:

Though much academic attention has been given to Dawkins' ideas about memes and their role as transmitters of culture, their existence in popular social media has been far less scrutinized. My research traces the journey of "memes" from their inception in Dawkins' "The Selfish Gene," to the primordial soup bowl of the internet, and their virus- like propagation on social media today.