QUEST 2009
ABSTRACTS

Airhart, Melissa — Industrial & Systems Engineering — Ohio Room 15:30 - 17:00

Time Study Analysis of L-Bracket Cutting Process at Northern States Metals

A team of methods engineering students from Youngstown State University's Industrial and Systems Engineering program conducted work at Northern States Metals. A time study analysis was performed using work measurement techniques applied to the cutting of L-brackets for use in the assembly of solar panels. Specific techniques that were implemented include time motion studies through the use of a video camera along with computer-aided software, MTM-1, MTM-2, and MOST Analysis, as well as portions of a Therblig and Work-Sampling analysis. Overall, it was the goal of this endeavor to not only bring together parties from both the university and manufacturing industries in the hopes of growing and learning together, but also to attempt to improve this particular manufacturing company's various processes.

Aldridge, James — Physics — Coffelt Room 14:15 - 14:30

(2) Variable Temperature Electrical Characterization

After giving a brief history over the make and use of a metal-semiconductor junction, my current assignment has been to analyze these devices under variable temperatures; from room temperature to 200 °C using a home-made heating device. The results will be analyzed to provide information about these devices that is critical to their characterization and application.

Aleksic, Snezana — Master of Science in Engineering — Jones Room 14:15 - 14:30

Butanol Fermentation using Clostridium beijerinckii ATCC 35702

Fossil fuels are currently the most economically feasible source of power for both personal and commercial use. During the combustion of fossil fuels, various emissions are released into the atmosphere contributing to the formation of acid rain that can seriously harm the environment, as well as greenhouse effect which is considered a key factor in global warming. Potential solution of various problems caused by fossil fuels is the use of renewable energy. With the production of ethanol undergoing a massive expansion, another interesting bio-fuel is getting increasing attention – butanol. During the fermentation process in a bioreactor, microorganisms consume the biomass converting it to butanol. Cellulosic material represents a commonly-available and cost-effective choice of biomass especially due to being an environmentally-friendly renewable energy source without jeopardizing world food sources. The fermentation process in this study was performed in a small-scale BIOFLO 110 bioreactor in an atmosphere of 85% N2, 5% H2 and 10% CO2. The bacterium used was Clostridium beijerinckii, which was grown in a media comprised of a mixture of many chemicals, including corn syrup as a major food source. Samples from the fermenting solution were taken in various stages of the process to allow cell counting which indicates the metabolic action of the bacteria. The objective of this research is to find the optimum conditions under which the process yields high butanol production rates.

Allen, Katie — Biology — Ohio Room 10:30 - 12:00

Two-dimensional Gel Electrophoresis Protein Comparison from Neurospora crassa

Neurospora crassa, possesses characteristics that make an ideal model organism for eukaryotes. N. crassa utilizes a variety of different carbon sources. It metabolizes preferred carbon sources such as dextrose, but has the ability to metabolize less preferred carbon sources such as quinic acid or glycerol. The ability to utilize quinic acid is controlled by the quinic acid (qa)-gene cluster. The expression of the qa –genes are enhanced when grown on quinic acid, but reduced when grown on a preferred carbon source such as dextrose. Changes in carbons sources should cause other changes in gene expression as well. In this study, we look at the protein profiles of wild-type N. crassa grown on the carbon sources, dextrose and quinic acid and glycerol. To perform the study, wild-type N. crassa was grown on Vogels minimal media and shifted to various carbon sources. Protein was extracted from the tissue and ran on two-dimensional gel electrophoresis (2-DGE). The preliminary results from the study reveal that more protein is expressed on the preferred carbon source (dextrose) compared to the less preferred carbon source (quinic acid).

Angelo, Arica — Communication Studies — Room 2068 13:45 - 14:00

Summer Art in China, 2008

This presentation will bring China to Youngstown as seen through the eyes of Youngstown State University students who visited china for the first time. The topics discussed include the National art Museum of China, Xian Academy of Fine Arts and Print Making Studio, China Block Printing Museum, Temple of Jianzhen, and Shanghai Museum of Art. These topics are presented and explored through their artistic, historical, cultural, and educational components

Angnardo, Anthony Accouting Coffelt Room 16:00 - 16:15

Reflections of a Catholic Boy's First Visit to a Moslem Nation : Does the

Reflections of a Catholic boy's first visit to a Moslem nation : Does the language of business tie us all together? What will a YSU non-traditional student, a product of the local parochial school system, with extensive business and travel experience encounter on his first visit with the Istanbul study tour? Learn about his expectations and his encounters. What is the role of women...do they all wear headscarves? Is business conducted the same way? Can a group of Williamson MBA and undergrad students convey their views to a Turkish business? See what was encountered on a visit to Duran Machinery.

Angnardo, Anthony Finance and Accounting Room 2068 14:30 - 14:45

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Arthur, Rick Mechanical Engineering James Gallery 15:45 - 16:00

Design of Testing Apparatus of Carbinite Pulleys for Supercharged Automobiles

Pulleys are being used for several purposes; one such application is to drive a super charged application. Under high speed loading, drive belts tend to slip, reducing the effectiveness and lowering the efficiency of the pulleys. Carbinite, Inc. has developed a process to coat such pulleys with a carbide alloy coating to reduce such slip. Carbinite desired a means of quantifying the slip reduction for the coated pulley. We have designed a testing apparatus to determine the percentage reduction in slip due to the coating process. The apparatus will allow for accurate but rapid testing of various pulleys. An electric motor will power the apparatus. A supercharger or rotational damper of similar resistance will be attached to the test pulley. This will allow accurate reflection of the type of rotational loading the pulley would experience. The tensioner will then be set to accurately reflect the belt tension in an automobile. The apparatus will count the rotations of the drive and supercharger pulleys. This data would then be used to determine the effectiveness of the coating. Carbinite has requested that the data be quantified in such a way that the general public may easily understand the difference between their pulleys and other competitor's pulleys. So, rather than determining the actual slip coefficients, we have decided to display only the percentage of change in slip of the coated pulley versus an uncoated pulley as well as other competitor's pulleys.

Ashburn, Joseph Electrical Engineering Ohio Room 15:30 - 17:00

Prototypical Design of a Power and Control System for an Electric Vehicle

The purpose of this project is to design a prototypical power and control system for an electric vehicle starting from its theoretical concept to an end-user application. This project will not only test our understanding of the concepts that we have learned throughout our undergraduate studies in the electrical engineering program at Youngstown State University, but also will challenge our abilities to apply what we have learned in a team environment. Li ion batteries are used to provide the main system power as well as auxiliary power to two isolated control circuits. In order to reuse the batteries a charging circuit was designed that has the capability to charge sixteen Li ion batteries simultaneously. The control circuit consists of three parts: a variable frequency drive; an inverter circuit and the human interface module. The aforementioned control subsystems were designed individually and integrated into one complete system. The complete system was then successfully implemented by fitting the system onto a cart chassis.

Bacisin, Anna Nursing Ohio Room 13:30 - 15:00

A Transcultural Nursing Experience in San Quintin, Mexico

This poster depicts the experiences of a health care team caring for individuals in San Quintin, a poor area on the Baja peninsula in western Mexico. The team consisted of seven (7) senior level nursing students and four (4) nursing faculty members from Youngstown State University, other community health care providers and support staff. A primary care clinic was held in a church for children, pregnant women and adults, many who had multiple, chronic health problems. It was the first time students worked with non-English speaking clients with basic and diverse health care needs. During this two day clinic, the nursing students triaged over 280 indigent patients and were able to perfect their assessment skills as they followed individual patients from intake, triage, physician's and dental visits, pharmacy, and discharge teaching. The experience provided an opportunity for students to develop their leadership skills by becoming patient advocates and active learners in a diverse setting. They also discovered creative forms of communications and nursing interventions. Through this experience, the nursing students began to acquire cultural competence as they provided care. The Mexican patients benefited from free medication and diabetic supplies, infant formula, donated eye glasses, tooth brushes and paste, and personal hygiene products

Backo, Jennifer Biology Ohio Room 13:30 - 15:00

NMR Spectroscopic Analysis Using ChemBioDraw®

During Chemistry 3719 and 3720 we look at spectroscopic tools such as Nuclear Magnetic Resonance (NMR) which are used by chemists to work out molecular structure. We have been using the ChemBioOffice software to calculate NMR spectra and using the results to tell the differences between isomeric compounds. This presentation will detail our findings beginning with simple molecules and moving on to stereoisomers.

Badar, Nadia Biology Ohio Room 10:30 - 12:00

Transposns Mutagenesis of Multimetal Resistance strain, Enterobactor cloacae of

A multi-metal resistant strain of Enterobacter cloacae (E. cloacae) YSU grows when exposed to toxic salts of mercury, cadmium, zinc, copper, arsenite, silver and selenite. An E-Z Tn5 transposome was introduced into E. cloacae YSU. Eleven hundrad transformants were exposed to different metals by replica plating to see if any metal resistant genes were interrupted . Twenty two transformants were sensitive to different metals. Eight out of the twenty two were sensitive to selenite, twelve were sensitive to cadmium, nine were sensitive to zinc, seven were sensitive to copper, eleven were sensitive to arsenite, four were sensitive to mercury, and fifteen were sensitive to multiple metals. Only one was sensitive to silver. Eleven of them failed to grow on M-9 minimal Medium. We are in the process of identifying the interrupted genes using gene rescue. The transposon contains a kanamycin resistance genes and the R6K replication origin. The genomic DNA from the mutants will be digested, ligated, purified and transformed into E.coli. These transformants will contain new plasmids consisting of a transposon flanked by the interrupted genes. In general, bacteria respond to toxic metal concentrations using efflux mechanisms, metal transformation (reduction and oxidation), and sequestration. When the interrupted genes are sequenced we expect them to encode proteins for similar functions.

Balint, Trevor Physics Coffelt Room 13:30 - 13:45

Deconvolution of True Bremsstrahlung Spectra From Measured Spectra

Gamma particle detectors are highly useful in nuclear and particle physics. Each detector gives a very reasonable look at any gamma events occurring. However, each detector has a different quantum and electronic response to the radiation incident on it. This response function can be very complicated, and in order to have a better perception of the gamma events incident on the detector, the measured spectra must be deconvolved, in effect reversing the response of the detector back into the actual radiation that was incident on it. A computer program has been compiled to do exactly this. The ultimate aim of the current testing in Youngstown State University's X-ray Effects Laboratory is to find a way to accurately measure bremsstrahlung spectra from a 450 keV industrial X-ray source and to process the spectra using the computer program in order to exactly determine the output of the X-ray source. This information may then be used to deduce cross sections for nuclear reactions initiated with those X rays.

Bartlett, Joshua Chemistry Ohio Room 13:30 - 15:00

NMR Spectroscopic Analysis Versus ChemBioDraw®

Nuclear Magnetic Resonance (NMR) spectroscopy is one of the most useful tools that chemists have at their disposal for working out molecular structure. During Chemistry 3719 and 3720 we look at spectroscopic tools such as NMR and use the ChemBioOffice software to calculate NMR spectra. At YSU we also have access to high field NMR spectrometers to collect the actual spectra of compounds. This presentation will detail our findings in relating calculated spectra to experimental samples.

Basista, Rebecca Nursing Ohio Room 13:30 - 15:00

A Transcultural Nursing Experience in San Quintin, Mexico

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Beach, Edwin Sociology Ohio Room 8:30 - 10:00

A Look at Youngstown State University Student's Perceptions About Youngstown

The Youngstown metropolitan area, like other areas in the Rust Belt, has been experiencing what is referred to as a "brain drain." This occurs when many college educated individuals leave the area to look for jobs in other parts of the country. In addition to looking for jobs, another possible reason for leaving this area may be the negative perceptions and attitudes that people have toward this community. Our study examines the possible sources of these attitudes and how these attitudes may affect behavior, specifically the willingness or unwillingness to act and become involved in activities designed to revitalize the Youngstown area. Furthermore, this study examines whether there is a relationship between knowledge about the community and attitudes and perceptions. We have included both a quantitative and a qualitative component in our research. A survey which measures attitudes, awareness, knowledge, efficacy, and engagement was given to students on the YSU campus. The qualitative component consists of interviews with six community activists who shared information concerning what is currently being done to revitalize the community. Our findings are reported here.

Beane, Jay English Bresnahan Suite 10:45 - 11:00

The Way the World Ends: The Manifestation of the Apocalypse in Literature and Po

The End of the World. Movies and television series relive it nearly every week. Current popular fiction shelves are full of tales of man at his end. Even literary classics seem obsessed with the death of mankind. The recurring theme in all versions of the End of the World is time, and the role that it plays in the End. This paper aims to prove through comparing and contrasting, the time is a unifying factor in these works. While the stories represented here showcase unique visions of the End of the World, none can escape the inevitability of time. The pieces that I will be discussing are The Wasteland and The Hollow Men by T.S. Eliot, Endgame by Samuel Beckett, The Road by Cormac McCarthy and The Dark Tower series by Stephen King.

Becker, Kaila Sociology Ohio Room 8:30 - 10:00

An Examination of the Collaborative Efforts between YSU and the Local Economy

Our research examines the relationship between the local economy and Youngstown State University. Our question of concern is whether or not the university is doing its best to meet the demands of the job market in this area. In order to investigate this issue, we have interviewed local economic development teams about the issues they are facing and what the university is doing to satisfy these needs. We were concerned with what criteria businesses are seeking in our graduates, what kinds of businesses are being recruited here, as well as what incentives are used to attract future businesses. We have analyzed data, both on the local and national levels, to determine where Youngstown falls as far as curriculum and degree changes in coordination with the changing economic conditions. We found that while Youngstown State University has been redeveloping its curriculum and graduating more students in the appropriate majors, we simply do not have enough students to fill all of the available positions. We also found through our research that there is a plethora of incentives used to bring businesses to the area and to help them succeed once they arrive. We hope that our research will foster future research that examines the curricula in more depth and discovers ways of bringing more students into the needed majors. We anticipate that our research will help to bridge the gap between the economy and the university and that this bridge will boost economic conditions in the area.

Becker, Kaila Sociology Pugsley Room 9:00 - 9:15

Age Discrimination in Employment: A Step Toward Change

In 1967, The Age Discrimination in Employment Act was signed into law. Until this juncture, discrimination against older workers occurred frequently and without reservations. While this type of discrimination is still a big concern in the workplace, this Act allowed for prosecutable consequences. This presentation includes a review of this Act from many different angles since its implementation in order to better understand its affects. While there are many cases brought to court regarding this issue, it is still not strictly enforced. One reason for this may be that older workers fear speaking out for the threat of losing their already fragile job stability. These workers are often unlawfully terminated or not even hired because of negative stereotypes regarding the perceived physical and mental affects of growing older. Preliminary research suggests a need to further enforce the ADEA. Ways to better apply ADEA may include specialization in the study of older workers with both standard curriculum and law school students, funding changes for those businesses who fail to uphold the policies set forth by ADEA, annual performance tests for workers to determine position eligibility and perhaps even annual analysis of businesses to determine if they are meeting standards.

Belknap, Farrell Mechanical Engineering James Gallery 14:30 - 14:45

The Engineering of a V-8 Antique Tractor for Competetive Pulling

The Geauga County Antique Tractor Pullers Association in Troy, OH holds a competition for the “V-8 Antique Tractor” class. The object of the competition tractor pull is to successfully displace a 14,515 kg (32,000 lbm). sled as far as possible until it can no longer overcome the force of fiction generated by the movement of the weights on the sled. This study provides the detailed engineering process needed to design an efficient tractor using a custom frame rebuilt from a 1945 Farmall M tractor. The original frame was exposed to an outdoor environment for 20 or more years leading to degradation of structural and operating stability. This leads to repair of existing usable components, customization of the frame body due to the eventual implementation of a new engine, and removal of unusable parts. A 1968 Chevrolet 350 small block engine was installed in the tractor to qualify for the V-8 Antique Tractor class. Proper design methods were based on loads incurred from the new engine and the pulled sled weight. Engineering techniques such as stress analysis, machine optimization, dynamics, and kinematics were utilized to ensure sound design and competent component assembly. Verification of all analysis methods was plausible by cross referencing software results with theoretical conclusions. All percent errors, data deviations, design justifications, and theoretical explanations are presented in the paper.

Benton, Cherise Professional Writing & Editing Bresnahan Suite 16:30 - 16:45

So, Seriously, Dude?

Prescriptivists argue that English is degrading because of “subversive” treatment of the language. In this paper, I explore some of the “subversive” uses of English I’ve noticed to decide whether or not English is indeed in as much danger as prescriptivists claim. I look at: neologism by affix affixation, verbing, blending, etc.; semantic expansion of the words seriously, and dude; and attitudes towards now less-marked slang characteristics such as the nonstandard uses of the word like; and high rising terminals. I analyze a 20 minute conversation and a small corpus of quotes taken from overheard conversation, newspapers, broadcast news, and television shows for occurrences of these features.

Bijle, Fahad Computer Information Systems Coffelt Room 10:30 - 10:45

Implementing Decision Tree In SQL Server And Rapid Miner For Predictive Analysis

Our project predicts the acceptability of a car by the potential car buyer based on the customer’s set of requirements. We intend to use the classification technique of data mining by using decision trees to classify the car evaluation data set. The classification is based on the model which evaluates the cars according to the following attributes viz. buying price, price of maintenance, estimated safety of the car, number of doors, the size of luggage boot and capacity in terms of persons. We will make use of two widely used data mining tools in the industry for the classification and analysis of this data. Firstly, we will make use of the data mining capability of Microsoft SQL Server 2005 by connecting Microsoft Excel 2007 to Microsoft Analysis Services. Secondly, we use Rapid Miner. Using both these tools mentioned above, we will build a decision tree based on the car evaluation data set. This decision tree will enable us to predict the acceptability of a car by the potential car buyer. Additionally we will also be comparing the output decision trees built from both these tools.

Billock, Matt Industrial & Systems Engineering Ohio Room 15:30 - 17:00

Northern States Metals (Punch L-Brackets)

The Methods Engineering class at YSU applied work design and time study methods at a local company Northern States Metals. The time study was conducted by using the Timer Pro Software. Other methods used to find appropriate times for certain tasks were MTM-1 and MTM-2. Work sampling was also conducted to find allowances and time standards based on the employee's workload. The classes work benefits both Northern States Metals and YSU because the information found is valuable to the company and also gives the class valuable engineering work experience.

Bishop, Susan English Bresnahan Suite 14:30 - 14:45

Profile of a Language Learner at YSU

As the culminating project of Dr. Nykiel-Herbert’s Fall 2008 TESOL Methods course (CRN: 40196/41729), student researchers investigated the current state of teaching and learning of geostrategic languages in the Mahoning Valley. Information concerning motivation, cultural attitudes, expectations, and usefulness was collected via the use of questionnaires distributed to students between the ages of 18 and 22 at YSU. Student researchers Nikki Cannon and Susan Bishop continued the research in the Spring semester of 2009 in their attempt to understand the motivations and attitudes of a "typical" language learner at YSU.

Blose, Mark Mechanical Engineering James Gallery 15:30 - 15:45

Advanced Pulley Slip Testing Method

A new experimental procedure for testing pulley designs has been developed for supercharged automotive serpentine pulleys. The purpose of this test is to determine if a supercharged pulley design provides better performance compared to designs of competitor pulleys or other standard pulleys. The proposed procedure for testing these pulleys involves determining the belt slippage around the pulley in question A motor that allows for belt speeds of 2500 ft per minute minimally will drive the normal pulley while the modified pulley will be attached to a shaft that allows it to rotate with minimal friction interference. If the belt speed exceeds the 2500 ft per min speed, centrifugal forces must be included. Because of this, the belt speed will be kept below 2500 ft per min to ensure that our results are as accurate possible. A belt tension tester will be used to measure the tension differences between the two segments of the belt. After that, the angle of contact will be measured. Finally, the coefficient of slip will be determined. This procedure will be repeated for the normal and other modified designs and the results will be compared to see what design has the lowest coefficient of slip. The expected result from this test is based on assumption that the belt tension meter will show a difference in the tensions, giving the coefficient of friction.

Bondor, Adam Mechanical Engineering Ohio Room 15:30 - 17:00

Get Fresh: A Mathematical Model of a Desalination Machine

Using van't Hoff's equation for reverse osmosis, (π=cRT), we can derive a desalination differential equation, ((dx/dt)= ΦA(ΔP-(cVRT/(V-x))). We will study how the parameters under our control, (ΔP, V, Φ, A), affect the amount of freshwater that can be extracted from a brine solution. Using direction fields and separation of variables, we will analyze the affects of these parameters and make recommendations on how to optimize the efficiency of a desalination machine that fits certain criteria.

Bozek, Danielle Bozek Biology Ohio Room 13:30 - 15:00

Conformational Analysis Using ChemBioOffice®

As part of Honors Chemistry 3719 and 3720 we have been using the ChemBioOffice software to calculate molecular structures and shapes. This presentation will detail our findings beginning with simple molecules and moving up to complex pharmaceuticals such as morphine.

Brenner, Marc Electrical Engineering Ohio Room 15:30 - 17:00

Radio Interferometer Telescope

Radio telescopes are used to view celestial objects that emit strong radio signals, such as supernovae remnants, neutron stars, galactic centers, and the Sun. The radio telescope captures radio waves from space and records the strengths of the signals via specialized data processing software. This is different from the traditional optical telescopes that use mirrors to view the observable celestial objects. One benefit of radio telescopes is that radio waves are able to travel through interstellar extinction caused by dust, gas, and the Earth's weather conditions. Another benefit of using a radio telescope is that it can detect frequencies ranging from 103 to 109 Hz; whereas an optical only views the visible spectrum which is 1014 to 1015 Hz. Since a radio telescope can detect such a large range of frequencies, it can pick up on local noise easily and receive unwanted signals. Our circuit design consists of a set of filters and amplifiers to block out unwanted frequencies and amplify audible signals. In conjunction with the designed circuit, one set of dipole antennas will capture signals from a large portion of space. Using two sets of dipole antennas with interferometer software on a computer, two waves can be resolved into one signal coming from a particular spot in space. Our design process is completed upon interpretation of this data and acknowledgement of observed celestial objects.

Brkich, Traci Nursing Ohio Room 13:30 - 15:00

A Transcultural Nursing Experience in San Quintin, Mexico

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Brown, Mark Mechanical Engineering James Gallery 15:30 - 15:45

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Brown, Andrew Biology Ohio Room 10:30 - 12:00

Decorin Interaction with Left Ventricular Myocyte Collagen: Investigation of Ext

Hypertension is a chronic illness which manifests itself as a significant elevation in normal blood pressure. The subsequent increase in blood pressure leads to cardiac hypertrophy characterized by the increase in myocyte size and increased deposition of collagen. It is believed that collagen deposition defects due to abnormal interactions with small leucine rich proteoglycans (SLRPs) play an important role in the development of hypertrophy. In a previous study in this laboratory the collagen rich fraction of hypertrophied hearts of Spontaneously Hypertensive Rats (SHR) was collected and the component proteins separated using 2D gel electrophoresis. The 2D gel profile indicated that this fraction contained both collagen and collagen-associated proteins. The objective of this study is to characterize the collagen-associated proteins and identify the decorin peptide by Western Blot analysis. In this protocol, hypertrophied hearts of male and female SHR will be harvested, the tissue homogenized digested using CNBr, dialyzed against water, lyophilized and resusupended in rehydration buffer, to a final protein concentration of 100µg/mL. Proteins in the collagen rich fraction will be isolated using 2D gel electrophoresis. Presence of decorin will be confirmed by incubation with rat decorin antibody and linking of horse radish peroxidase enzyme-antibody complex to rat decorin antibody causing color change.

Burden, Edward Electrical Engineering Ohio Room 15:30 - 17:00

Low Pass Filter Analysis Utilizing Various Software Packages

In the traditional electrical engineering laboratory experiment, electrical low pass filters are typically constructed. Bode Plots are created to obtain the frequency effect of insertion loss. The insertion loss can also be calculated mathematically by performing the analysis of a two port network. The calculated results are compared with the measurement results. In order to improve on the accuracy, flexibility, turn- around time, and ability to analyze the filter in various functional and environmental conditions, computer simulations are often utilized to supplemental the experiments. Youngstown State University has been involved with Maplesoft as one of the educational development sites. The paper compares and analyzes the capabilities of these 3 software packages (Pspice, Multisim 10.1 and MapleSim) in analyzing low pass electrical filters to determine the frequency effect of the circuit parameters. The simulated results are compared to the theoretical calculations.

Buxamusa, Adnan Civil & Construction Engineering Ohio Room 15:30 - 17:00

The Future Of Renewable Wind Energy Industry And Its Impact For Ohio

This project explores economic opportunities in the high-growth, “green” Wind Energy sector, specifically as it pertains to Ohio businesses and research at academic institutions coordinated through the University Clean Energy Alliance of Ohio (UCEAO). To supplement and contextualize on-line research, attendance at Wind Energy seminars, one-on-one contacts with key industry players and academic leadership from Iowa (a state with the highest percentage of its electricity generated from wind at 8%), and a visit to major Tier 1 supplier were undertaken. The study highlights the phenomenal growth potential of the industry and attendant challenges for different engineering disciplines involved in providing leading-edge solutions to the Wind Energy industry, in addition to new management challenges that face Tier 1 through Tier 4 Ohio businesses that want to tap this growth market.

Buxton, Tara Psychology Ohio Room 8:30 - 10:00

Justice Served: Extra-legal Factors and Discrimination in Sentencing Among Gende

Abstract The purpose of this study is to determine if extra-legal factors play a significant role in the sentencing of criminal offenders found guilty of the crimes of murder, arson, and assault. A pilot study was conducted to identify pictures of people who most looked like they committed the crimes of murder, arson, and assault. Participants (N=120; 51 males, 68 females) were undergraduate students enrolled in an introductory Psychology course. The majority of the participants were Caucasian (82%), the rest of the sample was made up of African American (11%), Hispanic (3%), and Asian (1%) students, two students selected the other category of racial identity. Participants were shown 48 pictures (24 male, 24 female; 24 Caucasian, 24 African American). Each photograph was rated using a 6 point Likert Scale ranging from strongly disagree (1) to strongly agree (6),indicating the degree to which the person in the photograph looked like a specific criminal offender. After all photographs were rated, the 12 pictures which received the highest scores for males and females, Caucasian and African American were selected for the final study. Currently participants are viewing the 12 photographs on-line and assigning an incarceration term they deem appropriate to each person. Each crime (murder, assault, arson) has a Caucasian male and female and an African American male and female. Results about the incarceration term by gender and race will be presented.

Cain, Leonard Electrical Engineering Ohio Room 15:30 - 17:00

Implementing the use of ALTERA Cyclone III FPGA technology into Game Design

The goal of this project is to successfully design and implement a 4-player tennis game, called Virtual Tennis, using FPGA Altera Cyclone III technology. The game will be implemented using VHDL (Very High Speed Hardware Descriptive Language) in Altera Quartus II software and will be displayed on a LCD monitor.

Cammarata, Sarah Communication Studies Room 2068 14:00 - 14:15

Summer Art in China, 2008

This presentation will bring China to Youngstown as seen through the eyes of Youngstown State University students who visited china for the first time. The topics discussed include the National art Museum of China, Xian Academy of Fine Arts and Print Making Studio, China Block Printing Museum, Temple of Jianzhen, and Shanghai Museum of Art. These topics are presented and explored through their artistic, historical, cultural, and educational components.

Campbell, Justin Biology Ohio Room 13:30 - 15:00

One-pot Approach to 1,2,3-Triazoles Using In Situ Generated Azide Anion

Alkyl and acyl azides are essential precursors in organic and medicinal chemistry yet they are notoriously difficult to work with because many of them have a habit of detonating when isolated in the pure form. We have developed a new approach to both alkyl and acyl azides, using microwave heating to shorten reaction times, in which reaction progress is monitored by infrared spectroscopy. Being able to follow azide generation in situ allows us to track the formation of ionic and covalent azide species conveniently, and then react the alkyl or acyl azide further to produce materials such as 1,2,3-triazoles in one reaction flask with minimal risk.

Campbell, Amanda Electrical Engineering Ohio Room 15:30 - 17:00

Prototypical Design of a Power and Control System for an Electric Vehicle

The purpose of this project is to design a prototypical power and control system for an electric vehicle starting from its theoretical concept to an end-user application. This project will not only test our understanding of the concepts that we have learned throughout our undergraduate studies in the Electrical Engineering program at Youngstown State University, but also will challenge our abilities to apply what we have learned in a team environment. Li ion batteries are used to provide the main system power as well as auxiliary power to two isolated control circuits. In order to reuse the batteries a charging circuit was designed that has the capability to charge sixteen Li ion batteries simultaneously. The control circuit consists of three parts: a variable frequency drive; an inverter circuit and the human interface module. The aforementioned control subsystems were designed individually and integrated into one complete system. The complete system was then successfully implemented by fitting the system onto a cart chassis.

Camuso, Joshua Mathematics Humphrey Room 9:30 - 9:45

Steiner's Minimal Tree Problem

The basis of this project is to look at Steiner points, which is a term used in networking while trying to find minimal spanning trees. These trees are created to find the shortest distance possible between a given set of points. For this project we will specifically be looking at the proofs of a 3 point and 4 point steiner tree.

Cannon, Nichole English Bresnahan Suite 13:30 -13:45

When The Lights Go On: A study of intimate discourse between law enforcement and civilians

As part of the requirement for a course on Discourses of Intimacy, I was intrigued with the different aspects of personal conversation. More particularly, after reading 'Not just doctors' orders': Directive-Response Sequences in Patients' Visits to Women and Men Physicians, by Candace West, I became more curious as to how power, status, age, and gender would play in conversation with law enforcement. Law enforcement has the aura of strict discipline, and for the most part, the only encounter the general population has with them is when they have broken a law. I know from my own experience that I have a sense of fear and anxiety when having to interact with the police. I have consciously been aware of what I was saying to the police, fearful I might give incorrect information or say the wrong thing that would get me thrown in slammer. With this in mind, I wondered if others had the same experiences and if so what language did they use when they interacted with the police.

Cannon, Nikki English Bresnahan Suite 14:30 - 14:45

Profile of a Language Learner at YSU

As the culminating project of Dr. Nykiel-Herbert's Fall 2008 TESOL Methods course (CRN: 40196/41729), student researchers investigated the current state of teaching and learning of geostrategic languages in the Mahoning Valley. Information concerning motivation, cultural attitudes, expectations, and usefulness was collected via the use of questionnaires distributed to students between the ages of 18 and 22 at YSU. Student researchers Nikki Cannon and Susan Bishop continued the research in the Spring semester of 2009 in their attempt to understand the motivations and attitudes of a "typical" language learner at YSU.

Capp, Timothy Respiratory Care Ohio Room 13:30 - 15:00

Different Carrying Positions of Portable Oxygen Containers: A Pilot Study

INTRODUCTION:Pulmonary rehabilitation (PR) programs have not established an acceptable method of carrying a portable oxygen container (POC) during PR. METHODS:Healthy subjects were recruited to perform a standard reference 6-minute walk test (6MWT) and series of walk tests. The POC was carried on the subject's right shoulder, on a roller assist device, and in a backpack. The CFQ questionnaire consists of 5-questions on a 5-point Likert scale assessing the subject's perception of: Comfort (COM); Heaviness (HVY); Walking Ability (WA); Range of Motion (ROM); and Shortness of Breath (SOB). RESULTS: Nineteen subjects, aged 25.26±8.16 years participated in the study. When CFQ responses were compared with POC condition, no significant effect was found for SOB ($p = .058$) or HVY($p > .05$). A significant effect was found for COM($p=.002$), WA ($p=.001$), and ROM ($p=.010$). Pairwise comparisons revealed the roller assist device (2.11 ± 1.20) was associated with significantly less COM than carrying the POC on the shoulder ($p = .018$) and using a backpack ($p=.008$). Compared to shoulder ($p=.027$) and backpack ($p=.002$), WA was significantly hindered when using the roller assist device. The backpack was perceived to provide significantly more ROM than the shoulder ($p=.036$) and roller assist ($p=.021$) conditions. CONCLUSION: The findings suggest that the subject's chose in favor of a backpack in regards to COM, WA, and ROM.

Carter, Kimbroe Computer Science Coffelt Room 10:45 - 11:00

Simulated C-E Analysis of Caring for a Subset of Brained Injured Patients

There exist complex medical situations which cannot be studied using real people. Randomized clinical control studies of such problems are limited by concerns of ethics, prohibitive costs, rarity of the problem or prolonged study period. Computer simulation of such problems permits insights into important factors controlling life altering outcomes in situations where simple heuristics are used in making critical choices. The following clinical problem impacting a subset of traumatically brain injured individuals was investigated using a computer model. After a traumatic event and brain injury, upon arrival to the emergency department a neurologic evaluation is performed and a Computerized Tomography (CT) scan of the head and neck. Disagreement exists regarding the prolonged use of a cervical collar and the role of magnetic resonance imaging (MRI) in the evaluation of possible ligamentous joint injury of the cervical spine. While the likelihood of such a lesion is low, its progression to spinal cord damage resulting in quadriplegia would be a catastrophic outcome. The program used Monte Carlo simulation. The results showed no clinical approach to dominate. Within reasonable ranges of the modeled factors, clinical strategies doing less were favored. This finding contrasts the current medical practice in managing this subset of brain injured patients. The importance of continued brain injury due to medical intervention appears to be under appreciated.

Castle, Chelsye Mechanical Engineering James Gallery 14:15 - 14:30

Power Generation by a Magnetically Coupled Wave Generator

The rising cost of energy along with the increased environmental concerns about the current means of energy production has created a need for more efficient and safer energy practices. A magnetic coupling concept was used to design and build a wave generator to create a more efficient and cleaner power generation. A small prototype was built using this magnetic coupling concept in order to power an LED. This proved that the magnetic coupling device did actually work, at least on a small scale. For this prototype, the design began with fitting the coupling device to a fixed frame. The basic design consisted of a rotating shaft placed vertically with magnets attached while a lever containing magnets placed at 90 degrees from those on the shaft moved up and down, creating a desired linear motion causing the shaft's rotation. This arrangement was placed in a small fixed frame. The magnetic coupling concept involved two rotating magnets set above and perpendicular to one linear magnet that had two more rotating magnets set perpendicular below the linear magnet. As the center magnet attached to a lever is forced upward, the shaft rotates. The rotation of the shaft is caused by the alternation of the poles (repulsion and attraction) caused by the reciprocation of the free moving magnets attached to the lever. As the top magnets attract the lever, it then descends toward the bottom magnets causing the same action. With each wave this, cycle repeats itself.

Catchpole, David Music Humphrey Room 16:00 - 16:15

Jungian Archetypes and Musical Characterization in Stravinsky's The Rake's Prog

Stravinsky's opera The Rake's Progress chronicles the progress of Tom Rakewell from the idyllic garden in the opening scene through the dirty streets of London and finally to the halls of Bedlam. The major characters in the opera are Tom Rakewell, Anne Truelove, and Nick Shadow. Of these characters, Tom proves most problematic. He is often described as shallow and incomplete, which is a strange attribute for the title character and the putative hero of an opera. However the roles of Nick and Anne seem to be more complete, and they vie for control of Tom. This paper examines the characters (and musical depiction) of Nick Shadow and Anne Trulove as dramatic manifestations of Tom's psyche. The paper invokes Carl Jung's concepts of the "Shadow" and the "Anima" and relates them to the figures of Nick Shadow and Anne Trulove. The conflict between the two projections of these concepts is manifested through diverse musical techniques, including the enharmonic respelling of a "thematic invariant" and conflicting tonal centers. As a problematic character, Rakewell can be understood as an empty vessel controlled by his subconscious desires, as projected by Nick Shadow and Anne Trulove, and as played out in Stravinsky's subtle neo-classical language.

Catrucco, Bianca Nursing Ohio Room 13:30 - 15:00

A Transcultural Nursing Experience in San Quintin, Mexico

This poster depicts the experiences of a health care team caring for individuals in San Quintin, a poor area on the Baja peninsula in western Mexico. The team consisted of seven (7)senior level nursing students and four(4) nursing faculty members from Youngstown State University, a nurse practitioner, four (4) physicians, a dentist, two (2) pharmacists, a minister, and other support staff. A primary care clinic was held in a church for children, pregnant women and adults, many who had multiple, chronic health problems. It was the first time students worked with non-English speaking clients with basic and diverse health care needs. During this two day clinic, the nursing students triaged over 280 indigent patients and were able to perfect their assessment skills as they followed individual patients from intake, triage, physician's and dental visits, pharmacy, and discharge teaching. The experience provided an opportunity for students to develop their leadership skills by becoming patient advocates and active learners in a diverse setting. They also discovered creative forms of communications and nursing interventions. Cultural competence as defined by Smith (1998), is a continuous process of cultural awareness, knowledge, skill, interaction, and sensitivity among caregivers and the services they provide. Through this experience, the nursing students began to acquire cultural competence as they provided care.

Catterlin, Richard Biology Ohio Room 10:30 - 12:00

Composition of Canyon-Slope Woodlands in Zoar Valley, Western New York, as Assoc

The Zoar Valley Canyon in western New York State represents a nearly undisturbed riparian ecosystem. Forest ecology has previously been studied here on riverside landforms, but the slopes above were heretofore unexplored. The present study aimed to catalogue tree species distributions on 20 - 50° slopes that also tend to be solidly forested. Two major objectives were to gauge the influence on forest composition of north vs. south slope orientation and elevation above the river bed. Additionally, Non-metric Multidimensional Scaling (NMDS) ordination was used to assess potential colonizer sources to the fluvial landforms below. A clinometer and laser rangefinder were used to measure positions of individual trees and slope angles. Trees were identified to species and classified as understory, midstory, canopy, and emergent. South-facing slopes >40 m above the river supported xeric canopies, often <10 m in height, dominated by Quercus rubra, Q. prinus, and Pinus resinosa (57 – 93% of trees collectively). In contrast, north-facing slopes supported >30-m tall mesic canopies (Acer saccharum, Fagus grandifolia, Tsuga canadensis, Fraxinus americana) across their entire vertical profiles. Ordination results suggest xeric communities play little role in fluvial landform colonization (communities were widely separated in ordination space), but that mesic slopes have variable influence on the flats below.

Cerzosimo, Diego Electrical Engineering Ohio Room 15:30 - 17:00

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Chaffee, Kelly Accouting Coffelt Room 16:15 - 16:30

Mind The Gap 2009

Youngstown State University seeks to provide access to study abroad programs that keep within the educational aims of YSU and accommodate a wide range of disciplines in diverse regions of the world; to advise students on meaningful study abroad opportunities; to provide programs and workshops on study abroad departures and re-entry orientations; to foster intercultural skills, knowledge and understanding; and to integrate study abroad into the students' academic year program to the fullest extent possible. Our presentation will show how the university achieved these goals through our study tour of London, England and Dublin, Ireland in January 2009.

Chell, Benjamin Music Room 2068 13:45 - 14:00

Summer Art in China, 2008

This presentation will bring China to Youngstown as seen through the eyes of Youngstown State University students who visited china for the first time. The topics discussed include the National art Museum of China, Xian Academy of Fine Arts and Print Making Studio, China Block Printing Museum, Temple of Jianzhen, and Shanghai Museum of Art. These topics are presented and explored through their artistic, historical, cultural, and educational components.

Cherwin, Cassandra Food & Nutrition Ohio Room 13:30 - 15:00

Probiotics Knowledge 2009

The health benefits of probiotics have sparked a growing interest in the scientific community. There are numerous clinical studies documenting these benefits: boost immunity, reduce risk of colon and bladder cancer, prevent and/or control allergies and dermatitis, improve lactose intolerance, treat and prevent antibiotic- associated diarrhea as well as travelers and rotavirus diarrhea. The increased publication of these studies has catalyzed an upsurge in commercial growth in the probiotic food concept. Statistics show that consumption of these foods has increased by 12-15% in the last three years. The objective of this study is to evaluate the knowledge of probiotics and their health benefits in Youngstown State University students. A cross-sectional survey will be conducted to define the scope of knowledge regarding probiotics and their use among the student population at YSU. Data will be obtained through a self-administered questionnaire distributed to approximately two hundred students that will be randomly sampled from various sites on campus. Survey data will be analyzed using SPSS. We hypothesize that: ≤50% of study participants will be able to define probiotics, ≤50% of study participants will be able to name at least one natural source of probiotics, the knowledge of probiotics will be significantly higher (P<0.05) in females compared to males, and participants who use supplements will be more knowledgeable of probiotic use.

Citarella, Mathew Mechanical Engineering James Gallery 13:30 - 13:45

Analysis of Structural Components for a Heavy Crane Operator's Chair

Crane operator's chairs that are rated for obese operators whose weight exceeds 1,465 N (330 lbf) do not exist. Accessibility of this type of job to employees considered legally disabled due to their weight is very low. A chair design that is capable of carrying an obese 1,780 N (400 lbf) operator while still maintaining modularity and backwards compatibility with current chair mounting systems is desirable for both customers and manufacturers alike Since operator weights vary the capability of carrying an obese operator poses a unique challenge. Modular options allow this model of chair to be sold to customers that do not require the added strength with the option of changing components later if necessary. This was achieved by designing several components common to all chair configurations that are rated for an obese operator and supplying options that fit all applications. For the purpose of analysis, a chair carrying the 1,780 N (400 lbf) operator in addition to the heaviest possible set of equipment consoles 2,670 N (600 lbf) was assumed. Finite Element Models were constructed for the chair pedestal, footrest, seat base and bearing tube. Each component was designed to a necessary design factor. Ultimately, this design will be implemented as a modular set available to the customer and future improvements can be made at their request. This design will allow operators who were prevented previously by their disability to take on this job.

Claypoole, Sherri Master of Science in Chemistry Ohio Room 13:30 - 15:00

Why Does My Wine Taste Like a Bug?

Cabernet Sauvignon, Merlot, and Sauvignon Blanc wines often contain methoxypyrazines and at certain concentration levels, they adversely affect the taste and aroma of the wine. An experimental procedure was developed to quantify the levels of three specific methoxypyrazines contained in various wine samples using solid-phase microextraction gas chromatography mass spectrometry (SPME-GC-MS).

Cole, Jessica Industrial & Systems Engineering Ohio Room 15:30 - 17:00

Productivity and Work Design of the Industrial Process at Northern States Metals

Team of Methods Engineering standouts from Youngstown State University, Industrial and Systems Engineering program, conducted work production studies focused on determining standard times by several different accepted methods (video, MTM, MOST). Also, a work sampling study was performed. In this writing and oral intensive class, the team had the opportunity to explore corporate communication protocols.

Colella, Lynann Food & Nutrition Ohio Room 13:30 - 15:00

Probiotics Knowledge 2009

The health benefits of probiotics have sparked a growing interest in the scientific community. There are numerous clinical studies documenting these benefits: boost immunity, reduce risk of colon and bladder cancer, prevent and/or control allergies and dermatitis, improve lactose intolerance, treat and prevent antibiotic- associated diarrhea as well as travelers and rotavirus diarrhea. The increased publication of these studies has catalyzed an upsurge in commercial growth in the probiotic food concept. Statistics show that consumption of these foods has increased by 12-15% in the last three years. The objective of this study is to evaluate the knowledge of probiotics and their health benefits in Youngstown State University students. A cross-sectional survey will be conducted to define the scope of knowledge regarding probiotics and their use among the student population at YSU. Data will be obtained through a self-administered questionnaire distributed to approximately two hundred students that will be randomly sampled from various sites on campus. Survey data will be analyzed using SPSS. We hypothesize that: ≤50% of study participants will be able to define probiotics, ≤50% of study participants will be able to name at least one natural source of probiotics, the knowledge of probiotics will be significantly higher (P<0.05) in females compared to males, and participants who use supplements will be more knowledgeable of probiotic use.

Coleman, Patrick Mechanical Engineering James Gallery 14:30 - 14:45

The Engineering of a V-8 Antique Tractor for Competetive Pulling

The Geauga County Antique Tractor Pullers Association in Troy, OH holds a competition for the “V-8 Antique Tractor” class. The object of the competition tractor pull is to successfully displace a 14,515 kg (32,000 lbm). sled as far as possible until it can no longer overcome the force of fiction generated by the movement of the weights on the sled. This study provides the detailed engineering process needed to design an efficient tractor using a custom frame rebuilt from a 1945 Farmall M tractor. The original frame was exposed to an outdoor environment for 20 or more years leading to degradation of structural and operating stability. This leads to repair of existing usable components, customization of the frame body due to the eventual implementation of a new engine, and removal of unusable parts. A 1968 Chevrolet 350 small block engine was installed in the tractor to qualify for the V-8 Antique Tractor class. Proper design methods were based on loads incurred from the new engine and the pulled sled weight. Engineering techniques such as stress analysis, machine optimization, dynamics, and kinematics were utilized to ensure sound design and competent component assembly. Verification of all analysis methods was plausible by cross referencing software results with theoretical conclusions. All percent errors, data deviations, design justifications, and theoretical explanations are presented in the paper.

Comeau, Kyle Chemistry Ohio Room 13:30 - 15:00

NMR Spectroscopic Analysis Versus ChemBioDraw®

Nuclear Magnetic Resonance (NMR) spectroscopy is one of the most useful tools that chemists have at their disposal for working out molecular structure. During Chemistry 3719 and 3720 we look at spectroscopic tools such as NMR and use the ChemBioOffice software to calculate NMR spectra. At YSU we also have access to high field NMR spectrometers to collect the actual spectra of compounds. This presentation will detail our findings in relating calculated spectra to experimental samples.

Cook, Travis Electrical Engineering Ohio Room 15:30 - 17:00

Implementing the use of ALTERA Cyclone III FPGA technology into Game Design

The purpose of our project is to design a game using FPGA technology and VHDL coding. The project encompasses the use of ALTERA Cyclone III FPGA and VHDL coding in order to run a 4 player Virtual Tennis game on the VGA Monitor. The result and demonstration of our project will be displayed in the class, QUEST presentation and University where they will be students, faculty and staff present

Corman, Jason Mechanical Engineering James Gallery 14:00 - 14:15

Friction Testing Unit Design for Automotive Applications

Tribology is a very important aspect of engineering in many industrial settings. It is the study of friction losses, lubrication, and wear, which has applications in the automotive industry, manufacturing, and even health products. The particular application of this study in design relates to the automotive industry and the friction testing of braking systems. In order to safely certify rotors and brake pads, extensive testing must be performed to identify coefficients of friction and rates of wear, and this project describes the design and assessment of a multi-faceted friction testing unit. Based on the sizing of a standard 2009 Chevrolet Cobalt LS, the power supply reflected a similar amount of energy that would be found in a typical 96.66 km/hr (60 mph) to 0 km/hr (0 mph) stop. Based on this value, the sensory unit and frame were designed accordingly to accomodate wear and friction coefficient calculation, and need for data output of shaft speed, normal force, and supplied torque. Ultimately, testing was performed to verify outputs, accuracy, and precision. The design process took into consideration all valid and applicable standards of the American Society of Testing and Materials, and the proceeding paper discusses the methods of design and verification, analysis including finite element modeling, and experimentation using the friction testing unit. Impedances during these processes have also been mentioned, with emphasis on problem-solving techniques.

Cretella, Clark Sociology Ohio Room 8:30 - 10:00

A Look at Youngstown State University Student's Perceptions About Youngstown

The Youngstown metropolitan area, like other areas in the Rust Belt, has been experiencing what is referred to as a "brain drain." This occurs when many college educated individuals leave the area to look for jobs in other parts of the country. In addition to looking for jobs, another possible reason for leaving this area may be the negative perceptions and attitudes that people have toward this community. Our study examines the possible sources of these attitudes and how these attitudes may affect behavior, specifically the willingness or unwillingness to act and become involved in activities designed to revitalize the Youngstown area. Furthermore, this study examines whether there is a relationship between knowledge about the community and attitudes and perceptions. We have included both a quantitative and a qualitative component in our research. A survey which measures attitudes, awareness, knowledge, efficacy, and engagement was given to students on the YSU campus. The qualitative component consists of interviews with six community activists who shared information concerning what is currently being done to revitalize the community. Our findings are reported here.

Cricks, Tammy Environmental Studies Ohio Room 10:30 - 12:00

Analysis of Trace Metals in Youngstown Community Garden Soils

The urban redevelopment of Youngstown Ohio has initiated a number of community garden plots located on sites where older, abandoned houses, garages and businesses were once located. This study examines the trace metal content of one such site located at the intersection of Cleveland Street and Oak Hill Avenue. The study was done to determine if the metals could be taken up by the plants grown on the site. Once taken up, the metals could be passed on to humans via consumption of this vegetable produce. The site was divided into a twelve meter by twelve meter grid consisting of eighteen squares. In each square, composite sampling was done by taking a sample in a five spot arrangement. The soil was dried in an oven overnight, sifted and the samples were extracted using Mechlich III extractant for plant available metals. The metals sampled for were Al, Mn, Ni, Na, Cu, Mg, Cr, Cd, Ca, Zn and Pb. Recovery levels of Ni, Cu, Cr and Cd were all below 0.1 mg/L. Recovery levels of Al, Mn, Mg, Na, Ca, Pb and Zn exceeded 1.0 mg/L to varying degrees. Results indicated that although a distribution of trace metals does exist in this plot of land, concentrations were not high enough to cause concern for health by ingestion of vegetable produce. One section of the grid however, an area which consists of a fire pit used by a local church, was found to have slightly elevated levels of Pb and could pose a risk for children who ingested the dirt directly.

Cross, Erica Mathematics Humphrey Room 9:15 - 9:30

Monkey See, Monkey Do, Monkey Censoring of Type II

In many real world applications, experimental conditions impose censoring on data. Censoring imposes a dependence structure on the data which renders mathematically intractable sampling distributions of many commonly used statistics. We examine the sampling distribution of the sample correlation coefficient when data arising from a bivariate normal model has been subjected to Type II censoring. We propose two approximation approaches to this distribution and examine the goodness of fit of each.

Culler, Krystal Gerontology Pugsley Room 14:00 - 14:15

Family Concerns for Adult Children with Autism

Autism is defined by the CDC as “lifelong developmental disabilities characterized by repetitive behaviors and social and communication problems.” Autism is a lifelong disability and presently there are no known cures. At this time, there is not a full population count of all individuals with Autism Spectrum Disorder in the United States.Importantly noted was a change in diagnosis criteria in the early 1990’s.There is an evident lack in research in reference to the manifestations of autism in adolescence and adulthood. $90 billion is spent annually on autism and there is a 10-17% annual growth. Cost of lifelong care can be drastically reduced by 2/3 with early diagnosis and intervention. The presence of one child with autism in a family is funded between 3-5 million dollars of services throughout the lifetime of the child. In this project parents and grandparents from a local parent support group for autism will be interviewed to examine their future concerns for their child with autism in orientation to future planning for the child’s life course. People with autism have a normal life expectancy and there are limited resources for funding in adulthood. Presently, preparation for adulthood is addressed in adolescence for children with autism. Results from the interviews will be utilized to acknowledge potential future concerns from parents/grandparents perspective to help aide in the life course trajectory arrangements for people with autism.

Culler, Krystal Gerontology Pugsley Room 9:45 - 10:00

Examining Current American with Disabilites Act Legislation for Service Animals

The American with Disabilities Act (ADA) rules and regulations regarding service animals was enacted in 1992.Title III of the ADA governs public accommodations which includes businesses that serve the public such as restaurants, retail establishments, hotels, and offices of service providers. Title II of the ADA governs public entities which include state and local government, any department, agency, or special purpose district, or other instrumentality of a State or local government. Essentially, the ADA was designed to help addressing the needs of people with disabilities that were going unmet in public without federal regulations such as handicap accessible restrooms, etc. The ADA defines a “service animal” as any guide/signal dog, or other animal trained to do work or perform tasks for the benefit of the individual with a disability, including but not limited to guiding individuals with impaired vision, alerting individuals with impaired hearing to intruders or sound, providing minimal protection or rescue work, pulling a wheelchair, or fetching dropped items. Laws in reference to service animals vary among states. Following the individual state’s laws regarding service animals is left to the discretion of the person with the animal. Individuals must be informed of different states’ laws if they are traveling or visiting. This presentation will examine some gaps in the current ADA policies and offer suggestions for future legislation regarding service animal registry.

Cunningham, Steven French Humphrey Room 13:45 - 14:00

Study Abroad in Aix-En-Provence, France

The presentation will focus on our summer semester studying abroad in Aix-en-Provence, France. It will include a variety of personal experiences, history of popular sites and areas, cultural differences, and our overall experience of a daily life in France.

Cunningham, Meagan Nursing Ohio Room 13:30 - 15:00

Health Beliefs vs. Health Practices in the Youngstown Warren Area

Society as a whole tends to evaluate or rate health not by a definition, but rather by comparison. The contrast between what is perceived as healthy, and what truly is healthy, sometimes is alarming. The purpose of this study was to poll Youngstown Warren area residents in order to identify three areas of health. The first subject dealt with the participants rating their current level of health. The second segment asked about their future health concerns. The last portion referenced things which either encouraged or discouraged the participant from maintaining a healthy lifestyle. A questionnaire was filled out at three local retail establishments. The participants’ identity was kept anonymous, there was informed consent, and the group was given ethical clearance prior to the study. The Health Belief Model was the main theoretical framework for this study. Various journal articles and internet writings were used for information as well. The most surprising result was the number of people polled who had no future health concerns. It was also interesting to learn the amount of participants which considered themselves healthy.

Cunningham, Krista Chemistry Ohio Room 13:30 - 15:00

One-pot Approach to 1,2,3-Triazoles Using In Situ Generated Azide Anion

Alkyl and acyl azides are essential precursors in organic and medicinal chemistry yet they are notoriously difficult to work with because many of them have a habit of detonating when isolated in the pure form. We have developed a new approach to both alkyl and acyl azides, using microwave heating to shorten reaction times, in which reaction progress is monitored by infrared spectroscopy. Being able to follow azide generation in situ allows us to track the formation of ionic and covalent azide species conveniently, and then react the alkyl or acyl azide further to produce materials such as 1,2,3-triazoles in one reaction flask with minimal risk.

Cvengros, Jennifer Merchandising: Fashion & Interiors Ohio Room 8:30 - 10:00

The Media's Influence on Body Image, Dress in the Workplace & Body Modification.

The goal of our study is to investigate and examine the effects of the media on dress and body image, body modification, and workplace attire. This is a highly relevant topic to college students getting ready to combat careers and create their own identity in the world. A 10 questions survey will be created by using elements from the media on dress and body image, body modification, and workplace attire and inputting the questions into survey monkey. A mass email will be sent out asking members of the Panhellenic Council to participate on a volunteer basis. These women represent a diverse sample of the student population here at YSU. The results will be calculated using SPSS and correlations will be compared and evaluated.

Dailey, Deanna Chemistry Ohio Room 15:30 - 17:00

Whiplash Injuries in Relation to Force and Energy

Worldwide many suffer from whiplash injuries. They know how the pain feels but are unaware of how it occurs. When in a car accident, your neck goes forward slowly and then whips back very fast and with a great deal of force. My group's experiment is designed to measure the force of the accident, the energy it takes to cause injury, and the stress and rupture strength on the muscles.

Dattilio, Amy Electrical Engineering James Gallery 11:15 - 11:30

RF Controlled Locomotive Tester

The current method for testing multiple-unit train control cables is time consuming and dangerous. A team member proposed the creation of a wireless remote to do specific tests on the multiple unit cable for a senior project. Initial testing will analyze the most efficient method to transmit signals from inside to outside the locomotive. Construction of the system will include a user operated remote and base unit which is attached to the MU connector during testing. The wireless testing system will have many positive effects to this line of work including the reduction in costs, fewer testing hours, and increased safety.

Davenport, Gary Individualized Curriculum Program Bresnahan Suite 15:30 - 15:45

Trolling for Data with an Online Advice Column

[Redacted], MSc, is a PhD student who writes "[redacted]," an Internet column about crustacean care and trivia since 2002 based on reader letters that was published recently in [redacted], an anthology collecting the best science writing from the World Wide Web. Despite these successes, however, [redacted] does not exist and his column's contents are just as fictitious. How, then, is his success explained? The answer lies in social engineering, the use of language and presentation to create a false sense of persona and reality in a specific audience, often to gain access to controlled resources. Social engineering has ethical, linguistic, political, and security implications and affects everyday interactions as well. To understand [redacted] and his column's success, his persona, language, and audience are analyzed, showing how fanciful science and pseudonymous personae can methodically garner a legitimate following and professional respect despite being utterly devoid of meaningful content.

DeChellis, Daniel Chemistry Ohio Room 13:30 - 15:00

Conformational Analysis Using ChemBioOffice®

As part of Honors Chemistry 3719 and 3720 we have been using the ChemBioOffice software to calculate molecular structures and shapes. This presentation will detail our findings beginning with simple molecules and moving up to complex pharmaceuticals such as morphine.

DeChellis, Matthew Industrial & Systems Engineering Ohio Room 15:30 - 17:00

Time Study Analysis of L-Bracket Cutting Process at Northern States Metals

A team of methods engineering students from Youngstown State University's Industrial and Systems Engineering program conducted work at Northern States Metals. A time study analysis was performed using work measurement techniques applied to the cutting of L-brackets for use in the assembly of solar panels. Specific techniques that were implemented include time motion studies through the use of a video camera along with computer-aided software, MTM-1, MTM-2, and MOST Analysis, as well as portions of a Therblig and Work-Sampling analysis. Overall, it was the goal of this endeavor to not only bring together parties from both the university and manufacturing industries in the hopes of growing and learning together, but also to attempt to improve this particular manufacturing company's various processes.

Deem, Maria Food & Nutrition Jones Room 15:45 - 16:00

Protein Consumption Among Collegiate Students

Certain groups, particularly athletes in power sports, consume greater amounts of protein for muscle development. Many Americans not participating in athletics also consume more protein than is needed for their bodies which in the long term can lead to chronic diseases, such as cardiovascular or renal disease. College students at the Youngstown State University's Main Campus, between the age of 18 and 24 and without medical complications, will be invited to complete a self-administered survey to assess knowledge and practices regarding protein intake from food and supplements. Demographic data that includes self-reported height and weight, calculated ideal body weight, and living arrangements will be used to compare participants. Other basis for comparison will include athletic participation, gender, level of protein intake, and reported influences regarding protein consumption. All participants will be compared to the guideline of 0.8g of protein intake per kilogram of body mass; athletes will be compared to guidelines of 1.0 – 1.2g of protein per kilogram of body mass, as confirmed by most research. We predict that many of the participants will regularly consume more protein than is necessary, and athletes and males will consume more protein than non-athletes and females, respectively.

DeGeorge, Anthony Electrical Engineering Ohio Room 15:30 - 17:00

Implementing the use of ALTERA Cyclone III FPGA technology into Game Design

The purpose of our project is to design a game using FPGA technology and VHDL coding. The project encompasses the use of ALTERA Cyclone III FPGA and VHDL coding in order to run a 4 player Virtual Tennis game on the VGA Monitor. The result and demonstration of our project will be displayed in the class, QUEST presentation and University where they will be students, faculty and staff present

Detwiler, Ben Electrical Engineering Coffelt Room 13:45 - 14:00

Experimental System to Search for Induced Depletion of 166m Ho

Nuclear isomers are known to hold large amounts of energy in the nucleus of the atom. Practical usage of these "nuclear batteries" hinges on the ability to release this contained energy when needed. The 166Ho isomer exists at a state with a 1200 year half-life. An induced depletion would allow the isomer release energy stored within the nucleus in only fractions of a second. This would be followed by a larger release of energy by beta decay of the ground state on a time scale of tens of hours. Current nuclear data suggests that incoming photons below 300 keV may allow this induced depletion of the 166Ho isomer to occur. An experimental design has been created to search for proof of this phenomenon. During the depletion cascade, a 136 keV photon is emitted from a level with a 185 μs half-life. Detecting both this unique photon and its corresponding half-life would be evidence that an induced depletion is occurring. A detection system has been developed using a gated scintillator to observe gamma rays from an isomeric sample of 166Ho. Data will be recorded in between pulses of the election linac used to excite the sample. Details will be discussed on the current progress of the experiment.

Detwiler, Tim Electrical Engineering Ohio Room 8:30 - 10:00

Analysis of Multi-detector Gamma-ray Data Using Radware

Radware is a software package developed to analyze gamma-ray coincidence data. Actually a collection of over two-dozen programs, Radware enables users to build graphical level schemes from gamma-gamma matrix data. This poster highlights some of the most common Radware programs, such as gf3, escl8r, effit, and encal, and explains how they can work together to analyze experimental data. This software will be applied to several data sets obtained by the YSU Isomer Project in pursuit of updated level schemes for the isotopes 177Lu, 174Tm and 108Ag.

Dewberry, Tim Food & Nutrition Jones Room 15:45 - 16:00

Protein Consumption Among Collegiate Students

Certain groups, particularly athletes in power sports, consume greater amounts of protein for muscle development. Many Americans not participating in athletics also consume more protein than is needed for their bodies which in the long term can lead to chronic diseases, such as cardiovascular or renal disease. College students at the Youngstown State University's Main Campus, between the age of 18 and 24 and without medical complications, will be invited to complete a self-administered survey to assess knowledge and practices regarding protein intake from food and supplements. Demographic data that includes self-reported height and weight, calculated ideal body weight, and living arrangements will be used to compare participants. Other basis for comparison will include athletic participation, gender, level of protein intake, and reported influences regarding protein consumption. All participants will be compared to the guideline of 0.8g of protein intake per kilogram of body mass; athletes will be compared to guidelines of 1.0 – 1.2g of protein per kilogram of body mass, as confirmed by most research. We predict that many of the participants will regularly consume more protein than is necessary, and athletes and males will consume more protein than non-athletes and females, respectively.

Doherty, Shannon Environmental Studies Jones Room 13:30 - 13:45

Heavy Metal Concentrations in the Floodplains of the Mahoning River

The Mahoning River is located in Mahoning County which is in northeast Ohio. The surrounding areas were once dominated by steel industries who used the Mahoning river for deposition of runoff and cooling processes. This was before any environmental regulations, so as a result contaminants were released into the river. Eventually the steel industries shut down, but the contaminants were still present. The purpose of this research was to analyze the floodplains for plant available metal concentrations that could have been transported from past flooding. Soil samples were taken from four different sites, including Mill Creek area, OH 289, Girard, and Girard Forest. All of these sites were chosen downstream from the old mills that contributed to metal contaminants. The metals that were investigated included Cd, Cu, Ni, Mg, Pb, and Zn. Phytotoxic metals include Cu, Ni, and Zn, while Pb and Cd pose food chain risks. All four sites had similar trends with concentrations higher in the upper 6 inches. However, Mill Creek area had higher concentrations in the lower 6 inches. In general, metals were lower away from the shoreline for all four sites. The highest plant available metal content was found at Mill Creek area with 50.7 mg/kg of Pb and 104.1 mg/kg of Zn. Pb background levels in Ohio are around 9-39 mg/kg and background levels for Zn are 47-138 mg/kg.

Drewnowski, Matthew Mechanical Engineering James Gallery 15:45 - 16:00

Design of Testing Apparatus of Carbinite Pulleys for Supercharged Automobiles

Pulleys are being used for several purposes; one such application is to drive a super charged application. Under high speed loading, drive belts tend to slip, reducing the effectiveness and lowering the efficiency of the pulleys. Carbinite, Inc. has developed a process to coat such pulleys with a carbide alloy coating to reduce such slip. Carbinite desired a means of quantifying the slip reduction for the coated pulley. We have designed a testing apparatus to determine the percentage reduction in slip due to the coating process. The apparatus will allow for accurate but rapid testing of various pulleys. An electric motor will power the apparatus. A supercharger or rotational damper of similar resistance will be attached to the test pulley. This will allow accurate reflection of the type of rotational loading the pulley would experience. The tensioner will then be set to accurately reflect the belt tension in an automobile. The apparatus will count the rotations of the drive and supercharger pulleys. This data would then be used to determine the effectiveness of the coating. Carbinite has requested that the data be quantified in such a way that the general public may easily understand the difference between their pulleys and other competitor's pulleys. So, rather than determining the actual slip coefficients, we have decided to display only the percentage of change in slip of the coated pulley versus an uncoated pulley as well as other competitor's pulleys.

Drotar, Lindsay Drotar Biology Ohio Room 13:30 - 15:00

NMR Spectroscopic Analysis Versus ChemBioDraw®

Nuclear Magnetic Resonance (NMR) spectroscopy is one of the most useful tools that chemists have at their disposal for working out molecular structure. During Chemistry 3719 and 3720 we look at spectroscopic tools such as NMR and use the ChemBioOffice software to calculate NMR spectra. At YSU we also have access to high field NMR spectrometers to collect the actual spectra of compounds. This presentation will detail our findings in relating calculated spectra to experimental samples.

Duffy, Michael Electrical Engineering James Gallery 11:15 - 11:30

RF Controlled Locomotive Tester

The current method for testing multiple-unit train control cables is time consuming and dangerous. A team member proposed the creation of a wireless remote to do specific tests on the multiple unit cable for a senior project. Initial testing will analyze the most efficient method to transmit signals from inside to outside the locomotive. Construction of the system will include a user operated remote and base unit which is attached to the MU connector during testing. The wireless testing system will have many positive effects to this line of work including the reduction in costs, fewer testing hours, and increased safety.

Durkos, Christopher Art James Gallery 9:15 - 9:30

Cross-Disciplinary Manufacturing Project

The project is a collaboration between two students, one from The School of Fine and Performing Arts, and the other from the School of Engineering Technologies. The project started as an artistic concept to create a retro-styled cellular device. The engineering student used preliminary drawings from the art student to create AutoCAD two-dimensional renderings. During this process, both students worked together to achieve concept goals in a feasible manner. The drawings were then used to three-dimensionally print a prototype, which was then direct, invested in a lost wax process to create a bronze and aluminum prototype. During this process the art student's designs changed to facilitate fabrication, and the engineering student used different processes to gain experience that is outside the normal learning environment.

Durse, Nicholas Mechanical Engineering James Gallery 13:45 - 14:00

Design of Mechanical Systems for a Heavy Crane Operator's Chair

Crane operator's chairs are not presently designed with the flexibility to meet their wide range of applications. Additionally, there are no chairs presently on the market that are rated for obese operators who are legally considered disabled if their weight exceeds 1465 N (330 lbf). As a result, chairs presently on the market must undergo significant modification before installation to meet the demands of a particular application. A chair design that incorporates a set of standardized parts with several modular options is desirable for both manufacturers and customers alike. Ergonomics were stressed since the operator is often confined to the chair for their entire workday. Interchangeability between the mounting locations of current models and this new model was also stressed. Additional options such as an adjustable footrest, seat options (including leather and internal heaters) and mechanized rotation were all implemented. Each chair consists of a pedestal and bearing system. Side consoles containing all of the electrical controls necessary for crane operation are selected based on customer needs. The bearing system was designed for applications that use both manual and mechanized rotation. The optional, mechanized rotation was achieved using a 43 rpm, 8.25 N-m (73 in-lbf) electric gear motor housed inside the pedestal. The bearing system and motorization were both designed to function with a maximum sized operator and the largest set of control consoles.

Edwards, Justin General Studies Humphrey Room 11:15 - 11:30

Sitcom Analysis of The Office

The Office is a spin off of a UK hit comedy. From the interesting writing on the show, to the unique and creative camera work, this sitcom created an interesting aura and amazing comedy experience. The main plot revolves around a group of employees' lives and experiences. These people work for a company called Dunder Mifflin, a paper distribution company. This paper will focus on the pitfalls found in the communication between these Dunder Mifflin employs. From fatal attraction to gossip, these characters show many examples of detrimental behavior that are found within Spitzberg and Cupach's The dark side of close relationships.

Eisenbraun, Tammy Sociology Pugsley Room 8:45 - 9:00

Medicare Part D: Financial Difficulties with the Current System

Medicare Part D and financial difficulties with the current system: A policy analysis Abstract Tammy Eisenbraun Sociology/Gerontology Medicare Part D is the government run prescription drug program for those 65+ that was started in 2003 by the Bush Administration. In researching Medicare Part D there are found to be many benefits in the system, but for those at or near the poverty line, there may be financial hardships for the participants. There is a lack of cost efficiency in the existing system and a lack of consistency in the coverage that is currently offered. Due to these two major problems the system needs to be re-evaluated in order to become more efficient. Other drawbacks to the program include confusion in choice of plan, and financial obligations of beneficiaries. There are a variety of managed care programs to choose from and a variety of premiums and deductibles, but the wording is confusing and many people are unable to understand all the monies that they are actually paying out on the current programs. Due to the problems that the system is having it would be prudent to take reexamine Medicare Part D in order to increase efficiency for recipients and Medicare. Stakeholder mobilization must occur to help revamp the system. Stakeholders include insurance companies, pharmaceutical companies, the American Medical Association, and the subscribers of the current plan.

Emig, Andrew Electrical Engineering James Gallery 11:00 - 11:15

Computer Controlled Feedback System for Analysis of Spinal Stiffness

Spinal Manipulation (SM) is a treatment often used by physical therapists, osteopaths, and chiropractors to treat a broad variety of back and neck pain. SM has been shown to increase pain thresholds and is speculated to improve spinal flexibility and strength. Despite this, the exact mechanism by which SM works is unknown. It has been proposed that SM can change the stiffness of the spine. Currently, the examination of spinal stiffness is largely based on manual examination. As this is a subjective method of examination, it lacks the ability to quantify spinal stiffness. Another concept concerned with SM is spinal thixotropy, which cannot be evaluated by manual examination. The thixotropic properties of the muscles, fluids, and other tissues of the spine may provide for the temporary pain relief provided by SM. Since current evaluation of spinal stiffness is usually qualitative in nature, it lacks data for comparative results to assess effectiveness. Therefore, we will develop a more reliable and accurate method of determining the stiffness and measuring the effects of spinal thixotropy in different areas of the spine. This system will be capable of providing controlled movements, while piezoresistive sensors will monitor the force on the linear actuator. The program to be created will enable repetitive loading cycles; the differences in stiffness observed by our system will provide us with the necessary data to attempt to quantify the effects of spinal thixotropy.

Emig, Andrew Electrical Engineering Ohio Room 13:30 - 15:00

Conformational Analysis Using ChemBioOffice®

As part of Honors Chemistry 3719 and 3720 we have been using the ChemBioOffice software to calculate molecular structures and shapes. This presentation will detail our findings beginning with simple molecules and moving up to complex pharmaceuticals such as morphine.

Engelhardt, Rick Industrial & Systems Engineering Ohio Room 15:30 - 17:00

Time Study Productivity at Northern States Metals

As part of the YSU methods class, work analysis and time study approaches were applied to the working environment at Northern States Metals. Multiple techniques were used such as motion studies, which involved the Timer Pro Software. MTM-1 and MTM-2 were applied to the process to figure out values needed to give appropriate times to given tasks. Work sampling was introduced to find allowances and time standards because of the workload applied to the employee's. These findings benefitted both Northern States Metals and students because of the shear fact that the information was given to the company, while students got quality time in an industrial working environment.

Falkenberg, Pamela Gerontology Pugsley Room 9:15 - 9:30

A Policy Analysis Addressing Elder Abuse Reporting, Investigation, and Awareness

One to two million older Americans have been abused by someone in which they had placed trust in or were dependent upon for care. The purpose of this study is to address and provide remedy for the lack of administration follow-through on reporting and investigation of elder abuse and, also, to provide a way to correct the lack of public awareness. Results were found through literature and law review. In Ohio, it was found that when elder abuse is identified, the law merely states that a report must be made so that the DJFS may be notified. There is no list of follow-up action beyond this required written document. Public awareness of Ohio elder abuse is also lacking. Ohio residents need to be aware of the abuse that occurs and be knowledgeable of the abusers. This analysis recommends that Ohio's laws be changed to specify reporting and investigation methods by replacing Ohio statute 5101.61 with 17b-452, Connecticut's statute in regard to elder abuse reporting and investigation that is much more complete with clearly laid out steps, procedures, and follow-through devices. Additionally, this analysis recommends that Ohio's laws be changed to add a public elder abuse registry modeled after Tennessee's registry that contains the names of any persons that have been determined to have abused, neglected, or misappropriated the property of vulnerable individuals. It is concluded that such changes will work to increase knowledge and decrease incidences of elder abuse.

Farmakis, Christopher Biology Ohio Room 13:30 - 15:00

Conformational Analysis Using ChemBioOffice®

As part of Honors Chemistry 3719 and 3720 we have been using the ChemBioOffice software to calculate molecular structures and shapes. This presentation will detail our findings beginning with simple molecules and moving up to complex pharmaceuticals such as morphine.

Ferrando, Lisa Psychology Pugsley Room 11:00 - 11:15

Effects of Stress on Visuospatial and Verbal Memory

Effects of stress on memory have been well documented separately for verbal and visuospatial memory, but few studies have considered the two as one entity. Participants in this experiment will study a list of 12 compound words for 2 minutes; they will then be asked to match the simple words that form the compound words in an intermediate memory quiz. Participants will then be told that after completing a second memory test, they will participate in 1 of 2 activities. Half will be told to prepare a 5 minute speech that will be videotaped, recorded and evaluated by 3 judges (stress). The other half will be told they will view a short film about memory enhancement strategies in kindergarten children (control). The second memory task is a visuospatial task, resembling the board game "Memory", in which they must again match the simple parts of each compound word. Each simple word will be printed on a card; all the cards will be placed face down in a specific arraignment. Participants will turn over 1 pair of cards per trial. If the 2 chosen cards form one of the compound words, the cards will be removed; if not the cards will be replaced face down and a new trial will begin. The number of errors in matched pairs and total time needed to complete the task will be recorded. Following the second memory task participants will complete a questionnaire, and will then be told that the experiment is over and they will not be required to give the speech or view the film.

Fillian, Noah Electrical Engineering Ohio Room 15:30 - 17:00

Generating Electricity Using Hydro Power

The current volatility in the modern energy industry encourages individuals to conserve power whenever and wherever possible. This design harnesses the energy from wastewater and turns it into electricity that can be used to power electrical devices. With this system, any building can be more efficient by having drain water generate electrical power. According to the U.S. Geological Survey (USGS), the average American uses from 80 to 100 gallons of water per day. The potential energy in the mass of this wastewater can be converted into DC electrical power through the use of power electronic components and a hydro generator.

Fleeger, Melissa Biology Ohio Room 10:30 - 12:00

Kinetics of Expression of the Quinic Acid (qa) Gene Cluster in Neurospora crassa

Eukaryotic gene regulation is a highly complex system made of a number of checks and balances. When environmental conditions change, organisms need to adapt. Part of this reaction may be a shift in gene expression based on the regulation of that particular gene or gene cluster. The quinic acid (qa) gene cluster of Neurospora crassa is such a system. N. crassa is a fungus that is widely used to study molecular genetics. The regulation of the qa gene cluster in the wild type strain of N. crassa is being studied. Regulation of the qa cluster is based on carbon source. When the fungus is grown on quinic acid as a sole carbon source the qa genes are expressed at high levels. The focus of this study is the kinetics of induction of the various quinic acid genes as the environment changes. RNA was isolated from N. crassa grown under various conditions. Transcript levels of the various qa genes are detected by reverse transcriptase polymerase chain reaction (RT-PCR) and analyzed with gel electrophoresis. Preliminary results have shown that carbon source has no effect on the control, histone-3, as expected. There are differences when looking at the qa genes.

Fluent, Amy Nursing Ohio Room 13:30 - 15:00

Health Beliefs vs. Health Practices in the Youngstown Warren Area

Society as a whole tends to evaluate or rate health not by a definition, but rather by comparison. The contrast between what is perceived as healthy, and what truly is healthy, sometimes is alarming. The purpose of this study was to poll Youngstown Warren area residents in order to identify three areas of health. The first subject dealt with the participants rating their current level of health. The second segment asked about their future health concerns. The last portion referenced things which either encouraged or discouraged the participant from maintaining a healthy lifestyle. A questionnaire was filled out at three local retail establishments. The participants' identity was kept anonymous, there was informed consent, and the group was given ethical clearance prior to the study. The Health Belief Model was the main theoretical framework for this study. Various journal articles and internet writings were used for information as well. The most surprising result was the number of people polled who had no future health concerns. It was also interesting to learn the amount of participants which considered themselves healthy.

Foor, Joseph Industrial & Systems Engineering Ohio Room 15:30 - 17:00

Time Study Analysis of a Packaging Process at Northern States Metal

The purpose of this project was to reinforce the concepts covered in Methods Engineering class with hands on experience as well as gauge the efficiency of packaging processes at Northern States Metals. A time study was performed on site using video recording equipment and then analyzed using TimerPro computer software. Methods of production flow analysis such as MTM-1, MTM-2 and MOST were also considered over the course of the project in order to develop proper work standards and allowances. Not only will these results be a valuable learning tool for the YSU Industrial Engineering students involved, but these results may also lead to ideas for improvement in the company's actual production efficiency. Combined, this partnership may prove to be beneficial to Youngstown State University and Northern States Metals.

Galioto, Pam Biology Ohio Room 15:30 - 17:00

Whiplash Injuries in Relation to Force and Energy

Worldwide many suffer from whiplash injuries. They know how the pain feels but are unaware of how it occurs. When in a car accident, your neck goes forward slowly and then whips back very fast and with a great deal of force. My group's experiment is designed to measure the force of the accident, the energy it takes to cause injury, and the stress and rupture strength on the muscles.

Gallot, Mark Master of Science in Education Ohio Room 13:30 - 15:00

Stages of Change

Identifying where a client is at in substance abuse is difficult for even the most skilled clinician. This presentation will focus on clarification of stages experienced by the abuser. In addition it will suggest a treatment plan based on a series of tests to explore the client's internal motivations. Description:Individual treatment for substance abusers is inportant to the overall success of any treatment plan. However, it has been verified that a group setting provides substance abusers with a format that encourages reflection and promotes commonality to others individual situations and outcomes. Group settings provide an effective means of identification and specialized treatment for clients. Increased success rates are possible through focus of specific stages and client identification of problem areas.

Gangam, Priyanka Reddy Computer Information Systems Coffelt Room 11:45 - 12:00

www Image Search Using Hierarchichal Clustering

We consider the problem of clustering Web image search results. Generally, the image search results returned by an image search engine contain multiple topics. Organizing the results into different semantic clusters facilitates users' browsing. In this paper, we propose a hierarchical clustering method using visual, textual and link analysis. By using a vision-based page segmentation algorithm, a web page is partitioned into blocks, and the textual and link information of an image can be accurately extracted from the block containing that image. By using block-level link analysis techniques, an image graph can be constructed. We then apply spectral techniques to find a Euclidean embedding of the images which respects the graph structure. Thus for each image, we have three kinds of representations, i.e. visual feature based representation, textual feature based representation and graph based representation. Using spectral clustering techniques, we can cluster the search results into different semantic clusters. An image search example illustrates the potential of these techniques.

Genuske, Megan Mechanical Engineering James Gallery 11:30 - 11:45

Research on Vehicle Fuel Consumption and Methods of Improvement

The desire for an aerodynamic vehicle that is capable of obtaining high fuel mileage per gallon of gasoline is in popular demand. The Society of Automotive Engineers (SAE) Supermileage vehicle was designed to be a lightweight vehicle that operates at a high fuel efficiency. The Supermileage competition is a design project that involves the development and construction of a single-person, fuel-efficient vehicle. The competing vehicles are powered by small four-cycle engines which are modified for fuel economy. The vehicles will undergo a variety of inspections and tests at the competition. The overall goal is to achieve the highest gas mileage, most efficient design, and to encourage fuel economy awareness worldwide. In accordance with SAE's requirements the vehicles chassis must be able to withstand a substantial amount of load. The material was chosen carefully in order to make the car lightweight yet meet strength regulations. Algor Finite Element Analysis was used to find the stresses within the frame and to verify that the frame would withstand any force that it may encounter. In June 2009 the team competed at the Eaton Test Facility to test the maximum fuel mileage achieved as well as present written and verbal reports about the design and construction of the finished vehicle. The ultimate goal was to continue to advance methods in which maximum fuel efficiency is achieved and to bring fuel conservation to the forefront.

Giblin, Jessica Anthropology Jones Room 11:00 - 11:15

Changing Shoreline Sedimentation at Sandy Point, San Salvador

Sandy Point is a massive peninsula-shaped sand deposit located on the south western tip of San Salvador. The deposit is likely the result of converging sediment movement southward along the island's western shore and sediment movement westward along the island's southern shore. The resulting sand deposit and shoreline changes dramatically from year to year as demonstrated by annual GPS surveys of the shoreline. The objectives of the research are to characterize the physical nature of Sandy Point for March 2009 and compare the findings to prior investigations. GPS surveys of the shoreline and back beach were conducted as well as the construction of 5 separate shoreline transects and the sampling and analysis of multiple beach sand samples. The results demonstrate a significant change in the shoreline location as compared to location surveys from prior years. In accordance with the shoreline position change, the cross-sections indicate changing topography of the sand deposit. Overall, the sediment deposits can be characterized as poorly sorted coarse sand composed primarily of carbonate shell fragments.

Gibson, Kevin Social Studies Pugsley Room 14:15 - 14:30

Tuition Free Education at State Universities for Senior Citizens Policy Analysis

The Tuition Free Education at State Universities for Senior Citizens policy analysis seeks to provide a clear depiction of the implementation of Ohio Revised Code section 3345.27. The code requires all state public universities to allow qualified citizens of Ohio to attend courses, free of tuition. To qualify, a senior must have residency in the state for at least one year, and be 60 years of age or older. This paper shows the differences in the way it is implemented at different universities. Options for the future of the program are presented. The information for this analysis was collected from participating state universities, studies on the effects of education and socialization on senior citizens and participants and traditional students. Information from universities was limited to the 13 designated as state universities by Ohio Revised Code 3345.011 The analysis shows that the program is a benefit. It provides an opportunity for seniors to be involved with local universities at a low individual cost. It provides seniors with mental stimulation and social interaction. It provides the universities and traditional students with classroom diversity and a wider perspective on the educational topic. All of these things are provided with low cost to the universities and the senior participants. The program is a benefit that should be expanded or at a minimum, remain at its current state.

Good, Eli Mechanical Engineering James Gallery 16:30 - 16:45

Supercharger Pulley: Test of Slippage for Carbinite, Inc.

Slippage of the serpentine belt on the pulley is a major factor in the loss of horsepower in a supercharger automobile application. Several modifications of the pulleys have been experimented with to reduce such slippages. One modification includes a rough metal coating to increase the coefficient of friction between the pulley and the belt, which results in reduced slippage. In our proposed testing procedure, coated pulleys will be tested and compared with alternative pulleys. An experimental approach is the most effective means of determining the amount of pulley slippage. Testing for this slippage is not an easy task due to the complexity and dynamics of the actual system. The proposed apparatus to be used in our experiment consists of a serpentine belt, a coated pulley, a competitor's pulley, a range of masses, a frictionless pulley system, and a roller with bearings to limit friction. The coefficient of friction will be calculated by using fundamental one dimensional force analysis and Newton's second law of motion. The slippage on the pulley is directly correlated with the coefficient of friction. Less slippage will occur with a higher coefficient of friction. The expected results are higher friction coefficients with any pulleys that are coated or modified, which will result in less slippage.

Goodman, Denver Mechanical Engineering James Gallery 16:15 - 16:30

Super Charger Pulley Test

Pulleys are used in all kinds of mechanical systems such as in automobiles, industry etc. In order to make the step towards a more reliable, quick, and priceless system, loss of the energy transmission should be minimized. Ideally the rotations that the input shaft makes should be equal to the rotation of the output shaft. One method to reduce this energy loss would be to reduce the amount of slippage between the pulley and belt. Other factors that affect the efficiency of the system would be the meshing between the belt and pulley, the tension in the belt, the materials selection, and the rates of acceleration/deceleration. We were given 3 pulleys from which a repeatable experiment was to be devised to test the amount of slippage. The pulleys given were such that one had an anti-slip coating; one was the exact same without the coating, and the last was a competitor's pulley without coating. A procedure is proposed in which the setup will be kept same for each test run and the only part that will be changed is the pulley. Our design is very simple, priceless, and obtains the results by measuring the input and output rotations. The percent error will then be calculated for each pulley and it is expected that the results verifies the least amount of energy loss.

Goswami, Nikita Chemistry Ohio Room 13:30 - 15:00

Design of Affinity Matrix with Gluthathionylspermidine

In most organisms, from bacteria to humans, low-molecular weight thiol - glutathione (GSH) plays important roles in the protection from a variety of harmful compounds including oxidants, heavy metals, and many others. The unique feature of microorganism E. coli is the formation of the conjugate between glutathione and polyamine spermidine – glutathionylspermidine (G-Sp) by the enzyme glutathionylspermidine synthetase (GSS). We hypothesize that G-Sp can replace GSH in a variety of reactions and participate in some physiologically important processes in E. coli; therefore, the metabolism of G-Sp might serve as a target for the potential drug discovery in the combat against pathogenic strains of E. coli and closely related pathogens such as Salmonella, Shigella and others. One of the critical steps in the understanding the role(s) of G-Sp in the biology of E. coli is the identification of the proteins interacting with G-Sp. The main objective of this project is the creation of affinity chromatography matrices with G-Sp molecules attached. G-Sp was synthesized enzymatically using GSS and purified using cation-exchange chromatography. It was then characterized by HPLC and mass spectrometry and coupled with epoxy-activated sepharose. The properties of the resulting matrix are still under investigation. Character Count: 1319

Grenga, Amanda Nursing Ohio Room 13:30 - 15:00

A Transcultural Nursing Experience in San Quintin, Mexico

This poster depicts the experiences of a health care team caring for individuals in San Quintin,, a poor area on the Baja peninsula in western Mexico. The team consisted of seven (7) senior level nursing students and four (4) nursing faculty members from Youngstown State University, a nurse practitioner, four (4) physicians, a dentist, two (2) pharmacists, a minister, and other support staff. A primary care clinic was held in a church for children, pregnant women and adults, many who had multiple, chronic health problems. It was the first time students worked with non-English speaking clients with basic and diverse health care needs. During this two day clinic, the nursing students triaged over 280 indigent patients and were able to perfect their assessment skills as they followed individual patients from intake, triage, physician's and dental visits, pharmacy, and discharge teaching. The experience provided an opportunity for students to develop their leadership skills by becoming patient advocates and active learners in a diverse setting. They also discovered creative forms of communications and nursing interventions. Cultural competence as defined by Smith (1998), is a continuous process of cultural awareness, knowledge, skill, interaction, and sensitivity among caregivers and the services they provide. Through this experience, the nursing students began to acquire cultural competence as they provided care.

Gumus, Ates | Industrial & Systems Engineering | Ohio Room 15:30 - 17:00

Time Study Productivity at Northern States Metals

As part of the YSU methods class,work analysis and time study approaches were applied to the working environment at Northern State Metals. Multiple techniques were used such as motion studies, which involved the Timer Pro Software.MTM-1 and MTM-2 were applied to the process to figure out values needed to give appropriate times to given tasks. Work sampling was introduced to find allowances and time standards because of the workload applied to the employee's.These findings benefitted both Northern State Metals and students because of the shear fact that the information was given to the company,while students got quality time in a industrial working environment.

Halicki, Ryan | Telecommunication Studies | Jones Room 10:45 - 11:00

Bahamian Beach Excavation

A presentation on beached trash on a remote beach on San Salvador Island, Tha Bahamas. We dug holes examining debris buried in the sand. Notes were taken on how much trash was found and on what layer. We dug down to the water table.

Hall, Greg | Mechanical Engineering | James Gallery 16:30 - 16:45

Supercharger Pulley: Test of Slippage for Carbinite, Inc.

Supercharger Pulley: Test of Slippage for Carbinite, Inc. Matt Norge, Eli Good, Greg Hall, Greg Klouse Slippage and sometimes a sudden displacement of the serpentine belt on a pulley are major factors in the loss of horsepower in an automobile supercharger application. Several modifications of the pulleys have been experimented with to reduce such slippages. One modification includes a rough metal coating to increase the coefficient of friction between the pulley and the belt which results in reduced slippage. In our proposed testing procedure, coated pulleys will be tested and compared with alternative pulleys. An experimental approach is the most effective means of determining the amount of pulley slippage. Testing for this slippage is not an easy task due to the complexity and dynamics of the actual system. The proposed apparatus to be used in our experiment consist of a belt, connected to a load cell, which is slid over the test pulley with a known force. The coefficient of friction will be calculated by using a fundamental one dimensional force analysis and Newton's second law of motion. The slippage on the pulley is directly correlated with the coefficient of friction. Less slippage will occur with a higher coefficient of friction. The expected results are higher friction coefficients with any pulleys that are coated or modified, which will result in less slippage.

Hall, Emilie | Biology | Ohio Room 13:30 - 15:00

NMR Spectroscopic Analysis Using ChemBioDraw®

During Chemistry 3719 and 3720 we look at spectroscopic tools such as Nuclear Magnetic Resonance (NMR) which are used by chemists to work out molecular structure. We have been using the ChemBioOffice software to calculate NMR spectra and using the results to tell the differences between isomeric compounds. This presentation will detail our findings beginning with simple molecules and moving on to stereoisomers.

Hardick, Donna | Accouting | Coffelt Room 16:15 - 16:30

Mind The Gap 2009

Youngstown State University seeks to provide access to study abroad programs that keep within the educational aims of YSU and accommodate a wide range of disciplines in diverse regions of the world; to advise students on meaningful study abroad opportunities; to provide programs and workshops on study abroad departures and re-entry orientations; to foster intercultural skills, knowledge and understanding; and to integrate study abroad into the students' academic year program to the fullest extent possible. Our presentation will show how the university achieved these goals through our study tour of London, England and Dublin, Ireland in January 2009.

Hawthorne, Kristen | Master of Health &Human Services | Ohio Room 8:30 - 10:00

What Factors Influence Sleep?

What factors influence the amount of sleep a person gets? Do things like alcohol, nicotine, or anxiety affect sleep? Many Americans do not get the required amount of sleep, and through awareness of what behaviors and factors influence sleep, the better understanding we can have on how to maximize and promote good sleep patterns.

Helle, Dustin Electrical Engineering Ohio Room 15:30 - 17:00

Generating Electricity Using Hydro Power

The current volatility in the modern energy industry encourages individuals to conserve power whenever and wherever possible. This design harnesses the energy from wastewater and turns it into electricity that can be used to power electrical devices. With this system, any building can be more efficient by having drain water generate electrical power. According to the U.S. Geological Survey (USGS), the average American uses from 80 to 100 gallons of water per day. The potential energy in the mass of this wastewater can be converted into DC electrical power through the use of power electronic components and a hydro generator.

Helterbran, Dawn Biology Ohio Room 15:30 - 17:00

Whiplash Injuries in Relation to Force and Energy

Worldwide many suffer from whiplash injuries. They know how the pain feels but are unaware of how it occurs. When in a car accident, your neck goes forward slowly and then whips back very fast and with a great deal of force. My group's experiment is designed to measure the force of the accident, the energy it takes to cause injury, and the stress and rupture strength on the muscles.

Henin, Freddy Electrical Engineering Ohio Room 15:30 - 17:00

Electricity Producing Wind Turbine

The purpose of this project came from the “going green” theme seen around the world today. We decided that at a time like this, on the brink of an energy crisis, some form of an unconventional energy producing product may be necessary. We decided on a wind turbine after contemplating which energy source would be the most efficient to build in our region. The basic purpose was derived then, and that was to build a turbine that would convert the energy that the wind produces by moving the blades into mechanical energy which in turn will be converted into electrical energy through a DC Motor that is attached to the blades. We then decided to convert the electricity that is being charged in a battery as DC electricity and convert it into household AC electricity in order for us to power any item that plugs into an outlet.

Hess, Lauren Music Humphrey Room 15:30 - 15:45

Music and Narrative: A Case Study

In this study, I explore the extent of music’s expressive powers and attempt to answer the question: “Can music tell a story?” To better understand music’s function as a narrative, I chose Frederic Chopin’s Nocturne in Db Major, Op. 27, No. 2 as my subject and then created two contrasting programs that both correspond with the piece. I compare the two programs to examine their relationship to the music, as well as each other. I bring to light the general characteristics of the piece that can evoke two very different specific stories. My conclusion suggests that music alone is incapable of telling a full story because it can evoke only the general and not the specific.

Hodge, Shannon English Bresnahan Suite 14:15 - 14:30

He Said, She Said: A Study of Gender Role in Compliments and Responses

Our research will examine compliments and responses of college student's ages 18-30 gathered on the YSU campus. The study will examine the types of compliments given according to gender and the responses to those compliments. The focus of the results will be to compare compliment type with the values American society places on the roles of each gender. In other words, do the majority of compliments a female receives reflect the social values of today's women? What types of compliments do males receive, are they different than the compliments females receive, and if so, why?

Homlitas, Christa Psychology Pugsley Room 10:45 - 11:00

Current Views on Married versus Cohabiting Couples

In recent years more and more couples have been choosing cohabitation as an alternative to marriage. Research has shown that cohabitation has been regarded as somewhat rebellious. The purpose of this study is to see if the stigma related to cohabiting couples still exists or if society’s view on cohabiting couples has become more accepting. Marriage, cohabitation, and infidelity will be examined. Participants are Youngstown State University students. Informed consent forms will be signed and returned by the participants before they proceeded with the experiment. Students will be asked to read a brief scenario and answer questions related to the story, including the rating of their perceived commitment level of the couple on a lickert scale. Four different scenarios will be used; manipulations to these scenarios include length of relationship and type of relationship.

Howard, Hillary Biology Ohio Room 10:30 - 12:00

Partial Sequence of a Selenite Resistance Determinant in Enterobacter cloacae

We are working with a multimetal resistant strain of Enterobacter cloacae (E. cloacae). The EZ-Tn5 transposome from Epicentre was used to identify some of the genes that are involved in metal resistance. This transposable element contains a gene for kanamycin resistance and the R6Kγ replication origin which are useful for isolating plasmids that contain the flanking regions of interrupted genes. Primers that are homologous to the transposome are used to sequence a segment of the interrupted gene. One of the selenite sensitive mutants, L31, contained a histidine kinase sensor gene that was interrupted. Bacteria respond to toxic metal concentrations using efflux mechanisms, metal transformation, and sequestration. To determine if the genes that may be associated with this sensor are related to common metal resistance genes, genomic DNA from L31 was partially digested with a 4 base cutter, BfuCI, religated and transformed into E. coli strain ECD100D pir to generate two plasmids. These plasmids were also partially digested with BfuCI, ligated into pUC19 and transformed into E coli strain Top10. Transformants containing 500 bp inserts were sequenced. Assembly of these sequences revealed that the interrupted region in L31 was similar to an Enterobacter sp 638 region that may be involved in cation efflux and rhamulose transport. Thus, our Enterobacter cloacae strain may use an efflux system that is controlled by the histidine kinase sensor.

Howard, Hillary Clinical Laboratory Science Ohio Room 13:30 - 15:00

NMR Spectroscopic Analysis Using ChemBioDraw®

During Chemistry 3719 and 3720 we look at spectroscopic tools such as Nuclear Magnetic Resonance (NMR) which are used by chemists to work out molecular structure. We have been using the ChemBioOffice software to calculate NMR spectra and using the results to tell the differences between isomeric compounds. This presentation will detail our findings beginning with simple molecules and moving on to stereoisomers.

Hudak, Adrienne Psychology Pugsley Room 11:15 - 11:30

Stereotype Threat Amongst Gender and Occupation For Women

Stereotypes amongst gender (using common first names) and occupations are being studied. Participants include undergraduate students who will learn one of three 20-item paired-associate lists that pair names with occupations. Pairings are either gender stereotypical, non-stereotypical, or mixed. Before learning the list, participants will view a television commercial that is either gender stereotypical or neutral. Participants who view the gender stereotypical commercial are expected to learn the gender stereotypical list most easily, compared with those who viewed the neutral television commercial.

Hulea, Kelsey Mechanical Engineering James Gallery 15:45 - 16:00

Design of Testing Apparatus of Carbinite Pulleys for Supercharged Automobiles

Pulleys are being used for several purposes; one such application is to drive a super charged application. Under high speed loading, drive belts tend to slip, reducing the effectiveness and lowering the efficiency of the pulleys. Carbinite, Inc. has developed a process to coat such pulleys with a carbide alloy coating to reduce such slip. Carbinite desired a means of quantifying the slip reduction for the coated pulley. We have designed a testing apparatus to determine the percentage reduction in slip due to the coating process. The apparatus will allow for accurate but rapid testing of various pulleys. An electric motor will power the apparatus. A supercharger or rotational damper of similar resistance will be attached to the test pulley. This will allow accurate reflection of the type of rotational loading the pulley would experience. The tensioner will then be set to accurately reflect the belt tension in an automobile. The apparatus will count the rotations of the drive and supercharger pulleys. This data would then be used to determine the effectiveness of the coating. Carbinite has requested that the data be quantified in such a way that the general public may easily understand the difference between their pulleys and other competitor's pulleys. So, rather than determining the actual slip coefficients, we have decided to display only the percentage of change in slip of the coated pulley versus an uncoated pulley as well as other competitor's pulleys.

Hulvalchick, Christine Nursing Ohio Room 13:30 - 15:00

A Transcultural Nursing Experience in San Quintin, Mexico

This poster depicts the experiences of a health care team caring for individuals in San Quintin, a poor area on the Baja peninsula in western Mexico. The team consisted of seven (7) senior level nursing students and four (4) nursing faculty members from Youngstown State University, other community health care providers and support staff. A primary care clinic was held in a church for children, pregnant women and adults, many who had multiple, chronic health problems. It was the first time students worked with non-English speaking clients with basic and diverse health care needs. During this two day clinic, the nursing students triaged over 280 indigent patients and were able to perfect their assessment skills as they followed individual patients from intake, triage, physician's and dental visits, pharmacy, and discharge teaching. The experience provided an opportunity for students to develop their leadership skills by becoming patient advocates and active learners in a diverse setting. They also discovered creative forms of communications and nursing interventions. Through this experience, the nursing students began to acquire cultural competence as they provided care. The Mexican patients benefited from free medication and diabetic supplies, infant formula, donated eye glasses, tooth brushes and paste, and personal hygiene products

Hunter, Gerald Chemistry Ohio Room 13:30 - 15:00

Gas Phase Exchange Reactions of Transition Metal β-diketonate Complexes

Gas phase ligand exchange reactions for a series of homo- and hetero-transition metal β-diketonates were observed in a triple quadrupole mass spectrometer following co-sublimation. By varying the extent of ligand fluororination, characteristics such as stability, volatility, and reactivity can be extensively investigated. Ligand exchange was also observed to occur when the metal β-diketonate compounds were introduced into the collision cell of the mass spectrometer where ensuing ion-neutral reactions took place. These reactions gave supporting evidence for the proposed gas phase mechanisms.

Infante, Louis Geology Jones Room 10:30 - 10:45

Assessment of the Hurricane Frances Tidal Surge on San Salvador, Bahamas

On September 2, 2004, Hurricane Frances passed directly over the San Salvador, Bahamas. The NOAA classified the hurricane as a category five storm with winds greater than 155 mph. The objective of this research is to investigate potential relationships between the position and elevation of the storm surge line and natural shoreline features such as location, dune height, shoreline curvature, shoreline orientation, shelf width, and natural obstructive/diminutive features such as patch reefs, barrier reefs, and off-shore cays. The tidal surge high water mark was well-defined on the island's eastern shore by ocean and beach debris deposits within the natural dune lines. A large portion of the debris consisted on non-biodegradable and synthetic items such as plastic and glass bottles, shoes, fishing nets. The basic location of the tide surge line was observed in March 2005 and owing to the non-biodegradable nature of the debris, the surge line was easily surveyed in late June, 2005. The surge line location and elevation was surveyed along three separate segments of the eastern shoreline using a total station and GPS. During March 2009, an abnormally low spring tide exposed all of the patch reefs along the shoreline segments providing for a GPS survey of reef locations. The shoreline location, shoreline orientation, shoreline curvature, dune height, and shelf width were determined using a topographic map of the island and Google Earth satellite imagery.

James, William Industrial & Systems Engineering James Gallery 8:45 - 9:00

Medical Data Sheets Process Improvement at Alliance Community Hospital

Medical Data Sheets (MDS) are forms that must be filled out and submitted by an MDS nurse for a patient in rehabilitation. These forms are completed and a final score is calculated by the computer. This score is made from therapy, nursing, social services, and nutrition information placed in a single spreadsheet. The final score determines how much reimbursement the hospital is going to receive for this patient. The final score is called the RUG score and it completes the forms. Once the forms are complete, they need to be submitted to the state. The overall process of completing these forms was taking a considerable amount of time due to poor process issues. The different departments involved did not have a standard way to fill out the paperwork. The paperwork went to all of the departments in the order mentioned every time, but it is collected at different times. Also, there was a delay for every department in when they were able to start their MDS paperwork. The hospital Community Care Center was looking for a standard way to have this process executed. My report is the summation of the problem and then a description of the results which came from my recommendations. All recommendations were discussed with myself and the administration at the hospital. In the end, a strong and steady process were put in place.

Jeng, Way English Bresnahan Suite 11:00 - 11:15

Annotations on Student Texts: An Analysis of Traditional and Electronic Comments

In this presentation we will discuss an on-going study we are conducting regarding the composition classroom and instructor feedback. This study aims to examine the differences between paper and electronic commenting of student essays. The widespread proliferation of computers in homes, offices, and university campuses has resulted in many classes using e-mail or web-based portfolio systems to turn in student work. In addition, this study is particularly applicable to current university instructors and students because of the increased number of hybrid composition classrooms and online courses. Along with these pedagogies, some instructors have chosen to comment work using word processor systems. This study aims to gather approximately 200 student essays from multiple Writing I instructors at Youngstown State University to determine the unique strengths and weaknesses of each approach. Essay comments for both styles are analyzed for length and content. Unique features, such as comments made only in one style, are noted. This presentation will cover all of this information.

Jerome, Genevieve Mechanical Engineering James Gallery 16:00 - 16:15

Slippage Test of Pulley for Supercharged Automobiles Applications

The objective of this project is to design a repeatable test that will allow for testing of multiple pulleys. This will allow for the comparison of a proposed pulley design to the competitors' and the standard provided. The slippage of the belt on each design will be tested experimentally. An apparatus that can house two different pulleys and a third pulley used to set a standard tension in the belt system. The pulley that is being tested will need to have a drive input to make the setup rotate. The other two pulleys will be used to hold the belt in place, with one being able to vary in position to change the initial tension of the serpentine belt. To test how much the belt slips on the supercharged pulley, the difference between the angular velocities of the test pulley and the idler pulley will be the total slip. The two angular velocities will be measured using a tachometer. The test will be repeated for a competitor's pulley in the similar way. The pulley that has less slip will be the pulley that will have a lower difference between the two angular velocities. To see how better the pulley in question is compared to the competitor's pulley, the percentage difference of each result will be calculated and compared.

Johns, Matt Electrical Engineering James Gallery 11:15 - 11:30

RF Controlled Locomotive Tester

The current method for testing multiple-unit train control cables is risky and time consuming. A remote to wirelessly test the MU cable is proposed from a team member that currently works in the locomotive industry. Initial testing will analyze the most efficient method to transmit signals from inside the train locomotive. Construction of the system will include a user operated remote and base unit which is attached to the MU cable during testing periods. The wireless testing system will have many positive effects to this line of work including the reduction in costs, smaller required man-hours, and increased safety.

Johnson, Kristin Chemistry Jones Room 14:30 - 14:45

Recycling Plastics: The Fates of Differing Plastic Polymers

A service project compiled by the American Chemical Society: Student Affiliates group in conjunction with YSU Recycles to discuss the little known facts of plastics recycling and the chemical difference between all seven categories of chemical polymers used in industry to date. Information was compiled from varying websites outlining the importance of plastics recycling and statistics from the EPA (Environmental Protection Agency). A discussion of the various misconceptions involving the labeling of plastics and the path of recycling will be outlined. Application to recycling practices in relation to the Mahoning County and why only certain plastics are recycled while others are discarded will be explained. The final fate of plastics starting at the curbside recycling bin and ending as new materials will be explained in terms of how this affects the overall ability of these compounds to be effectively recycled and how this can have further impacts upon green chemistry in the fields of materials science.

Johnson, Kara Food & Nutrition Jones Room 15:45 - 16:00

Protein Consumption Among Collegiate Students

Certain groups, particularly athletes in power sports, consume greater amounts of protein for muscle development. Many Americans not participating in athletics also consume more protein than is needed for their bodies which in the long term can lead to chronic diseases, such as cardiovascular or renal disease. College students at the Youngstown State University's Main Campus, between the age of 18 and 24 and without medical complications, will be invited to complete a self-administered survey to assess knowledge and practices regarding protein intake from food and supplements. Demographic data that includes self-reported height and weight, calculated ideal body weight, and living arrangements will be used to compare participants. Other basis for comparison will include athletic participation, gender, level of protein intake, and reported influences regarding protein consumption. All participants will be compared to the guideline of 0.8g of protein intake per kilogram of body mass; athletes will be compared to guidelines of 1.0 – 1.2g of protein per kilogram of body mass, as confirmed by most research. We predict that many of the participants will regularly consume more protein than is necessary, and athletes and males will consume more protein than non-athletes and females, respectively.

Johnson, Kristin Chemistry Ohio Room 13:30 - 15:00

One-pot Approach to 1,2,3-Triazoles Using In Situ Generated Azide Anion

Alkyl and acyl azides are essential precursors in organic and medicinal chemistry yet they are notoriously difficult to work with because many of them have a habit of detonating when isolated in the pure form. We have developed a new approach to both alkyl and acyl azides, using microwave heating to shorten reaction times, in which reaction progress is monitored by infrared spectroscopy. Being able to follow azide generation in situ allows us to track the formation of ionic and covalent azide species conveniently, and then react the alkyl or acyl azide further to produce materials such as 1,2,3-triazoles in one reaction flask with minimal risk.

Jones, Margaret Music Humphrey Room 16:15 - 16:30

Sounds of Inevitability: Death, Damnation and the Lament Theme in Mozart's Don G

Sounds of Inevitability: Death, Damnation and the Lament Theme in Mozart's Don Giovanni In Mozart's opera buffa Don Giovanni, one is confronted with several characters suited more to the elevated and serious form of opera seria than to comic opera. While opera seria characters certainly appear many times in other comic operas, the characters of Don Giovanni are special in their relationship to the Don, each sharing a relationship of inflicted pain and desire for revenge. One of the most memorable seria characters in Don Giovanni is the Commendatore. While his appearances on stage are brief and few in number, the Commendatore's encounters with Don Giovanni are pivotal points in the opera's plot, and his scenes are regarded by many critics to be among the most significant in the opera. This presentation will examine the musical characterization of the Commendatore, including the manner in which both the static and dynamic musical settings of scenes with the Commendatore and the Don correlate to a larger underlying musical structure. This structure imparts a sense of inevitability to these scenes that culminates in the Don's eventual damnation and descent into hell.

Kapcewich, Phil Mechanical Engineering James Gallery 16:00 - 16:15

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Katzman, Brooke Chemistry Jones Room 14:30 - 14:45

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Kennedy, Kathleen Business Economics Coffelt Room 15:30 - 15:45

Computer Simulations: Effective Tools in Teaching Microeconomics?

Technology is becoming an increasing part of the collegiate education process. Interactive computer simulations are often incorporated into the curriculum of principles of microeconomic courses with the idea that they will improve students' understanding of the theories presented in the classroom. This study investigates how participating in the MarketSim computer simulation as a requirement of an introductory microeconomics course effects course performance.

Kiriazis, James Sociology Ohio Room 8:30 - 10:00

A Cool City Survey: Do YSU Students Think Youngstown is a Cool City?

One of the effects of the closing of the steel mills in Youngstown, Ohio during the mid to late seventies is what is referred to as the brain drain. Brain drain can be defined as the migration of educated or talented people from less economically successful areas to areas where opportunities are more plentiful and diverse. In 2003, the state of Michigan recognized that their cities and communities were suffering from the brain drain and decided to assemble a panel of political, educational, and community leaders to address this issue. The panel created the Cool Cities Initiative with the goal of reducing the problem of the brain by building cities that were both vibrant and capable of creating job opportunities. Included in the Cool Cities Initiative was a Cool Cities Survey which examined what young people believed were characteristics of a "cool city." In this project, we have taken the Michigan Cool Cities Survey and changed it to refer to Youngstown, Ohio. The survey was given on the YSU campus to 913 students. Our findings report what YSU students believe are characteristics of a "cool city" and we compare our findings with those of the Michigan survey. We also include our findings from questions that were asked about whether students believe the Youngstown area possesses the characteristics of a "cool city." Also reported are the findings that reveal the percentage of students from each college who indicate that they will be leaving Youngstown when they graduate.

Klouse, Greg Mechanical Engineering James Gallery 16:30 - 16:45

Supercharger Pulley: Test of Slippage for Carbinite, Inc.

Slippage of the serpentine belt on the pulley is a major factor in the loss of horsepower and sometimes a sudden disengagement of the pulley with its belt in a supercharger automobile application. Several modifications of the pulleys have been experimented with to reduce such slippages. One modification includes a rough metal coating to increase the coefficient of friction between the pulley and the belt, which results in reduced slippage. In our proposed testing procedure, coated pulleys will be tested and compared with alternative pulleys. An experimental approach is the most effective means of determining the amount of pulley slippage. Testing for this slippage is not an easy task due to the complexity and dynamics of the actual system. The proposed apparatus to be used in our experiment consits of a load cell with various pulleys and weights. The coefficient of friction will be calculated by using fundamental one dimensional force analysis and Newton's second law of motion. The slippage on the pulley is directly correlated with the coefficient of friction. Less slippage will occur with a higher coefficient of friction. The expected results are higher friction coefficients with any pulleys that are coated or modified, which will result in less slippage.

Kluska, Sarah Anthropology Ohio Room 8:30 - 10:00

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Kocher, Lauren Food & Nutrition Jones Room 15:45 - 16:00

Protein Consumption Among Collegiate Students

Certain groups, particularly athletes in power sports, consume greater amounts of protein for muscle development. Many Americans not participating in athletics also consume more protein than is needed for their bodies which in the long term can lead to chronic diseases, such as cardiovascular or renal disease. College students at the Youngstown State University's Main Campus, between the age of 18 and 24 and without medical complications, will be invited to complete a self-administered survey to assess knowledge and practices regarding protein intake from food and supplements. Demographic data that includes self-reported height and weight, calculated ideal body weight, and living arrangements will be used to compare participants. Other basis for comparison will include athletic participation, gender, level of protein intake, and reported influences regarding protein consumption. All participants will be compared to the guideline of 0.8g of protein intake per kilogram of body mass; athletes will be compared to guidelines of 1.0 – 1.2g of protein per kilogram of body mass, as confirmed by most research. We predict that many of the participants will regularly consume more protein than is necessary, and athletes and males will consume more protein than non-athletes and females, respectively.

Koerth, Stacy Food & Nutrition Jones Room 15:45 - 16:00

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Kopelos, Justin Mechanical Engineering James Gallery 14:30 - 14:45

The Engineering of a V-8 Antique Tractor for Competetive Pulling

The Geauga County Antique Tractor Pullers Association in Troy, OH holds a competition for the “V-8 Antique Tractor” class. The object of the competition tractor pull is to successfully displace a 14,515 kg (32,000 lbm). sled as far as possible until it can no longer overcome the force of fiction generated by the movement of the weights on the sled. This study provides the detailed engineering process needed to design an efficient tractor using a custom frame rebuilt from a 1945 Farmall M tractor. The original frame was exposed to an outdoor environment for 20 or more years leading to degradation of structural and operating stability. This leads to repair of existing usable components, customization of the frame body due to the eventual implementation of a new engine, and removal of unusable parts. A 1968 Chevrolet 350 small block engine was installed in the tractor to qualify for the V-8 Antique Tractor class. Proper design methods were based on loads incurred from the new engine and the pulled sled weight. Engineering techniques such as stress analysis, machine optimization, dynamics, and kinematics were utilized to ensure sound design and competent component assembly. Verification of all analysis methods was plausible by cross referencing software results with theoretical conclusions. All percent errors, data deviations, design justifications, and theoretical explanations are presented in the paper.

Kourian, Sarah Geography Jones Room 11:15 - 11:30

Excavation & Research of Storr's Lake Archaeological Site, San Salvador Island

Further Excavation & Research of the Storr's Lake archaeological site on San Salvador Island in the Bahamas. Further excavating of sites from previous digs, in search of artifacts from the Lucayan Indians who inhabited this land in the 1400's. Using a compass we were able to map our sites, and lay transects, where we dug to sterile soil. Use of trowels, dustpans, brushes, sifting screens, shovels, compasses, string, marking ribbon, tape measures, gloves, and machetes to clear the sites were all used in our excavating. Findings included broken pieces of palmetto ware pottery, several beads, fish vertebrae, shells, and a serpentine stone. The serpentine stone is not native to San Salvador Island, which may have been a trade item.

Kremin, Daniel Industrial & Systems Engineering Ohio Room 15:30 - 17:00

Northern States Metals (Punch L-Brackets)

The Methods Engineering class at YSU applied work design and time study methods at a local company Northern States Metals. The time study was conducted by using the Timer Pro Software. Other methods used to find appropriate times for certain tasks were MTM-1 and MTM-2. Work sampling was also conducted to find allowances and time standards based on the employee's workload. The classes work benefits both Northern States Metals and YSU because the information found is valuable to the company and also gives the class valuable engineering work experience.

Kudary, Jaime Business Administration Coffelt Room 15:45 - 16:00

Istanbul Study Tour: A Strategic Model for Yeditepe University

In December 2008 I attended the Istanbul, Turkey study tour with the Williamson College of Business Administration. In my presentation I would like to tell everyone about my experiences in Turkey and about the Porter’s Five Forces model that my group created for Yeditepe University. On our trip to Istanbul we toured and visited numerous businesses and stayed at a local University. At the end of the week we were required to make a presentation using Porter’s Five Forces Model to analyze Yeditepe University. We gathered information about the University from the students we interacted with, the internet, and from the presentations we attended that were hosted by the Dean of the college and professors. Finally, I would like to express the value of participating in a study tour. These are experiences that you will never forget and friends that you will have for a life-time.

Kuhns, Matthew Mechanical Engineering James Gallery 16:00 - 16:15

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Kummari, Rani S Electrical Engineering Coffelt Room 14:30 - 14:45

Improved n-type 4H-SiC Schottky Barrier Diodes Using Metal Boride Contacts

We fabricated Schottky barrier diodes using Schottky contacts of different refractory metal borides deposited at room temperature (~20C) and high temperature (600C) on 4H n-type SiC. The borides investigated included W2B, W2B5, WB, CrB2, TiB2, HfB2 and ZrB2. The thermal stability of the diodes was tested by annealing using rapid thermal processor (RTP) at 600C for 20 minutes in nitrogen. The electrical properties of the diodes were characterized by using current-voltage (I-V) and capacitance-voltage (C-V) measurements before and after the annealing. The physical property of the boride/SiC contact was investigated using Rutherford backscattering spectroscopy (RBS). The diodes with the contacts deposited at 600 oC had ideality factors around 1.04 – 1.17, while the diodes with the contacts deposited at room temperature had much larger ideality factors. The Schottky barrier heights of the diodes with the contacts deposited at 600 oC and at room temperature were comparable and had an average value ~ 0.92 – 1.28 eV. The ideality factor and Schottky barrier heights of the diodes with the contacts deposited at 600C remained unchanged even after the RTP annealing. The ideality of the diodes which were deposited at room temperature improved after annealing, with no substantial change in the barrier heights.

Kummasook, Akummasook Master of Science in Biology Ohio Room 10:30 - 12:00

Morphological Mutants of the Dimorphic Fungus Penicillium marneffei Generated by

Penicillium marneffei is a dimorphic fungus that causes fatal disseminated infections in immune compromised humans. At 25°C, this fungus develops mycelia and conidia typical of other Penicillium species. Interestingly, at 37°C, this fungus undergoes phase transition to form yeast cells that divide by fission. Studies have demonstrated that the development of the yeast phase is associated with pathogenesis of P. marneffei. To date, however, molecular analyses of this pathogen have yet to identify the molecular mechanism(s) responsible for the dimorphic nature of P. marneffei. To better understand the molecular basis of phase transition in P. marneffei, we employed an Agrobacterium-mediated transformation strategy to randomly mutate genes in this fungus via T-DNA integration. Subsequently, 35 mutants of interest were isolated from screening approximately 7,000 transformants. The T-DNA insertion sites in several of these isolates were identified by PCR-tailing and sequencing methods. BLAST analysis of the integration site in an albino mutant indicated that it was located in stuA, a gene previously shown to affect pigmentation in this fungus. A second mutant, defective in conidiation, possessed a defect in the gene encoding S-adenosylmethionine decarboxylase, an enzyme critical to polyamine biosynthesis. Collectively, these results demonstrate a useful strategy to search for the genetic basis of morphogenesis in P. marneffei.

Kutsko, Rebecca Astronomy Ohio Room 8:30 - 10:00

The Search for in the BOKS Survey Field

BOKS is a astronomical imaging survey,consisting of 1896 images taken over 27 nights in the constellation Cygnus. The original goal of BOKS is to search for transiting extrasolar planets, but the enormous amount of data makes it helpful in other areas of astronomy. Here, we present preliminary results of a search for moving objects within the BOKS data. We describe the methods and software we have developed especially for this search. Most of the moving objects are likely to be previously undiscovered asteroids in the Solar System, and once found, we will be able to determine their orbital properties. We will discuss the statistics of dealing with such a large amount of data, the complications of false positives,and compare our results to other known asteroid surveys.

Lang, Emma Biology Ohio Room 13:30 - 15:00

NMR Spectroscopic Analysis Using ChemBioDraw®

During Chemistry 3719 and 3720 we look at spectroscopic tools such as Nuclear Magnetic Resonance (NMR) which are used by chemists to work out molecular structure. We have been using the ChemBioOffice software to calculate NMR spectra and using the results to tell the differences between isomeric compounds. This presentation will detail our findings beginning with simple molecules and moving on to stereoisomers.

Langer, Jason Environmental Studies Jones Room 10:30 - 10:45

Assessment of the Hurricane Frances Tidal Surge on San Salvador, Bahamas

On September 2, 2004, Hurricane Frances passed directly over the San Salvador, Bahamas. The NOAA classified the hurricane as a category five storm with winds greater than 155 mph. The objective of this research is to investigate potential relationships between the position and elevation of the storm surge line and natural shoreline features such as location, dune height, shoreline curvature, shoreline orientation, shelf width, and natural obstructive/diminutive features such as patch reefs, barrier reefs, and off-shore cays. The tidal surge high water mark was well-defined on the island's eastern shore by ocean and beach debris deposits within the natural dune lines. A large portion of the debris consisted on non-biodegradable and synthetic items such as plastic and glass bottles, shoes, fishing nets. The basic location of the tide surge line was observed in March 2005 and owing to the non-biodegradable nature of the debris, the surge line was easily surveyed in late June, 2005. The surge line location and elevation was surveyed along three separate segments of the eastern shoreline using a total station and GPS. During March 2009, an abnormally low spring tide exposed all of the patch reefs along the shoreline segments providing for a GPS survey of reef locations. The shoreline location, shoreline orientation, shoreline curvature, dune height, and shelf width were determined using a topographic map of the island and Google Earth satellite imagery.

Lewis, Sarah Political Science Humphrey Room 11:00 - 11:15

The Uncoordinated Campaign: How Party and Candidate Have Become Strangers

Employing 25 staffers, managing hundreds of volunteers, and contacting thousands of voters, the Barack Obama Campaign for Change became a veritable force in Mahoning County, OH. Nationally, the Campaign has been hailed as a return to grassroots politics, yet one crucial point is overlooked: where is the Democratic Party in community campaigning for the Presidency? Historically, political parties have ceded power to candidates because of Progressive Era reforms, campaign finance laws, and technological advances. Wielding a monopoly over local politics, logic anticipates that the Mahoning County Democratic Party would hold influence in the operation of Presidential campaigns. However, the Party and the Campaign remained mutually exclusive in 2008 and ran separate, duplicate, and sometimes competitive operations in their campaign to elect the same candidates. Field research in Mahoning County helps to explain the divide: the Mahoning County Campaign for Change staff members hailed from outside Ohio, prioritized voter contacts to interactions with the local Party, and concentrated on the national campaign while the Party focused on local elections. As the Party and the Candidate become strangers in Mahoning County, Presidential races truly become uncoordinated.

Lindsay, Dustin Mechanical Engineering James Gallery 16:15 - 16:30

Super Charger Pulley Test

Pulleys are used in all kinds of mechanical systems such as in automobiles, industry etc. In order to make the step towards a more reliable, quick, and priceless system, loss of the energy transmission should be minimized. Ideally the rotations that the input shaft makes should be equal to the rotation of the output shaft. One method to reduce this energy loss would be to reduce the amount of slippage between the pulley and belt. Other factors that affect the efficiency of the system would be the meshing between the belt and pulley, the tension in the belt, the materials selection, and the rates of acceleration/deceleration. We were given 3 pulleys from which a repeatable experiment was to be devised to test the amount of slippage. The pulleys given were such that one had an anti-slip coating; one was the exact same without the coating, and the last was a competitor's pulley without coating. A procedure is proposed in which the setup will be kept same for each test run and the only part that will be changed is the pulley. Our design is very simple, priceless, and obtains the results by measuring the input and output rotations. The percent error will then be calculated for each pulley and it is expected that the results verifies the least amount of energy loss.

Lisko, Jason Mechanical Engineering James Gallery 11:30 - 11:45

Research on Vehicle Fuel Consumption and Methods of Improvement

The desire for an aerodynamic vehicle that is capable of obtaining high fuel mileage per gallon of gasoline is in popular demand. The Society of Automotive Engineers (SAE) Supermileage vehicle was designed to be a lightweight vehicle that operates at a high fuel efficiency. The Supermileage competition is a design project that involves the development and construction of a single-person, fuel-efficient vehicle. The competing vehicles are powered by small four-cycle engines which are modified for fuel economy. The vehicles will undergo a variety of inspections and tests at the competition. The overall goal is to achieve the highest gas mileage, most efficient design, and to encourage fuel economy awareness worldwide. In accordance with SAE's requirements the vehicles chassis must be able to withstand a substantial amount of load. The material was chosen carefully in order to make the car lightweight yet meet strength regulations. Algor Finite Element Analysis was used to find the stresses within the frame and to verify that the frame would withstand any force that it may encounter. In June 2009 the team competed at the Eaton Test Facility to test the maximum fuel mileage achieved as well as present written and verbal reports about the design and construction of the finished vehicle. The ultimate goal was to continue to advance methods in which maximum fuel efficiency is achieved and to bring fuel conservation to the forefront.

Lisovitch, Matt Gerontology Pugsley Room 13:45 - 14:00

Attitudes Towards Social Security: An Examination of Intergenerational Equity, a

The largest shift in population from middle to old age will occur in the next 18 years when 76 million baby boomers begin to reach retirement age. The focus of this research is on the attitudes of people towards Social Security, and examines the importance of intergenerational equity, and various revenue raising proposals to offset increased spending for the increasing number of retirees. Examination of each revenue proposal and its intent to offset increased spending throughout the retirement of the baby boomers was assessed. There will be up to 1,000 informants, over the age of 18 who will complete surveys, and up to 20 informants who will complete interviews. These informants are being anonymously surveyed through religious congregations and educational institutions. Preliminary data shows that most are not too confident in the revenue raising proposals to offset increased spending and the Social Security system. Respondents also responded that older generations will benefit more from Social Security than younger generations. It is important to understand these attitudes, so that we can address the issues of the program with full public support.

Lisovitch, Matt Gerontology Pugsley Room 9:30 - 9:45

A Policy Analysis on the Special Delivery Program, Facilitated by the Library of

The Library of Mahoning County and Youngstown has ran a program called Special Delivery since 1971, that serves 660 homebound and handicapped individuals with library materials, in the mail at no cost. The Special Delivery Program looks to expand to a growing senior population of the area, but the current economic environment will cut state money to run the libraries and their programs and services. Identifying inefficiencies and successes will be the moving force to ensure that the Special Delivery Program continues to bring to dignity and happiness to these homebound and handicapped individuals. The current successes is that Special Delivery can use laws such as the Postal Reorganization Act of 1970 to reduce costs, but if the program is expanded to other populations to gain notoriety, the Act will not cover costs of the these new patrons. The biggest inefficiency is the distance between library sites. By moving Special Delivery into a larger branch, time and money will be saved due to more resources available, than the current home of the Special Delivery Program.

Long, Michael Mechanical Engineering James Gallery 14:45 - 15:00

The NASA Great Moonbuggy Race

The original Lunar Rover Vehicle (LRV) was built by NASA for the Apollo 15 (NASA 2009) mission, in July of 1971. There was limited space for travel and a multitude of design requirements needed to safely maneuver the LRV on the moon. Those requirements that were met by NASA are similar to the requirements that are used for The Great Moonbuggy Race that is held annually in Huntsville, Alabama. The Moonbuggy must be human powered with no energy storage devices. It also must be able to fit, unassembled, into a box with the dimensions of 1.22 m x 1.22 m x 1.22 m (4'x4'x4'). It must be carried 6.1 m (20 feet) by the two riders who will be operating it, have a minimum clearance of 0.381 m (15 inches) with the riders on board, turning radius of 4.572m (15 feet) or less, and be able to handle inclines of 30 degrees. The vehicle must also come equipped with a mock antenna, TV camera, radio, two simulated batteries, electronic controls, fenders, and a school or national flag. The design challenge is to improve upon last year's design while staying within this year's budget, making the vehicle more competitive and reliable. The challenges were met by strengthening the driveline and modifying the pedal mount. The rear suspension was also redesigned to accommodate new hubs that improved the competitiveness and overall design of the buggy.

Lowry, Sarah English Bresnahan Suite 15:45 - 16:00

Face-Work on Facebook: Intimate Conversations in a Public Space

This study evaluates how parties handle Facebook's juxtaposition of public and private space and whether or not parties maintain their real-life relationships with their "Friends" or if the relationships become "leveled out" or "equalized" due to the distance afforded to them by internet-based interactions. Traditional discourse rules are muddled in the conversations that take place via Facebook. Turn-taking rules are structured differently because responses are asynchronous and usually more carefully thought out and more permanent since they are written instead of spoken. What is written, however, is often done so with specific illocutionary and perlocutionary results in mind—to understand conversational interactions on Facebook is to learn how to read in-between the lines. This discrepancy between what is said and what is intended is another juxtaposition produced by Facebook's blurring of expectations based on public and private conversational norms, which are complicated by the equalization of relationships between the interlocuters. A public message may contain "sub-textual" meanings for close friends of the speaker to be able to read what is not being said, but because the message is not explicit, less intimate "Friends" gloss over the deeper, more intimate, intended meaning of the utterance. Facebook users collect a large and diverse population "friends," which forces users to continue practicing the discursive ritual of saving face.

Ludiciani, Julie Gerontology Pugsley Room 13:30 - 13:45

An Assessment of the Need for Senior Service and Programs in Mahoning County

The purpose of this study was to assess the need for senior service programs in Mahoning County to gain further insight for a future senior service levy. In this study, a senior services needs assessment survey was given to determine the types of programs needed, funding levels of the programs, the need for funding of new services, and new program development. The research was conducted in conjunction with the Area Agency on Aging Chapter 11, Alzheimer's Association Greater East Ohio chapter, the Volunteer Services Agency and Youngstown State University. The survey was completed by a random sample of registered voters living in Mahoning County. The surveys were taken over the telephone and administered by trained volunteers. The names of the responders were not linked to the completed surveys. Currently, there are 256 surveys completed and analyzed. The data collected thus far has provided information on many different elements, including that the average age of the responders is 59 and more than 60 percent of the responders are female. The implications of this study suggest the three most important senior services reported are, prescription drug assistance programs, emergency response systems, and caregiver services such as care choices for Alzheimer's victims and support groups.

Lydic, Melissa Biology Ohio Room 10:30 - 12:00

The Ability of Mesenchymal Stem Cells to Attach to Mesh Material Used in Hernia

The goal of this project is to create an optimal environment for healing at an incision site in the abdominal fascia. Long cycles of recurring hernias are one of the major complications that patients can endure following surgery. This research project will compare various mesh material embedded with mesenchymal stem cells (MSC's) to find the optimal environment to enhance hernia repair. The four mesh materials that will be used in this study are Bard Colla Mend, Vicryl Knitted Mesh, Gore-Tex Soft Tissue Patch, and Bard Mesh. Mesh supports have been used in the treatment of hernia repair and MSC's have been used to treat cartilage and cutaneous tissue repair. Since MSC's attach to a collagen matrix, we predict that the MSC's will adhere to the mesh materials. We also predict that MSC's once attached to the mesh materials, will increase the amount of collagen and elastin production at the incision site. The Cell Titer 96 Cell Proliferation Assay will be used to measure the number of MSC's that adhere to the mesh and stains will be used to measure collagen and elastin production. Future studies will examine how MSC's along with mesh supports can be used to strengthen hernia repair sites. Hopefully, this will diminish or eliminate the vicious cycle of hernia reappearance.

Mabbott, Benjamin Mechanical Engineering James Gallery 15:45 - 16:00

Design of Testing Apparatus of Carbinite Pulleys for Supercharged Automobiles

Pulleys are being used for several purposes; one such application is to drive a super charged application. Under high speed loading, drive belts tend to slip, reducing the effectiveness and lowering the efficiency of the pulleys. Carbinite, Inc. has developed a process to coat such pulleys with a carbide alloy coating to reduce such slip. Carbinite desired a means of quantifying the slip reduction for the coated pulley. We have designed a testing apparatus to determine the percentage reduction in slip due to the coating process. The apparatus will allow for accurate but rapid testing of various pulleys. An electric motor will power the apparatus. A supercharger or rotational damper of similar resistance will be attached to the test pulley. This will allow accurate reflection of the type of rotational loading the pulley would experience. The tensioner will then be set to accurately reflect the belt tension in an automobile. The apparatus will count the rotations of the drive and supercharger pulleys. This data would then be used to determine the effectiveness of the coating. Carbinite has requested that the data be quantified in such a way that the general public may easily understand the difference between their pulleys and other competitor's pulleys. So, rather than determining the actual slip coefficients, we have decided to display only the percentage of change in slip of the coated pulley versus an uncoated pulley as well as other competitor's pulleys.

Madeline, Ronald Anthropology Jones Room 11:15 - 11:30

Excavation & Research of Storr's Lake Archaeological Site, San Salvador Island

Further excavation and research of the Storr's Lake archaeological site on San Salvador Island in the Bahamas. Further excavation of sites from previous digs performed by YSU faculty and students was done in order to search for artifacts from the Lucayan Indians. These people inhabited the island of San Salvador in the 1400's. Using a compass we were able to map our sites, and lay transects where we dug approximately 40cm or until we reached sterile ground. Findings included broken piece of Palmetto Ware pottery, shell beads, fish vertebrate, shells used as a food source, and a finished serpentine stone that was not native to the island of San Salvador, concluding that is was rare and that the site we excavated, 30 meters from the original site, was a possible trade site or finishing place for trade materials due to the fact that the serpentine axe-head was polished and pointed. During our work we used: trowels, dust pans, brushes, shovels, compasses, string, marking tape, tape measures, gloves, 5gallon buckets, steaks, and machetes to clear the site and set up our 1 by 1 square meters.

Magana, Adam Computer Science Ohio Room 10:30 - 12:00

Tipping Point Evaluation of a Network Intrusion Detection System (NIDS) for Peer

Unstructured Peer-to-Peer (P2P) networks for content distribution are decentralized and robust. Their growing popularity has an impact on security because they can be use to deliver malicious code and potential remote control. Additionally, P2P networks create a hole in a firewall that can be used to obtain private and confidential information. P2P security in many organizations focuses on blocking the default port used in P2P communication. We proposed configuring and experimentally evaluating an off the shelf Network Intrusion Detection Systems (NIDS) to minimize and manage the threads posed by P2P networks in the Youngstown State University network. The NIDS selected from TippingPoint promises to be simple to use and provide concrete information when an intruder tries to penetrate the network. Furthermore, there is a default recommended setting to block malicious traffic. Our evaluation of the NIDS selected seeks to test the methods provided by TippingPoint that deal with P2P traffic. Also, we will investigate procedures that can analyze the scenario in which a P2P network is configured to listen on the TCP port 80 (HTTP). Most organizations allow the traffic from port 80 to go through the firewall and P2P threats may disguise themselves as HTTP traffic.

Mahone, Lori Communication Studies Humphrey Room 10:45 - 11:00

Hope Amidst All Hell: The Analysis of the 44th Inaugural Address

Americas' inferno is fueled with a backdrop of corporate greed, a collapsed economy, and a bailout of Wall Street. President Barack Obamas' inaugural address attempts to extinguish this fire with a message of hope. Initially, we overview the history of our President, the theme of the inauguration, the historical circumstances and the hellish situation that America was facing, and tied that to the inaugural address. Collectively, all of this affected what the speech had to include. We found that the historical implications of it being an inauguration speech, him being the first African American President, and the economic situation of the country determined what Obama had to talk about. We also explained how this speech brought us all together, particularly the imagery in the speech, the arrangement of his words, and the specific words he chose to use. We also found that the speech lacked factual information or directive information, but was more descriptive and focused on ideas that were desirable.

Manfrass, Susan Middle Childhood Education Jones Room 16:30 - 16:45

Diabesity: Prevention of Future Risks

High cholesterol, high blood pressure, fatty liver disease, all symptoms associated with patients over 40. Today however, physicians are treating a surprising number of school aged children who suffer diabesity. The name diabesity refers to the first consequences related to the ongoing childhood obesity epidemic. Traditionally children and teenagers are diagnosed with the inherited form, diabetes Type 1, where treatment not prevention has been the focus. But, a lifestyle of inactivity, a diet high in fat and sugars, and an increase in the incidence of diabetes Type 2 among children and teenagers has parents, physicians, schools and communities looking at the problem with prevention as the goal. Schools and communities are in a perfect position of being able to join forces to prevent future risks of diabesity. This presentation addresses how one school responded to children in need.

Marstellar, Jessica Chemistry Ohio Room 13:30 - 15:00

NMR Spectroscopic Analysis Versus ChemBioDraw®

Nuclear Magnetic Resonance (NMR) spectroscopy is one of the most useful tools that chemists have at their disposal for working out molecular structure. During Chemistry 3719 and 3720 we look at spectroscopic tools such as NMR and use the ChemBioOffice software to calculate NMR spectra. At YSU we also have access to high field NMR spectrometers to collect the actual spectra of compounds. This presentation will detail our findings in relating calculated spectra to experimental samples.

Mastran-Czopor, Monica History Humphrey Room 13:45 - 14:00

The Royale Architecture of Louis XIV of 17th Century France

Seventeenth Century Royal French architecture continues to stand as a demonstration of greatness to the modern period. The grandeur of the Baroque style, the strong Italian influence, the highly ornate artistry reflects all the splendor of one of the most influential and pivotal monarchs to rule. Louis XIV remains a major figure in some of the most magnificent architectural marvels ever built. The "Sun King" as he was often referred to, had a passion for architecture, literature, music and art. Louis's enthusiasm for such things paralleled his visions of 'absolutism' and kingship, which were reflected in much of the art and architecture of the time. In order to understand these ideals and how they shaped Louis's state, it is important to understand the man himself and how his passion for architecture grew to the scale it did. A key point is the notion that Louis played a much larger role in the design and construction of a commission. Examining royal architecture illustrates how 'absolutism' and kingship are reflected in the architecture. Louis' influence, seen in the famous architects he used for buildings illustrated how Roman ideals were mirrored in much of royal French architecture, even before Louis XIV.

Matthews, Alison Merchandising: Fashion & Interiors Ohio Room 8:30 - 10:00

Dirty Dozen: Carcinogens in Common Products

In all major shampoos, conditioners, body washes, and lotions there are twelve major carcinogens that the public is unaware of. The goal of our project is to raise awareness of these carcinogens and make the public more aware of natural products without the twelve major carcinogens.

Matthews, Bethany Philosophy Pugsley Room 10:30 - 10:45

Internalizing Ethics: An Innovative Approach to Moral Education

Conventional approaches to moral education rely on assumptions of preexisting moral intuitions and theory. When the student demographic is that of convicted juvenile offenders, however, these undue assumptions are quickly exposed and traditional pedagogies are found to be inefficient. The Mobile Ethics Program (MEP), for which I assistant taught in the summer of 2008, draws upon interdisciplinary theoretical perspectives to create a system of moral education accessible to students without relying upon high-level moral reasoning and abstraction. By internalizing basic moral facts, the juveniles' recidivism rates will decrease and their behavior will be permanently modified—resulting in legitimate rehabilitation. In my presentation, I will outline the theoretical bases for the MEP based upon the research of course designer Dr. Deborah Mower. I will also discuss my classroom teaching experience as well as the pedagogical and theoretical positions that experience has informed. It is my opinion that this inclusive, incorporative methodology will have a profound impact on the way we approach criminal justice rehabilitation and moral education in general.

Matune, Nicholas Mechanical Engineering James Gallery 15:30 - 15:45

Advanced Pulley Slip Testing Method

A new experimental procedure for testing pulley designs has been developed for supercharged automotive serpentine pulleys. The purpose of this test is to determine if a supercharged pulley design provides better performance compared to designs of competitor pulleys or other standard pulleys. The proposed procedure for testing these pulleys involves determining the belt slippage around the pulley in question. A motor that allows for belt speeds of 2500 ft per minute minimally will drive the normal pulley while the modified pulley will be attached to a shaft that allows it to rotate with minimal friction interference. If the belt speed exceeds the 2500 ft per min speed, centrifugal forces must be included. Because of this, the belt speed will be kept below 2500 ft per min to ensure that our results are as accurate possible. A belt tension tester will be used to measure the tension differences between the two segments of the belt. After that, the angle of contact will be measured. Finally, the coefficient of slip will be determined. This procedure will be repeated for the normal and other modified designs and the results will be compared to see what design has the lowest coefficient of slip. The expected result from this test is based on assumption that the belt tension meter will show a difference in the tensions, giving the coefficient of friction.

Matyi, Andrea Sociology Ohio Room 8:30 - 10:00

A Look at Youngstown State University Student's Perceptions About Youngstown

The Youngstown metropolitan area, like other areas in the Rust Belt, has been experiencing what is referred to as a "brain drain." This occurs when many college educated individuals leave the area to look for jobs in other parts of the country. In addition to looking for jobs, another possible reason for leaving this area may be the negative perceptions and attitudes that people have toward this community. Our study examines the possible sources of these attitudes and how these attitudes may affect behavior, specifically the willingness or unwillingness to act and become involved in activities designed to revitalize the Youngstown area. Furthermore, this study examines whether there is a relationship between knowledge about the community and attitudes and perceptions. We have included both a quantitative and a qualitative component in our research. A survey which measures attitudes, awareness, knowledge, efficacy, and engagement was given to students on the YSU campus. The qualitative component consists of interviews with six community activists who shared information concerning what is currently being done to revitalize the community. Our findings are reported here.

Maxon, Ravonne Chemistry Ohio Room 10:30 - 12:00

Analysis of Purified Staphylococcus aureus Capsular Polysaccharide Via Monoclonal Antibodies and Nuclear Magnetic Spectroscopy

Staphylococcus aureus is an opportunistic bacterial pathogen responsible for causing a variety of human diseases including, foreign body infection, bacteremia, abscesses, and wound infections. Eleven antigenically distinct capsular polysaccharides, which have been shown to enhance virulence, are recognized for Staphylococcus aureus. Of these eleven, two types (type 5 and type 8) comprise about 70% of the isolates from patients with S. aureus disease. Type 5 and type 8 strains of S. aureus are isolated by killing the bacteria and removing DNA, RNA, and teichoic acid. The sample is then applied to a DEAE column followed by Sephacryl S-300 column for further purification. After each column the sample is tested for presence of carbohydrates (red tetrazolium test) and teichoic acid (phosphate test). Monoclonal antibodies specific for capsule are then used in an ELISA as a final step to identify purified the capsular polysaccharides. Samples can then be analyzed by nuclear magnetic spectroscopy to confirm the structure of the capsule. Confirmation of the capsule structure can then be used in the development of several types of treatments for S. aureus, by proving that antibodies are binding the capsule and not a different molecule on the cell such as, teichoic acid.

Mayle, Robert Nursing Ohio Room 13:30 - 15:00

A Transcultural Nursing Experience in San Quintin, Mexico

This poster depicts the experiences of a health care team caring for individuals in San Quintin, a poor area on the Baja peninsula in western Mexico. The team consisted of seven (7) senior level nursing students and four (4) nursing faculty members from Youngstown State University, other community health care providers and support staff. A primary care clinic was held in a church for children, pregnant women and adults, many who had multiple, chronic health problems. It was the first time students worked with non-English speaking clients with basic and diverse health care needs. During this two day clinic, the nursing students triaged over 280 indigent patients and were able to perfect their assessment skills as they followed individual patients from intake, triage, physician's and dental visits, pharmacy, and discharge teaching. The experience provided an opportunity for students to develop their leadership skills by becoming patient advocates and active learners in a diverse setting. They also discovered creative forms of communications and nursing interventions. Through this experience, the nursing students began to acquire cultural competence as they provided care. The Mexican patients benefited from free medication and diabetic supplies, infant formula, donated eye glasses, tooth brushes and paste, and personal hygiene products.

McCain, Andrew Electrical Engineering James Gallery 11:00 - 11:15

Computer Controlled Feedback System for Analysis of Spinal Stiffness

Spinal Manipulation (SM) is a treatment often used by physical therapists, osteopaths, and chiropractors to treat a broad variety of back and neck pain. SM has been shown to increase pain thresholds and is speculated to improve spinal flexibility and strength. Despite this, the exact mechanism by which SM works is unknown. It has been proposed that SM can change the stiffness of the spine. Currently, the examination of spinal stiffness is largely based on manual examination. As this is a subjective method of examination, it lacks the ability to quantify spinal stiffness. Another concept concerned with SM is spinal thixotropy, which cannot be evaluated by manual examination. The thixotropic properties of the muscles, fluids, and other tissues of the spine may provide for the temporary pain relief provided by SM. Since current evaluation of spinal stiffness is usually qualitative in nature, it lacks data for comparative results to assess effectiveness. Therefore, we will develop a more reliable and accurate method of determining the stiffness and measuring the effects of spinal thixotropy in different areas of the spine. This system will be capable of providing controlled movements, while piezoresistive sensors will monitor the force on the linear actuator. The program to be created will enable repetitive loading cycles; the differences in stiffness observed by our system will provide us with the necessary data to attempt to quantify the effects of spinal thixotropy.

McCain, Andrew Electrical Engineering Ohio Room 13:30 - 15:00

Conformational Analysis Using ChemBioOffice®

As part of Honors Chemistry 3719 and 3720 we have been using the ChemBioOffice software to calculate molecular structures and shapes. This presentation will detail our findings beginning with simple molecules and moving up to complex pharmaceuticals such as morphine.

McCarty, Trillion English Bresnahan Suite 16:15 - 16:30

Understanding the Linguistics of "Country Grammar": A Discussion of Hip-Hop Lin

Hip-Hop music as provide the main stream—"white culture"— with a glimpse in to the world of black urban America. Hip-Hop music is laced with its own metaphors, lexicon, syntax, and phonology that define the black experience. Hip-Hop artist and poets use "Black English"—or to put it politically correct—African American vernacular in their songs to speak to the everyday black people in a dialect they will understand, but also respect . The American black culture is heavily influenced by oral communication; Hip-Hop music is reflection of their oral culture. The purpose of looking at Hip-Hop from a linguistics stand point is to reveal the impact of Black English both with in its own culture, but also the impact Black English has on the mainstream. Using the Lyrics from Nelly's hit song "Country Grammar" a discussion of how Hip-Hop music is acting as an oral history of the black experience in America in the voice of the everyday black man will be explored. The slang terms, metaphors, syntax, and phonology will be explained and using Nelly's lyrics will act as an examples to elucidated Black English that this often misunderstood by the homogenized culture that controls the mainstream.

McCullough, Brad Mechanical Engineering James Gallery 14:15 - 14:30

Power Generation by a Magnetically Coupled Wave Generator

The rising cost of energy along with the increased environmental concerns about the current means of energy production has created a need for more efficient and safer energy practices. A magnetic coupling concept was used to design and build a wave generator to create a more efficient and cleaner power generation. A small prototype was built using this magnetic coupling concept in order to power an LED. This proved that the magnetic coupling device did actually work, at least on a small scale. For this prototype, the design began with fitting the coupling device to a fixed frame. The basic design consisted of a rotating shaft placed vertically with magnets attached while a lever containing magnets placed at 90 degrees from those on the shaft moved up and down, creating a desired linear motion causing the shaft's rotation. This arrangement was placed in a small fixed frame. The magnetic coupling concept involved two rotating magnets set above and perpendicular to one linear magnet that had two more rotating magnets set perpendicular below the linear magnet. As the center magnet attached to a lever is forced upward, the shaft rotates. The rotation of the shaft is caused by the alternation of the poles (repulsion and attraction) caused by the reciprocation of the free moving magnets attached to the lever. As the top magnets attract the lever, it then descends toward the bottom magnets causing the same action. With each wave this, cycle repeats itself.

McElroy, Nicole Sociology Ohio Room 8:30 - 10:00

An Examination of the Collaborative Efforts between YSU and the Local Economy

Our research examines the relationship between the local economy and Youngstown State University. Our question of concern is whether or not the university is doing its best to meet the demands of the job market in this area. In order to investigate this issue, we have interviewed local economic development teams about the issues they are facing and what the university is doing to satisfy these needs. We were concerned with what criteria businesses are seeking in our graduates, what kinds of businesses are being recruited here, as well as what incentives are used to attract future businesses. We have analyzed data, both on the local and national levels, to determine where Youngstown falls as far as curriculum and degree changes in coordination with the changing economic conditions. We found that while Youngstown State University has been redeveloping its curriculum and graduating more students in the appropriate majors, we simply do not have enough students to fill all of the available positions. We also found through our research that there is a plethora of incentives used to bring businesses to the area and to help them succeed once they arrive. We hope that our research will foster future research that examines the curricula in more depth and discovers ways of bringing more students into the needed majors. We anticipate that our research will help to bridge the gap between the economy and the university and that this bridge will boost economic conditions in the area.

McInnis, Desiree Civil & Construction Engineering Ohio Room 15:30 - 17:00

Properties and Strength of Materials: Lab Manual

During the past three semesters, I have been assisting Professor Lamb in creating a lab manual appropriate for students registered for this course to use. This student aid consists of 7 chapters dealing with all materials used in the lab as well as an introductory section to provide an overview of what each chapter will consist of. Each chapter in the manual includes a description of the material and its application, the purpose and procedure of the test, data sheets for calculations and photographs of the lab equipment to be used. For my presentation, I will create a poster which provides a sufficient understanding of what the guidebook will consist of.

McKinney, Nicholas Electrical Engineering Ohio Room 15:30 - 17:00

Prototypical Design of a Power and Control System for an Electric Vehicle

The purpose of this project is to design a prototypical power and control system for an electric vehicle starting from its theoretical concept to an end-user application. This project will not only test our understanding of the concepts that we have learned throughout our undergraduate studies in the electrical engineering program at Youngstown State University, but also will challenge our abilities to apply what we have learned in a team environment. Li ion batteries are used to provide the main system power as well as auxiliary power to two isolated control circuits. In order to reuse the batteries a charging circuit was designed that has the capability to charge sixteen Li ion batteries simultaneously. The control circuit consists of three parts: a variable frequency drive; an inverter circuit and the human interface module. The aforementioned control subsystems were designed individually and integrated into one complete system. The complete system was then successfully implemented by fitting the system onto a cart chassis.

Melchert, Amy Mechanical Engineering James Gallery 14:45 - 15:00

The NASA Great Moonbuggy Race

The original Lunar Rover Vehicle (LRV) was built by NASA for the Apollo 15 (NASA 2009) mission, in July of 1971. There was limited space for travel and a multitude of design requirements needed to safely maneuver the LRV on the moon. Those requirements that were met by NASA are similar to the requirements that are used for The Great Moonbuggy Race that is held annually in Huntsville, Alabama. The Moonbuggy must be human powered with no energy storage devices. It also must be able to fit, unassembled, into a box with the dimensions of 1.22 m x 1.22 m x 1.22 m (4'x4'x4'). It must be carried 6.1 m (20 feet) by the two riders who will be operating it, have a minimum clearance of 0.381 m (15 inches) with the riders on board, turning radius of 4.572m (15 feet) or less, and be able to handle inclines of 30 degrees. The vehicle must also come equipped with a mock antenna, TV camera, radio, two simulated batteries, electronic controls, fenders, and a school or national flag. The design challenge is to improve upon last year's design while staying within this year's budget, making the vehicle more competitive and reliable. The challenges were met by strengthening the driveline and modifying the pedal mount. The rear suspension was also redesigned to accommodate new hubs that improved the competitiveness and overall design of the buggy.

Melvin, Kelly Criminal Justice Pugsley Room 11:45 - 12:00

Treating AD/HD in an Effort to Decrease Delinquency

Many criminologists have determined a strong correlation between criminality and mental health/educational achievement. One illness in society that affects education and quality of life is Attention Deficit/Hyperactivity Disorder (AD/HD). In one detention facility in northeastern Ohio, it was discovered that 13.5% of the youths detained were found to have AD/HD. According to Silver, 2004 the percent of school-age children in the general population suffering with AD/HD is 3% to 10%. In an effort to assist these detained youths, specialized programming was put in place at the detention facility. This presentation explains and evaluates this new, promising program.

Mensah, Eric Chemistry Ohio Room 13:30 - 15:00

Site Specific Oxidation and Protein Structure: mutant HEWL stdudies..

Abstract Studies have showed that many diseases occur as result of protein damages that develop from oxidative reactions involving the active sites of the protein. Generally the reactive oxygen species cause the damage by reacting to the active site or the metal binding site of the protein. It is therefore important to investigate the site specificity of metal-catalyzed oxidation of a mutant hen egg white lysozyme using Cu2+ and hydrogen peroxide to generate a highly reactive hydroxyl radical. The double mutant lysozyme gene is generated with Asn 77 and then changed to His (N77H), with His15 also changed to Ser (H15S) by site-directed mutagenesis. The lysozyme mutant gene is therefore cloned into yeast expressing vector pPICZ α A to express the protein. A transformed methyltropic yeast pichia pastoris is then used to express the mutant protein.

Michael, Jeff Mechanical Engineering James Gallery 11:30 - 11:45

Research on Vehicle Fuel Consumption and Methods of Improvement

The desire for an aerodynamic vehicle that is capable of obtaining high fuel mileage per gallon of gasoline is in popular demand. The Society of Automotive Engineers (SAE) Supermileage vehicle was designed to be a lightweight vehicle that operates at a high fuel efficiency. The Supermileage competition is a design project that involves the development and construction of a single-person, fuel-efficient vehicle. The competing vehicles are powered by small four-cycle engines which are modified for fuel economy. The vehicles will undergo a variety of inspections and tests at the competition. The overall goal is to achieve the highest gas mileage, most efficient design, and to encourage fuel economy awareness worldwide. In accordance with SAE's requirements the vehicles chassis must be able to withstand a substantial amount of load. The material was chosen carefully in order to make the car lightweight yet meet strength regulations. Algor Finite Element Analysis was used to find the stresses within the frame and to verify that the frame would withstand any force that it may encounter. In June 2009 the team competed at the Eaton Test Facility to test the maximum fuel mileage achieved as well as present written and verbal reports about the design and construction of the finished vehicle. The ultimate goal was to continue to advance methods in which maximum fuel efficiency is achieved and to bring fuel conservation to the forefront.

Miller, Christopher Mechanical Engineering James Gallery 13:45 - 14:00

Design of Mechanical Systems for a Heavy Crane Operator's Chair

Crane operator's chairs are not presently designed with the flexibility to meet their wide range of applications. Additionally, there are no chairs presently on the market that are rated for obese operators who are legally considered disabled if their weight exceeds 1465 N (330 lbf). As a result, chairs presently on the market must undergo significant modification before installation to meet the demands of a particular application. A chair design that incorporates a set of standardized parts with several modular options is desirable for both manufacturers and customers alike. Ergonomics were stressed since the operator is often confined to the chair for their entire workday. Interchangeability between the mounting locations of current models and this new model was also stressed. Additional options such as an adjustable footrest, seat options (including leather and internal heaters) and mechanized rotation were all implemented. Each chair consists of a pedestal and bearing system. Side consoles containing all of the electrical controls necessary for crane operation are selected based on customer needs. The bearing system was designed for applications that use both manual and mechanized rotation. The optional, mechanized rotation was achieved using a 43 rpm, 8.25 N-m (73 in-lbf) electric gear motor housed inside the pedestal. The bearing system and motorization were both designed to function with a maximum sized operator and the largest set of control consoles.

Mills, Isaac Adolescent/Young Adult Education Coffelt Room 14:00 - 14:15

Tests of Different Detection Approaches for Induced Depletion of 108mAg

Different methods for the observation of an induced depletion of isomers exist. In the case of 108m Ag, it is currently most convenient to setup experiments which attempt to observe delayed radiation. Two different types of delayed radiation experiments have been developed at YSU's X-Ray Effects Laboratory, one focusing on observation of beta particles (electrons) in a vacuum with a new detector system, and another focusing on discrimination between two different types of radiation (gamma and beta) during decay. This talk will survey the current experimental plans for vacuum observation and signal discrimination of an experiment on induced depletion of the 108m Ag isomer.

Mincher, Arielle History Jones Room 11:15 - 11:30

Excavation & Research of Storr's Lake Archaeological Site, San Salvador Island

Further Excavation & Research of the Storr's Lake Archaeological Site on San Salvador Island in the Bahamas. Further excavation of sites from previous digs performed by YSU faculty and students was done in order to search for artifacts from the Lucayan Indians. These peoples inhabited the island of San Salvador in the 1400's. Using a compass we were able map our sites, lay transects; where we dug approximately 40cm or until we reached sterile ground. Findings included broken pieces of Palmetto Ware, Pottery, Shell beads, Fish vertebrate, Shells used as food sources and a finished Serpentine stone possibly used as a trade item. The Serpentine stone was not native to the island of San Salvador, concluding that it was rare and that the site we excavated, 30 meters from the original site, was a possible trade site or finishing place for trade materials due to the fact that the Serpentine axe-head was polished and pointed. During our work we used: trowels, dust pans, brushes, sifting screens, gallon buckets, shovels, compasses, string marking tape, tape measures, gloves and machetes to clear the site and set up our square meters.

Miranda, Alberto Civil & Construction Engineering Ohio Room 15:30 - 17:00

The Scanning Electron Microscope: Effects of Sample Preparation on Resulting

The purpose of this research is to examine the effect of sample preparation on the resulting images obtained with the Scanning Electron Microscope (SEM). Coupled with special skill sets and techniques, the world of electron spectroscopy can be magnified thousands of times over. The SEM at Youngstown State University's Center for Transportation and Materials Engineering (CTME) can view objects more clearly at higher magnifications than ever before by employing new insights into quality materialographic sample preparation and techniques. The CTME makes use of a Stereoscan 200 Scanning Electron Microscope (SEM) for its materials studies and spectroscopy. The first critical step in spectroscopy is preparation of the sample to be studied. Sample preparation employs many crucial steps such as cutting, mounting, mechanical preparation (grinding and polishing), cleaning, etching, and coating. The second and next equally important step concerns spectroscopy techniques that must be utilized to obtain high quality information. The SEM technician must weigh many variables in the study of a sample to achieve the predetermined goals of the research. Topographic investigation must be weighed against the chemical composition study before spectroscopy can even begin.

Moliterno, Jeffrey History Humphrey Room 14:00 - 14:15

Removing Female Body Hair: Answering the Mystery of the Arduous Chore

Nearly all American women must endure the difficult and painful task of removing unsightly and unfeminine hair from their legs, underarms, and other parts of the body. Surely all have wondered why. It was not always something that women did. Indeed, many women viewed the practice as lascivious and something that only "chorus girls" would do. This presentation will explore the reasons for why women began removing their body hair. This presentation will focus on women's fashion magazines and other popular magazines from the1910s in order to trace the beginnings of mainstream American feminine hair removal. In addition, the high fashions of the period will be examined to help explain why feminine hair removal was the next logical step in the process of fashion change. This presentation will also touch on the limited amount of research done on the history of feminine hair removal and will discuss some of the strengths and flaws of that research.

Moore, Darla Environmental Studies Jones Room 13:45 - 14:00

The Examination of Soluble Nitrate, Phosphate and Coliform for Assessment of Water

Analysis of the Cranberry Run wetland was initiated in order to determine its health and productivity. Surface and ground water samples were collected from fifteen predetermined sites within the know perimeter of the wetland to be analyzed for water quality. The location of this wetland places it among several residential and commercial zones. By evaluating the water quality of the wetland, we can make an assessment of the effects of the surrounding areas on the health of the wetland. The specific water parameters at the focus of this research are nitrate, soluble phosphorous, and coliform. Other on-site water parameters were also taken such as conductivity, temperature and dissolved oxygen. Analyses of all parameters were monitored over the course of five months in order to determine any monthly or seasonable trends. General trends indicate nitrate and phosphorous levels generally increases at most sites in spring months during higher precipitation. The increase in precipitation most likely increased runoff from commercial and residential lawn fertilizers surrounding the wetland, and increased nutrient levels entering the wetland. Increased coliform is also seen in the spring months which could indicate return of wildlife activity to the wetland. Deceases in coliform, phosphorous and nitrate also correlated with seasonably dry weather. A strong relationship was also found with nitrates and phosphates increasing and decreasing at similar rates during the sampling period.

Morlan, Shane Food & Nutrition Ohio Room 13:30 - 15:00

Probiotics Knowledge 2009

The health benefits of probiotics have sparked a growing interest in the scientific community. There are numerous clinical studies documenting these benefits: boost immunity, reduce risk of colon and bladder cancer, prevent and/or control allergies and dermatitis, improve lactose intolerance, treat and prevent antibiotic- associated diarrhea as well as travelers and rotavirus diarrhea. The increased publication of these studies has catalyzed an upsurge in commercial growth in the probiotic food concept. Statistics show that consumption of these foods has increased by 12-15% in the last three years. The objective of this study is to evaluate the knowledge of probiotics and their health benefits in Youngstown State University students. A cross-sectional survey will be conducted to define the scope of knowledge regarding probiotics and their use among the student population at YSU. Data will be obtained through a self-administered questionnaire distributed to approximately two hundred students that will be randomly sampled from various sites on campus. Survey data will be analyzed using SPSS. We hypothesize that: ≤50% of study participants will be able to define probiotics, ≤50% of study participants will be able to name at least one natural source of probiotics, the knowledge of probiotics will be significantly higher (P<0.05) in females compared to males, and participants who use supplements will be more knowledgeable of probiotic use.

Morris, Cheryl Food & Nutrition Ohio Room 13:30 - 15:00

Probiotics Knowledge 2009

The health benefits of probiotics have sparked a growing interest in the scientific community. There are numerous clinical studies documenting these benefits: boost immunity, reduce risk of colon and bladder cancer, prevent and/or control allergies and dermatitis, improve lactose intolerance, treat and prevent antibiotic- associated diarrhea as well as travelers and rotavirus diarrhea. The increased publication of these studies has catalyzed an upsurge in commercial growth in the probiotic food concept. Statistics show that consumption of these foods has increased by 12-15% in the last three years. The objective of this study is to evaluate the knowledge of probiotics and their health benefits in Youngstown State University students. A cross-sectional survey will be conducted to define the scope of knowledge regarding probiotics and their use among the student population at YSU. Data will be obtained through a self-administered questionnaire distributed to approximately two hundred students that will be randomly sampled from various sites on campus. Survey data will be analyzed using SPSS. We hypothesize that: ≤50% of study participants will be able to define probiotics, ≤50% of study participants will be able to name at least one natural source of probiotics, the knowledge of probiotics will be significantly higher (P<0.05) in females compared to males, and participants who use supplements will be more knowledgeable of probiotic use.

Moy, Jennifer Electrical Engineering Ohio Room 15:30 - 17:00

Get Fresh: A Mathematical Model of a Desalination Machine

Using van't Hoff's equation for reverse osmosis, (π=cRT), we can derive a desalination differential equation, ((dx/dt)= ΦA(ΔP-(cVRT/(V-x))). We will study how the parameters under our control, (ΔP, V, Φ, A), affect the amount of freshwater that can be extracted from a brine solution. Using direction fields and separation of variables, we will analyze the affects of these parameters and make recommendations on how to optimize the efficiency of a desalination machine that fits certain criteria.

Moy, Stephen Electrical Engineering Ohio Room 15:30 - 17:00

Low Pass Filter Analysis Utilizing Various Software Packages

In the traditional electrical engineering laboratory experiment, electrical low pass filters are typically constructed. Bode Plots are created to obtain the frequency effect of insertion loss. The insertion loss can also be calculated mathematically by performing the analysis of a two port network. The calculated results are compared with the measurement results. In order to improve on the accuracy, flexibility, turn- around time, and ability to analyze the filter in various functional and environmental conditions, computer simulations are often utilized to supplemental the experiments. Youngstown State University has been involved with Maplesoft as one of the educational development sites. The paper compares and analyzes the capabilities of these 3 software packages (Pspice, Multisim 10.1 and MapleSim) in analyzing low pass electrical filters to determine the frequency effect of the circuit parameters. The simulated results are compared to the theoretical calculations.

Nash, David Biology Ohio Room 13:30 - 15:00

NMR Spectroscopic Analysis Using ChemBioDraw®

During Chemistry 3719 and 3720 we look at spectroscopic tools such as Nuclear Magnetic Resonance (NMR) which are used by chemists to work out molecular structure. We have been using the ChemBioOffice software to calculate NMR spectra and using the results to tell the differences between isomeric compounds. This presentation will detail our findings beginning with simple molecules and moving on to stereoisomers.

Nemergut, Daniel Electrical Engineering Ohio Room 15:30 - 17:00

Radio Interferometer Telescope

Radio telescopes are used to view celestial objects that emit strong radio signals, such as supernovae remnants, neutron stars, galactic centers, and the Sun. The radio telescope captures radio waves from space and records the strengths of the signals via specialized data processing software. This is different from the traditional optical telescopes that use mirrors to view the observable celestial objects. One benefit of radio telescopes is that radio waves are able to travel through interstellar extinction caused by dust, gas, and the Earth's weather conditions. Another benefit of using a radio telescope is that it can detect frequencies ranging from 103 to 109 Hz; whereas an optical only views the visible spectrum which is 1014 to 1015 Hz. Since a radio telescope can detect such a large range of frequencies, it can pick up on local noise easily and receive unwanted signals. Our circuit design consists of a set of filters and amplifiers to block out unwanted frequencies and amplify audible signals. In conjunction with the designed circuit, one set of dipole antennas will capture signals from a large portion of space. Using two sets of dipole antennas with interferometer software on a computer, two waves can be resolved into one signal coming from a particular spot in space. Our design process is completed upon interpretation of this data and acknowledgment of observed celestial objects.

Nigro, Joseph Mechanical Engineering Technology James Gallery 10:45 - 11:00

Energy Saving Techniques for HVAC Systems

The objective of this report is to design two different HVAC systems for a LEED certified building and evaluate the energy being used by each one. The two types of systems will include a conventional air handling unit with minor energy efficient techniques within the system. Following that will be an energy efficient geothermal system. A number of wells will be used in order to heat and cool the building, along with other energy saving techniques. After both of these systems have been designed, it will be possible to model the energy costs for a year to see the benefits or downfalls of each. By completing this study, it will be easier to show the benefits of systems that may initially cost more, but have long term savings, as well as low impacts on the environment.

Norge, Matthew Mechanical Engineering James Gallery 16:30 - 16:45

Supercharger Pulley: Test of Slippage for Carbinite, Inc.

Slippage of the serpentine belt on the pulley is a major factor in the loss of horsepower in a supercharger automobile application. Several modifications of the pulleys have been experimented with to reduce such slippages. One modification includes a rough metal coating to increase the coefficient of friction between the pulley and the belt, which results in reduced slippage. In our proposed testing procedure, coated pulleys will be tested and compared with alternative pulleys. An experimental approach is the most effective means of determining the amount of pulley slippage. Testing for this slippage is not an easy task due to the complexity and dynamics of the actual system. The proposed apparatus to be used in our experiment consists of a serpentine belt, a coated pulley, a competitor's pulley, a range of masses, a frictionless pulley system, and a roller with bearings to limit friction. The coefficient of friction will be calculated by using fundamental one dimensional force analysis and Newton's second law of motion. The slippage on the pulley is directly correlated with the coefficient of friction. Less slippage will occur with a higher coefficient of friction. The expected results are higher friction coefficients with any pulleys that are coated or modified, which will result in less slippage.

Novotny, Adam Criminal Justice Ohio Room 8:30 - 10:00

What Elements in a City Affect Rape?

What elements in a city affect rape? I'm taking five elements city size, education, race, crime rate, and average age and seeing if any of them correspond with the rape rate.

Nycz, Michael Physics Jones Room 11:00 - 11:15

Changing Shoreline Sedimentation at Sandy Point, San Salvador

Sandy Point is a massive peninsula-shaped sand deposit located on the south western tip of San Salvador. The deposit is likely the result of converging sediment movement southward along the island's western shore and sediment movement westward along the island's southern shore. The resulting sand deposit and shoreline changes dramatically from year to year as demonstrated by annual GPS surveys of the shoreline. The objectives of the research are to characterize the physical nature of Sandy Point for March 2009 and compare the findings to prior investigations. GPS surveys of the shoreline and back beach were conducted as well as the construction of 5 separate shoreline transects and the sampling and analysis of multiple beach sand samples. The results demonstrate a significant change in the shoreline location as compared to location surveys from prior years. In accordance with the shoreline position change, the cross-sections indicate changing topography of the sand deposit. Overall, the sediment deposits can be characterized as poorly sorted coarse sand composed primarily of carbonate shell fragments.

Ogbonna, Antoine Master of Science in Mathematics Coffelt Room 11:00 - 11:15

The Psychology of a Web Search Engine

Majority of the web's information is stored as text. The ability to be able retrieve useful information has been of tremendous curiosity. Many companies have been trying to develop a system upon which retrieval of information is useful and efficient. In this project, I present a paper that would illustrate the ability of using text mining techniques on the Internet in order to help users find what they are looking for. This process can tremendously reduce the complexity of information searching and return relevant results. This process would incorporate psychology, mathematics, computer science, and statistics in order to understand the user so as to return a good result. By incorporating these disciplines, the use of text-mining would help create a mathematical method or algorithm that analyses web pages as a matrix to precisely approximate the user's answer. A perfect web search engine would be to know what the user is thinking in order to return exact responses, so I postulate that a system can learn about the user's behavior through non-verbal clues such as their IP address or other pertinent information that would indicate a direction in processing their queries. These processes which include, analyzing users' behaviors, analyzing web pages in a matrix, and implementing an optimal and efficient appropriate system, when combined would precisely and efficiently give an appropriate result to the users' query.

Oliver, Jamar Industrial & Systems Engineering Ohio Room 15:30 - 17:00

Time Study on L Bracket Punching at Northern States Metals

At the local fabricating facility of Northern States Metals in Youngstown, OH, Youngstown State University Industrial Engineering students in the methods engineering class performed a field study. The specific process studied was the trimming of the edges of the L-brackets. This study forced extra learning about production analysis in the classroom while obtaining valuable experience in the field. Time study analysis was the major technique applied to this environment. Other techniques used include flow diagramming, line balancing, and the analysis of predetermined time study systems consisting of MOST, MTM1 and MTM2. in this study, there was also a chance to use data collection and work sampling techniques, which were learned in other courses.

Olszewski, Amy Chemistry Ohio Room 13:30 - 15:00

Conformational Analysis Using ChemBioOffice®

As part of Honors Chemistry 3719 and 3720 we have been using the ChemBioOffice software to calculate molecular structures and shapes. This presentation will detail our findings beginning with simple molecules and moving up to complex pharmaceuticals such as morphine.

Pannoni, Nina Exercise Science Jones Room 16:00 - 16:15

Laboratory Indices of Nutritional Status in Baritatric Patients are Modulated b

Weight-loss surgery is associated with a number of changes to laboratory indicators of nutritional status. For example, some studies report favorable effects on blood lipid concentrations while others demonstrate adverse outcomes related to micronutrient deficiencies. We investigated the effects of surgical procedure, age and sex on changes over time, to serum concentrations of vitamin D, iron studies and lipid profile in a cohort of bariatric surgery patients. A retrospective review was performed of 413 patients who underwent LRYGB or LAGB at a single institution between 2005 and 2007. Of these, we included only those individuals who had data for all post-operative visits (n ≥ 50). Data were analyzed using SAS 9.1, where effects on laboratory parameters were tested in mixed models with surgery-type, age, sex and time, and interactions of the three entered as factors. Main effects of age and sex were found respectively for vitamin D ($p = 0.02$) and iron ($p = 0.003$). Two-way interactions were found between surgery-type and time for lipid parameters (p's < 0.05), and Vitamin D ($p = 0.03$), while a marginally-significant, three-way interaction was found for age, sex and time for ferritin ($p = 0.057$). In conclusion, type of surgery, sex and age differentially affect blood lipid and micronutrient concentrations after bariatric surgery. Supplementation regimens for patients should be adjusted to reflect these differences in order to optimize nutritional outcomes.

Parsons, Bryan Mechanical Engineering James Gallery 14:30 - 14:45

The Engineering of a V-8 Antique Tractor for Competetive Pulling

The Geauga County Antique Tractor Pullers Association in Troy, OH holds a competition for the "V-8 Antique Tractor" class. The object of the competition tractor pull is to successfully displace a 14,515 kg (32,000 lbm). sled as far as possible until it can no longer overcome the force of fiction generated by the movement of the weights on the sled. This study provides the detailed engineering process needed to design an efficient tractor using a custom frame rebuilt from a 1945 Farmall M tractor. The original frame was exposed to an outdoor environment for 20 or more years leading to degradation of structural and operating stability. This leads to repair of existing usable components, customization of the frame body due to the eventual implementation of a new engine, and removal of unusable parts. A 1968 Chevrolet 350 small block engine was installed in the tractor to qualify for the V-8 Antique Tractor class. Proper design methods were based on loads incurred from the new engine and the pulled sled weight. Engineering techniques such as stress analysis, machine optimization, dynamics, and kinematics were utilized to ensure sound design and competent component assembly. Verification of all analysis methods was plausible by cross referencing software results with theoretical conclusions. All percent errors, data deviations, design justifications, and theoretical explanations are presented in the paper.

Patrick, Douglas Electrical Engineering Ohio Room 15:30 - 17:00

Application of Laplace Transform to Determine Time Domain Transients and Steady

Derivations of transients of charging current of series RL (Resistor & Inductor) circuit require the applications of differential equations. Since this is typical beyond the mathematical capability of 1st year engineering student, an alternate solution must be used. Using Laplace Transform to covert time domain solutions to frequency domain solutions would allow the use of Algebra and Calculus. The transient current into and voltage across the inductor will be derived. The time domain transient waveforms are created using Microsoft Excel. Electronic Work Bench (EWB) Multisim10.1 (computer simulation software) is used to obtain current and voltage waveform of the RL circuit. The results from Excel and Multisim are compared.

Peshel, Ian Mechanical Engineering James Gallery 15:30 - 15:45

Advanced Pulley Slip Testing Method

A new experimental procedure for testing pulley designs has been developed for supercharged automotive serpentine pulleys. The purpose of this test is to determine if a supercharged pulley design provides better performance compared to designs of competitor pulleys or other standard pulleys. The proposed procedure for testing these pulleys involves determining the belt slippage around the pulley in question. A motor that allows for belt speeds of 2500 ft per minute minimally will drive the normal pulley while the modified pulley will be attached to a shaft that allows it to rotate with minimal friction interference. If the belt speed exceeds the 2500 ft per min speed, centrifugal forces must be included. Because of this, the belt speed will be kept below 2500 ft per min to ensure that our results are as accurate possible. A belt tension tester will be used to measure the tension differences between the two segments of the belt. After that, the angle of contact will be measured. Finally, the coefficient of slip will be determined. This procedure will be repeated for the normal and other modified designs and the results will be compared to see what design has the lowest coefficient of slip. The expected result from this test is based on assumption that the belt tension meter will show a difference in the tensions, giving the coefficient of friction.

Peterson, Courtlynne Criminal Justice Room 2068 14:00 - 14:15

Summer Art in China, 2008

This presentation will bring China to Youngstown as seen through the eyes of Youngstown State University students who visited china for the first time. The topics discussed include the National art Museum of China, Xian Academy of Fine Arts and Print Making Studio, China Block Printing Museum, Temple of Jianzhen, and Shanghai Museum of Art. These topics are presented and explored through their artistic, historical, cultural, and educational components.

Pethtel, Zach Electrical Engineering Ohio Room 15:30 - 17:00

Electricity Producing Wind Turbine

The purpose of this project came from the “going green” theme seen around the world today. We decided that at a time like this, on the brink of an energy crisis, some form of an unconventional energy producing product may be necessary. We decided on a wind turbine after contemplating which energy source would be the most efficient to build in our region. The basic purpose was derived then, and that was to build a turbine that would convert the energy that the wind produces by moving the blades into mechanical energy which in turn will be converted into electrical energy through a DC Motor that is attached to the blades. We then decided to convert the electricity that is being charged in a battery as DC electricity and convert it into household AC electricity in order for us to power any item that plugs into an outlet.

Pettenati, Nicole Music Humphrey Room 15:45 - 16:00

Visual and Aural Art of the Baroque Period

The Baroque Era saw a shift in societal priorities from the intellectual to the emotional. Following the Counter-Reformation, art and music became more dynamic and expressive. Music and art became part of a unified force to affect the emotions of an audience through movement and space. This presentation will explore the similarities between art and music during the Baroque Era especially as a consequence of social change.

Pfeil, Erin Master of Science in Biology Jones Room 14:45 - 15:00

Spatial and Temporal Dependant Shifts In Grassland Invasibility

A biological community can become invaded by non-resident species when the resources necessary for establishment and growth coincide with invader propagules. There are many ecological factors that affect below- and aboveground resource availability in a community and this research integrates both spatially and temporally varying components. In a managed grassland, we measured the interactive effects of disturbance patch size (DPS), grazing intensity and soil resource availability (SRA) on the invasion success of smooth pigweed Amaranthus hybridus and velvetleaf Abutilon theophrasti. Importantly, we considered two life history stages of each focal invader (i.e., emerged and established seedlings) because invasion success may depend on when resource shifts coincide with particular life history stages. Our empirical data generally support the following predictions: 1) thresholds in invasion success exist across DPS and SRA gradients, 2) invader size strongly affects invasion success in small-sized patches containing high SRA and 3) without grazing, varying SRA within a given DPS can have opposing effects on the success of the invader . Integrating disturbance type and intensity across other ecological dimensions is important in elucidating the mechanisms of community invasibility as well as offering sound recommendations to managers of native grassland communities

Piccirillo, Donald Computer Information Systems Ohio Room 10:30 - 12:00

Gaining Information Through Collaborating Filtering

Through the use of the collaborating filtering algorithm we intend to demonstrate the different approaches that can be taken on likes and dislikes of automobiles in the general public and how that information can then offer more insight as to other vehicles that person would also be interested in. We will take a dataset that contains different rankings on automobile by different customers. We will also take into consideration other features of the car and see if these can help determine the best recommended care for a consumer. For example, in addition to just a customers rating of a car, we will take the color, engine size, and miles per gallon of that car as well. Then, we will use these additional variables to see if they help improve the recommendation engine. We will also take into consideration the base similarities of individuals, i.e. their interests, their income level, as well as the amount of time they will typically spend in the vehicle that will affect their decision as to what vehicle they will choose.

Pierson, Kristopher Mechanical Engineering James Gallery 15:45 - 16:00

Design of Testing Apparatus of Carbinite Pulleys for Supercharged Automobiles

Pulleys are being used for several purposes; one such application is to drive a super charged application. Under high speed loading, drive belts tend to slip, reducing the effectiveness and lowering the efficiency of the pulleys. Carbinite, Inc. has developed a process to coat such pulleys with a carbide alloy coating to reduce such slip. Carbinite desired a means of quantifying the slip reduction for the coated pulley. We have designed a testing apparatus to determine the percentage reduction in slip due to the coating process. The apparatus will allow for accurate but rapid testing of various pulleys. An electric motor will power the apparatus. A supercharger or rotational damper of similar resistance will be attached to the test pulley. This will allow accurate reflection of the type of rotational loading the pulley would experience. The tensioner will then be set to accurately reflect the belt tension in an automobile. The apparatus will count the rotations of the drive and supercharger pulleys. This data would then be used to determine the effectiveness of the coating. Carbinite has requested that the data be quantified in such a way that the general public may easily understand the difference between their pulleys and other competitor's pulleys. So, rather than determining the actual slip coefficients, we have decided to display only the percentage of change in slip of the coated pulley versus an uncoated pulley as well as other competitor's pulleys.

Pietromonaco, Joseph Mechanical Engineering James Gallery 14:00 - 14:15

Friction Testing Unit Design for Automotive Applications

Tribology is a very important aspect of engineering in many industrial settings. It is the study of friction losses, lubrication, and wear, which has applications in the automotive industry, manufacturing, and even health products. The particular application of this study in design relates to the automotive industry and the friction testing of braking systems. In order to safely certify rotors and brake pads, extensive testing must be performed to identify coefficients of friction and rates of wear, and this project describes the design and assessment of a multi-faceted friction testing unit. Based on the sizing of a standard 2009 Chevrolet Cobalt LS, the power supply reflected a similar amount of energy that would be found in a typical 96.66 km/hr (60 mph) to 0 km/hr (0 mph) stop. Based on this value, the sensory unit and frame were designed accordingly to accomodate wear and friction coefficient calculation, and need for data output of shaft speed, normal force, and supplied torque. Ultimately, testing was performed to verify outputs, accuracy, and precision. The design process took into consideration all valid and applicable standards of the American Society of Testing and Materials, and the proceeding paper discusses the methods of design and verification, analysis including finite element modeling, and experimentation using the friction testing unit. Impedances during these processes have also been mentioned, with emphasis on problem-solving techniques.

Pirigyi, Andrew Mechanical Engineering James Gallery 16:00 - 16:15

Slippage Test of Pulley for Supercharged Automobiles Applications

The objective of this project is to design a repeatable test that will allow for testing of multiple pulleys. This will allow for the comparison of a proposed pulley design to the competitors' and the standard provided. The slippage of the belt on each design will be tested experimentally. An apparatus that can house two different pulleys and a third pulley used to set a standard tension in the belt system. The pulley that is being tested will need to have a drive input to make the setup rotate. The other two pulleys will be used to hold the belt in place, with one being able to vary in position to change the initial tension of the serpentine belt. To test how much the belt slips on the supercharged pulley, the difference between the angular velocities of the test pulley and the idler pulley will be the total slip. The two angular velocities will be measured using a tachometer. The test will be repeated for a competitor's pulley in the similar way. The pulley that has less slip will be the pulley that will have a lower difference between the two angular velocities. To see how better the pulley in question is compared to the competitor's pulley, the percentage difference of each result will be calculated and compared.

Politis, Paula Chemistry Ohio Room 13:30 - 15:00

One-pot Approach to 1,2,3-Triazoles Using In Situ Generated Azide Anion

Alkyl and acyl azides are essential precursors in organic and medicinal chemistry yet they are notoriously difficult to work with because many of them have a habit of detonating when isolated in the pure form. We have developed a new approach to both alkyl and acyl azides, using microwave heating to shorten reaction times, in which reaction progress is monitored by infrared spectroscopy. Being able to follow azide generation in situ allows us to track the formation of ionic and covalent azide species conveniently, and then react the alkyl or acyl azide further to produce materials such as 1,2,3-triazoles in one reaction flask with minimal risk.

Polles, Amanda Earth Science Jones Room 11:30 - 11:45

Geocaching in San Salvador: A New Approach to Teaching Geoscience Subjects

Geocaching is a popular pastime that involves locating a hidden cache using geographic coordinates published on the Internet at websites like Geocaching.com. The Bahamian island of San Salvador has long been the subject of scientific research and teaching through the Gerace Research Center. Tourism on the island has expanded in recent years with the establishment of a Club Med resort. The objectives of the research were to develop a method for using geocaching as a means of teaching a variety of geoscience subjects in the “Field Investigations in Geology” course, provide access to geoscience lessons for other student groups utilizing the Gerace Research Center, and to promote awareness of the island’s natural history for tourists visiting the island. Nine different geocaches were established on the island during March 2008 and 2009. In addition, each site was published on the predominant geocaching website, Geocaching.com. The geocaches consist of a camouflaged weather proof field container (30mm Army surplus ammo can) that contains a log book, a tradable item in the form of attractive minerals donated by the Clarence R. Smith Mineral Museum, a geoscience lesson plan, and associated items such as maps, a compass, and a ruler. A typical lesson plan requires a student or tourist to make observations, simple analyses, and basic conclusions about a given site.

Price, Eric Biology Ohio Room 10:30 - 12:00

Phylogenetic Analysis of The Bacterium Klebsiella pneumoniae by sequence data fr

Phylogenetic Analysis of The Bacterium Klebsiella pneumoniae by sequence data from the Two Highly Conserved Genes, gyrB and rRNA. Eric Price (Youngstown State Univ., Youngstown, OH)-Presenting Author Chester R. Cooper, Jr. (Youngstown State Univ., Youngstown, OH) Klebsiella pneumoniae is a common bacterium that lives in the soil. To better understand the phylogenic relationships this bacterium may have with other bacteria, the sequences of two genes, gyrB and rRNA, are being studied to establish definite phylogenic relationships where traditional biochemical tests may be inconclusive or incorrect about a certain organism’s ancestry. To obtain the sequences for these genes, genomic DNA was first isolated and then the specific DNA fragments were amplified using the polymerase chain reaction. These fragments were then cloned into a plasmid carried by the bacterium Escherichia coli. The plasmids were then isolated and their DNA sequences determined. Current efforts are using this sequence information to generate phylogenetic relationships of our isolate with other bacteria.

Pringle, Chad Exercise Science Jones Room 16:15 - 16:30

Weight-loss Outcomes in Laparoscopic Bariatric Surgery Patients (Roux-en-Y Gastr

LRYGB and LAGB are two common surgeries for obesity and previous studies have demonstrated that outcome disparities may be attributed to differences in psychosocial characteristics of patients and type of surgery performed. We sought to examine interactive effects of surgical procedure, marital status and depression, on loss of excess weight over time, in a cohort of bariatric surgery patients. A retrospective review was performed of 413 patients who underwent LRYGB or LAGB at a single institution between 2005 and 2007. Of these, ~130 patients had values for all time points for pre- and post-operative body weight. Data were analyzed using SAS 9.1, where effects on percent of excess weight lost (%EWL) were tested in mixed models with surgical method, marital status and time, and all possible interactions of the three entered as factors. The correlation procedure was used to determine the relationship between depression and weight-loss as a function of marital status. Two-way interactions were found for surgical procedure and marital status, (p’s ≤ 0.001), and time. An inverse correlation was found between %EWL and depression for patients of single marital status (R2 = -0.82, p = 0.0002), while no correlations were noted for those categorized as married or divorced. Our results demonstrate that surgery-type and marital status exert differential effects on weight-loss outcomes for bariatric surgery patients, and that the latter relationship may be modulated by depression.

Purnell, William Mechanical Engineering James Gallery 13:45 - 14:00

Design of Mechanical Systems for a Heavy Crane Operator's Chair

Crane operator's chairs are not presently designed with the flexibility to meet their wide range of applications. Additionally, there are no chairs presently on the market that are rated for obese operators who are legally considered disabled if their weight exceeds 1465 N (330 lbf). As a result, chairs presently on the market must undergo significant modification before installation to meet the demands of a particular application. A chair design that incorporates a set of standardized parts with several modular options is desirable for both manufacturers and customers alike. Ergonomics were stressed since the operator is often confined to the chair for their entire workday. Interchangeability between the mounting locations of current models and this new model was also stressed. Additional options such as an adjustable footrest, seat options (including leather and internal heaters) and mechanized rotation were all implemented. Each chair consists of a pedestal and bearing system. Side consoles containing all of the electrical controls necessary for crane operation are selected based on customer needs. The bearing system was designed for applications that use both manual and mechanized rotation. The optional, mechanized rotation was achieved using a 43 rpm, 8.25 N-m (73 in-lbf) electric gear motor housed inside the pedestal. The bearing system and motorization were both designed to function with a maximum sized operator and the largest set of control consoles.

Ragan, Robert Electrical Engineering Ohio Room 15:30 - 17:00

Application of Laplace Transform to Determine Time Domain Transients and Steady

Derivations of transients of charging current of series RL (Resistor & Inductor) circuit require the applications of differential equations. Since this is typical beyond the mathematical capability of 1st year engineering student, an alternate solution must be used. Using Laplace Transform to covert time domain solutions to frequency domain solutions would allow the use of Algebra and Calculus. The transient current into and voltage across the inductor will be derived. The time domain transient waveforms are created using Microsoft Excel. Electronic Work Bench (EWB) Multisim10.1 (computer simulation software) is used to obtain current and voltage waveform of the RL circuit. The results from Excel and Multisim are compared.

Rahman, Hamza Electrical Engineering Ohio Room 15:30 - 17:00

Implementing the use of ALTERA Cyclone III FPGA technology into Game Design

The purpose of our project is to design a game using FPGA technology and VHDL coding. The project encompasses the use of ALTERA Cyclone III FPGA and VHDL coding in order to run a 4 player Virtual Tennis game on the VGA Monitor. The result and demonstration of our project will be displayed in the class, QUEST presentation and University where they will be students, faculty and staff present.

Ramsey, Jennifer Psychology Ohio Room 8:30 - 10:00

Emotionally Charged Visual Stimuli

Many aspects of our daily lives elicit emotion, and research suggests we are more likely to remember events that provoke emotion (Brown & Kulik, 1997). Prior research on memory has indicated that emotional stimuli seem to be easier to recall than neutral stimuli (Abrisqueta-Gomez, Bueno, Oliveira, & Bertolucci, 2006; Kensinger, 2007). Hadley and MacKay (2006) tested the effect of taboo words on memory and found higher recognition for taboo words compared to neutral words. The current study models the work of Hadley and MacKay; however, pictures are used in place of words. Sixty male and sixty female undergraduate students from Youngstown State University are randomly assigned to one of three conditions: taboo only, neutral only, or mixed (taboo and neutral). A series of pictures (either taboo, neutral, or, mixed) is presented to the participants at the rate of 200 ms per picture. The participants are asked to complete a recognition task by viewing 50 pictures based on the condition to which they are assigned. Consistent with the findings of Hadley and MacKay, it is expected that the participants' recognition will be significantly better for the taboo pictures in the mixed series than for the solely taboo or neutral pictures. The results of this study will provide further evidence to help the field of psychology to better understand how emotions influence memory.

Ramsey, Jennifer Psychology Room 2068 14:30 - 14:45

Summer Art in China, 2008

This presentation will bring China to Youngstown as seen through the eyes of Youngstown State University students who visited china for the first time. The topics discussed include the National art Museum of China, Xian Academy of Fine Arts and Print Making Studio, China Block Printing Museum, Temple of Jianzhen, and Shanghai Museum of Art. These topics are presented and explored through their artistic, historical, cultural, and educational components.

Rapp, Trevor Civil & Construction Engineering James Gallery 9:00 - 9:15

Revit Architecture- The Advantages of Converting to BIM Design Software

Since the advent of computer aided modeling, software has been making the design process of buildings easier than ever before. In recent years, BIM, or Building Information Modeling software has gained momentum, and is supplanting more traditional CAD software. BIM software is different from conventional 2D drafting software in that it allows the integration of multiple aspects of the structure, and then to view said structure in a variety of unique ways. The conversion to BIM software can pose problems, but also comes with its own set of rewards, these being the ability to view all disciplines included in the construction process, and then to catch interference errors prior to field erection. The advantages and disadvantages of converting to BIM software, specifically the Autodesk Revit suite, will be discussed, with the comparative monetary results of both decisions.

Reddy, Bhaskar Industrial & Systems Engineering Ohio Room 15:30 - 17:00

Time Study on L-Bracket Punching at Northern States Metals

At the local fabricating facility of Northern States Metals in Youngstown, Ohio, Youngstown State University Industrial Engineering students in the methods engineering class performed a field study. The specific process studied was the trimming of the edges of the L-brackets. This study forced extra learning about production analysis in the classroom while obtaining valuable experience in the field. Time study analysis was the major technique applied to this environment. Other techniques used include flow diagramming, line balancing, and the analysis of predetermined time study systems consisting of MOST, MTM1, and MTM2. In this study, there was also a chance to use data collection, and work sampling techniques, which were learned in other courses.

Ridzon, Jacklynn Adolescent/Young Adult Education Bresnahan Suite 11:15 - 11:30

Loss of Innocence: A New Theme in Young Adult Literature?

This paper examines the theme and portrayl of sex and the effects of sex on the lives of teenage girls in young adult literature. Research has shown that many young adult novels contain themes that are meant to make the books relatable to the teenage audience. The question is, is sex a new theme in young adult literature and how does it affect the characters and what conclusion can readers come to based on the portrayl of sex and sexual encounters. Two books are examined, Virginia Euwer Wolff's Make Lemonade and Speak by Laurie Halse Anderson. These books serve as two examples that contain characters who are affected by sex and speak to teenage audiences in many ways.

Ridzon, Matthew Mechanical Engineering James Gallery 13:30 - 13:45

Analysis of Structural Components for a Heavy Crane Operator's Chair

Crane operator’s chairs that are rated for obese operators whose weight exceeds 1,465 N (330 lbf) do not exist. Accessibility of this type of job to employees considered legally disabled due to their weight is very low. A chair design that is capable of carrying an obese 1,780 N (400 lbf) operator while still maintaining modularity and backwards compatibility with current chair mounting systems is desirable for both customers and manufacturers alike Since operator weights vary the capability of carrying an obese operator poses a unique challenge. Modular options allow this model of chair to be sold to customers that do not require the added strength with the option of changing components later if necessary. This was achieved by designing several components common to all chair configurations that are rated for an obese operator and supplying options that fit all applications. For the purpose of analysis, a chair carrying the 1,780 N (400 lbf) operator in addition to the heaviest possible set of equipment consoles 2,670 N (600 lbf) was assumed. Finite Element Models were constructed for the chair pedestal, footrest, seat base and bearing tube. Each component was designed to a necessary design factor. Ultimately, this design will be implemented as a modular set available to the customer and future improvements can be made at their request. This design will allow operators who were prevented previously by their disability to take on this job.

Roberts, Ben Nursing Pugsley Room 11:30 - 11:45

It's Not Men, It's Them, The Other

The purpose of this project is to explore the definition of identity. The essay examines the portrayal and perception of a magazine photo found in a popular, contemporary magazine. The project bases its reasoning upon support found in the essay titled “Looking at Women” written by Scott Russell Sanders. The purpose of the essay is to argue and convince others that women are looked upon by men as a result of the way they present themselves. This argument is solidified using the magazine photo of a model selling perfume and the support found in Sander’s essay.

Rodgers, Zachary Chemistry Ohio Room 13:30 - 15:00

NMR Spectroscopic Analysis Versus ChemBioDraw®

Nuclear Magnetic Resonance (NMR) spectroscopy is one of the most useful tools that chemists have at their disposal for working out molecular structure. During Chemistry 3719 and 3720 we look at spectroscopic tools such as NMR and use the ChemBioOffice software to calculate NMR spectra. At YSU we also have access to high field NMR spectrometers to collect the actual spectra of compounds. This presentation will detail our findings in relating calculated spectra to experimental samples.

Rogner, Kathryn Industrial & Systems Engineering Ohio Room 15:30 - 17:00

Productivity and Work Design of the Industrial Process at Northern States Metals

Team of Methods Engineering standouts from Youngstown State University, Industrial and Systems Engineering program, conducted work production studies focused on determining standard times by several different accepted methods (video, MTM, MOST). Also, a work sampling study was performed. In this writing and oral intensive class, the team had the opportunity to explore corporate communication protocols.

Romeo, Breanne Accouting Coffelt Room 16:15 - 16:30

Mind The Gap 2009

Youngstown State University seeks to provide access to study abroad programs that keep within the educational aims of YSU and accommodate a wide range of disciplines in diverse regions of the world; to advise students on meaningful study abroad opportunities; to provide programs and workshops on study abroad departures and re-entry orientations; to foster intercultural skills, knowledge and understanding; and to integrate study abroad into the students' academic year program to the fullest extent possible. Our presentation will show how the university achieved these goals through our study tour of London, England and Dublin, Ireland in January 2009.

Roscoe, Tracey General Studies Jones Room 10:45 - 11:00

Bahamian Beach Excavation

We are going to talk about the beach excavation we did while in San Salvador, Bahamas. We sifted through sand to find what washed ashore on a beach in San Salvador and recorded the levels and the precise spot of our findings and what we found. We have records and pictures to show and explain.

Roscoe, Sarah Multi-Age Education Jones Room 10:45 - 11:00

Bahamian Beach Excavation

In December 2008 we engaged in an investigation of entombed beach debris on East Beach of San Salvador Island, the Bahamas. This work was a continuation of work begun initially in March 2007. Follow up excavations were conducted in January and March 2008. Results of these previous efforts were reported at QUEST 2007 and QUEST 2008. Our research consisted of excavations conducted along two transects situated on portions of East Beach that had not been investigated during previous research efforts. Pits were excavated at ten meter intervals away from the waterline and into the coastal dunes. Excavations were performed using one meter squares. Sands and foreign materials were excavated in ten centimeter layers to determine variations in debris accumulation and concentration at specific depths. Distinct vegetation layering within the excavations indicated evidence of specific storm tide events. Small plastic shards were found consistently throughout all layers of the excavations. Heavier materials, such as glass bottles or denser plastics, tended to concentrate in layers associated with specific storm tides events. Our findings were consistent with previous research efforts which showed that materials were entombed within the sand dunes only after being marooned above the high tide line by episodic storm tide activities. Flotsam deposited on the beach below the high tide line was re-floated by later rising tides and migrated down current along the beach face.

Rudnicki, Thomas Chemistry Ohio Room 10:30 - 12:00

The Inhibition of Staphyloccocus aureus Capsule Production by TC-I-019

Staphylococcus aureus (S.aureus) infections have become increasingly problematic due to antibiotic resistance which can be attributed to virulence factors such as the presence of a polysaccharide capsule. Two capsular serotypes, 5 and 8 account for over 90% of methicillin resistant Staphylococcus aureus (MRSA). The objective of this study is to inhibit the production of S.aureus capsule by administration of a carbohydrate compound which mimics the capsule structure. A S.aureus strain which produces capsular serotype 5 was treated with varying concentrations of the glycomimetic compound, TC-I-019. An Enzyme-linked immunosorbent assay (ELISA) was then performed to determine the effects of TC-1-019 on capsule production. The cessation of capsule production will make the bacteria more susceptible to elimination via the host immune system. These compounds which reduce capsule formation can serve as a form of treatment for S.aureus infections which are currently resistant to a myriad of antibiotics.

Ruess, Megan Geology Jones Room 11:00 - 11:15

Changing Shoreline Sedimentation at Sandy Point, San Salvador

Sandy Point is a massive peninsula-shaped sand deposit located on the south western tip of San Salvador. The deposit is likely the result of converging sediment movement southward along the island's western shore and sediment movement westward along the island's southern shore. The resulting sand deposit and shoreline changes dramatically from year to year as demonstrated by annual GPS surveys of the shoreline. The objectives of the research are to characterize the physical nature of Sandy Point for March 2009 and compare the findings to prior investigations. GPS surveys of the shoreline and back beach were conducted as well as the construction of 5 separate shoreline transects and the sampling and analysis of multiple beach sand samples. The results demonstrate a significant change in the shoreline location as compared to location surveys from prior years. In accordance with the shoreline position change, the cross-sections indicate changing topography of the sand deposit. Overall, the sediment deposits can be characterized as poorly sorted coarse sand composed primarily of carbonate shell fragments.

Ruiz, Jared Mathematics Humphrey Room 9:00 - 9:15

The Fine Topology of Minkowski Space

Minkowski space is the 4-dimensional representation of spacetime which is conventionally used to model the special theory of relativity. The topology often used for Minkowski space is the usual 4-dimensional Euclidean topology. While this topology is mathematically correct, it is undesirable to use because it incorrectly represents our physical universe. This presentation introduces a new topology on Minkowski space, called the fine topology. While the fine topology is slightly more complicated to work with than the Euclidean topology, the physical advantages of it are quite useful, as it does correctly represent the universe we live in.

Ruozzo, Ashley Chemistry Ohio Room 13:30 - 15:00

Design of Affinity Matrix with Gluthathionylspermidine

In most organisms, from bacteria to humans, low-molecular weight thiol - glutathione (GSH) plays important roles in the protection from a variety of harmful compounds including oxidants, heavy metals, and many others. The unique feature of microorganism E. coli is the formation of the conjugate between glutathione and polyamine spermidine – glutathionylspermidine (G-Sp) by the enzyme glutathionylspermidine synthetase (GSS). We hypothesize that G-Sp can replace GSH in a variety of reactions and participate in some physiologically important processes in E. coli; therefore, the metabolism of G-Sp might serve as a target for the potential drug discovery in the combat against pathogenic strains of E. coli and closely related pathogens such as Salmonella, Shigella and others. One of the critical steps in the understanding the role(s) of G-Sp in the biology of E. coli is the identification of the proteins interacting with G-Sp. The main objective of this project is the creation of affinity chromatography matrices with G-Sp molecules attached. G-Sp was synthesized enzymatically using GSS and purified using cation-exchange chromatography. It was then characterized by HPLC and mass spectrometry and coupled with epoxy-activated sepharose. The properties of the resulting matrix are under investigation.

Russell, Janelle Chemistry Ohio Room 13:30 - 15:00

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Russell, Sarah Sociology Ohio Room 8:30 - 10:00

A Cool City Survey: Do YSU Students Think Youngstown is a Cool City?

One of the effects of the closing of the steel mills in Youngstown, Ohio during the mid to late seventies is what is referred to as the brain drain. Brain drain can be defined as the migration of educated or talented people from less economically successful areas to areas where opportunities are more plentiful and diverse. In 2003, the state of Michigan recognized that their cities and communities were suffering from the brain drain and decided to assemble a panel of political, educational, and community leaders to address this issue. The panel created the Cool Cities Initiative with the goal of reducing the problem of the brain by building cities that were both vibrant and capable of creating job opportunities. Included in the Cool Cities Initiative was a Cool Cities Survey which examined what young people believed were characteristics of a “cool city.” In this project, we have taken the Michigan Cool Cities Survey and changed it to refer to Youngstown, Ohio. The survey was given on the YSU campus to 913 students. Our findings report what YSU students believe are characteristics of a “cool city” and we compare our findings with those of the Michigan survey. We also include our findings from questions that were asked about whether students believe the Youngstown area possesses the characteristics of a “cool city.” Also reported are the findings that reveal the percentage of students from each college who indicate that they will be leaving Youngstown when they graduate.

Ryan, Caitlyn English Bresnahan Suite 13:45 - 14:00

Afterwards and Other Poems

A collection of contemporary poems influenced by, among others, Philip Larkin, Ezra Pound, and Sharon Olds. The poems explore genres, styles, and structural vehicles that vary greatly from one to the next; yet, every poem incorporates one major thematic commonality: an uncompromising approach to and visceral treatment of its subject matter.

Ryan, Caitlyn Anthropology Ohio Room 8:30 - 10:00

Youngstown's Creative Class: Still Ranked Last?

In 2002, Richard Florida published The Rise of the Creative Class, in which he examines metropolitan areas' standings in the creative economy, ranks them, and uses the ranks as a "barometer" of a region's economic potential. In his study, he ranks Youngstown's position in the creative class mid-sized cities number 32 out of 32. Seven years later, our study challenges his placement of Youngstown at the very bottom. Our own research uses two of his indices: the High-Tech Index (looking at high-tech industry in the area) and the Gay Index (measuring openness to diversity), and also looks at entertainment and outdoor amenities as a third index. Based on our research thus far, we find that Youngstown has come a long way in its development over the past several years and deserves to be reevaluated.

Sajja, Sunitha Master of Science in Mathematics Coffelt Room 11:15 - 11:30

To Calculate the Error Rates Using Naive-Bayes, ID3 and C4.5

To determine whether a person makes over 50k in a year from dataset from around 51states and to calculate the Error rates using ID3 (Iterative Dichotomiser 3), C4.5, Naïve Bayes. Naive-Bayes induction algorithms were previously shown to be surprisingly accurate on many classification tasks even when the conditional independence assumption on which they are based is violated. However, most studies were done on small databases. We show that in some larger databases, the accuracy of Naive-Bayes does not scale up as well as decision trees. ID3 is a algorithm used to generate a decision tree invented by Ross Quinlan.Where ID3 works well than Naïve-Bayes.

Sarty, Seth Middle Childhood Education Jones Room 11:30 - 11:45

Geocaching in San Salvador: A New Approach to Teaching Geoscience Subjects

Geocaching is a popular pastime that involves locating a hidden cache using geographic coordinates published on the Internet at websites like Geocaching.com. The Bahamian island of San Salvador has long been the subject of scientific research and teaching through the Gerace Research Center. Tourism on the island has expanded in recent years with the establishment of a Club Med resort. The objectives of the research were to develop a method for using geocaching as a means of teaching a variety of geoscience subjects in the "Field Investigations in Geology" course, provide access to geoscience lessons for other student groups utilizing the Gerace Research Center, and to promote awareness of the island's natural history for tourists visiting the island. Nine different geocaches were established on the island during March 2008 and 2009. In addition, each site was published on the predominant geocaching website, Geocaching.com. The geocaches consist of a camouflaged weather proof field container (30mm Army surplus ammo can) that contains a log book, a tradable item in the form of attractive minerals donated by the Clarence R. Smith Mineral Museum, a geoscience lesson plan, and associated items such as maps, a compass, and a ruler. A typical lesson plan requires a student or tourist to make observations, simple analyses, and basic conclusions about a given site.

Scott, Kristin Allied Health Ohio Room 13:30 - 15:00

A National Survey of Occupational Attire in Clinical Dietetics

Previous research has demonstrated that patients' perceptions of care are influenced by the outward appearance of their health-care provider, however current practices for occupational attire in clinical dietetics are unknown. We conducted a telephone survey of a nationally-representative sample of hospitals to assess on-duty apparel of registered, clinical dietitians (RDs) employed therein. Seventy-seven percent (n=132) of those who responded reported that typical worksite attire consisted of business casual clothing and of these, 84 individuals (64%) indicated that they wore a traditional, white lab coat in addition to this clothing. Four percent (n=6) of respondents reported use of colored medical scrubs only, while 17% (n=29) reported that they could choose to wear either the lab coat ensemble or medical scrubs. Approximately 37% (n=64) of those surveyed reported a lack of formal dress code for clinical RDs at their facility and of these, 22% (n=14) indicated that they would prefer more formalized guidelines. Seventy-four percent and 33% of respondents (n=124 and n=55) agreed that the clothing a clinical RD wears while working has an effect on how knowledgeable or friendly, respectively, he/she appears to the patient. Differences in proportions of attire-style were found as a function of RD age, facility size and revenue, but not presence of operational management.

Severa, Aaron Electrical Engineering Ohio Room 15:30 - 17:00

Electricity Producing Wind Turbine

The purpose of this project came from the "going green" theme seen around the world today. We decided that at a time like this, on the brink of an energy crisis, some form of an unconventional energy producing product may be necessary. We decided on a wind turbine after contemplating which energy source would be the most efficient to build in our region. The basic purpose was derived then, and that was to build a turbine that would convert the energy that the wind produces by moving the blades into mechanical energy which in turn will be converted into electrical energy through a DC Motor that is attached to the blades. We then decided to convert the electricity that is being charged in a battery as DC electricity and convert it into household AC electricity in order for us to power any item that plugs into an outlet.

Shambaugh, Matthew Electrical Engineering Ohio Room 15:30 - 17:00

Generating Electricity Using Hydro Power

The current volatility in the modern energy industry encourages individuals to conserve power whenever and wherever possible. This design harnesses the energy from wastewater and turns it into electricity that can be used to power electrical devices. With this system, any building can be more efficient by having drain water generate electrical power. According to the U.S. Geological Survey (USGS), the average American uses from 80 to 100 gallons of water per day. The potential energy in the mass of this wastewater can be converted into DC electrical power through the use of power electronic components and a hydro generator.

Sheppard, JD Exercise Science: Physical Therapy Track Ohio Room 13:30 - 15:00

The Effects of Exercise Training and Airway Clearance Treatments (ACT) on Chronic

To assess the effect of an Airway Clearance Treatment (ACT) called the Acapella® before and after exercise training on COPD patients participating in a Pulmonary Rehab program (PR). Randomized Clinical Trial. St. Elizabeth Hospital Pulmonary Rehab Health Center METHODS: Twenty patients with Chronic Obstructive Pulmonary Disease (COPD) from St. Elizabeth's PR program will be randomly assigned to either: Usual care group (UC) pulmonary rehabilitation exercise training, n = 10 or Usual care plus Acapella® (UC+A) pulmonary rehabilitation exercise training in combination with the Acapella® treatment, n = 10. Both groups will complete questionnaires and a breathing test before and after every exercise session to assess changes over time. Also, both groups will be using a newly invented Clinical Dose Recorder (CODR) with FDA 510k approval to measure breathing responses. MEASUREMENTS: Oxygen saturation, heart rate, dyspnea, exertion, blood pressure, and function will be measured during each exercise session. Baseline measurements of height, weight, pulmonary function, functional capacity, COPD Self-Efficacy, quality of life, and nutritional status will be taken. CONCLUSIONS: The study hopes to investigate whether adding an ACT ten minutes before and after exercise training yield additional benefits in the COPD population completing a PR program.

Shone, Wendy Nursing Ohio Room 13:30 - 15:00

Health Beliefs vs. Health Practices in the Youngstown Warren Area

Society as a whole tends to evaluate or rate health not by a definition, but rather by comparison. The contrast between what is perceived as healthy, and what truly is healthy, sometimes is alarming. The purpose of this study was to poll Youngstown Warren area residents in order to identify three areas of health. The first subject dealt with the participants rating their current level of health. The second segment asked about their future health concerns. The last portion referenced things which either encouraged or discouraged the participant from maintaining a healthy lifestyle. A questionnaire was filled out at three local retail establishments. The participants' identity was kept anonymous, there was informed consent, and the group was given ethical clearance prior to the study. The Health Belief Model was the main theoretical framework for this study. Various journal articles and internet writings were used for information as well. The most surprising result was the number of people polled who had no future health concerns. It was also interesting to learn the amount of participants which considered themselves healthy.

Shukla, Amar Civil & Construction Engineering Ohio Room 15:30 - 17:00

Analysis of Structure Using Symbolic Mathematics

Structural Analysis is an integral component of Structural Design. It is used to analyze structures in the area of Civil, Mechanical and Aeronautical Engineering. Structural Analysis requires high level computations. The conventional approach to these computations is numerical in the past due to the unavailability of symbolic mathematics algorithms. We discuss the capabilities of a freely available open source software package Maxima that is capable of performing symbolic mathematics calculations. The use of algebraic solution allows the development of more general solutions at higher abstraction level as compared to the purely numerical solutions to the same computation problems. This work also presents the use of symbolic mathematics to develop algebraic solutions to the several problems in structural analysis for indeterminate structures.

Skalsky, Ashley Astronomy Ohio Room 8:30 - 10:00

Searching for Extragalactic Planetary Nebulae in the Virgo Cluster

We report the results of a survey for extragalactic planetary nebulae in a field near the galaxy M49 in subclump B of the Virgo Cluster. Planetary nebulae can be used as a tracer for intracluster light (ICL). ICL are stars between galaxies in a galaxy cluster and can be used to study the evolution of galaxies in a galaxy cluster. The data was collected using the Kitt Peak National Observatory 4 meter telescope mounted with an array of MOSAIC CCDs. The data was reduced using standard MOSAIC reduction techniques and will be used to detect planetary nebulae candidates using manual and automated methods.

Slavic, Matt — Industrial & Systems Engineering — Ohio Room 15:30 - 17:00

Time Study Analysis of a Packaging Process at Northern States Metal

The purpose of this project was to reinforce the concepts covered in Methods Engineering class with hands on experience as well as gauge the efficiency of packaging processes at Northern States Metals. A time study was performed on site using video recording equipment and then analyzed using TimerPro computer software. Methods of production flow analysis such as MTM-1, MTM-2 and MOST were also considered over the course of the project in order to develop proper work standards and allowances. Not only will these results be a valuable learning tool for the YSU Industrial Engineering students involved, but these results may also lead to ideas for improvement in the company's actual production efficiency. Combined, this partnership may prove to be beneficial to Youngstown State University and Northern States Metals.

Smith, Andrew — Electrical Engineering — Coffelt Room 14:45 - 15:00

Ohmic Contacts to p-type GaN using Refractory Metal Borides

Gallium nitride (GaN) is a wide band gap and has superior materials properties for making a wide variety of optoelectronic devices such as light emitting diodes (LEDs), laser diodes and photodetectors operating in the blue/green to ultraviolet wavelength regions. They also offer the possibility of realizing microelectronic devices for high power/high temperature and high frequency operations. However, in order to take full potential of GaN for fabricating these devices, ohmic contacts of low resistance and high thermal stability have to be developed. The Schottky-Mott theory predicts that for p-type GaN, metals that have high work functions such as Pt, Ni, and Au should form good ohmic contacts. We have investigated tungsten borides (W2B and W2B5) for forming ohmic contacts on p-type GaN. These contacts were deposited by magnetron sputtering and annealed in vacuum and in the rapid thermal processor (RTP). The optimum annealing conditions we found was by annealing in vacuum at 1,000 oC for 5 minutes. Current-voltage measurements showed that at 5 volts, a current of 3.5 mA was obtained.

Smith, Nicole — General Studies — Ohio Room 8:30 - 10:00

Media's Influence on Body Image, Dress in the Workplace and Body Modification

The goal of our study is to investigate and examine the effects of the media on dress and body image, body modification, and workplace attire. This is a highly relevant topic to college students getting ready to combat careers and create their own identity in the world. A 10 questions survey will be created by using elements from the media on dress and body image, body modification, and workplace attire and inputting the questions into survey monkey. A mass email will be sent out asking members of the Panhellenic Council to participate on a volunteer basis. These women represent a diverse sample of the student population here at YSU. The results will be calculated using SPSS and correlations will be compared and evaluated.

Snowberger, Britta — Master of Arts in English — Bresnahan Suite 14:00 - 14:15

Compliments and Cultural Values

As cultural values change, so do the compliments given by members of the evolving culture. Comparing a recent study of 300 compliments collected by YSU students to compliments given in popular television shows of the 1950s and 1960s, one can explain the changing compliment foci with the shift in cultural values over a 50-year period.

Sokol, Tiffany — Marketing Management — Coffelt Room 16:15 - 16:30

Mind The Gap 2009

Youngstown State University seeks to provide access to study abroad programs that keep within the educational aims of YSU and accommodate a wide range of disciplines in diverse regions of the world; to advise students on meaningful study abroad opportunities; to provide programs and workshops on study abroad departures and re-entry orientations; to foster intercultural skills, knowledge and understanding; and to integrate study abroad into the students' academic year program to the fullest extent possible. Our presentation will show how the university achieved these goals through our study tour of London, England and Dublin, Ireland in January 2009.

Sood, Nitin — Biology — Ohio Room 10:30 - 12:00

Use of neurotoxin 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine(MPTP) as a good m

Parkinson's disease (PD) is a neurodegenerative disorder with symptoms like resting tremor, bradykinesia,rigidity, and postural instability.PD is characterized by loss of the functional dopaminergic neurons in the substantia nigra and striatum, and the presence of intracellular aggregates of amyloid fibers called Lewy bodies.PD is accompanied by psychiatric symptoms eg.dementia,psychosis,anxiety and depression. A suitable experimental model is key to characterizing causes of PD as well as identifying drugs that reduce symptoms and slow neurodegeneration. One model used in scientific research involves the use of neurotoxin 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP).MPTP that specifically destroy monoamine neurons has made it possible to investigate the role of dopamine in the etiology of PD.This project looks into the efficacy of MPTP to induce Parkinsonian syndrome in non human primates.MPTP,a lipophilic pro-toxin which crosses the blood brain barrier, is converted in the brain to its active form, 1-methyl-4-phenylpyridinium (MPP+) by monoamine oxidase B.MPP+ inhibits mitochondrial complex 1 and causes ATP depletion,loss of striatal DA neurons,abnormal locomotor activity and memory deficits in rats.MPTP administration in animals produces neuronal attenuation,symptoms and brain structures are similar to those observed in PP patients so that it can be used in labs to study PD physiology and new treatment strategies.

Stan, Jason — Electrical Engineering — Ohio Room 15:30 - 17:00

Prototypical Design of a Power and Control System for an Electric Vehicle

The purpose of this project is to design a prototypical power and control system for an electric vehicle starting from its theoretical concept to an end-user application. This project will not only test our understanding of the concepts that we have learned throughout our undergraduate studies in the electrical engineering program at Youngstown State University, but also will challenge our abilities to apply what we have learned in a team environment. Li ion batteries are used to provide the main system power as well as auxiliary power to two isolated control circuits. In order to reuse the batteries a charging circuit was designed that has the capability to charge sixteen Li ion batteries simultaneously. The control circuit consists of three parts: a variable frequency drive; an inverter circuit and the human interface module. The aforementioned control subsystems were designed individually and integrated into one complete system. The complete system was then successfully implemented by fitting the system onto a cart chassis.

Stanislav, Nina — Merchandising: Fashion & Interiors — Room 2068 13:45 - 14:00

Summer Art in China, 2008

This presentation will bring China to Youngstown as seen through the eyes of Youngstown State University students who visited china for the first time. The topics discussed include the National art Museum of China, Xian Academy of Fine Arts and Print Making Studio, China Block Printing Museum, Temple of Jianzhen, and Shanghai Museum of Art. These topics are presented and explored through their artistic, historical, cultural, and educational components.

Stevens, Erin — Sociology — Ohio Room 8:30 - 10:00

Youngstown's Creative Class: Still Ranked Last?

In 2002, Richard Florida published The Rise of the Creative Class, in which he examines metropolitan areas' standings in the creative economy, ranks them, and uses the ranks as a "barometer" of a region's economic potential. In his study, he ranks Youngstown's position in the creative class mid-sized cities number 32 out of 32. Seven years later, our study challenges his placement of Youngstown at the very bottom. Our own research uses two of his indices: the High-Tech Index (looking at high-tech industry in the area) and the Gay Index (measuring openness to diversity), and also looks at entertainment and outdoor amenities as a third index. Based on our research thus far, we find that Youngstown has come a long way in its development over the past several years and deserves to be reevaluated.

Stieb, Jolene — English — Bresnahan Suite 11:00 - 11:15

Annotations on Student Texts: An Analysis of Traditional and Electronic Comments

Abstract: In this presentation we will discuss an on-going study we are conducting regarding the composition classroom and instructor feedback. This study aims to examine the differences between paper and electronic commenting of student essays. The widespread proliferation of computers in homes, offices, and university campuses has resulted in many classes using e-mail or web-based portfolio systems to turn in student work. In addition, this study is particularly applicable to current university instructors and students because of the increased number of hybrid composition classrooms and online courses. Along with these pedagogies, some instructors have chosen to comment work using word processor systems. This study aims to gather approximately 200 student essays from multiple Writing I instructors at Youngstown State University to determine the unique strengths and weaknesses of each approach. Essay comments for both styles are analyzed for length and content. Unique features, such as comments made only in one style, are noted. This presentation will cover all of this information.

Tacsik, Nathan — Mechanical Engineering — James Gallery 16:15 - 16:30

Super Charger Pulley Test

Pulleys are used in all kinds of mechanical systems such as in automobiles, industry etc. In order to make the step towards a more reliable, quick, and priceless system, loss of the energy transmission should be minimized. Ideally the rotations that the input shaft makes should be equal to the rotation of the output shaft. One method to reduce this energy loss would be to reduce the amount of slippage between the pulley and belt. Other factors that affect the efficiency of the system would be the meshing between the belt and pulley, the tension in the belt, the materials selection, and the rates of acceleration/deceleration. We were given 3 pulleys from which a repeatable experiment was to be devised to test the amount of slippage. The pulleys given were such that one had an anti-slip coating; one was the exact same without the coating, and the last was a competitor's pulley without coating. A procedure is proposed in which the setup will be kept same for each test run and the only part that will be changed is the pulley. Our design is very simple, priceless, and obtains the results by measuring the input and output rotations. The percent error will then be calculated for each pulley and it is expected that the results verifies the least amount of energy loss.

Tamayo, Michelle Mechanical Engineering Technology James Gallery 10:30 - 10:45

Energy Saving at Youngstown State University

Using energy efficiently and saving money are the goals for everyone. Youngstown State University has implemented a new heating/cooling system in order to use energy more efficiently. In order to make certain these changes were not doing the opposite of plans, the energy was considered for electricity, gas, steam, and chilled water. This led to more changes such as changing all the lighting fixtures, which too saved energy use for the University

Tatebe, Caleb Electrical Engineering Ohio Room 15:30 - 17:00

Get Fresh: A Mathematical Model of a Desalination Machine

Using van't Hoff's equation for reverse osmosis, (π=cRT), we can derive a desalination differential equation, ((dx/dt)= ΦA(ΔP-(cVRT/(V-x))). We will study how the parameters under our control, (ΔP, V, Φ, A), affect the amount of freshwater that can be extracted from a brine solution. Using direction fields and separation of variables, we will analyze the affects of these parameters and make recommendations on how to optimize the efficiency of a desalination machine that fits certain criteria.

Taylor, James Geography Humphrey Room 13:30 - 13:45

Russian America: Russia's Approach to Alaska

As Russia continues to resurge from its Cold War humiliation, this still powerful nation is looking to expand its economy while continuing to aggravate the Western world. Alaska , America 's gigantic, sparsely populated Arctic outpost, has had a long, storied history with its Russian neighbors. This paper explores Russian interest in and attitude toward Alaska , from its imperial history to the present day. The essay will also provide a brief description of Russian foreign policy and list possible reasons why Russia has not invaded our forty-ninth state. Key Words: Alaska , Russian Federation , Heartland Theory, Eastern Europe , hydrocarbons

Taylor, James Geography Humphrey Room 14:15 - 14:30

The Effects of the Ural Mountains on the Climate of the former Soviet Union

This project seeks to explain the role that the Ural Mountains have on the Soviet Climate, especially in the South Ural Region of the Russian Federation and extreme northwest Kazakhstan. This research also focuses on why a combination of unique upper-air patterns and topography set the South Ural region apart from the rest of the former U.S.S.R. In this project I compared raw climatological data from the leeward and windward sides of the Ural Mountains to explain the effects of orographic lifting and temperature inversions on the South Ural Region. Key words: Russian climatology, Ural Mountains, orographic lift, Siberian anticyclone, temperature inversion.

Temelkoff, Daniel Chemistry Ohio Room 13:30 - 15:00

One-pot Approach to 1,2,3-Triazoles Using In Situ Generated Azide Anion

Alkyl and acyl azides are essential precursors in organic and medicinal chemistry yet they are notoriously difficult to work with because many of them have a habit of detonating when isolated in the pure form. We have developed a new approach to both alkyl and acyl azides, using microwave heating to shorten reaction times, in which reaction progress is monitored by infrared spectroscopy. Being able to follow azide generation in situ allows us to track the formation of ionic and covalent azide species conveniently, and then react the alkyl or acyl azide further to produce materials such as 1,2,3-triazoles in one reaction flask with minimal risk.

Theodore, Nhemie Communication Studies Humphrey Room 10:30 - 10:45

Should College Athletes be Paid?

In this day and time with college sports growing in popularly which also means dollar signs and question is again raised. Should these guys be paid? I believe they should but only the two or three sports of the university that generate significant income. That may sound unfair but life is unfair. You must give in order to receive.

Thompson, Amanda Food & Nutrition Jones Room 15:30 - 15:45

Nutrition Genomics

Nutrigenomics is not a study of a single field, but is a combination of two fields, nutritional genomics and nutritional genetics. Nutritional genomics is the effects of ingested nutrients and other food components on gene expression and gene regulation. Nutritional genetics is identifying human genetic variations that cause phenotype responses to diet among humans. Thus, nutrigenomics involves researching the role of nutrients in gene expression and those in nutrigenetics determine how polymorphisms affect response to nutrients. There is an association between genes and their physiologic function in which mistakes in the genes are correlated with dysfunction and disease. For the past 50 years physicians have focused on treating manifest disease and developing drugs and technologies in which to treat these diseases. However, with the evolution of nutrigenomics, the central role of genetics in health and disease can impact the way that health is viewed. With the knowledge that disease is genetically based but environmentally influenced, we can focus on targeted intervention and prevention. Some diseases are caused solely by mutations in genes. However, some diseases are caused by a combination of environment and genes. These genes cannot be changes, but the environment can. Currently, there are about 20 genes that have polymorphisms that have shown a great chance to be overcome with dietary food modification.

Tofil, Lisa Biology Ohio Room 10:30 - 12:00

Quantitation of Ventricular Collagen in Male and Female Spontaneously Hypertensive Rats Using Hyd

Hypertension, or chronically elevated blood pressure, can result in altered cardiac function and ultimately heart failure if left untreated. Hypertension can lead to cardiac hypertrophy where an increase in myocardial mass, myocyte size, and collagen deposition in the heart occurs. Hydroxyproline, a nonessential amino acid, is found primarily in collagen. As a result, measurement of the hydroxyproline content in tissues has been used to determine collagen content. We will test the hypothesis that the ventricular collagen content in the hypertrophied ventricles of males is greater than in females using a modification of Reddy and Enwemeka's hydroxyproline assay (1996). Our preliminary studies show that this method is highly sensitive and reproducible. The absorbance at 550 nm is linear from 1.0 to 20 µg of hydroxyproline. The slope of the standard curve ranged from 0.0106 to 0.1082 ± 0.0381 and the R values ranged from 0.7374 to 0.9784 ± 0.0878 (N=5). Future studies will use this assay to measure cardiac hydroxyproline content.

Tsarnas, Tracilyn Professional Writing & Editing Bresnahan Suite 16:00 - 16:15

She Got It: A Study of HipHop Slang

This presentation focuses the way modern hip-hop lyrics create new phrases that slowly become main-stream. The phrase "it ain't trickin' if you got it," makes no immediate sense. However, by teasing it apart using the linguistic study of formation, we come to understand that the intended meaning is, "it's not pretending when it's genuine." This study considers the song "She Got It," by 2 Pistols and T-Pain, and both studies and discusses the lyrics: how the phrases were formed, what they mean, and how they are understood by the hip-hop audience.

Turner, Kevin Mechanical Engineering James Gallery 14:45 - 15:00

The NASA Great Moonbuggy Race

The original Lunar Rover Vehicle (LRV) was built by NASA for the Apollo 15 (NASA 2009) mission, in July of 1971. There was limited space for travel and a multitude of design requirements needed to safely maneuver the LRV on the moon. Those requirements that were met by NASA are similar to the requirements that are used for The Great Moonbuggy Race that is held annually in Huntsville, Alabama. The Moonbuggy must be human powered with no energy storage devices. It also must be able to fit, unassembled, into a box with the dimensions of 1.22 m x 1.22 m x 1.22 m (4'x4'x4'). It must be carried 6.1 m (20 feet) by the two riders who will be operating it, have a minimum clearance of 0.381 m (15 inches) with the riders on board, turning radius of 4.572m (15 feet) or less, and be able to handle inclines of 30 degrees. The vehicle must also come equipped with a mock antenna, TV camera, radio, two simulated batteries, electronic controls, fenders, and a school or national flag. The design challenge is to improve upon last year's design while staying within this year's budget, making the vehicle more competitive and reliable. The challenges were met by strengthening the driveline and modifying the pedal mount. The rear suspension was also redesigned to accommodate new hubs that improved the competitiveness and overall design of the buggy.

Vaughn, Velissa Communication Studies Humphrey Room 10:45 - 11:00

Hope Amidst All Hell: The Analysis of the 44th Inaugural Address

Americas' inferno is fueled with a backdrop of corporate greed, a collapsed economy, and a bailout of Wall Street. President Barack Obamas' inaugural address attempts to extinguish this fire with a message of hope. Initially, we overview the history of our President, the theme of the inauguration, the historical circumstances and the hellish situation that America was facing, and tied that to the inaugural address. Collectively, all of this affected what the speech had to include. We found that the historical implications of it being an inauguration speech, him being the first African American President, and the economic situation of the country determined what Obama had to talk about. We also explained how this speech brought us all together, particularly the imagery in the speech, the arrangement of his words, and the specific words he chose to use. We also found that the speech lacked factual information or directive information, but was more descriptive and focused on ideas that were desirable.

Vazquez, Brennan Electrical Engineering Ohio Room 15:30 - 17:00

Radio Interferometer Telescope

Radio telescopes are used to view celestial objects that emit strong radio signals, such as supernovae remnants, neutron stars, galactic centers, and the Sun. The radio telescope captures radio waves from space and records the strengths of the signals via specialized data processing software. This is different from the traditional optical telescopes that use mirrors to view the observable celestial objects. One benefit of radio telescopes is that radio waves are able to travel through interstellar extinction caused by dust, gas, and the Earth's weather conditions. Another benefit of using a radio telescope is that it can detect frequencies ranging from 103 to 109 Hz; whereas an optical only views the visible spectrum which is 1014 to 1015 Hz. Since a radio telescope can detect such a large range of frequencies, it can pick up on local noise easily and receive unwanted signals. Our circuit design consists of a set of filters and amplifiers to block out unwanted frequencies and amplify audible signals. In conjunction with the designed circuit, one set of dipole antennas will capture signals from a large portion of space. Using two sets of dipole antennas with interferometer software on a computer, two waves can be resolved into one signal coming from a particular spot in space. Our design process is completed upon interpretation of this data and acknowledgment of observed celestial objects.

Veeramachaneni, Rathna Chemistry Ohio Room 10:30 - 12:00

Stages of Change

Quantitation of mRNA levels in a strain of Neurospora crassa constitutive for expression of the qunic acid (qa) gene cluster. Rathna J Veeramachaneni and David K Asch. Departments of Chemistry and Biological Sciences, Youngstown State University. Neurospora crassa belongs to the kingdom of fungi and phylum ascomycota and is eukaryotic. Neurospora has the ability to adapt and grow in environments with a variety of carbon sources. Gene systems involved in this adapation in N.crassa such as the quinic acid (qa) gene cluster has been studied from many years. We are utilizing a strain of Neurospora which has the qa-1S repressor gene deleted (S) in it, is used for the study of carbon repression of qa gene cluster. In order to determine the levels of qa gene expression, RNA is isolated from the Neurospora (S) tissue grown in dextrose and quinic acid and one step RT-PCR is carried out. Preliminary results have shown that the messages of the quinic acid gene cluster can be detected in the S strain using this technique.

Veeramachaneni, Rathna Chemistry Ohio Room 13:30 - 15:00

Quantification of Glutathione and Its Conjugate in E.coli Under Various Growth C

Quantification of Glutathione and Its Conjugate in E.coli Under Various Growth Conditions using HPLC: E. coli has the ability to conjugate glutathione (L- -glutamyl-cysteinyl-glycine) and spermidine to form glutathionylspermidine in an ATP-dependent reaction catalyzed by glutathionylspermidine synthetase/amidase. In many organisms glutathione, low molecular weight thiol, participates in the detoxification processes and protection from oxidative damage however the role of glutathionylspermidine conjugate in E. coli is still unclear. The ratio between glutathione and its conjugate with spermidine in the cells depends on their growth conditions. HPLC is used for the detection and quantification of glutathione and its conjugate. Since thiols cannot be detected on their own, 5,5'-dithio-bis(2-nitrobenzoic acid) (DTNB) is used as a derivatizing agent. This compound specifically reacts with thiols producing derivatives that could be detected by absorbance detector at 330 nm. Different strains of E. coli (BL21, DH5α and the stain lacking the gene for glutathionylspermidine synthetase/amidase) are grown under aerobic and anaerobic conditions and their thiol composition is validated by HPLC.

Vernon, Daniel Mechanical Engineering James Gallery 14:45 - 15:00

The NASA Great Moonbuggy Race

The original Lunar Rover Vehicle (LRV) was built by NASA for the Apollo 15 (NASA 2009) mission, in July of 1971. There was limited space for travel and a multitude of design requirements needed to safely maneuver the LRV on the moon. Those requirements that were met by NASA are similar to the requirements that are used for The Great Moonbuggy Race that is held annually in Huntsville, Alabama. The Moonbuggy must be human powered with no energy storage devices. It also must be able to fit, unassembled, into a box with the dimensions of 1.22 m x 1.22 m x 1.22 m (4'x4'x4'). It must be carried 6.1 m (20 feet) by the two riders who will be operating it, have a minimum clearance of 0.381 m (15 inches) with the riders on board, turning radius of 4.572m (15 feet) or less, and be able to handle inclines of 30 degrees. The vehicle must also come equipped with a mock antenna, TV camera, radio, two simulated batteries, electronic controls, fenders, and a school or national flag. The design challenge is to improve upon last year's design while staying within this year's budget, making the vehicle more competitive and reliable. The challenges were met by strengthening the driveline and modifying the pedal mount. The rear suspension was also redesigned to accommodate new hubs that improved the competitiveness and overall design of the buggy.

Vesey, Cory Mechanical Engineering Ohio Room 15:30 - 17:00

Beam Deflection

Our objective was to find mathematically how far a beam would deflect when a known amount was placed on it. We then tested the experiment to find the actual results and compared them with the mathematical numbers we found earlier.

Vinayak, Anubhav Chemistry Ohio Room 13:30 - 15:00

Purification and Characterization of Synthetic Vpr

Human immunodeficiency virus type 1 (HIV-1) is a retrovirus that is well known to be the causative agent for acquired immunodeficiency syndrome (AIDS). HIV-1 contains many proteins such as Vpr, Tat, Rev, Vif, Vpu and Nef that help regulate its function. Viral protein R (Vpr) is an accessory protein that is involved in virus replication and plays a key role in the function of HIV-1. Vpr has the ability to arrest the cell cycle of infected cells in the G2 phase which leads to the immunopathogenicity of HIV-1. There are 96 amino acid residues in Vpr and is conserved in HIV-1, HIV-2 and simian immunodeficiency virus (SIV). Our ongoing study involves the relationship between the structure and function of Vpr as it plays a significant role in HIV and in the pathogenesis of AIDS and we anticipate to present the findings.

Vlock, Dana Middle Childhood Education Jones Room 11:30 - 11:45

Geocaching in San Salvador: A New Approach to Teaching Geoscience Subjects

Geocaching is a popular pastime that involves locating a hidden cache using geographic coordinates published on the Internet at websites like Geocaching.com. The Bahamian island of San Salvador has long been the subject of scientific research and teaching through the Gerace Research Center. Tourism on the island has expanded in recent years with the establishment of a Club Med resort. The objectives of the research were to develop a method for using geocaching as a means of teaching a variety of geoscience subjects in the “Field Investigations in Geology” course, provide access to geoscience lessons for other student groups utilizing the Gerace Research Center, and to promote awareness of the island’s natural history for tourists visiting the island. Nine different geocaches were established on the island during March 2008 and 2009. In addition, each site was published on the predominant geocaching website, Geocaching.com. The geocaches consist of a camouflaged weather proof field container (30mm Army surplus ammo can) that contains a log book, a tradable item in the form of attractive minerals donated by the Clarence R. Smith Mineral Museum, a geoscience lesson plan, and associated items such as maps, a compass, and a ruler. A typical lesson plan requires a student or tourist to make observations, simple analyses, and basic conclusions about a given site.

Vogel, Christie English Bresnahan Suite 11:30 - 11:45

Cross-Cultural Study of Depression and its Manifestation in College Age Women

Though in the 21st century, there has been an insurgence in depression studies done both on women as well as the college age set, creating a new dimension to the puzzle that is depression, many of these studies-old and new- have remained fairly superficial in their quests to answer questions on depression. Attempting to answer the more nagging, personal, important questions such as but not limited to why college age women are becoming so depressed or why Asian American college students are the largest group of depressed college age women? No explorations or therefore explanations can be offered as to how depression can manifest itself in these already stressed women, and some of those manifestations can be life-altering without treatment. This study hopes to engage in the exploration of depression’s manifestations in college age women and come to conclusions about trends as well as correlations and differences between the majority (Caucasian) college age women group and the minority (Asian American) college age group.

Wajda, Douglas Mechanical Engineering James Gallery 14:00 - 14:15

Friction Testing Unit Design for Automotive Applications

Tribology is a very important aspect of engineering in many industrial settings. It is the study of friction losses, lubrication, and wear, which has applications in the automotive industry, manufacturing, and even health products. The particular application of this study in design relates to the automotive industry and the friction testing of braking systems. In order to safely certify rotors and brake pads, extensive testing must be performed to identify coefficients of friction and rates of wear, and this project describes the design and assessment of a multi-faceted friction testing unit. Based on the sizing of a standard 2009 Chevrolet Cobalt LS, the power supply reflected a similar amount of energy that would be found in a typical 96.66 km/hr (60 mph) to 0 km/hr (0 mph) stop. Based on this value, the sensory unit and frame were designed accordingly to accomodate wear and friction coefficient calculation, and need for data output of shaft speed, normal force, and supplied torque. Ultimately, testing was performed to verify outputs, accuracy, and precision. The design process took into consideration all valid and applicable standards of the American Society of Testing and Materials, and the proceeding paper discusses the methods of design and verification, analysis including finite element modeling, and experimentation using the friction testing unit. Impedances during these processes have also been mentioned, with emphasis on problem-solving techniques.

Walsh, Ryan Electrical Engineering James Gallery 11:15 - 11:30

RF Controlled Locomotive Tester

The current method for testing multiple-unit train control cables is time consuming and dangerous. A team member proposed the creation of a wireless remote to do specific tests on the multiple unit cable for a senior project. Initial testing will analyze the most efficient method to transmit signals from inside to outside the locomotive. Construction of the system will include a user operated remote and base unit which is attached to the MU connector during testing. The wireless testing system will have many positive effects to this line of work including the reduction in costs, fewer testing hours, and increased safety.

Wells, Joelle Chemistry Ohio Room 13:30 - 15:00

Cyber-Instrumentation for Predominantly Undergraduate Institutions (PUIS)

Remote control of chemical instruments can greatly improve the quality of research and education at Predominantly Undergraduate Institutions. With the help of remote control software packages such as PCAnywhere, Apple Remote Desktop and many others, it is possible to access the entire desktop of a remote computer from another computer. As a result such software packages offer an initial solution to remote control of research facilities such as X-ray diffractometers, NMR Spectrometers, and Mass Spectrometers. However, such software packages come with limitations because they are not scalable, require large and reliable bandwidth, and are time-consuming. In this presentation, the role played by Youngstown State University to develop a suitable CyberLabNet software that will be scalable, easy to use, easy to administrate, and inexpensive will be discussed. This development will ultimately allow a large number of users at PUIS to remotely access and use facilities available at YSU.

Welton, Sean Electrical Engineering Ohio Room 15:30 - 17:00

Radio Interferometer Telescope

Radio telescopes are used to view celestial objects that emit strong radio signals, such as supernovae remnants, neutron stars, galactic centers, and the Sun. The radio telescope captures radio waves from space and records the strengths of the signals via specialized data processing software. This is different from the traditional optical telescopes that use mirrors to view the observable celestial objects. One benefit of radio telescopes is that radio waves are able to travel through interstellar extinction caused by dust, gas, and the Earth's weather conditions. Another benefit of using a radio telescope is that it can detect frequencies ranging from 103 to 109 Hz; whereas an optical only views the visible spectrum which is 1014 to 1015 Hz. Since a radio telescope can detect such a large range of frequencies, it can pick up on local noise easily and receive unwanted signals. Our circuit design consists of a set of filters and amplifiers to block out unwanted frequencies and amplify audible signals. In conjunction with the designed circuit, one set of dipole antennas will capture signals from a large portion of space. Using two sets of dipole antennas with interferometer software on a computer, two waves can be resolved into one signal coming from a particular spot in space. Our design process is completed upon interpretation of this data and acknowledgement of observed celestial objects.

Werkmeister, Lora Food & Nutrition Jones Room 15:45 - 16:00

Protein Consumption Among Collegiate Students

Certain groups, particularly athletes in power sports, consume greater amounts of protein for muscle development. Many Americans not participating in athletics also consume more protein than is needed for their bodies which in the long term can lead to chronic diseases, such as cardiovascular or renal disease. College students at the Youngstown State University's Main Campus, between the age of 18 and 24 and without medical complications, will be invited to complete a self-administered survey to assess knowledge and practices regarding protein intake from food and supplements. Demographic data that includes self-reported height and weight, calculated ideal body weight, and living arrangements will be used to compare participants. Other basis for comparison will include athletic participation, gender, level of protein intake, and reported influences regarding protein consumption. All participants will be compared to the guideline of 0.8g of protein intake per kilogram of body mass; athletes will be compared to guidelines of 1.0 – 1.2g of protein per kilogram of body mass, as confirmed by most research. We predict that many of the participants will regularly consume more protein than is necessary, and athletes and males will consume more protein than non-athletes and females, respectively.

Whitfield, Ashley Biology Ohio Room 10:30 - 12:00

Generation of Mutants in the Pathogenic Fungus, Penicillium marneffei.

Penicillium marneffei is a dimorphic, pathogenic fungus that grows as a mold at 25°C (room temperature), but converts to a yeast form at 37°C (body temperature). To better understand the genes involved in this conversion process, DNA sequencing is being used to determine the function of genes of interest. These genes of interest are being identified through large scale mutagenesis using Agrobacterium-mediated transformation (AMT). By generating a large scale of transformants through AMT, the identification of genes associated with morphogenesis, melanin synthesis, and cell wall production can be identified. These three areas are believed important to the infectious disease process of this fungus. In our AMT experiments, several mutants have been identified based upon phenotypic differences with the wild-type strain. The observable changes we have easily noted are in colony size, color, and texture. We intend to further characterize the genetic basis for these differences using modern molecular techniques that will identify the mutated gene(s).

Williams, Leonard Mechanical Engineering Technology James Gallery 9:15 - 9:30

Cross-Disciplinary Manufacturing Project

The project is a collaboration between two students, one from The School of Fine and Performing Arts, and the other from the School of Engineering Technology. The project goal was to manufacture an artistic concept, in this case a retro-styled cellular device. The engineering student used concept sketches from the art student to create 3D models. During this process, both students worked together to achieve concept goals while maintaining manufacturability. The models were then used to print a 3D wax prototype, which was then used in an investment cast process to create a bronze prototype. The students needed to make compromises in order to build the project - the art student needed to make it manufacturable while the Engineering Technology student needed to maintain the purpose.

Williamson, Latresa Chemistry Ohio Room 13:30 - 15:00

Determination of Selenium Using Hydride Generation Atomic Emission Spectroscopy

Detection of metalloids such as selenium in the environment is important for technological and health reasons. Selenium in trace amounts has biological importance and hydride generation is one of the most effective sample introduction methods for analytical measurements. Selenium is converted to its gaseous form via hydride generation and the gas is delivered to an atomizer for measurement. Laser Induced Breakdown Spectroscopy, LIBS, is the atomic emission spectroscopy technique that is used in this research to measure the gaseous form of selenium generated by the hydride approach. Selenium atoms are excited by a laser produced plasma and the atomic emission is measured at a selenium specific wavelength near 196 nm. Optimization of the instrument to obtain the maximum wavelength of emission was done on a 10 ppm solution of selenium. The optimized parameters were used to measure various concentrations of selenium in solution ranging from 0 to 10 ppm. A calibration curve was generated using the wavelength to plot intensity as a function of concentration. A limit of detection, LOD, was determined using the data from the calibration curve. Further studies of selenium using laser induced fluorescence spectroscopy are also planned.

Wilson, Lindsay Anthropology Ohio Room 8:30 - 10:00

Youngstown's Creative Class: Still Ranked Last?

In 2002, Richard Florida published The Rise of the Creative Class, in which he examines metropolitan areas' standings in the creative economy, ranks them, and uses the ranks as a "barometer" of a region's economic potential. In his study, he ranks Youngstown's position in the creative class mid-sized cities number 32 out of 32. Seven years later, our study challenges his placement of Youngstown at the very bottom. Our own research uses two of his indices: the High-Tech Index (looking at high-tech industry in the area) and the Gay Index (measuring openness to diversity), and also looks at entertainment and outdoor amenities as a third index. Based on our research thus far, we find that Youngstown has come a long way in its development over the past several years and deserves to be reevaluated.

Wince, Jesse Chemistry Ohio Room 13:30 - 15:00

NMR Spectroscopic Analysis Using ChemBioDraw®

During Chemistry 3719 and 3720 we look at spectroscopic tools such as Nuclear Magnetic Resonance (NMR) which are used by chemists to work out molecular structure. We have been using the ChemBioOffice software to calculate NMR spectra and using the results to tell the differences between isomeric compounds. This presentation will detail our findings beginning with simple molecules and moving on to stereoisomers.

Winters, Jeremy Management Information Systems Coffelt Room 11:30 - 11:45

Twitter - An Instant Source of Customer Feedback

Micro-blogging is one of the fastest growing trends on the Internet today. Part of this revolutionary trend can be attributed to the vast success of Twitter. Twitter is a web-based service that allows user to post up to 140 characters from a multitude of mediums, the web, cell phones, widgets, and many more, updating their "status". Twitter is based on two categories, "following" and "followers". Following is simply a list of those Twitter users that you track or receive status updates from. Followers are those people who follow you to see what you are up to at any given time. This new social media is not only used by individuals but companies have also begun using it as an important source of information. But what do people, and companies, tweet about? The answer is everything and anything. With the Super Bowl being the biggest television event of the year, many marketers would want to know instantly if their commercials were a success or not. Twitter, by design being an instant source of information, could provide marketers with that insight. We also tracked how the public felt about many of the Super Bowl commercials and will try to determine the best possible situation for a company's advertisement to succeed.

Wittenauer, Jessica Marketing Management Coffelt Room 16:15 - 16:30

Mind The Gap 2009

Youngstown State University seeks to provide access to study abroad programs that keep within the educational aims of YSU and accommodate a wide range of disciplines in diverse regions of the world; to advise students on meaningful study abroad opportunities; to provide programs and workshops on study abroad departures and re-entry orientations; to foster intercultural skills, knowledge and understanding; and to integrate study abroad into the students' academic year program to the fullest extent possible. Our presentation will show how the university achieved these goals through our study tour of London, England and Dublin, Ireland in January 2009.

Wolfgang, Adam Mechanical Engineering James Gallery 11:30 - 11:45

Research on Vehicle Fuel Consumption and Methods of Improvement

The desire for an aerodynamic vehicle that is capable of obtaining high fuel mileage per gallon of gasoline is in popular demand. The Society of Automotive Engineers (SAE) Supermileage vehicle was designed to be a lightweight vehicle that operates at a high fuel efficiency. The Supermileage competition is a design project that involves the development and construction of a single-person, fuel-efficient vehicle. The competing vehicles are powered by small four-cycle engines which are modified for fuel economy. The vehicles will undergo a variety of inspections and tests at the competition. The overall goal is to achieve the highest gas mileage, most efficient design, and to encourage fuel economy awareness worldwide. In accordance with SAE's requirements the vehicles chassis must be able to withstand a substantial amount of load. The material was chosen carefully in order to make the car lightweight yet meet strength regulations. Algor Finite Element Analysis was used to find the stresses within the frame and to verify that the frame would withstand any force that it may encounter. In June 2009 the team competed at the Eaton Test Facility to test the maximum fuel mileage achieved as well as present written and verbal reports about the design and construction of the finished vehicle. The ultimate goal was to continue to advance methods in which maximum fuel efficiency is achieved and to bring fuel conservation to the forefront.

Woolstrum, Karen French Humphrey Room 13:45 - 14:00

Study Abroad in Aix-En-Provence, France

The presentation will focus on our summer semester studying abroad in Aix-en-Provence, France. It will include a variety of personal experiences, history of popular sites and areas, cultural differences, and our overall experience of a daily life in France.

Wright, Jannette Nursing Ohio Room 13:30 - 15:00

Health Beliefs vs. Health Practices in the Youngstown Warren Area

Society as a whole tends to evaluate or rate health not by a definition, but rather by comparison. The contrast between what is perceived as healthy, and what truly is healthy, sometimes is alarming. The purpose of this study was to poll Youngstown Warren area residents in order to identify three areas of health. The first subject dealt with the participants rating their current level of health. The second segment asked about their future health concerns. The last portion referenced things which either encouraged or discouraged the participant from maintaining a healthy lifestyle. A questionnaire was filled out at three local retail establishments. The participants' identity was kept anonymous, there was informed consent, and the group was given ethical clearance prior to the study. The Health Belief Model was the main theoretical framework for this study. Various journal articles and internet writings were used for information as well. The most surprising result was the number of people polled who had no future health concerns. It was also interesting to learn the amount of participants which considered themselves healthy.

Yancey, Shaunda English Room 2068 13:45 - 14:00

Summer Art in China, 2008

This presentation will bring China to Youngstown as seen through the eyes of Youngstown State University students who visited china for the first time. The topics discussed include the National art Museum of China, Xian Academy of Fine Arts and Print Making Studio, China Block Printing Museum, Temple of Jianzhen, and Shanghai Museum of Art. These topics are presented and explored through their artistic, historical, cultural, and educational components.

Yatsco, Michael Mechanical Engineering James Gallery 14:15 - 14:30

Power Generation by a Magnetically Coupled Wave Generator

The rising cost of energy along with the increased environmental concerns about the current means of energy production has created a need for more efficient and safer energy practices. A magnetic coupling concept was used to design and build a wave generator to create a more efficient and cleaner power generation. A small prototype was built using this magnetic coupling concept in order to power an LED. This proved that the magnetic coupling device did actually work, at least on a small scale. For this prototype, the design began with fitting the coupling device to a fixed frame. The basic design consisted of a rotating shaft placed vertically with magnets attached while a lever containing magnets placed at 90 degrees from those on the shaft moved up and down, creating a desired linear motion causing the shaft's rotation. This arrangement was placed in a small fixed frame. The magnetic coupling concept involved two rotating magnets set above and perpendicular to one linear magnet that had two more rotating magnets set perpendicular below the linear magnet. As the center magnet attached to a lever is forced upward, the shaft rotates. The rotation of the shaft is caused by the alternation of the poles (repulsion and attraction) caused by the reciprocation of the free moving magnets attached to the lever. As the top magnets attract the lever, it then descends toward the bottom magnets causing the same action. With each wave this, cycle repeats itself.

Yurco, Isaac Mechanical Engineering James Gallery 16:00 - 16:15

Slippage Test of Pulley for Supercharged Automobiles Applications

The objective of this project is to design a repeatable test that will allow for testing of multiple pulleys. This will allow for the comparison of a proposed pulley design to the competitors' and the standard provided. The slippage of the belt on each design will be tested experimentally. An apparatus that can house two different pulleys and a third pulley used to set a standard tension in the belt system. The pulley that is being tested will need to have a drive input to make the setup rotate. The other two pulleys will be used to hold the belt in place, with one being able to vary in position to change the initial tension of the serpentine belt. To test how much the belt slips on the supercharged pulley, the difference between the angular velocities of the test pulley and the idler pulley will be the total slip. The two angular velocities will be measured using a tachometer. The test will be repeated for a competitor's pulley in the similar way. The pulley that has less slip will be the pulley that will have a lower difference between the two angular velocities. To see how better the pulley in question is compared to the competitor's pulley, the percentage difference of each result will be calculated and compared.

Zame, Kenneth Environmental Studies Jones Room 14:00 - 14:15

Prospects of Biodiesel from Algae in the United States.

This research evaluates biodiesel against the conventional fuels of gasoline and petro-diesel for transportation. Though petro-diesel has the highest specific energy, biodiesel compares the most favorably in miles per gallon as well as in the amount of particulate matter, carbon dioxide, carbon monoxide, and hydrocarbon emissions. Following these findings, the prospect of increasing the use of biodiesel in transportation is examined. Micro-algae prove to have a high fuel yield per acre compared to the conventional crops of soybeans, rapeseed and jatropha in producing biodiesel in more significant quantities which would reduce the dependence on gasoline and petro-diesel for transportation.