

HONORS COLLABORATIVE PRESENTATION ABSTRACTS

Gency Abraham, Christina Ayad, Ara Ayeras, Zachery Bohon, Anabelle Dominguez, Guendalina Guidotti, Leila Hamzo, Muniza Hassan, John Joerns, Connor Kelley, Rob MacArthur, Roy Mitchell, Nicole Phillips, Camille Schroder, Giancarlo Toledanes, Kyle White, Alex Yancey, America: The New Rome?, Dr. Houser

The situation of classical Rome was one unprecedented in history. For the first time, a single society found itself to be responsible for the entire known world. That it was, in the end, not equal to the task is hardly surprising. That it managed this task for so long, however, is nothing short of astonishing. Indeed, what Rome did has so astonished the western world that we have been attempting to rebuild it ever since. Many other nations and peoples have attempted to become "the empire" in Rome's place. We maintain that, whether willingly or not, America is today busily occupied in playing Rome. What we hope to present are the points of similarity between us and them, and what lessons the Roman experience might hold for our future.

Abstracts of Presentations (Alphabetical Listing by First Author)

Abraham, Gency, DONNE AND MODERN MEDICINE, Dr. Clinton Brand, English

A new trend in medical education involves Literature and Medicine courses that a handful of medical schools have applied to their curriculum. There is a great need for such an approach to education in our contemporary society where medicine has been dehumanized. Literature has been shown to enrich the medical profession and individuals. The ability to reflect especially in light of suffering is rewarding for all but crucial for a physician. John Donne, arguably the greatest metaphysical poet, produced one of the most penetrating and enlightening explorations on suffering following his affliction. His Devotions Upon Emergent Occasions shows the meaning of suffering and how it can enrich a human person. Such a work enables one to deal with life, experiences and emotions, all of which are necessary for a physician to give his patients the greatest quality of care. This article will explore the values that can be derived from Donne's devotions both for the common man and for the health professional. Contemporary medicine is trying to humanize itself, but where did we lose that human aspect? What and how do we gain from suffering? How can we apply Donne's insights to improve practical and educational medicine?

Ali, Mehwish, MIDDLE EAST: ROADBLOCKS TO DEMOCRACY, Dr. Hans Stockton, International Studies

The Middle East has long suffered from deficiencies in development and modernization, and a number of the countries that constitute the region qualify as LDCs (least developed countries). Despite this critical statistic, the authoritarian regimes populating the region retain their legitimacy. Through analysis of the theories of transitional democracy and the persistence of authoritarian regimes, this paper will seek an understanding of the factors that have hindered democratization in the Middle East. In examining conditions that contribute to state legitimacy in the region, five variables will be studied: economic performance, level of human development, regime repression, presence of an external threat, and the character and strength of the opposition. In addition, this paper will go further than measuring the progress of democratic transition and assess which countries in the troubled region show greater promise in the establishment of democratic institutions. The aim of the research is to further inquiry into the internal failures of the regimes in question, and the paper proposes a theory as to why it is that mass mobilization, as it was witnessed in other regions of the world in their respective "waves of democratization" has yet to be seen in the Middle East. Although each of the five factors examined in the research contribute to the deficiency of democratic institutions in the region, the oftentimes non-democratic, weak, and divided character of the opposition in these countries, a direct result of brutal regime repression, has been the primary obstacle for democratization in the Middle East.

Alrehani, Nawaf; Chiali, Ilyas; Vasquez, Aracely; Ali, Yesha, PRESENCE OF SECONDARY ENDOSYMBIONTS IN BEMISIA TABACI WHITEFLIES, Dr. Rosemarie Rosell, Biology

Whiteflies are pest insects that feed on the phloem of plants. They require the presence of bacterial endosymbionts contained within an organ known as the bacteriome. The endosymbionts are essential to the whitefly's survival in that they provide essential nutrients not present in the plant phloem. However, some symbiotic bacteria interfere with reproduction leading to a detrimental effect to the whitefly. Endosymbionts present in arthropods are characterized as belonging to one of two categories: primary or secondary. Previous studies have shown that the whitefly primary endosymbionts belong to the α -proteobacteria. Several secondary endosymbionts have been identified; however, these are not present in all species or in every individual of a species. The objective of this experiment was to focus on the secondary endosymbionts present in the insects and to further confirm the presence of known secondary endosymbionts species, *Arsenophonus* and *Wolbachia*. In order to do this, we extracted genomic DNA from whiteflies in the last instar stage of development. Using polymerase chain reaction (PCR), we used primers specific to bacterial 16S rDNA of secondary endosymbionts to amplify multiple DNA copies to use in bioinformatics studies. Positive results led us to further investigate the presence of specific endosymbionts, *Arsenophonus* and *Wolbachia* species. We then sent the results for sequencing and utilized Genbank database to reconstruct the phylogenetic relationships of these secondary endosymbionts.

Angelone, Kelli, SUCCESSFUL BROWNFIELDS REDEVELOPMENT: A PRIMARY ANALYSIS, Dr. Ravi Srinivas, Environmental Studies

Concern over the daunting number and difficulty of redeveloping Brownfields in the United States has grown steadily in the last decade. This study is a preliminary analysis of Brownfield redevelopment projects in Houston, TX in hopes of making the redevelopment processes an easier one for future developers. First, critical factors that affect the success of the redevelopment projects were identified. Next, the factors were incorporated into a model highlighting the interrelationships between them. These factors within the model were used as criteria to analyze multiple cases in the Houston region and select cases nationwide. Preliminary results reveal a need for multiple factors to be favorable in order to achieve overall success.

Attie, Kristen, THE EFFECTS OF THE MASS MEDIA ON BODY IMAGE, Dr. Robin Williamson, Communications

The effects of the mass media on body image using Leon Festinger's social comparison theory were investigated. Festinger's social comparison theory asserts that humans engage in social comparison to evaluate their opinions and abilities. Past studies have also confirmed that individuals evaluate their appearance using the same method. One investigation found that females were more likely to evaluate their appearance by comparing themselves to a universalistic target, such as the ideal female body type portrayed so often in many forms of mass media. Moreover, those females who did so were generally less satisfied with their appearance. Additional studies that tested the effects of TV and other forms of media consumption on the body image of adolescent females were included as well. These studies reveal startling statistics about the dwindling size of female models and the increase of eating disorders generally. Finally, the film "The Devil Wears Prada" was examined as a case in point-- how unrealistic standards imposed on women by the fashion industry and mass media can affect the body image of adolescent females.

Avalos, Christian D.; Marin, Miguel; Rosell, Rosemarie, IDENTIFYING THE ENDOSYMBIONTS OF THE GLASSY-WINGED SHARPSHOOTER, HOMALODISCA COAGULATA BY FLUORESCEN, Dr. Rosemarie Rosell, Biology

The glassy winged sharpshooter (GWSS), *Homalodisca coagulata*, is a major insect pest of grapes that has caused millions of dollars in damages to the vineyard industry of California. Recently GWSS have been identified as pests in grapes of Texas. These insects have specialized organs called bacteriomes, which contain insect cells, called bacteriocytes that house bacterial endosymbionts. The bacteria have been shown to be necessary for the insect's survival. Molecular methods have shown that the bacteria are members of the gamma-proteobacteria, specifically *Candidatus Baumannia cicadellinicola* and the Chlamydia, specifically *Candidatus Sulcia muelleri*. In our studies, we used fluorescently labeled rDNA probes in conjunction with fluorescent in situ hybridization (FISH) and laser scanning confocal microscopy to localize the bacteria in the bacteriomes. The *Sulcia* bacteria were pleomorphic in shape and cell wall deficient and the *Baumannia* were more typical rod shaped gram negative bacteria. Future work will focus on correlating species identification with morphology at the electron microscope level.

Avila, John Jr., GENERATION OF A PLASMID VECTOR FOR USE IN ELUCIDATING THE REGULATORY MECHANISM OF BHLHB4, Bramblett, Debra, Biology

This study was concerned with identifying the cis-regulatory region of the murine gene *Bhlhb4*, more specifically, the promoter region. This region is responsible for the regulation of gene expression. A 5 kb nucleotide sequence upstream of *Bhlhb4* was amplified from mouse genomic DNA and analyzed using gel electrophoresis in order to verify that the product was of the correct length. The product, which was of the appropriate length, was then inserted and ligated into a plasmid vector. The plasmid and insert were named pGL3-B4-pro. This plasmid was then resolved on a gel and analyzed using restriction endonuclease digestion. We plan to use pGL3-B4-pro to test the ability of the fragment 5 kb upstream of *Bhlhb4* to direct transcriptional activity. To do this we will take advantage of the luciferase reporter gene system to perform transfections in p19 cells. Our long term goal is to generate truncations and mutations of the 5 kb fragment, using pGL3-B4-pro, to generate molecular tools that can be used to elucidate the molecular mechanism for the regulation of *Bhlhb4*.

Ayad, Christina, A MULTI-FACETED THEORETICAL ANALYSIS OF POPE BENEDICT XVI'S SPEECH AT THE UNIVERSITY OF REGENSBURG, Dr. Robin Williamson, Communications

On September 12, 2006 Pope Benedict XVI addressed an academic audience at the University of Regensburg on the issue of faith and reason. As a result, differences in interpretation emerged between the Christian community and the Muslim community. Some persons in the Christian community regarded

the message as a calling for open interfaith dialogue regarding the issues of faith and reason. On the other hand, some members of the Muslim community interpreted the message as an assault on the fundamental beliefs of the Islamic religion. Because the purpose of the speech was interpreted differently by the two religious communities, linguistic and cultural differences surfaced. The impact of this speech along with subsequent explanations by the Holy Father and varying responses from Islamic leaders has been a subject of continuing controversy. This presentation examines Pope Benedict's speech and ensuing debate using Kenneth Burke's Pentadic criticism—Act, Agent, Agency, Scene and Purpose—to explain the divergence between intention and result.

Ayeras, Ara Marie, EXPLORING NEURAL CIRCUITRY IN MOUSE BHLHB4 KNOCKOUTS, Dr. Debra Bramblett, Biology

Basic helix-loop-helix (bHLH) factors are a family of transcription factors important in cell differentiation processes, particularly in neuronal cell fate determination. Among these is Bhlhb4, which has been associated with the development of retinal rod bipolar cells (RB). These cells indirectly transmit light information received from rod photoreceptors to retinal ganglion cells via amacrine cells, which process light signals prior to relaying the information to ganglion cells. Synapses between RB and amacrine cells are located in the inner plexiform layer (IPL) of the retina. Bhlhb4 knockouts (Bhlhb4 ^{-/-}) of *Mus musculus* have been shown to result in dysfunctional rod bipolar cells, leading to eventual cell death. It is unclear how amacrine cells normally involved with RB connectivity are affected by the loss of RB cells. Immunofluorescence and histological methods were conducted on both wild type and Bhlhb4 ^{-/-} retinas to observe the IPL composition in the absence of Bhlhb4. Using fluorescent antibodies that differentially stain for certain cellular components, the axons of specific cell types may be identified in the IPL. Of particular interest was the stratification of amacrine cell axons in the IPL, as well as the detection of an unidentified amacrine cell type residing in the inner nuclear layer (INL). The Bhlhb4 ^{-/-} allows for better visualization of this unclassified cell type. Hematoxylin and eosin staining were also used to observe IPL morphological changes. It is hypothesized that amacrine cells may reroute axon connectivity from RB to another target. The results of this study can be used to further characterize the functional importance of Bhlhb4 in mouse retinal development.

Baird, Charles Lee, JOURNALISM PRIOR TO WW2, Dr. Joseph McFadden, History

I will examine the media sources of the time specifically the Houston Chronicle and the New York Times and compare their coverage of specific events leading up to the entrance of the United States into World War II. I will search for understand as to how these media establishments covered these events in comparison. I will examine articles by these two newspapers with regard to the remilitarization of the Rhineland, Arsenal of Democracy Speech, the invasion of Poland and the Lend Lease Deals. I will be looking for personal relationships between the issues and the reactions of the White House. Questions hope to answer what kind of relationship did the press have with the first press secretary as opposed to today's media? Did one newspaper have a better relationship with the new press secretary as opposed to the other? Where there any regional differences in the reports of these papers? What kind of respect where these newspapers accorded with? What were the relationships between these two cities like? Houston was only a small developing city and New York was a major metropolitan center of economics. Would a small Texas rural town have the same reaction to events in Europe as New York? Who were the writers? Of what descent were they and what do their experiences reflect? Were there fears of Hitler within the United States? Was the isolationist policy preferred to a higher degree in one area as opposed to the other? Whom was influential in the city government of these two cities and would those individuals have had any effect on what was published in their newspapers?

Balderas, Monique; Iglesias, Norma; Okoh, Chinye, CULTURAL INTELLIGENCE AND EMPLOYEE'S PERCEPTION OF THE WORKPLACE, Dr. Ly Phan, Psychology

Some studies have been done in the past that looked at opportunity for promotion and employee/supervisor interaction, but none of them looked at each one specifically. They were usually combined with other variables and results were not given for them alone. Cultural intelligence is looked at as well, but hardly any studies have been done on it. This is important because there is so much diversity in the United States, especially in the workplace. The purpose of this study is to look at the relationship between cultural intelligence and two things: opportunity for promotion and employee/supervisor interaction. The participants are approximately 400 ethnically diverse males and females in the metropolitan area between the ages of 21 and 70. A survey was given to the participants on cultural intelligence, job satisfaction, job stress, and opportunity for promotion. The results showed that where there was a positive relationship between a person's perception of cultural intelligence and opportunity for promotion $r(104) = .258, p = .01$, and their perception of cultural intelligence and employee/supervisor interaction $r(104) = .399, p = .01$. The implications of these results will be discussed.

Balderas, Monique, TROUBLED NEIGHBORS, Dr. John Burke, Political Science

Historically, the United States and Latin America have had a relationship full of conflict, mistrust, anger and sometimes cooperation. Relations between them have changed with each president that has come into power in the United States. Latin America has been a top priority for some and low priority for others. The presidential administrations can be categorized into two groups: one that is pro-Latin America and the other is anti-Latin America. Franklin D. Roosevelt and John F. Kennedy are examples of administrations that put Latin America at the top of their agenda. Relations between Latin America and the United States were at their best and their policies were received in a positive light. Harry S. Truman and Richard Nixon are examples of administrations where Latin America fell off the U.S. agenda. Currently, relations between Latin America and the United States manifest the negative model. New factors, such as China, immigration, and Hugo Chavez are playing a big part in relations between the two countries. There is no clear indication of what the future looks like between Latin America and the United States. There are still a lot of questions that need to be answered. In any case, Latin America and the United States have a long road ahead of them before relations will ever regain the positive character of the FDR-JFK model.

Berlanga, Warren, THE MORE THINGS CHANGE, THE MORE THEY STAY THE SAME: THE BIPARTISAN CAMPAIGN REFORM ACT OF 2002, Dr. Jean-Philippe Faletta, Political Science

This study examines the history of campaign finance reform in the United States, and how the Bipartisan Campaign Reform Act of 2002 (BCRA) fits into this historical scheme. This study asserts, as have others, that most campaign finance reform efforts have essentially failed in reducing the importance of money in the political process, resulting in little more than a diverting of the funds. The primary focus here, however, is whether the BCRA has achieved meaningful campaign finance reform. Has the BCRA deviated from historical trends? Has the BCRA accomplished its intended goals? The research outlines the main goals of the legislation and examines data, released by the Federal Election Commission and other sources, from presidential and congressional elections before and after the enactment of the BCRA. While possible methods of solving the campaign finance conundrum are also discussed, the bulk of the research centers on the adequacy of the BCRA itself.

Bohon, Zachery, THE HOUSTON RACE RIOT OF 1917, Prof. Thomas Crow, History

On August 23, 1917 a riot broke out in the camp of the soldiers of the Third Battalion of the Twenty-fourth U.S. Infantry. Approximately 150 of the soldiers marched on the streets of Houston attacking white civilians and police officers. The underlying tensions which brought about this tragedy illuminate the complex relationship between African Americans, the military, and the Jim Crow South as America

prepared to launch into the First World War The mutiny brought to a head the incompatibility of the military's treatment of black soldiers and the way the people of Houston felt African Americans should be dealt with.

Boss, Stephanie, ST. CATHERINE OF SIENA. HER LIFE AND CONTRIBUTIONS TO THE 14TH CENTURY CHURCH, Sr. Madeline Grace, Theology

During the fourteenth century, the Church encountered great difficulties within the Papacy. The seed bed of many of these concerns for 70 years was Avignon, the site of the Babylonian Captivity. While the germination of this captivity is an intricate study within itself, the homeward journey to Rome has much to do with the persuasive gifts of Catherine of Siena (1347-1380). This fourteenth century mystic perceived the backbone of this quest to get the successors of Peter home, that is, to Rome as her deepening devotion to Christ. Catherine of Siena spent many years in solitude before entering into active public ministry and awed many well educated priests with her special gift of infused knowledge. This research conveys not only the resourcefulness of a vibrant Sienese woman as a peace maker but also her undying love for the Church in carrying out what she grasped as her personal mission

Boss, Stephanie, OLD ENOUGH TO FIGHT, NOT OLD ENOUGH TO DRINK: ASSESSING THE NATIONAL MINIMUM DRINKING AGE ACT OF 1984, Dr. Jon Taylor, Political Science

When a person turns 18 years-old, many legal responsibilities are gained, such as being able to marry without parental consent. However, while one may marry, they cannot drink alcohol at their own wedding reception because all states have a mandatory minimum drinking age of 21 years-old. The drinking age has had a major impact on 18 – 20 year-olds, who feel that they are treated as less than either full citizens or adults due to their age and have followed suit through such self-destructive behaviors like binge drinking and document forgery. Following the repeal of the 18th in 1933, prohibition efforts have largely been age-specific. While repeal of the 18th Amendment abolished Prohibition in general, prohibitionists have tried to maintain their hold over young adults. 18 – 20 year-olds have been chosen because of their political impotence and the lack of major economic consequences. Mandating a uniform 21-year-old drinking age in all 50 states neither works, nor does it make sense on either political or Constitutional grounds. This paper will assess the National Minimum Drinking Age Act of 1984, hypothesizing that the law should be challenged on Constitutional grounds because it singles out adults between the ages of 18 – 20 years-old, violating the Concurrent Powers clause of Article I, as well as the 10th Amendment's guarantee of Federalism, and the 14th Amendment's Equal Protection Clause.

Browne, Zachary, ANGEL IN THE ORPHANAGE: HELEN BURN'S AFFECT ON JANE EYRE, Dr. Shannon Forbes, MLA

For my oral presentation, my paper will discuss Helen Burns from the novel Jane Eyre. Specifically, Helen's affect on Jane Eyre interests me the most. The paper will argue that without Helen, Jane would have made different decisions in her life. For example, it would have been more likely for Jane to become Mr. Rochester's mistress if she had not received Helen's divine influence earlier in the novel. Even though Helen is not mentioned again after her death, there is an air of "w.w.h.d?" (What would Helen do?) In the major decisions Jane ponders for the novel's remainder. The paper will also discuss Helen as a "Christ-like" figure. The paper would attempt to answer the question of how Helen came to be so wise in thought and was able to implement those conclusions into action. The dichotomy of Helen being so humble but being so sure that she was doing the right thing fascinates this reader. People have tried to learn from Jesus for over 2,000 years, and He proclaimed to be the Son of God. Subsequently, it is even more intriguing to see similar characteristics in a thirteen-year old orphan who lacks connections to anybody. Helen Burns could be the most interesting and most valuable minor character I have encountered in all the great works I have been exposed to in literature. She is a wondrous individual, and her novel's protagonist would not be the same without her.

Crawford, Wheeler; Bui, HaiVan, Oxidation of Polypropylene Glycols to Diketones, Dr. Wheeler Crawford, Chemistry

An oxidation of a polypropylene glycol, of average molecular weight 230, to the diketone was carried out by using manganese dioxide, sodium dichromate, and oxone™ as oxidizing agents. The polypropylene glycol contains two beta-secondary hydroxyl groups which can be oxidized to ketone groups. The oxidation with manganese dioxide, sodium dichromate, and oxone led to ketone product on the basis of GCMS and IR analysis. However, unreacted polypropylene glycol-230 was still present. Our aim is to find a route to the diketone product that contains a minimum amount of hydroxyl group present. In our future work we will try using other oxidizing agents such as NaOCl to see which one is the best to use when oxidizing polypropylene glycol. After oxidation, the diketone will be used in the synthesis of novel polyether chalcones and their biological activities will be evaluated.

Caicedo, Diana Carolina, EXPLAINING LATIN AMERICAN INEQUALITY: THE ROLE OF CLEAVAGES IN LATIN AMERICAN INEQUALITY, Dr. Gustavo Wensjoe, International Studies

Latin America has experienced economic backlashes, coupled by an uneven distribution of resources and wealth throughout its history. Unfortunately, there is a tendency to focus primarily on macroeconomic and global economic concerns. Therefore, an assessment of the diverse social realities that shape the region is largely neglected. The neglect of these social realities denoted by dividing cleavages has led to debates amongst scholars and policymakers about the centrality of inequality in explaining the development riddle. The notion of inequality in Latin America is not a new subject of discussion within academic circles. The numerous studies that have been conducted in the region are indicative of a persistent interest among scholars in deciphering the sources of inequality in the region. Through the use of three cleavages: ethnicity, gender, and social economic status (SES), this paper will examine and attempt to prove the significant role these cleavages play in explaining the persistent and ubiquitous inequality that has come to be identified with the region. To highlight these differing, but possibly reinforcing cleavages, two countries will be studied: Colombia and Brazil. This paper will provide further analysis of the quintessential role of cleavages as key factors of inequality in Latin America. Despite the lack of academic consensus, the sheer pervasiveness of inequality in the region is substantial evidence of a need to further study not just the consequences of inequality, but the effects and sociological sources of it and the evolution of these variables, namely cleavages. Today, many Latin American countries face serious governance challenges derived from the lack of social cohesion; that can be partly understood by the dramatic inequality associated with cleavages. Therefore, an urgent need to more fully understand the role of cleavages in Latin America is evident.

Calderon, Jennifer, POVERTY IN AMERICA: AN EXAMINATION OF SINGLE MOTHERS AND CURRENT MINIMUM WAGE, Dr. Jean-Philippe Faletta, Political Science

The issue of minimum wage has been in the spotlight recently and has stirred up impassioned advocates of an increase in the current minimum wage. This particular topic is directly correlated with poverty in America. In order to break the cycle of poverty, it is argued that the minimum wage must be increased. Education and money management skills are extremely important in the fight against poverty as well. Year after year the gap between the rich and poor grows larger, diminishing the middle class. If the issue of poverty is not addressed, the middle class is in danger of becoming non-existent with the majority of workers classified as low class. The United States of America has one of the highest GDPs in the world and income wages should reflect this. This study focuses on a specific subset of this population, single mothers. By analyzing data of income and the cost of living, it is found that single mothers are the fastest growing population among minimum wage earners to live in poverty. An examination of the problems experienced, and some possible public policy solutions are discussed.

Cano, Tricia, ENGLISH CATHOLICS UNDER ELIZABETH I AND THE COUNTER-REFORMATION SAINT EDMUND CAMPION, Sr. Madeline Grace, Theology

Seeking to comprehend the attitudes and motivations behind the Elizabethan government's systematic persecution of Catholics, this research endeavor expounds upon a broad range of issues that aided the propagation of the Counter-Reformation in England. Because of the scope of this undertaking, necessary focus is placed upon the Jesuit Edmund Campion, who was a key figure in the missionary efforts deployed from the Douai seminary in Rheims: to administer to the spiritual needs of Catholics in England. Although these missions were established purely from a concern of spiritual nourishment for the flock of England, the Elizabethan government saw them as a political threat which effectively resulted in the capture, trial, and martyrdom of Edmund Campion. Utilizing primary source material from prominent figures involved in the events of the era, combined with citation of historical analysis and expertise, the presentation of this material provides a view of Catholic existence under Elizabeth, and the heroic efforts of one of the Church's champions.

Caro, Mary, SOMEWHERE IN-BETWEEN, Dr. James Barloon, Dr. Janet Lowrey, English

This creative writing project consists of four individual short stories. The stories are written in the first-person voice and portray contemporary women of urban America between the ages of twenty and twenty-nine. Each protagonist is markedly different in her awareness of the world around her, as well as in her own self-perception, and each woman possesses a specific flaw in her worldview. In addition, they all are awakened, some more gently than others, by certain undeniable moments of reality that, while often jarringly painful, present the characters with opportunities for change. The titles of the short stories Tunnel, High-rise, Continent, and Ocean all indicate opposing objects or polar extremes; the overarching title of the work, Somewhere In-between, asserts the need for some degree of moderation in our perceptions of the world. One of my primary goals is to illustrate accurate accounts of young, contemporary women and the real issues at stake in the twenty-something age aside from the brainlessly promiscuous, cosmopolitan-sipping playgirl so often depicted in twenty-first century paperback novels. Moreover, I wanted to point to the complexities that, regardless of age, gender, location, or historical period, are an intrinsic component of the universal human condition. Overall, what I hope these stories do is create authentic representations of young, post-modern women that ask us to evaluate our perceptions of the world and demonstrate the human ability to correct our perceptions that we might therefore more actively participate in the creation of our destinies.

Cedeño, Emily, SEGOLENE ROYAL: IS FRANCE READY FOR ITS FIRST WOMAN PRESIDENT?, Dr. Rolande Leguillon, French

Women are becoming more empowered to seek the highest elected offices in the world. They are playing an increasingly active role in politics and have gained recognition as competitive counterparts to the traditionally male-dominated executive offices. Both the United States and France currently have female presidential candidates for up-coming elections. This study focuses particularly on the French presidential candidate Ségolène Royal, a woman who has attracted great public attention and credibility as she competes in the 2007 French Presidential elections. This study will highlight Royal's political platform, her strengths and weaknesses, and how, if she wins the election, she might transform the political atmosphere not only in France, but also the international arena.

Cisneros, Reina, P-PUFF, O-ON, T-THIS, Dr. Jon Taylor, Political Science

Mary Jane, ganja, cheeba, chronic, doobee, reefer ... the list goes on. These are some of the names of one of the most praised and most denounced substances in U.S. history. This ubiquitous weed has been used for medicinal purposes, clothing, rope, and a host of recreational purposes well before the founding of the Republic. Although this resilient weed has many practical uses, it is, per se, illegal within almost all of the United States beyond an exceedingly small quantity. While other nations have decriminalized, if not

outright embraced marijuana, the U.S. remains mired in pursuing a drug war that it seems increasingly to be losing. Perhaps the time has come for the U.S. to concentrate on the practical policy aspects of taxing and commercially utilizing cannabis, rather than continuing with harsh policies toward marijuana use. Consequently, social science scholars have long discussed the law of unintended consequences to describe the harmful effects of policy initiatives. The war on marijuana is an on-going example of the unintended consequences of government policy: drug wars between international gangs, numerous illegal crossings of the border, and massive government service infrastructure stress. This paper will examine the unintended consequences of the war on drugs as it relates to the history of drug and alcohol enforcement in the United States, the impact on civil liberties, the criminal justice system, and American culture.

Clarke, Sarah, MONEY TALKS: THE COMMUNICATION MODEL AND ITS IMPLICATIONS FOR THE STUDY OF ECONOMIC AID, Dr. Hans Stockton, International Studies

In the realm of economic aid distortion is a fact of life. It has been called by many names— fiscal illusion, relative deprivation, dependency—but all of these terms convey the same basic idea: Aid did not accomplish what it was expected to. Legions of scholars have devoted their lives to studying the reasons for this phenomenon. But every case is different, and generalizations about the causes for Aid breakdowns are therefore difficult to support. The resulting literature seems disjointed and overly specific, and these attributes limit the scope of its applicability. In an attempt to synthesize this literature, the author turns to a seemingly unrelated field of study, namely, communication. She argues that the crux of the Economic Aid process is not the transfer of money. It is the exchange of information. Money is a symbol and like all symbols, it has a meaning both for those who give and for those who receive it. The two meanings are not, however, necessarily equivalent. The process of economic aid is, therefore, one of communication and like verbal communication, the process does not always work. This leads to the question: What new insights into the Economic Aid process can the treatment of Aid as Communication offer? To answer this question, the author will apply Communication Theory to the study of Economic Aid, developing a model that demonstrates how capital and information act as messages in the Economic Aid process, and how various factors interfere with these messages' accurate reception.

Cole, Amanda, STORM AND STRESS, Dr. Janet Lowrey, English

My presentation for the 2007 Research Symposium is an excerpt from my creative writing senior thesis, a novel in progress. In my thesis, the main character, Helen, is preparing for her upcoming journey. She is awakening to a world that holds too many painful or empty realities for her, and she wants to be elsewhere. The excerpt that I will read is a pivotal moment in Helen's awakening; it is the moment after a series of numbing hardships that makes her realize the life she knew is gone. She is in a new world that appears to her inescapably bleak. It is a definite turning point, central to the story, absolutely essential to transporting her to the world she will later encounter.

Cortes, Alejandro, PEMEX: STRUGGLING TO REALIZE A CHANGE IS NEEDED, Dr. Linda Pett-Conklin, International Studies

After the expropriation of all hydrocarbons in 1938 under president Lazaro Cardenas, Mexico was able to create a national symbol that represented Mexican sovereignty in the energy industry. As a result, PEMEX was given extraordinary powers by the Mexican government and it stands today as both the largest and the most solvent company within Mexico. Unfortunately over time, the Mexican government has interfered significantly into the affairs of PEMEX and has hindered its potential to become a strong oil and gas company in the world. Also, PEMEX must find ways to innovate its practices within its fiscal, corporate and governmental relations. In this research, the author suggests that PEMEX must first be demythologized and treated as another company within Mexico. Doing so will allow PEMEX to invest in projects that can extend its viability as a corporation. The author also contends that PEMEX must redefine what its core business is and move away from Mexican societal issues. Finally, the author

suggests that some involvement of the private sector in PEMEX could be beneficial to it because it would increase investment opportunities, mitigate risk and allow PEMEX to think more as a business and less as a governmental agency. In order to stay in the oil industry, the Mexican government must take steps to alter its regard of PEMEX as a government agency, and instead view the organization properly as a market-driven enterprise in a competitive global environment.

Dao, My; Landry, Courtney; Vong, Linda, INHIBITION OF PIGMENT FORMATION IN ZEBRAFISH EMBRYOS TO FACILITATE DETECTION OF GENE EXPRESSION, Dr. Debra Bramblett, Biology

Danio rerio, also known as the zebrafish, is an important vertebrate model organism in developmental and genetic research, due to its powerful genetics, rapid overall development, and external fertilization and development. During embryonic development, pigment formation begins at the prim-5 stage or 24 hours post fertilization and develops rapidly as the embryo matures. The process of pigment formation, also known as melanogenesis, begins in cells of the pigmented retinal epithelium. The pigment cells then migrate dorsolaterally in the skin and also appear on the anterior part of the yolk sac. The target area of study is the nervous system of the zebrafish embryos which includes the retina. In order to facilitate the examination of gene expression by techniques such as whole mount in situ hybridization, treatment of embryos with Phenylthiourea (PTU) during their development can suppress pigment formation. PTU blocks melanin synthesis thus inhibits pigmentation of new melanocytes. PTU can be toxic and unhealthy at high concentrations which may cause adverse effects on the development of the embryos. Thus it is important to observe and compare the rate of development and the quality of the treated embryos to the untreated embryos in order to detect differences in gene expression.

Donna Diggons, FLOWER-PICKING (A MODERN-DAY 'HYMN TO DEMETER'), Dr. Janet Lowrey, MLA

My presentation is a reading of a short story, "Flower-Picking (A Modern-Day 'Hymn to Demeter')," written for Dr. Lowery's "Women in the Classical Tradition" seminar. The story, told from the viewpoint of the grandmother, covers three generations of women. The youngest, a girl of seventeen, turns up missing, and the story is about the profound emotions of the girl's mother, grandmother and grandfather as they search and grieve for the girl. As part of a two-component assignment—one creative, one research—the story rests on the motif of a meadow and flower-picking, which in 'The Homeric Hymn to Demeter' signaled Persephone's coming of age just before she was abducted by Hades. My story is about mortals rather than gods, people who cannot avail themselves of Olympian powers to resolve their deepest life anxieties.

Dodaro, Robert, CHINA'S ECONOMIC EXPANSION: THE BEGINNING OF A PROSPEROUS FRIENDSHIP OR THE START OF AN ECONOMIC CO, Dr. Jean-Philippe Faletta, Political Science

Since September 11th, 2001, the attention of U.S. security policy has been focused on preventing terrorism, the War in Iraq, and problems in the Middle East. While each of these areas is a major concern for the U.S., more attention needs to be focused on the emergence of China as a world leader. Since being admitted into the World Trade Organization in November of 2001, China's economy has grown at a rate of about 9% per year. At this pace, China will have a larger purchasing power than the U.S. by 2030. Will China be able to surpass the U.S. as the world hegemon? Is this a threat to U.S. security? What changes should the U.S. make to its foreign policy in order to prevent a zero-sum trade-off of power with China? Will China's growth create a new blueprint for developing countries to follow while trying to establish their governments? This study addresses each of these questions from a realist perspective.

Dolino, Drew; Flores, Jacky; Aghakasiri, Nilou; Mohammed, Misbah; Tran, Thomas; and Rosell, Rosemarie, DETERMINING INDUCTION OF SUPEROXIDE DISMUTASE IN TEMPERATURE-STRESSED WHITEFLIES, Dr. Rosemarie Rosell, Biology

The whitefly, *Bemisia tabaci*, is an agricultural pest that transmits viral diseases from infected plants to healthy plants. The whitefly has been shown to be able to survive and thrive in high temperatures, like those in the southwest deserts of the US. Superoxide dismutase, or SOD, is a heat shock protein that may help protect the whitefly proteins from denaturing in those high temperatures. SOD works by catalyzing the dismutation of the superoxide ion ($\bullet\text{O}_2^-$), which is formed as a byproduct of aerobic respiration, into molecular oxygen and hydrogen peroxide. If SOD were not present, the superoxide ion would react with hydrogen peroxide in the cell to create the highly reactive and dangerous hydroxyl free radicals. If whiteflies were stressed at different temperatures, they are likely to respond with increased metabolism and respiration, which would lead to an increase in superoxide ions. To combat the increased levels of superoxide ions, induction of SOD enzyme is likely to occur. In this experiment, we used polyacrylamide gel electrophoresis (PAGE) to assay whiteflies exposed to different temperatures to determine if temperature stress induced increased levels of SOD or synthesis of different isoenzymes of SOD. Using this assay, we have shown that SOD was present in whiteflies reared at room temperature (25°C). We predict that in whiteflies exposed to higher temperatures SOD will be induced, which may contribute to increased whitefly survival.

Dominguez, Anabelle, JUSTICE FOR THE WRONGFULLY CONVICTED, Communications

Justice for the Wrongfully Convicted, since its inception in 1989, the magic bullet of DNA testing has helped uncover ugly flaws in the justice system. One of the most pernicious, grave errors is the wrongful imprisonment of innocents, and worse, failing to compensate or redress the injustice dealt. Mounting numbers of exonerations have created a whole population of exonerees with needs that remain unaddressed following their release. In fact, most exonerees never receive any compensation for the years spent wrongfully imprisoned. Thirty states do not have any compensation laws written, and the form in which the states that do provide some kind of compensation are highly problematic, difficult and insufficient. This presentation will examine what comprehensive compensation for the wrongfully convicted means, as well as addressing how to re-incorporate the exoneree population into society. Ultimately, the problem of the wrongfully convicted is larger than the barriers individual exonerees are forced to overcome, and imbues upon all to answer a demand for justice.

D'Souza, Melinda, THE EFFECT OF ENVIRONMENTAL STRESS ON GLUTATHIONE REDUCTASE ACTIVITY IN AIPTASIA PALLIDA, Dr. Joanne Romagni, Biology

Aiptasia pallida are sea anemones that form mutualistic relationships with the dinoflagellate algae (*Symbiodinium* sp). These sea anemones are commonly found in warm, tropical waters. Under common environmental stress, such as temperature and/or salinity stress, enzymes are produced in order to cope with the changes in environment. One of these enzymes is glutathione reductase (GR) which is key in the detoxification of peroxides and also the removal of free radicals that have accumulated during stress conditions. We wished to determine the activity of GR in anemones with and without symbionts. This is part of a larger study documenting the advantages of a mutualistic relationship. Preliminary results indicated that aposymbiotic *A. pallida* had higher GR activity than the symbiotic anemones. Aposymbiotic levels in controls were significantly higher than the symbiotic controls suggesting that they are already stressed without the algae. Bleaching, or the loss of the symbiotic algae, occurs under chronic stress conditions. The symbiotic relationship in anemones is the same as in corals. This investigation will help in understanding the mechanisms of coral bleaching.

Dyke, Myriam Cristina, REGIONAL INTEGRATION AND GLOBAL INSERTION: THE LATIN AMERICA CASE, Dr. Gustavo Wensjoe, International Studies

Over the past two decades developing countries are becoming increasingly focused on greater involvement in the global economy. Latin American countries are prime examples of this involvement at both regional and global levels. This is exemplified by their role in the establishment of regional trade blocs such as MERCOSUR, CAN, and NAFTA, as well as their participation in the GATT /WTO rounds of negotiations. This begs the question what strategies should Latin American countries pursue in order to solidify and promote their position as effective economic participants at regional and global levels? The main objective of this paper is to analyze how economic integration has taken shape in Latin America to date and how this cooperation could bolster Latin American countries insertion into the global economy. This paper argues to the complementarity of regional and global strategies for successful participation in the global economy. The argument is based on the notion that as regional blocs contribute to increases in effective modes of cooperation and economic development among member countries; this in turn improves the international competitiveness of the bloc and its member states. Greater competitiveness is critical to ensure the successful insertion of Latin American countries into World markets. This paper will review the globalization process as a whole and the participation of Latin America in the global economy through the last two decades. It will then discuss how economic integration has taken shape in Latin America to date focusing primarily on the NAFTA and MERCOSUR cases. The paper will then compare the regional and global economic strategies implemented by Mexico and Brazil in order to evaluate the success of each country's strategies with respect to global insertion. According to the previous review, the paper will finally attempt to demonstrate how both regional and global strategies could bolster the capability of Latin American countries to insert themselves into the global economy.

De La Rosa, Chasity; Eaves, Kayleigh; Rosell, Rosemarie, USING BIOINFORMATICS TOOLS TO CHARACTERIZE CYSTEINE PROTEASE GENES IN THE WHITEFLY, BEMISIA TABACI, Dr. Rosemarie Rosell, Biology

Cysteine proteases are important enzymes present in the tissues of many Homopteran, including the whitefly, *Bemisia tabaci*. These proteases function by breaking down proteins and are important components of intracellular and extracellular digestive processes. Specifically, cysteine proteases involve the degradation of proteins through a mechanism involving cysteine thiols. Five DNA sequences obtained from micro-array sequencing methods by collaborators at USDA in Ft. Pierce, FL, were hypothesized to be related to the genes for cysteine proteases. We have utilized bioinformatics databases to characterize each of these sequences. Our research aims to determine whether these enzymes have homeostatic or digestive function in the whitefly. We have focused on the location of similar nucleotide and protein sequences by narrowing our searches based on expectation values, an experimental number generated by bioinformatics search engines based on the probability that the match is possible. Using comparative methods, we have determined the active sites of other cysteine proteases and have used this data to identify the active sites in our sequences. This allowed us to locate the most conserved region of each sequence, which, in turn, will be used to develop PCR (polymerase chain reaction) primers to amplify the whitefly protease genes. From the known gene sequences, we will design oligonucleotide probes and perform in situ hybridizations to localize these enzymes in the whitefly, which will determine the functional roles of these proteases in the whitefly.

Green, Grover, CHARLEMAGNE AND THE RISE OF MEDIEVAL EUROPE: THE CHRISTIANIZATION OF EUROPE THROUGH CONQUEST, Sr. Madeline Grace, Theology

By the end of the 5th century, traces of the power and grandeur of the Roman Empire were all but gone from Western Europe, disappearing under the debilitating weight of governmental corruption and greed, the continuous onslaught of barbarian hordes from the north, and with the disintegration of the once formidable Roman Legions. Christianity emerged from the ashes of the Roman civilization as a force that helped form the base of a new empire in the East and was not only the meaningful factor in preserving the remnants of antiquity, but was also the greatest hope for binding and unifying Western Europe and

staving off total consummation by the barbarian chaos. By the 8th century, the stage was set for the Medieval Church to come into full fruition, and for a king to emerge that would bring church and state together and act decisively in forming the foundations for Christendom. This paper argues that Charlemagne was on the cutting edge of a new style of kingly leadership that unified church and state and by which he derived his power and authority. Beginning with Charlemagne, the destiny of the European king and the Medieval Church were intimately intertwined and inseparable. Furthermore, as this paper will show, Charlemagne played an immensely important role in the formation of the Medieval Church, becoming her defender and promoter of her will. Also, as the driving force behind the Carolingian Renaissance, he ushered in a new era of learning by stimulating advancements in Christian education, liturgy, art, and intellectual thought.

Guidotti, Guendalina, TEACHING THE LIBERAL ARTS IN ELEMENTARY SCHOOLS USING A GREAT BOOKS CURRICULUM, Dr. Terry Hall, Honors

Instruction in the liberal arts seeks to inspire a thirst for learning and acquisition of knowledge, not for a specific vocational purpose, but rather for its own sake. Great books are considered to be literary works that are masterfully crafted to express universal ideas that speak to the whole of mankind. The liberal arts and the great books are therefore taught together and through one another, and both are most commonly associated with university programs. However, the introduction of both the liberal arts and great books as early as kindergarten is worth considering. Specifically, the trivium of the liberal arts includes grammar, rhetoric, and logic and correlates directly with the educational objectives of reading, writing, and oral expression. Furthermore, these skills are taught through the use of children's literature, which could include great books that are developmentally appropriate for the students. Therefore, this research examines specific programs that could be used to implement the liberal arts and great books in elementary school, as well as the benefits, the plausibility of implementation, the required teacher training, and the drawbacks of such an approach to education. Ultimately, the goal of implementing the liberal arts and a great books curriculum at the elementary school level is to foster a self-motivated, lifelong love of learning at the foundation of a child's experience with school.

Guillen, Darla, A NEW PERSPECTIVE ON THE FEMALE LITERARY CHARACTER AS PRESENTED BY KATE CHOPIN IN THE AWAKENING, Fr. Romanus Muoneke, English

Kate Chopin spoke of the submissiveness of women and of their hidden feelings and desires. Some of Chopin's pieces include the subject of the mentally unstable woman whose disease is caused or worsened by her social conditions. This is especially obvious in her work, *The Awakening*, in which Edna Pontellier struggles to fight against her social constraints. Chopin also deals with other risqué topics including: female sexuality, alcoholism, and divorce. In making the female character flawed she is empowering her by giving her a depth that was not present in past female characters. Literature had always portrayed women as the picture-perfect virtue-keepers of their homes who were obligated to be flawless and without sin. In other works they were oftentimes merely props to a leading male character. This technique only makes them two-dimensional characters and misleads real women into believing that they have to fit this idealistic, unrealistic profile. In her writing, women are allowed to be more complicated, dynamic people. The assumed function in much of Chopin's writing is to empower real women and make them aware of their true selves as individuals and not only as roles in society. This theme is personified by Pontellier in *The Awakening*.

Hamzo, Leila, THE POWER OF THE EMPLOYEE, Dr. Leslie Haugen, Honors

Each component of the customer-employee-owner (CEO) cycle (Porth, 2003) contributes a significant part to the success of a company. My primary interest lies in exploring the employee section of the cycle and analyzing the importance in psychological and social value for the employee. Questions/Challenges to explore include: How can companies better motivate their employees to prosper and how does this affect the company's success? To add on to this does a company's corporate cultures have a direct affect on employee value? What is the importance in making sure the employee is satisfied and how does this

affect the other components of the CEO cycle (customers and owners)? These questions are significant in pursuing because they will help in supporting the position of a job being more than just a way to make a living. It will be guidance in showing the significance of living to one's full potential and finding meaning in one's work. The company has to take responsibility in ensuring the over-all success of its employees, because this will benefit not only the employee, but the company as well.

Hassan, Muniza, SYMBOLS OF PROGRESS FOR WOMAN: THE BLOOMER, THE FLAPPER AND THE . . . HIJAB?, Dr. Linda Pett-Conklin, International Studies

The Muslim woman's veil, or Hijab, has been the object of much heated discussion and critical examination, particularly by the Muslim woman's female counterpart, the Western woman. Although not a new source of contention, the Hijab has witnessed a surge in attention following events such as September 11 and the banning of the Hijab in France. What exactly does highly emotive garment represent to the Western woman and to the Muslim woman? This paper will first review literature on the Western women's dress reforms and opinions on the Muslim woman's use of the Hijab. It will then examine the use of clothing as communication and the definition of progress. These two elements set the guidelines for establishing both the Western woman's and Muslim woman's symbolic fashions in terms of progressive movements. Next, this paper will examine two sets of case studies: the Western woman as highlighted by the American woman, and the Muslim woman's experiences in the United States, France, Turkey, and Egypt. Initially, it may seem that the non-Muslim Western woman and the Muslim woman are complete opposites; however, my contention is that the majority of Muslim women wear the Hijab for a primarily progressive motive, similar to the American woman's movements in the 1850's and 1920's. Thus, one can use the Hijab as a symbol to examine the opposing views that two different cultures of women hold towards one another, and to conclude that ultimately they are both seeking the same rights of increased respect, power, and equality.

Hawbaker, Nicole; Johnson, Debra; Tinnerman II, W.N., THE SYNTHESIS OF 3, 4-DIMETHYL-2-PENTANONE, Dr. William Tinnerman, Chemistry

This research describes the synthesis of the commercially unavailable isomeric heptanone, 3, 4-dimethyl-2-pentanone by reacting 2, 3-dimethylbutanoic acid with lithium hydride to form lithium 2, 3-dimethylbutanecarboxylate and treating the carboxylate product with methyllithium followed by aqueous acid. GC-Mass Spectral data of the product of synthesis as well as that of the product of synthesis after undergoing deuterium exchange confirmed that the product synthesized was 3,4-dimethyl-2-pentanone. The successful synthesis of 3, 4-dimethyl-2-pentanone extends our micro-scale deuterium exchange GC-MS experiment in the organic chemistry laboratory.

Hawbaker, Nicole; Phuoc, Vania, FTNMR AND GC/MS EXPERIMENTS for the BIOCHEMISTRY LABORATORY: AMINO ACIDS, Dr. Thomas Malloy, Dr. Michelle Steiger, Chemistry

We have developed Fourier transform nuclear magnetic resonance (FTNMR) experiments and gas chromatography mass spectrometry (GC/MS) experiments on amino acids for inclusion in the Biochemistry laboratory curriculum. The amino acids studied were glycine, phenylalanine, tryptophan, aspartic acid, alanine & methionine, tyrosine, glutamic acid and serine. The proton nmr spectra were obtained by dissolving approximately 50 mg of the amino acids in 0.7 mL of deuterium oxide. A few drops of concentrated DCl in D₂O were added if necessary. In this way, the nmr of the signals on the skeletal carbons was able to be observed. The amino and acid protons had been exchanged for deuterium. In order to obtain GC/MS data for these compounds, it was necessary to derivatize them with N, O bis-(trimethylsilyl)-trifluoroacetamide (BSTFA). This typically replaced the acid proton and one of the amino protons with trimethylsilyl groups and rendered them volatile enough to pass through the GC column. Pure compounds as well as mixtures were analyzed and compared to electronic library spectra. Acknowledgements: The Welch Foundation. Partial support for this work was provided by the National

Science Foundation's Course, Curriculum, and Laboratory Improvement program under Award No. 0536648.

Heffern, Rebecca, A MOTHERLY TOUCH IN MEXICO, Dr. Clinton Brand, Catholic Studies

Mary is the Mother of God and the Mother of the Church, she has a special role as the spiritual mother of all who believe in her Son, but she has played a very special role as the Mother of Mexico in particular. She has influenced the formation of the Mexican identity over the past five hundred years, leading the native people of Mexico and their descendants to the fulfillment in life that only comes through Christ. Looking at Mary's universal motherhood and the history of Mexico, today's culture that reflects Our Lady of Guadalupe's influence can be understood in a deeper way that reflects the love and motherhood of Christ's mother. She is present in the literature, the art, and the prayer and popular devotion in the land where she appeared as Our Lady of Guadalupe. This presence is evidence of the devotion the people pay to her and points to her part in shaping the cultural identity of Mexico.

Hunter, Robin, NEWFOUND REGIONISM VS. CONTINUED GLOBALIZATION: THE EFFECTS OF OIL DEPLETION ON GLOBAL TRANSPORTATION, Dr. Linda Pett-Conklin, International Studies

Demand and circumstance, including for example, increased tension in the Middle East and hurricane threats in the Gulf of Mexico, can easily spark drastic fluctuation in oil prices. Many experts believe that world oil production has peaked and that the current petroleum-based global economy will undergo dramatic changes. At the least, until viable alternative energy sources replace oil, consumers should expect prices to continue rising. Higher oil prices yield more expensive transportation that will directly affect global trade. In many ways, global transportation costs regulate the flow of international trade. Therefore, with oil prices expected to steadily continue rising, countries will soon be forced to reevaluate the way that they currently operate their markets. Oil has become more than an enabler of globalization; it has become one of the driving forces behind it, actualizing the definitive aspect of transporting goods and services worldwide. Therefore, it should come as no surprise that an absence or lack of oil would alter the way the world leads its everyday life. Continuing this thought is an undeniable fact: the world's oil supply will expire at some point. As a result of the depletion of the world's oil resources, a newfound regionalism will emerge in the areas of global trade and shipping because of several key influences: an increased regional competition for goods, a shift in the location of labor, and a drastic spike in shipping costs and ratios.

Hussain, Kiran, TERRORISM AND ISLAM, Dr. Jean-Philippe Faletta, Political Science

There is a stereotype in the world today about terrorism, and that stereotype involves any individual who practices Islam. Unfortunately, many individuals do not know what the basic teachings of Islam are, nor are they aware of the different sects within the Islamic faith. This study will shed light on the significant difference between the sects within Islam and their relationship to terrorism, with a focus on Wahhabism.

Husted, Craig Hunter, BODY CONFIGURATIONS: A DIALOGUE, Dr. Janet Lowrey, English

Although they are not the most perfect means of conveying our thoughts, ideas, emotions, etc., sometimes words and language are all we have to do so. And even though this form of communication is lacking, it is through our conversations (words and language in a raw state) that we can learn about ourselves and others that we can attempt to make sense of our lives or any other internal matter we feel in need of resolving. Therefore, through a written dialogue I call "Body Configurations," I am examining two strangers' interaction in which acceptance is sought by both. This fictive piece takes place amongst a minimal plot: two people sitting with their backs to each other in a bare, empty room. The two individuals' names and genders are unknown, and the dialogue itself is often minimal. Basically, any fact that can be is absent because the focus is on the words/language these individuals use to express themselves.

Because they (we?) are unable to see the other's body language (or any other form of communication, for that matter), spoken language is the only way to share. "Body Configurations" is a look at the abilities and inabilities of the spoken word as a tool to guide us to that place where we can become one with others in that spiritual/immaterial realm in which language is unnecessary. Whether or not anything is resolved by the end of our two characters' dialogue is not the point, as the behavior of verbal communication is the main interest.

Jabbour, Natalie; Samani, Zehra; Sanchez, Ariana; Galindo, Juan Carlos Garcia, A STUDY DOCUMENTING THE BIOACTIVITY OF A PURE COMPOUND FROM PELTIGERA CANINA, Dr. Joanne Romagni, Biology

Peltigera canina is a lichen species that contains a cyanobacterial photobiont. It is normally found on soils in pine forests. Lichens produce several secondary metabolites, all of which are energetically expensive. Therefore, they must play a key role in their survival. We have isolated a pure compound that shows bioactivity against competing plant species. Our initial objective was to quantify the activity through a dose-response curve. Our final objective is to elucidate the mode of action for this compound. Our hypothesis was with increasing concentration, there would be an increase in inhibition of plant growth. From the preliminary research, dicot plant species showed a general decrease in root length as the concentration of the compound increased. Also, the plants showed changes to root morphology, including root thickness and root hair structures. Current research is investigating changes to root proteins. We will continue to investigate the mode of action for this compound in order to better understand the role of these compounds in the ecosystem.

Jain, Aleisha R., A GAME OF NUCLEAR CHESS: THE DICHOTOMOUS RATIONALITY OF NORTH KOREA'S NUCLEAR AMBITIONS, Dr. Hans Stockton, International Studies

Since the collapse of the Soviet Union, and the consequential ideological vacuum created by this watershed event, North Korea has existed in a state of heightened insecurity eclipsed only by an erratic and, at times, volatile interaction with the U.S. and regional heavyweights. The alarming urgency and newfound zeal present in its nuclear ambitions only augment worldwide concerns of nuclear proliferation in a post-9/11 era. Furthermore, North Korea's, arguably, puzzling and seemingly contradictory behavior provides fuel for a continuing debate regarding its rationality, or lack thereof. This thesis presents an entirely new perspective on North Korea's 'rationality', and sheds light on a new and dangerous dimension of its nuclear ambitions. Utilizing game theory as its foundation, this paper will illustrate North Korea's nuclear brinkmanship with the U.S., China, and South Korea through the form of game tree models and utility equations. The study of rationality, in turn, will be expressed through the lens of rational choice, a form of theory that will be integral in the analysis of North Korea's perceived course of behavior. Finally, and most importantly, results from both complementary paradigms of study will be merged to reveal the crux of this paper- the dichotomous rationality present within North Korea's foreign policy vis-à-vis its nuclear empowerment.

Janse van Rensburg, Katherine, The SOCIAL RELIGIOUS FACTORS LEADING TO PARTICIPATION IN THE PEOPLES' CRUSADE OF 1096, Dr. Irving Kelter, History

While the Crusades are most often thought of as a troop of well-armed knights, the People's Crusade of 1096 was made up almost entirely of civilians. Many were peasants and held little or no power in society, and were more militant pilgrim than crusader. It became an enormous force, well out of control for the people who had instigated it, and grew into one of the most significant events of the Middle Ages. This was no well-armed force of knights, but men, women, and children who left everything they had ever known to travel over two thousand miles to a place they would likely never return from. Pope Urban II's appeal was not the sole motivation for those who joined the ranks of the crusade. These Crusaders set out with the expressed intent of aiding Byzantium and freeing Jerusalem. In reality, however, there were numerous other social and religious factors both driving people from Europe and pulling them toward the

Holy Land that led to participation in the People's Crusade. Looking beyond the obvious causes of Pope Urban II's plea for aid, there were many other factors involved, including propaganda, cultural norms, climate conditions, theology, and both temporal and spiritual privileges promised to the crusaders in return for their participation in the Crusade. Through a thorough examination of primary source material, this paper will help examine these factors to bring a greater understanding of the event.

Jimenez, Jeffrey-Lee Aauino, THE CLASH OF TWO CULTURES - THE CAUSES LEADING TO THE FIRST CRUSADE (C.1095-C.1102, Sr. Madeline Grace, Theology

Prior to the disaster of the World Trade Center in New York City, the term 'Crusade' would have brought little attention to the public. Yet, suddenly, the term 'Crusade' brings with it the stigma of the attacks by Muslim extremists and the preemptive strikes by the U.S. in the war against terrorism. Many people today would perceive the Crusades as the black stain of Christianity, namely, the Catholic Church, which was fueled by power-hungry, wealthy nobles who fought primarily for personal gain and hatred of the Muslims. This is an error accepted by those who refuse to look deeper into the history books and discern for themselves the actual motives and events of one of the most perplexing phenomenon in medieval history. A study of the causes leading to the First Crusade not only provides some outlet of open dialogue, but, in an academic setting, it will encourage a fair look at the historical records. Focusing on three points, the rise of Islam, the geographical and political setting which primed the Crusades, and the influence of the Papacy, this presentation will allow a deeper probing into the common modern assumptions of what happened and why, when the clash of two cultures - Christianity and Islam – unfolded.

Jimenez, Cynthia, THE GLOBAL IMPACT OF OUTSOURCING: CORPORATE GOVERNANCE BEYOND THE CORPORATION AND ITS SHAREHOLDERS, Dr. Beena George, Accounting

The Global Impacts of Outsourcing: Corporate Governance beyond the corporation and its shareholders. Outsourcing is becoming a popular trend among multinational companies. The driving force behind outsourcing in most of the case studies is economic benefits. This paper discusses the social and economic impacts to the U.S and the country that has been chosen to provide the services. The effects of outsourcing are not limited to the organization. Corporations that outsource or offshore become integrated into the local market of the country they select and also take on the social responsibility of guiding the economic well being of that country. It is necessary that corporation understand the role that they will play in the success of the industry in the chosen destination. Taking a look to the future, the paper concludes with an examination of the impact to the host country after the industry matures in that region and corporations move their operations to the next hot outsourcing destination. The impacts of Corporate Governance now go beyond the walls of the organization and encompass the true global stakeholders, the constituents of the country.

Jiwani, Sana Varghese, Nishant, A PHYLOGENY OF LAMPROPELTIS GETULA SPLENDIDA, LAMPROPELTIS GETULA HOLBROOKI, AND LAMPROPELTIS GETULA, Dr. E. Larry Nordyke, Biology

The desert kingsnake, *Lampropeltis getula splendida* and the speckled kingsnake, *Lampropeltis getula holbrooki*, are two subspecies of kingsnakes whose range extends across the Southwestern and Southeastern United States. *L. g. splendida* also ranges south into Mexico. *L. g. splendida* is found to be quite consistent in its patterning throughout its range but variant from *L. g. holbrooki*. *L.g. holbrooki* on the other hand not only differs from *L. g. splendida*, but also displays two distinct patterns. The more dominant morph of *L. g. holbrooki* is seen in the regions of the Red River to the upper Texas coast while the lesser resides mainly in the Texas coastal marshes ranging from Corpus Christi to Louisiana. There is an intergrade of the two subspecies found along a broad band extending from the Panhandle and two thirds of the Red River southward to the mid-Texas coast. Snakes found on either side of the intermixing zone are most similar to the nearest subspecies, whereas those towards the midsection of the zone show features of both *L. g. splendida* and *L. g. holbrooki*. The phylogeny of these subspecies was studied using

DNA sequences of the mitochondrial gene ND4. Sequences were manually aligned by eye and then analyzed using maximum parsimony and/or Bayesian inference.

Jiwani, Sana; Jabbour, Joseph; Varghese, Nishant; Silva, Richard, INDUCTION AND ACTIVITY OF SUPEROXIDE DISMUTASE (SOD) IN AIPTASA PALLIDA UNDER ACUTE TEMPERATURE STRESS, Dr. Joanne Romagni, Biology

The study is a part of a larger study documenting the effects of environmental stress on symbiosis. This research is documenting the induction and levels of activity of superoxide dismutase (SOD) in sea anemones, both symbiotic and aposymbiotic. The role of SOD is to catalyze the dismutation of superoxide and single oxygen radicals into oxygen and hydrogen peroxide thereby preventing peroxidation of membranes and cell death. In this study, we have documented the induction and activity of SOD isozymes in the symbiotic anemone, *Aiptasia pallida*, under acute temperature stress. Our objective was to document activity SOD under varying temperatures. Preliminary data of this experiment documented the responses of symbiotic anemones, aposymbiotic anemones, and isolated algae (*Symbiodinium* sp) to both chronic and acute salinity and temperature stresses. It was determined that there is one constitutive isoenzyme in the anemone *A. pallida*. It appears that a minimum of forty-eight hours is needed for biosynthesis of the two induced isoenzymes. We found that aposymbiotic anemones had significantly higher levels of SOD activity, even in controls. There was a direct correlation with increasing temperature to increase enzyme activity until the maximum temperature of 35°C.

Joerns, John, How Things Change: THE IMPORTANCE OF NECESSITY, DISASTER AND DANGER IN MAJOR POLICY REFORM, Dr. Jon Taylor, Political Science

Major policy reforms, by virtue of their scale, are intensely difficult to enact. Longstanding bureaucracies have interests of their own and are protective of turf, power, and their very survival. Major changes bring about winners and losers: those enfranchised by change and those hostile to proposed reforms. As such, there is a powerful natural inertia ingrained into the status-quo of any political system and the once dynamic bureaucracies and programs of old can become entrenched, ossified obstacles to the new. What can past attempts at major bureaucratic and policy reforms, both successful and unsuccessful – and their attendant circumstances – tell us about the scope and realistic hope for major reforms of looming policy challenges? In short, what leads to the calculus of “Political Will” to tackle grand challenges and where are the hotbeds for open policy experimentation? This paper will assess how some of the major policy reforms of the last century were fashioned, hypothesizing that the pragmatism and political necessities of those reform endeavors are inadequate in the 21st Century’s policy environment, where broad agreement and the ability to predict problems should ideally prevent policy procrastination and a disaster-driven reform process.

Kahl, Ryan; Struthers, Sarah, THE EFFECT OF ENVIRONMENTAL STRESS ON DETOXIFYING ENZYME ASCORBATE PEROXIDASE IN APTASIA PALLIDA, Dr. Joanne Romagni, Biology

When exposed to common environmental stresses such as varying temperature, *Aiptasia pallida*, a symbiotic sea anemone commonly found in warm, tropical waters, produces enzymes in order to cope with the changing environmental conditions. Ascorbate peroxidase (APX) is one of the many enzymes produced under environmental stress. This study, part of a larger study to analyze the effects of various stress mechanisms on APX as well as other known stress enzymes, analyzed the activity of APX in *A. pallida*, both in a symbiotic relationship with the zooxanthellae, *Symbiodinium* sp. and aposymbiotically, under varying temperatures. Our goal was to determine whether this symbiotic relationship was mutualistic and to begin to understand why symbioses fail. We found that aposymbiotic anemones had higher levels of APX activity under stress and control conditions when compared to symbiotic controls and symbiotic stressed organisms. This would suggest that the relationship is a true mutualism.

Kelley, Connor; Gifford, Armel; Steiger, Michelle; Palasota, John A.; Rosell, Rosemarie, SEPARATION AND CHARACTERIZATION OF A CRUDE CULTURE FILTRATE OF ASPERGILLUS, Dr. John Palasota, Dr. Michelle Steiger, Chemistry

Aspergillus is a ubiquitous fungus in the air to which most people are immune. However, certain individuals with a genetic disease called Chronic Granulomatous Disease (CGD) are prone to lung and upper respiratory tract infections caused by Aspergillus. In an effort to find a cure, research has been done to isolate a protein factor that will elicit a type A immune response to this fungus. Once isolated, this factor may subsequently be synthesized and used to immunize individuals at risk for this disease. Our goal is to isolate and characterize the factor responsible for the immune response by using high-performance liquid chromatography (HPLC), gel separation protein visualization, and mass spectrometry techniques. To date, the research has shown that samples of crude culture filtrate of Aspergillus (A-CCF) can be characterized effectively using sodium dodecyl sulfate polyacrylimide gel electrophoresis (SDS PAGE) and silver staining techniques. Seven distinct bands of proteins in the A-CCF sample were indicated in the silver-stained SDS PAGE gel. However, fractions of A-CCF separated via HPLC are not able to be directly characterized. These will be sent off for protein sequence analysis via HPLC and tandem mass spectrometry.

Kelsch, Emily L., SURVEY OF THE HOUSE DEBATE SURROUNDING THE PASSAGE OF THE INDIAN REMOVAL ACT (1830), Dr. Joseph McFadden, History

The Indian Removal Act passed the House by only five votes, and the debates preceding the vote span hundreds of pages in the House Journal. This is a consideration of the many points of view and arguments leading up to the Act's realization as seen in that session of the House of Representatives. The discussion surrounding it was emotional and heated, as not only people's lives but the economic and geographic future of the Union and its individual states was in jeopardy. Using the testimony of contemporary congressmen, a survey will be made of how the issue of Native Americans in a young America became volative law in 1830.

Khurshid, Kashif, India- THE PERFECT CULTURE FOR BUSINESS SUCCESS, Dr. Beena George, Management Information Systems

Business strategies are developed for profitability and outsourcing is at the pinnacle of this idea. Not only does outsourcing make economical sense, it also shines new light on the theories of absolute advantage and globalization. The paper provides an understanding for business competitiveness and cultural mix that has made India a unique, attractive, and strategic hub of the business world. Further, it examines the political and legal risks faced by outsourcing companies/organizations/nations and draws a relationship between the author's perceptions and observations of business in India. The paper comes to a close by addressing the evolution of outsourcing in India

Knutson, Amy; Toledanes, Giancarlo, NMR DETERMINATION OF THE KINETICS OF DEUTERIUM EXCHANGE IN 3-METHYL-2-BUTANONE, Dr. Thomas Malloy, Chemistry

The analysis of the base catalyzed exchange of the alpha protons in 3-methyl-2-butanone: is a case of competing reactions with very different rates. The alpha methyl protons are much more readily exchanged than the isopropyl methine proton. The disappearance of the alpha methyl protons are followed directly. The disappearance of the methine protons are more readily followed indirectly by monitoring changes in the beta methyl groups. The initial doublet with a splitting slightly above 7 Hz is replaced by a triplet at the center with a splitting of ~ 1Hz due to the replacement of the proton with deuterium. The disappearance of the doublet components is more readily followed than the disappearance of the heptet corresponding to the methane resonance. Partial support for this work was provided by the National Science Foundation's Course, Curriculum, and Laboratory Improvement program under Award No. 0536648. The Welch Foundation is acknowledged for support.

Lafuente, Ana-Maria, COLLECTIVISM AND PARTICULARISM: UNDERSTANDING THE CHANGING LEGAL CULTURE IN COSTA RICA, Dr. Linda Pett-Conklin, International Studies

As globalization more fully permeates all countries around the world, maintaining public order between nations has become increasingly important. In order to establish a comprehensive international legal framework, it is necessary to understand that the perceptions and use of the international legal system are affected by each society's culture. A country's cultural orientations influence attitudes, values, and opinions about the law as well as the appropriate method for resolving disagreements. Furthermore, globalization has also played a role in affecting the legal culture of societies by helping to transmit, as well as homogenize culture. The effects of this homogenization are seen in Latin America, particularly in Costa Rica. This paper examines two cultural dimensions – collectivism and particularism – which have historically set Latin America apart from traditional Western legal culture. In a collectivist society, the focus is on the community and priority is given to the group. A survey was conducted with Costa Rican and American subjects in order to determine to what extent each was collectivistic or individualistic, and how this affected views regarding justice, punishment, authority, dispute resolution, and discretion. When compared to original cultural indices, developed by Geert Hofstede in 1970, the US has remained essentially the same, but Costa Rica's collectivism score has moved toward individualism. This change is also reflected in the Costa Rican preference for authority and dispute resolution. While it is possible that these results could be due to a non-representative sample size, it is also likely that the survey has catalogued the effects of globalization on legal culture.

Landry, David, STRAIGHTEDGE DOWN SOUTH, Dr. Claire McDonald, Drama

In my video documentary, Straightedge Down South: Underground Counterculture in Houston, TX, I seek to examine the straight-edge ideology not only through interviews of those that consider themselves to be a part of the counterculture, but also observing of historical documentation (i.e.- musical venues and performances by hardcore/straightedge musicians). : The purpose and intent of this documentary is two-fold - To inform the audience of the musical/political/social spheres of the counterculture- To dispel misconceptions about the counterculture that those who are ill-informed may have. The documentary will be video-recorded and edited, with at least, a theatrical trailer for the film to be presented at Symposium.

Lefeber, Donald, HOW U.S. CULTURE IMPEDES THE EFFECTIVENESS OF CANCER TREATMENT, Dr. Linda Pett-Conklin, International Studies

The United States has adequate medical care for most illnesses, except those that are chronic diseases. Why is this? The medical model generally taught and employed in the United States is not comprehensive, for it caters only to certain aspects of the human person. This medical model is based on the Cartesian method, developed from the works of Rene´ Descartes. The Cartesian method famously separates the mind from the body, thus ignoring the symbiotic relationship between the two. Cancer patients embark on a spiritual journey when they begin their encounter with the disease. The health of both mind and body must be considered to ensure the most effective treatment of the disease. Unfortunately there are many aspects of U.S. culture that impede this strategy in medical care, including: ethnocentrism; avoidance of discussion of death; low context communication; monochronic attitudes about how time should be spent; and values surrounding money. Each of these characteristics is embedded within U.S. culture and each sculpts the system of medical practice for cancer treatment. How these elements in U.S. culture affect the medical treatment with cancer will be illustrated and suggestions on how to deal with this dilemma will be offered.

Lemos, Priscila, REFLECTIONS OF POLITICAL CULTURE IN POLITICAL PARTICIPATION: A CASE STUDY IN ANGOLA, Dr. Hans Stockton, International Studies

The original traits of political culture in Angola have been transformed by a variety of events that occurred during and after the colonial experience. In my opinion; however, the Portuguese colonial rule, the

independence struggle, various external influences, and the state building process were the main events that jeopardized the shape of political culture in Angola. Consequently these events reflected on the political participation towards the political system. For long, scholars have been making practical associations between the profile of political culture and political participation. Considering that elections are one of the most important indicators that help us to define the success of a democratic society, it is important to analyze to what extent this theory can be applied in sub-Saharan African countries where political participation still is a challenge. By emphasizing the Angola case study, this paper will first identify and examine the possible theories of the relation between political culture and political participation. The key factors that characterized the first and the consequences of the second will be the relevant questions that this paper will answer. The use of comparative methodology on other sub-Saharan states such as Mozambique, and Namibia, will reveal similar historical, political, and cultural characteristics. Finally, the overall assessment of these cases will enable me to infer a hopefully supportive position to the general hypothesis of the relationship between the shape of political culture and the feasibility of political participation in Angola. This analysis and explanations are highly complex in the sense that the shape of the political culture in those countries leads to a road with several intersections. Identifying and exploring the relevance of each intersection in terms of decisive factors to the profile of political culture will be the key to understanding the dynamics of political participation in Angola.

Katie Long, THE DICTATES OF REASON, Dr. Joseph McFadden, History

The Irish War of Independence is often seen as a violent revolution single-handedly won by the force and sheer will of the Irish Republican Army. While the volunteer (IRA) effort did significantly aid the process of realizing an Irish Republic, it was in reality just one piece of a complex puzzle. The British government, through their failure to understand the severity of the situation from its onset as well as their underestimation of the Irish people's capacity for intelligence, allowed the revolution to proceed to a point of no return without the realization that they were actually fighting a war. By examining the counties of Tipperary (North Riding) and Cork in the year 1920 and utilizing the British county inspectors reports found in the Dublin Castle Records, I hope to show how the actions of both countries contributed to the advancement and eventual resolution of the war. I would also like to illustrate how the situations presented were not specific to one or two areas, as small efforts such as these were being made all over Ireland. By understanding the war in a local context, it makes it easier to incorporate it into a broader worldview.

Lubrano, Andrew, DELUSIONS OF POWER, Dr. Janet Lowrey, English

My presentation for the Research Symposium will be one short story from my senior thesis project entitled Delusions of Power. In it I attempt to address the problematic conflict between humanity's goodness and its depravity. Specifically, I focus on my struggle to cope with the monstrous things that some men perpetrate on humanity. My presentation is a classical story of heroism. The story attempts to show bravery and chivalry as it exists in the minds of young boys, even in the face of intense cruelty and perversion. In this day and age, when we are at a loss for male, public role models, it seems as though evil is winning. My idea, and hope, is that good can and does outweigh evil; I believe there is no real power in evil. It seems that during puberty and young adulthood many boys turn to violence and depravity in an effort to assert themselves as men. This thesis attempts to dispel these delusions of power, exposing the weakness of perversion, and the real strength of temperance and good deeds.

LUFFMAN, CHRISTINA, DO MBA STUDENTS FIND STUDY ABROAD PROGRAMS BENEFICIAL CURRICULUM ADDITIONS?, Dr. Beena George, Management Information Systems

Current day MBA programs are beginning to incorporate study abroad as part of their curriculum. With the rise of globalization in recent years there is a growing demand for students to have "World-mindedness". It is no longer enough for professional development to be based on book knowledge and class room discussions; it must now be integrated with real world experience. Are MBA programs

meeting the needs of the students and the latest globalization phenomenon? This paper addresses that question by providing insight from the perspective of MBA students that have taken study abroad courses.

MacArthur, Robert; Cardona, Luis; Giampietro, Matthew; Weatherly, Katherine, THE 27TH, Dr. Sam Havens, Drama

Matthew Giampietro and Robert MacArthur in The 27th, Directed by Katherine Weatherly, Set Design by Matthew Giampietro, Lighting by Luis Cardona, Written by Robert MacArthur. :The 27th discusses human nature in modern society. What is it that makes someone really alive? What happens when that something is gone? This ten-minute play depicts people who lose something they need to be themselves, and what they choose to do to get it back. It is student-written, the production is student-directed and student-acted, and the lighting and set are student-designed with the gracious help and support of the Drama department.

MacArthur, Robert, THE SURPRISING WISDOM OF G. K. CHESTERTON, Dr. Clinton Brand, English

In my paper, I argue that the same complete and cohesive system of thought, comparable to any of the great philosophical systems, is present in and drives the body of Chesterton's works; that a close reading of his texts can and does make this system and its first principles clear; that these principles are found just as much in the fictional works as in the polemical, though implicit rather than explicit; that this philosophy provides a model for human behavior both admirable and enjoyable; and that further work along these lines could bring forth a line of thought capable of answering the arguments of modernism and post-modernism and reasserting the traditional wisdom of Christendom. To demonstrate this, I offer brief analysis of three of his major novels: The Man Who Was Thursday, Manalive, and The Napoleon of Notting Hill; and three of his non-fiction works; The Everlasting Man, Orthodoxy, and What's Wrong With The World. In short, I assert that Chesterton's uniqueness is in that he allows his readers to see an old thing, to which they are long familiar: namely western civilization; as if for the first time, and thereby enables them to understand it as its founders did, and know it for the precious and valuable thing it is.

Maguire, Lisa, AN ANALYSIS OF SELECTED ENGLISH AND FRENCH INFLUENCES ON EMPRESS CATHERINE THE GREAT OF RUSSIA, Dr. Lee Williames, Masters of Liberal Arts

I will present my analysis of what I have identified as key English and French influences on Empress Catherine the Great and how these influences manifested themselves in her policies, her reign and her vision for Russia.

Malik, Fraz, THE EFFECTS OF PERCEPTION ON GLOBAL HEALTH, Dr. Hans Stockton, International Studies

In a world filled with infectious diseases and increasing complications in health care it is important to understand how aware people are of this. People tend to only recognize the importance of diseases when they are plastered on the front pages of the paper; however, time and the next sensational story quickly allow people to forget about global health. Thus, how does media exposure to global health issues shape perceptions or the level of awareness and attentiveness? Mass media can lead to either hysteria or utter disregard in the area of global health by the nature of the issues they cover. The basis of this study is to determine what the perception of people towards health dangers is by studying their social character, demographics, class, ethnicity, and exposure to media. The mass media does shape perceptions; however, what other variables, including the mass media, shape perceptions on global health. To determine how perceptions are shaped on global health, a survey was conducted to test different variables and form correlations. The survey had a sample size of 45 subjects, all of whom answered questions regarding global health, media, and other socioeconomic variables. These measures are important in shaping help perceptions and help to determine whether or not people are aware of global

health. Global health is an important concept that is imperative for people to understand. Through collective efforts and general awareness of global health, the implementation of new solutions can help in alleviating problems that can arise.

Marfetan, Veronica, SYNTHESIS OF 4,4'-DIHYDROXY CHALCONE FROM 4-HYDROXYBENZALDEHYDE AND 4-HYDROXYACETOPHENONE, Dr. Wheeler Crawford, Chemistry

The synthesis of 4,4'-dihydroxy chalcone was carried out by reacting 4-hydroxybenzaldehyde with 4-hydroxyacetophenone in the presence of several catalysts and solvents. The ion exchange resin catalyst was used with the reactants with dichloromethane as a solvent. There was no reaction. Silica-sulfuric acid catalyst was used for several reactions with different solvents. Using dichloromethane as a solvent with the reactants and the silica-sulfuric catalyst produced no chalcone. Using chloroform or methyl sulfoxide as the solvent also did not produce any chalcone. In these reactions little heat or not heat at all was applied. Using ethanol as the solvent in the reaction, the chalcone was produced in a 45% yield. The products were easily removed by recrystallization. The results seem to indicate a correlation between the used of heat as ethanol as a solvent. All the results were confirmed by IR and GC-MS.

Marruffo, Liann; Palasota, John, AN HPLC SEPARATION OF DERIVATIZED Á-DICARBONYL COMPOUNDS: PRELIMINARY STUDIES, Dr. John Palasota, Chemistry

The purpose of our work is to develop a derivatization process for the detection and quantitative determination of á-dicarbonyl compounds by high-performance liquid chromatography (HPLC). Using the model compounds glyoxal, methylglyoxal, and 2,3-butanedione, these initial studies focus on the development of the HPLC analytical method for the separation of the derivative products (quinoxaline, 2-methylquinoxaline, and 2,3-dimethylquinoxaline) and the derivatizing agent (o-phenylenediamine). In particular, the combined effects of analyte pH and mobile phase acetonitrile concentration are investigated. Future work will focus on the derivatization process and explore additional derivatizing agents.

Martinez, Carlos, MANAGING DATA WITH STORAGE VIRTUALIZATION, Dr. Beena George, Dr. Charlene Dykman, Management Information Systems

Organizations own a large amount of data which may be spread across multiple file systems, media, hosts, and locations. This data grows exponentially and has to be kept for longer periods of time because of legal and regulatory issues. In addition, access to the data needs to be controlled and audited. Managing this architecture is a challenge, and to access this data, users must know the logical location of the data and be aware of anytime this location changes. As time goes by data has to be moved for one reason or another and this causes disruptions to the business. In addition, over 80% of data is stale data that occupies space and needs to be managed differently. The solution is Storage Virtualization, or File Area Networks, which enables the presentation, access and management of data using logical names. This architecture enables better data classification, management of the data with less disruption to the business, increased control, and optimized access.

Mata Jr., Robert, DEVELOPMENT OF AN ANODE STRIPPING VOLTAMMETRY METHOD FOR TRACE METAL ANALYSIS USING EG&G PARC SMDE M, Dr. Thomas Malloy, Chemistry

Electrochemistry can be utilized to perform quantitative and qualitative analysis of metals. Using a EG&G Potentiostat/Galvanostat Model 263 attached to a EG&G PARC SMDE Model 303 A, Dropping Mercury Electrode, different methods of voltammetry were used to check the condition and detection limit of the apparatus. Differential Pulse Voltammetry was performed to establish the working status of the electrode and its communication with the interface. Cadmium solutions of 1.30×10^{-3} , 9.00×10^{-4} , 6.00×10^{-4} and 3.00×10^{-4} M Cd^{2+} produced linear relationships of concentration vs. peak height and concentration vs. peak area when subjected to Differential Pulse Voltammetry. The R² value was 0.9967 and 0.9951.

Next, a Linear Sweep Voltammetry method was tried but no useful signal was obtained using the Mercury Drop Electrode in the hanging drop mode. However, we were able to rewrite and adapt the EG&G PARC SMDE Model 303 A and the Linear Sweep Voltammetry method, to obtain an Anode Stripping Voltammetry method. The Anode Stripping Voltammetry method has shown results of detecting Cd²⁺ and Pb²⁺ in 0.10 M KCl solutions at the 100 ppm, 10 ppm, and 1 ppm detection levels. Research is in progress to use the EG&G PARC SMDE Model 303 A to test smaller concentrated metal solutions in the range of ppm to ppb. The use of Anode Stripping Voltammetry using the EG&G PARC SMDE Model 303 A has the potential to become a cheap, quick, and effective method of detecting toxic, heavy metals in our laboratories.

Mcclarty, Erin, PRE-TRIAL MEDIA AND ITS EFFECTS ON JURY VERDICTS, Prof. Charles Young, Political Science

This study was conducted in order to determine the effects of pre-trial media on jury verdicts and decision making in criminal and civil trials. For the purpose of this study, pre-trial media includes newspaper articles, television coverage, and internet sources. The time window concerning media exposure begins immediately after suit is commenced and ends at opening arguments. The findings are a composite of several studies conducted on juries that includes mock jury panels, questionnaires, interviews and analyses of previous jury findings. The studies suggested that pre-trial media affected the way in which jurors interpreted the lawyer's arguments, the evidence introduced, and the judge's jury instructions. Most jurors were found to either negatively perceive the defendant from the outset of the trial or interpret the trial through pre-conceived notions derived from the media or non-evidentiary factors. In order to demonstrate the importance of these studies and their findings, I will provide an overview of the jury concept, the jury's work, what their role and duties are in jurisprudence, and what is commonly perceived to be the duties of a jury. I will conclude with a discussion of the faults implicit in jury verdicts being derived from non-evidentiary factors (such as pre-trial media) and how the faults affect our judicial system, and individual rights. Suggestions for improvement will include pre-emptive and restorative actions that may be taken to keep the bad influence from escalating in the future.

Merrick, Katharine, THE DEVELOPMENT OF POLITICAL PARTIES IN UKRAINE, Dr. Rogelio García, International Studies

Though the country of Ukraine is barely 15 years old, it has made tremendous strides towards democratization since 1991. With the collapse of the Soviet Union, Ukraine found itself in a difficult position. It needed to transition itself from a Soviet republic to something new, something Ukrainian. With this newfound independence from Socialism, Ukraine found its political market flooded with new emerging parties. Though the main political parties were at first the Socialist and Communist parties, over the years their influence has seen an increasing decline. Now, the main influences in party affiliations and alignments are based on the divisive East/West issue, that is, Ukraine's alignment with Russia versus alignment with the European Union. This paper will thus explore the development of political parties in Ukraine since its independence from the Soviet Union in 1991, focusing on the factors that have contributed not only to party formations and alliances, but the Ukrainian political system in general.

Mireles, Heather; Nguyen, Kathy; POWER, ORLA, EXAMINING POSITIVE AND NEGATIVE RELIGIOUS COPING METHODS AND PERCEIVED STRESS, Dr. Elizabeth Maynard, Psychology

This correlation study explored the relationship between perceived stress and positive and negative religious coping among college students attending a private liberal arts university in Houston, Texas. Because stress is a common health issue among college students (Largo-Wight, Peterson, & Chen 2005), the researchers hoped to gain a better understanding of how college students use religion to cope with perceived stress by focusing on measuring the trait of religious coping. The researchers believed that positive religious coping is inversely associated with perceived stress, whereas negative religious

coping is positively associated with perceived stress. Likert-type scales were used to assess participants' perception of stress (Perceived Stress Scale, or PSS) and their positive and negative methods of religious coping (Brief RCOPE). Participants included 57 undergraduate students who were enrolled in psychology courses. The sample was predominantly Caucasian/White (n = 20) and Catholic (n = 28). However, other ethnic groups and religious affiliations were represented. Several correlations between items on both PSS and RCOPE were significant at the alpha level of $p \leq .05$. For example, an individual's perception of low levels of abandonment by God was moderately associated with fewer difficulties the individual must overcome ($r = -.31, p \leq .05$). However, further analyses showed that correlations between PSS score and positive and negative religious coping scale scores were not significant. Suggestions for future research will be discussed.

Mitchell, Roy, PROPHETIC POLITICS: THE EFFECTS OF CHRISTIAN FUNDAMENTALISM ON AMERICAN FOREIGN POLICY IN THE MIDDLE EAST, Dr. Jean-Philippe Faletta, Honors

The impact of religion on the American political landscape has been studied with great detail in an effort to determine exactly what significance it may hold. In light of current American conflicts within the Middle East and a sharp increase in fundamentalist Christian religious participation in the twentieth and twenty-first centuries, particular attention must be given to the impact Christian fundamentalists have had on American foreign policy with the Middle East. Through an extensive evaluation of the current research on Christian fundamentalism, with particular attention paid to the Christian Zionist movement, the impact of the religious agenda of the Bush Administration, and the state of U.S. relations with the Middle East, certain conclusions can be drawn: Christian fundamentalism has had a positive effect with U.S. relations in Israel and its allies, but has greatly weakened American ties to other Arab world countries. However, these conclusions support the much larger idea, that Christianity is on the whole an undeniable force in American politics and is rooted in the very core of the country.

Mohammadi, Milad, INFRARED AND RAMAN SPECTROSCOPY EXPERIMENTS FOR THE UNDERGRADUATE LABORATORY, Dr. Thomas Malloy, Chemistry

We have developed several experiments to obtain, as nearly as possible, the complete vibration spectra of carbon dioxide, carbon disulfide, carbon tetrachloride, chloroform and chloroform-d by obtaining infrared and Raman spectra of gas-phase, liquid phase and solid phase samples. By combining the data from the various experiments, we are able to estimate the frequencies of each of the fundamental vibrations in these molecules. The data obtained were compared to the data listed on the NIST web page. These experiments illustrate the importance of symmetry, selection rules, including the mutual exclusion rule, Fermi resonance and the use of stable isotopes to analyze molecular vibrations. This represents one of the first applications of our new Delta Nu Raman spectrometer purchased with funds from the Welch Foundation.

Mohammadi, Milad; Nunes, Megan; Gillette, Louis; Simon, Tommie, GC/MASS SPECTRAL ANALYSIS OF SUBSTITUTED CHALCONES, Dr. Wheeler Crawford, Dr. Thomas Malloy, Chemistry

A series of chalcones have been synthesized from substituted acetophenones and substituted benzaldehydes. Chalcones have also been synthesized from 2-, 3-, and 4-pyridine carboxaldehydes and the corresponding acetyl compounds. GC-MS analysis of the reaction mixtures indicates the presence of chalcone, ketol and Michael adducts. The analysis of the fragmentation patterns will be discussed.

Monroe, Catherine, A FORETELLING FRIENDSHIP: THE RELATIONSHIP BETWEEN ANDREW JACKSON AND SAM HOUSTON, Dr. Joseph McFadden, History

This research project will analyze the correspondence between Andrew Jackson and Sam Houston based in the third and fourth decades of the nineteenth century. These letters demonstrate the

relationship between the United States and Texas in the years leading up to the Texas War of Independence. President Jackson of the United States and the future President Houston of the future Texas Republic can provide insight into the details of the relationships between the two countries. I intend to rely mainly on *The Letters of Andrew Jackson*, edited by Sam B. Smith and Harriet Chappell Owsley, and *The Personal Correspondence of Sam Houston*, edited by Madge Thornall Roberts. Through these letters, I will determine Jackson's role, if any, in the movement for Texas' independence and later annexation by the United States. First, this project will provide the backgrounds of Jackson and Houston to foster an understanding of the men themselves. Then, I will detail their respective experiences in the U.S. and Texas throughout the 1820's and 30's to give an understanding of the time period and the regions. Next, I will analyze the letters between the two leaders to understand their relationship as well as any mention of the present or future attitudes towards the succession and annexation of Texas. Using the preceding information, I will draw conclusions about Jackson's influence on Texas as a province of México, an independent country, and the 28th state of the United States of America.

Monroe, Catherine, MAN OF THE HOUR: ST. BONAVENTURE'S ROLE AS DEFENDER AND RECONCILER, Sr. Madeline Grace, Theology

Saint Bonaventure (ca. 1217 - 1274) is one of the most prominent saints in the medieval Church for many reasons. One significant element is his ability to reconcile conflicts within the Church and defend the Church's orthodoxy. His response to certain groups, such as the Spiritual and Relaxati groups of the Franciscan Order, unorthodox teachers at the University of Paris, and the Greek Church, exemplify his role as a moderator. Although his death allowed these forces he argued against to re-emerge under new leadership, his talent remains evident in his writings he left behind, such as his *Defense of the Mendicants*. Bonaventure's talent during his life was shown in a number of ways. The Church defended and supported the position of Bonaventure and condemned those who argued against him. The University of Paris also upheld his stance by naming the second founder of the Franciscan Order and his ally, St. Thomas Aquinas, Regent Masters of the University. After his death, those who continued to fight against unorthodoxy were able to rely on his writings. Through his active role in the Franciscan Order and the Church, the Seraphic Doctor contributed to the lasting strength and unity of the Church throughout the middle ages. This paper will explore some of the examples of Bonaventure's dedication and success in his role as a defender and a reconciler of the Church.

Nassif, Philippe, THE EVOLUTION OF POLITICAL ISLAM AND ITS IMPLICATIONS ON A GLOBALIZED WORLD, Dr. Linda Pett-Conklin, Dr. Hans Stockton, International Studies

This paper focuses on the evolution of Political Islam. The rise of Political Islam, coupled with the U.S war on terror has exacerbated existing tensions and animosity between the West and the Muslim World. A politicized religious fundamentalism gives more meaning than other ideologies, thus making it an ideology of a unique caliber, spreading across the Arab Islamic populace with great fervor and confronting progressive Muslims and existing secular democratic governments across the Middle East with great challenges. Political Islam is best defined as an ideology that promotes the creation of an Islamic state based on the unity between state and religion, and serves as a counter option to western dominated globalization and corrupt Arab governments, the latter of whom provide little relief from the stinging poverty that dominates the region. Political Islam is totalitarian in nature as it accepts no other form of government except its own and is rising in places with existing totalitarian rule or in democratic societies where it is "Islamizing" that democracy, eventually usurping it in legal ways such as via elections. As a result, democracy struggles to take root in the Arab world and development lags behind as an increasingly globalized world moves on. The stakes are high as national interests converge in an evolving battle that involves resources, ideology, religion, and culture, thus pulling the worlds superpowers into the fray. How did we reach this point of polarization and can we avert a bitter clash between the West and its supporters against an Islamic world united under the banner of Political Islam?

Nguyen, Kathy; Chavez, Jorge; Pruneda, Lindsay; Titus, Courtney; Wissmiller, Curt; Peacock, Lenzie; Pihlaskari, Andrea; & Motter Logan, DEFINITIONS OF TORTURE: A CONTENT ANALYSIS, Dr. Carl Scott, Psychology

Many government and human rights organizations have raised questions about the prevalence, justification, and use of torture. Often, controversies about torture seem to arise from widely different definitions of torture. A consensus definition may help to eliminate some of the ambiguity about what people think torture is. To find how most people define torture, we asked college students for their definition and coded their answers. 120 students wrote an open-ended definition of torture as part of a larger study. We developed a reliable coding system and coded responses for pain type, pain intensity, and the goals of torture, among other variables. Over 90% of participants mentioned pain, and about half explicitly included both physical and psychological aspects in their definition of torture. Only 40% of definitions specified that torture included excessive or extreme pain. The most commonly mentioned goals for torture were to inflict pain/cruelty (60%), to get information (15%), and to humiliate or for fun (9%). Our results suggest that people's definitions of torture differ widely from some definitions promulgated by government and human rights organizations.

Nguyen, Loan; Stachyra, Jessica; Vittone, Veronica, OBSERVING AND LOCATING LAC-Z EXPRESSION IN DROSOPHILA MELANGASTER EMBRYOS, Dr. Debra Bramblett, Biology

Transposable elements are mobile pieces of DNA that insert themselves randomly into the genome. In our experiment, we are using *Drosophila melangaster*, or the common fruit fly. The *Drosophila* has a transposable element that contains a marker gene called Lac-Z in its genome, which is kept in place by a balancer chromosome. The transposable element inserts itself into the genome randomly, and is then under the control of the promoter of the gene in which it is inserted. Upon reaction with the X-gal staining solution, a blue coloration occurs where the gene is normally expressed. The object of our experiment is to determine the area of expression of the Lac-Z gene in each developmental stage of the embryo. This will provide evidence for the position of transposon integration.

Nam Nguyen, Dr. Takae Kiyama, ANALYSIS OF SPBHLHB4 IN S. PURPURATUS EMBRYOS USING NON-RADIOACTIVE WHOLE MOUNT IN SITU HYBRIDIZATION, Dr. Debra E. Bramblett, Biology

Bhlhb4 (basic helix loop helix beta 4) is a transcription factor that has been shown to be responsible for the regulation of neuronal and rod bipolar development in mice (Bramblett et al., 2004). Our laboratory has succeeded in subcloning a 723 bp fragment, which is putatively named Spbhlhb4, from *S. purpuratus* genomic DNA, that shares a 60.5% identity at the nucleotide level and a 91% identity at the amino acid level to the Bhlh domain of mouse Bhlhb4. We have also accomplished the task of generating a non-radioactive DIG-riboprobe from our subcloned product. Furthermore, we have also carried out a whole mount in situ hybridization (WMISH) using our DIG-riboprobe, which demonstrates the expression pattern of Spbhlhb4 in *S. purpuratus* embryos. As a future goal, we are working on developing a protocol for carrying out a double labeling technique that will allow us to identify the type of tissue that Spbhlhb4 is regulating during the developmental processes of *S. purpuratus* embryos.

Nguyen, Patrick, THE MISSING TRIPLE BOTTOM LINE: A LOOK INTO CORPORATE RESPONSIBILITY, Dr. Terry Hall, Dr. Vinita Ramaswamy, Accounting

Today's business environment calls for firms to actively support the society, economy and environment in which they operate. Thousands of companies around the globe now participate in corporate social responsibility (CSR). With the prevalence of these activities comes the need of financial reporting that can evaluate these actions. Triple bottom line accounting (3BL) is a method that companies use to measure its effects and actions on the environment, economy, and society. Although the purpose of 3BL is morally sound, its effectiveness is questionable. This presentation takes a deeper look into CSR, sustainability reports, and the difficulties of 3BL reporting.

Novak, Jessica, MIDDLEMARCH: ANALYSIS USING FORMALISM AND STRUCTURALISM, Fr. Romanus Muoneke, English

Middlemarch: Analysis using Formalism and Structuralism my thesis paper will be a detailed analysis of the novel Middlemarch by George Eliot. The main goal of this paper will be to come to a level of understanding of the text that can only be acquired by using several different schools of literary criticism. The idea is that while using just one form of criticism may shed some light on Eliot's work, many different views and theories are needed to obtain the overall picture. While I may use some historicism to gain background knowledge of the author and the time period, this entire paper will mainly focus on the schools of criticism that call for strictly textual analysis. A large portion of my thesis will be dedicated to Formalism. I will use this style of criticism to explore the literary techniques Eliot uses in his work. Formalism puts aside the historical and social context in order to look at the "form" in a non biased manner. The main body of this section will explore some of the major symbols and themes in the text. The next logical school to incorporate is Structuralism. I will use Structuralism to analyze any binary opposition found within Middlemarch. I will briefly include two branches of Structuralism; Marxism and Semiotics to further explore the classes and how these structures produce the meaning found in the text. My thesis will extract a few scenes from Middlemarch and analyze them using Formalism, Structuralism and its branches. The conclusion will draw upon the above knowledge and state different meanings of the text depending on the school of literary criticism in question. I will link the meanings together to obtain a general understanding of Middlemarch. Jessica Novak: Thesis Abstracts.

Novi, Carla, CITY OF BLINDNESS, Dr. James Barloon, Dr. Janet Lowrey, English

My presentation for the Research Symposium will be a reading of an excerpt from my senior thesis as an English major. "City of Blindness" is a short story that creates juxtaposition between the visual and the non-visual worlds. Wanda, an ordinary girl in her mid-twenties, wakes up one day in the City of Blindness, a city inhabited only by blind people. As soon as she opens her eyes, she realizes that she has become blind. The story explores the problem that the technological wave of the 21st century is bringing to a society that is mainly focused on the sense of sight, desensitizing, in that way, the four other senses, which results in a limitation of our human capacities.

Nudo, Meredith, THE DICHOTOMOUS QUEEN: MORGAN LA FEY AS A REPRESENTATION OF THE CHANGING VIEW OF THE WITCH IN MEDIEV, Dr. Irving Kelter, Masters in Liberal Arts

The Dichotomous Queen: Morgan La Fey as a Representation of the Changing View of the Witch in Medieval Culture concerns the vastly conflicting portrayals of King Arthur's half-sister in the works of English writers Geoffrey of Monmouth and Thomas Malory. Whether seen as a kindly, altruistic healer or a ruthless villainess who will stop at nothing in her quest for power, Morgan La Fey can be thought of as a reflection of popular opinions regarding magic and witchcraft in the corresponding time periods. Though only briefly present in Geoffrey of Monmouth's *La Vita Merlini* (1150 CE), she plays a pivotal role in the story as a greatly beloved queen endowed with a respectable healing power which she uses to alleviate a wounded Arthur's injuries. This depiction is in accordance with a loophole in *St. Augustine of Hippo's De Doctrina Christiana* (397-426 CE), a theological framework still widely followed in the 12th century which allowed for benevolent healing magic to escape condemnation by the church. By contrast, however, witch hunting manuals such as Heinrich Kramer's and James Sprenger's *The Malleus Maleficarum* (1487 CE) paralleled the ideas expressed in Thomas Malory's *Le Morte D'Arthur* (1470 CE). The church and theologians in the 15th century damned practitioners of all witchcraft, including healing, and Morgan's depiction as a cruel, selfish villainess seeking to assassinate King Arthur mirrors these beliefs.

Odell, April, RELIGIOUS INFLUENCES ON THE U.S. SUPREME COURT, Prof. Charles Young, Political Science

This paper will discuss how the Religious Right has tried to influence the Court, and why they have been successful. It will discuss how the group's influence on the Executive and Legislative Branch's of government has led to a domino effect of influence on the Judicial Branch. It will also discuss minority religious groups, such as Jews, Jehovah's Witnesses, Atheists, and Mormons and their attempts to make public policy changes through the U.S. Supreme Court. Additionally it will discuss the ways in which mainstream religion has created roadblocks for these minority groups, making it more difficult for them to affect change in public policy.

Olowu, Adeola, BACILLUS PUMILUS SAFR-32 GENOME ANNOTATION AND CONSERVATION OF SPORULATION GENE CLUSTERS IN BACILLUS, Dr. Donald Frohlich, Biology

A frequently isolated aerobic spore forming bacteria from the space craft environments has been identified and named as *Bacillus pumilus* SAFR-032. The spores of these bacteria are resistant to known methods of sterilization such as: extreme temperature conditions, harsh chemical treatments, and UV radiation. Information obtained from the sequenced and annotated genome of this resilient species will aid in a better understanding of the mechanisms causing the spores to be resistant in the space craft environment. The genome has been sequenced at the HUMAN GENOME SEQUENCING CENTRE at Baylor College of Medicine and is presently being annotated by collaborative efforts between Dr. George Fox's group in University of Houston, HGSC (BCM) and Jet Propulsion Laboratory. After complete genome annotation, it is essential to carry out a comparative genomic study to the already sequenced strains for *Bacillus* sp. Special emphasis is given to understand the conservation of the sporulation related gene clusters and operons of the strain being sequenced and compare it to other available *Bacillus* genomes. The first part of my work involves manual curation and annotation of the *B. pumilus* SAFR-032 genome using GenBoree (<http://www.genboree.org/java-bin/login.jsp>). The second part of the project is comparing the gene order conservation of the sporulation related clusters and operons in 7 closely related *Bacillus* species.

Olowu, Adeola; Abraham, Gency; Eaves, Kayleigh; Tahvilian, Nadia, UST'S GATEWAY TO BIOINFORMATICS, Dr. Donald Frohlich, Biology

Bioinformatics is the groundbreaking field of genomics and proteomics comprising the sciences of biology, and computer science, and the statistical tools of mathematics. This field has primarily been focused on the concerns of health care until recently. Although it has become quite useful, bioinformatics is unknown to the majority of people, and it is constantly changing at a rapid pace. The students of Bioinformatics Colloquium II have developed a website designed to keep students & member of the UST community informed about the breakthroughs and accomplishments of bioinformatics. The website includes various subsections: What is Bioinformatics?; The Subcategories of Bioinformatics; Bioinformatics Databases; Bioinformatics Database Tutorials; and many other useful and informative links to information for students and faculty. The website will be linked to the Doherty Library's website of bioinformatics tools, which are focused on the fields of molecular and cellular biology and biotechnology. Our bioinformatics website can be used by anyone: the student, common citizen, healthcare professionals, professors, scientists, and any other person interested in learning about bioinformatics. Students in the future classes of Bioinformatics Colloquium II will act to continue the updating and improving of the website as dictated by the ever-changing nature of the field.

Olowu, Adeola; Toledanes, Giancarlo; Marruffo, Liann; Kelley, Connor; Metouri, Shahrazed, STUDENT AFFILIATES OF THE AMERICAN CHEMICAL SOCIETY AT THE UNIVERSITY OF ST. THOMAS, Dr. Thomas Malloy, Chemistry

SAACS at University of St. Thomas attained outstanding status for 2005-06 for the first time. Our chapter was either in the Honorable Mention or Commendable category for the previous six years. Over that time, we have been able to increase overall participation, and particularly, increase the percentage of National members. This has been accomplished through publicizing and holding regular meetings, by planning activities of interest to the student members, by interacting with the Local ACS section and with the community. This year, we provided volunteers for the Regional ACS meeting held in Houston, as well as having members present several research posters. ACS Greater Houston Section seminars have been held on our campus and hosted by our chapter. Our efforts are leveraged by partnering with other groups for National Chemistry week events and other community outreach events. We are planning to join with a local group, the Education Rainbow Challenge group and the Houston Independent School District to put on spring and fall events for over 400 3rd -6th grade inner city school students. We also take field trips to local facilities. Social interactions are important and we have end of semester banquets and/or picnics with other science and health professions related organizations.

Perez, Nataly; Pflughoeft, Kathryn; Koehler, Theresa, ISOLATION OF BACILLUS ANTHRACIS MUTANTS ALTERED FOR PROTECTIVE ANTIGEN AND LETHAL FACTOR SYNTHESIS, Dr. Joanne Romagni, Biology

The toxins secreted by *Bacillus anthracis* contain three main proteins: protective antigen (PA), lethal factor (LF), and edema factor (EF). Each of the three proteins has corresponding structural genes which are all located at different loci on the pXO1 plasmid. By using a Sterne strain that contains pXO1, but lacks pXO2, the plasmid that allows capsule formation, we are able to study the toxin proteins without being harmed. In a previous experiment, while screening a Himar insertion library of *B. anthracis*, a Sterne strain containing two Himar transposon insertions was found to have the inability to produce LF and PA. The location of the two transposon insertions could be the reason for such a phenotype. The first insertion is located within *grpE*, a nucleotide exchange factor for the DnaJ and DnaK chaperone pair. The location of the second transposon insertion is still unknown, but since an insertion in the first site alone does not produce the anti-LF and anti-PA phenotype, it is highly likely that the site of the second insertion causes the non-toxic phenotype. This experiment is focused on determining the location of the second insertion. Through phage transduction of the donor mutant strain into a recipient strain, anti-PA and anti-LF mutants were created and screened. Transductants were screened by Western Blot analysis for a negative phenotype. Identification of the Himar insertion site will be determined by genomic extraction and sequencing.

Perry, Suzanne, Civility Ordinances: THE CRIMINALIZATION OF HOMELESSNESS IN HOUSTON, Dr. Jon Taylor, Political Science

Civility ordinances have been enacted in a number of cities, including Houston, for the ostensible purpose of reducing crime and discouraging vagrancy. The ordinances, which have been enacted in Downtown, Midtown, and selected residential neighborhoods, are primarily targeted at restricting the actions of the homeless by outlawing sitting, lying on, or placing personal items on sidewalks between the hours of 7:00 A.M. and 11:00 P.M. Civility ordinances have the common effect of pushing the homeless population away from one area of the city, and any crime that is being caused by the homeless, to another area not covered by ordinance. This paper will assess the impact of civility ordinances in Houston, hypothesizing that these ordinances fail to reduce either crime or the incidence of homelessness. Additionally, the paper will argue that pushing the homeless population and their possessions off of the city's sidewalks during the day is unlikely to achieve the desired effect, making life more difficult for this segment of the city's population, and preventing the city from developing a comprehensive and humane solution to both criminal activity and homelessness in Houston.

Peters, Julie, THE NEW MOTHER, Dr. James Barloon, Fr. Romanus Muoneke, English

Around the turn of the century a new type of female character emerged in literature, known as the “new woman”. These heroines were based on a popular movement in society towards women’s liberation and rights. As females began to take on new responsibilities and adopt more liberal philosophies, their traditional roles evolved as well. Among these was the essential role of mother. Many of these women began to reject their previous position as dutiful wife and mother and value their independence above all else. Thus, child rearing was viewed as a burden rather than a duty or privilege. ::This thesis aims to examine the attitudes of authors and their characters during this time of great social change towards the role of motherhood. This will be done primarily by studying literature written by women of this “modern” mindset, written around the turn of the century, with a focus on Kate Chopin’s *The Awakening*. Textual evidence, including tone and imagery related to mothers and children, will be reflected on in order to determine the authors’ views of motherhood and the ideology behind them. The actions of literary mothers, their attitude towards their children and how they perform their role will be used to infer the author’s position.

Phillips, Nicole, SENIOR THESIS, Dr. Shannon Forbes, English

This essay examines the way in which Henry James presents the differences between American and European attitudes and values through the characters in his novel *The Portrait of a Lady*. Furthermore, the essay focuses on the novel's main character Isabel Archer, a young, independent, and innocent American, and how her experiences in Europe among both Europeans and Europeanized Americans influence her character, views, and values.

Pira, Katie, RACE TO WIN: A PRACTICAL LOOK AT MARKETING THOROUGHBREDS, Dr. Hans Stockton, International Studies

In the summer of 2006 I began working as the general manager of the family horse farm and I have since then taken an interest in the breeding and sales of racing thoroughbreds. Part of running a successful horse farm is knowing how to best market your stock, but how does one market a horse? This work aims to answer this question by applying a marketing plan. Drawing on basic marketing theory, the paper will first find out what a marketing plan is and when its use is appropriate. From there a complete skeleton of a five-step marketing plan will be created. Working from the general marketing plan structure, the paper will then explain what modifications need to be made to the original structure to better fit the unique nature of the thoroughbred industry. Ultimately, the modified marketing plan will be used in a case study of a Texas farm with actual information and data from interviews with John Adger and Vick Van Camp of Stonerside Stables in Kentucky, industry authorities such as The Jockey Club and the Thoroughbred Owners and Breeders Association (TOBA), sales companies like Fasig-Tipton, Inc. and Keeneland Association, as well as trade publications such as *The Blood-Horse Magazine*. The case study will reveal the unique nature of the thoroughbred industry and at the same time provide practical and usable information for marketing thoroughbreds in Texas.

Platt, Steven, THE SPANISH CHURCH DURING THE 8TH CENTURY, Dr. Irving Kelter, History

The Adoptionist Heresy was a religious controversy over the nature of Christ that had its beginning in Spain during the late 8th century. The Adoptionist Heresy came about due to a heretical preacher called Migetius who taught that the Trinity was manifested in King David as the father, Jesus as the son and Peter as the Holy Spirit. This ridiculous theology was refuted by Elipandus, the eighty-five year old archbishop of Toledo, in a letter distributed to all the regions of Spain. Although Elipandus’ letter successfully eradicated the teachings of Migetius, Elipandus himself fell into heresy by claiming that Christ was made the adopted Son of God during his baptism citing a formula from the Visigoth liturgy as the source of this theology. Beatus of Liebana from the Kingdom of Asturias quickly attacked his error.

This sparked a controversy that resulted in the involvement of the Carolingian Franks and the Papacy and created a schism in the Spanish church.

Prihoda, Nathan; Brownell, Colleen, THE BIASED ASSIMILATION EFFECT: COGNITIVE FUNCTIONING AND POLITICAL INFORMATION, Dr. Carl Scott, Psychology

This experiment explores biased perception in cognitive performance. To examine the generality of perception bias, we provided both written and recorded versions of the same presidential debate, and examined participants' judgments of the debate. We hypothesized that a compatible political affiliation would result in a stronger bias, as reflected in biased recall and judgments. In a sample of 60 respondents, candidate convincingness was predicted primarily by participants' judgment of the strength of the candidates' arguments and not by political affiliation. Similarly, participants' political affiliation did not predict their perceptions of candidate convincingness to any significant degree. The findings of this experiment contradicted prior studies (especially Munro et al., 2002) and did not find effects of biased assimilation. One important difference in methods was that the current study did not use the entire debate, but instead used a sample of four questions. The shorter presentation used in this study may have allowed participants to respond to the debate's contents. A presentation of the entire debate, as in Munro et al. (2002), may have led to fatigue and a reversion to pre-existing opinions when faced with the information overload of an entire debate.

Prihoda, Nathan; Burdin, Amanda; Maynard, Elizabeth, CONCEPT OF GOD AND THE COPING PROCESS, Dr. Carl Scott, Psychology

Because prior research is limited to predominantly Christian samples, little is known about the God concepts of other faiths. This study explores the God concepts of people from various backgrounds and then looks at the relationship between God concept and coping style. On a sample of over 170 participants, a positive concept of God correlated positively with religious coping, but not with the optimistic flexibility or social support coping styles. A negative God concept did not correlate positively with coping style at any level of statistical significance. Future research will need to focus on recruiting a more highly ethnically representative sample and may need to specifically target certain religious populations, including non-Christian monotheistic groups, polytheistic groups, atheists, and agnostics.

Raley, Katherine, MORE THAN MEETS THE EYE: UNDERSTANDING FEMININE BEAUTY AND BEAUTY IDEALS IN A GLOBALIZED WORLD, Dr. Hans Stockton, Honors

Beauty as it is understood by others is something that women all over the world must deal with every day. We are faced with airbrushed supermodels, weight-loss solutions, and advertisements for cosmetic surgery that may not have anything to do with how we look, how we think we should look, or what we personally understand beauty to be. Yet, no matter how we may fight against it, the ideal presented to us by the media and a competitive society – the global beauty standard – can easily subvert what we believe about ourselves and others. ::This paper asks the following: Have feminine beauty ideals truly become globalized and, if so, what effect has this had on the world's female population? First, this paper will examine the Western idea of beauty from biological, philosophical, and artistic viewpoints. Next, it will focus on the evolution of a Western beauty standard and how that standard has affected women in Western societies. Finally, a Global Beauty Standard Perpetuation Model will be introduced. Using a case study of China, the GBSP Model will show how the Global Beauty Standard provides an end beyond beauty to some of its adherents, including but not limited to fame, wealth, professional success, etc. In so doing, the Global Beauty Standard is spread to more women, who then attempt to conform to this beauty ideal based in Western culture.

Rencher, Shawna, THE PROBLEM OF INTELLECTUAL RITUAL MAGIC IN THE LATER MIDDLE AGES AND EARLY RENAISSANCE, Dr. Irving Kelter, History

This paper, "The Problem of Intellectual Ritual Magic in the Later Middle Ages and Early Renaissance," is an analysis of how learned, ritual magic (in particular necromancy) developed in what Richard Kieckhefer called the "clerical underworld" and how it became "problematic" in the later Middle Ages and early Renaissance. :: Particular focus is directed to how this group was studying, practicing, copying, and fusing necromantic ritual. This phenomenon is then placed in a cultural context in relation to intellectual and cultural phenomena that occurred at the end of the Middle Ages and into the early Renaissance.

Richards, Leslie, FRANKLIN VS. JEFFERSON, Dr. Lee Williams, Masters in Liberal Arts

Benjamin Franklin and Thomas Jefferson were arguably two of the most influential Founding Fathers. Both men were involved in the writing of the two most important American documents, the Declaration of Independence and the Constitution, and both men were excellent examples of Enlightenment individuals. While they shared some common goals for their new country and some common Enlightenment influences, their approach to political philosophy was very different. An examination of the background of the two men, their Enlightenment influences, and some of the crucial documents they produced during the years leading up to and including the American Revolution, paints a picture of the different political approaches taken by two of America's greatest thinkers.

Rodriguez, Melanie, ACROSS THE ANTEBELLUM DIVIDE: NORTHERN AND SOUTHERN WOMANHOOD RECONSIDERED, Dr. Joseph McFadden, History

Based on extensive research in county manuscripts, personal diaries and letters, church and census records, this paper examines two bordering counties—one in Pennsylvania, Franklin county, and the other, Augusta County, in Virginia; it argues that women within these communities often did not match the ascribed roles of Northern and Southern womanhood dominant in American culture, and roles that have been thoroughly studied by historians of antebellum womanhood. In these counties, men expected women to be virtuous Christian models; as church records reveal, women fulfilled this role, but were aware of some contradictions in their positions as Christians and active participants in both counties' public spheres. Women from both the North and South, as found in these two counties, blurred the distinction between private and public, female and male. Some women acted outside gender norms by pursuing male interests. For example, Pennsylvania farming women succeeded so well that they held some of the higher claims in real and personal property, as recorded in the 1860 census. Various primary sources reveal that Virginian women, oftentimes portrayed as distinctly Southern and isolated to the household under paternal authority, also made achievements outside the home by involving themselves in education and benevolence at a time of emerging crisis. Such findings run against historical studies that claim benevolence was isolated mostly among northern women. By focusing on women's roles, this paper explains interesting similarities between the counties and offers an important reinterpretation of Southern womanhood during the opening of the Civil War era. A non-slavery oriented economy in Pennsylvania opened different opportunities for women, whereas the similarities between the two agricultural communities enabled Virginian women of Augusta to appear more "Northern" than women in other parts of the South.

Rodriguez, Dianna, LOS TRES HIDALGOS, Dr. John Burke, Political Science

Mexico's political structure has been shaped by several transformational periods. Some of the pivotal moments in Mexican affairs have been its historical roots and the presidential administrations post-1988. These administrations have played an important role in Mexico's political and economical realm. First, the Administrations of Salinas, Zedillo, and Fox have brought forth many significant changes internally as well

as externally. My paper focuses on two key issues. First, these presidents have offered opportunities for a better lifestyle such as, healthcare, and social programs to the people. Second, these presidents have addressed the issue of immigration and Mexico's relationship with the United States in a more systematic way than their predecessors. Indeed, both nations must work with one another in order to prevent the flow of immigration. Given Mexico's heavy emphasis on its past, nevertheless, the country is evolving rapidly as a democratic nation.

Rull, Dorothy, DETAINEE RIGHTS: NATIONAL COURT, INTERNATIONAL COURT OR ALTERNATIVE QUASI-JUDICIAL VENUE?, Dr. Linda Pett-Conklin, International Studies

Renowned Harvard law professor Alan Dershowitz has argued, "due process is the process you are due under the circumstances of the case, and the process that an alleged terrorist who is planning to kill thousands of people may be due is very different than the process that an ordinary criminal may be due." This contextual strategy has been used by the Bush Administration in defense against accusations of torture and prolonged, unlawful detention of terrorist detainee's five-and-a-half years post-9/11. In an attempt to abide by the rule of law and to address concerns about the lack of due process being afforded detainees, the Administration concluded that venue for terrorist detainees would best be served in military tribunals. Military tribunals, though, do not afford the rights of due process and appeal. This raises the question, "What is proper venue for trying terrorist detainees?" Why have other countries, such as France, had success prosecuting terrorists in their national courts, but the United States struggles with this issue? Are international criminal courts preferable? This paper will analyze national courts and international courts systems to evaluate which venue is proper. The French experience with trying terrorists will be addressed as a comparative tool to the United States' legal process. Also, criminal international courts will be addressed as an alternative venue. This analysis will conclude that proper venue is in either national courts or international courts in order to make the process transparent, therefore, preserving due process and the rule of law.

Saenz, Luis A., STORIES FROM 45-SOUTH, Dr. Janet Lowrey, Masters of Liberal Arts

My presentation for the Research Symposium is a selection from one of the chapters of my MLA creative thesis, a novel called STORIES FROM 45-SOUTH. An episodic account of the experiences of a young boy growing up in a low-income inner-city neighborhood along highway 45-South in Houston in the early 1990s, the excerpt that I will present is an experience in which the main character, Nato, learns to pray to the Virgin of Guadalupe, patron saint of Mexico, in order to be delivered from a severe punishment. Through this humorous experience, Nato discovers as a child that God indeed answers prayer and that with faith all things are possible.

Samperi, Ciro, MS-13: THE IMPACT OF U.S. FOREIGN POLICY AND IMMIGRATION, Dr. Jean-Philippe Faletta, Political Science

The purpose of this study is to illustrate the influence of the United States on the creation and sprawl of transnational street gangs through the implementation of immigration and its foreign policies. The research traces the evolution of immigration and foreign policies since the 1970s to the present which contributed to the creation and sprawl of these gangs. The study will also discuss the presidential responses since the 1970s to immigration issues. Three specific questions are addressed: 1) How did U.S. policies facilitate the creation of street gangs? 2) How did U.S. immigration and foreign policies facilitate the sprawl of these dangerous street gangs? 3) What are the potential political and social problems for the international community with regard to transnational street gangs? A case study of the Latin American country of El Salvador and the growing street gang MS-13 is conducted. This research will illustrate there is an increased danger to the citizens of the United States as a direct result of the policies implemented by the United States government.

Shah, Arsalan; Agboli, Chiedu; Khan, Mudasser; Rosell, Rosemarie, EFFECTS OF HEAT STRESS ON SUPEROXIDE DISMUTASE IN WHITEFLIES, Dr. Rosemarie Rosell, Biology

Whiteflies are small hemipterans that feed on the underside of plant leaves. Whiteflies' remarkable ability to transmit and spread viruses has had a great impact on global food production and thus have become one of most serious crop pests through out much of the world. In previous experiments, we have shown the presence of the enzyme Superoxide Dismutase in the whitefly, *Bemisia tabaci*. Superoxide Dismutase (SOD) is responsible for the conversion of O₂ – free radicals into less toxic products. A better understanding of the effects of heat stress on SOD activity provides basic biological information which may ultimately be used to design weapons for protection of crops against whiteflies. In this study, we determined the effects of heat stress in whiteflies by characterization and quantification of the SOD using a commercially available spectrophotometric SOD Assay. The activity of SOD was determined by inhibition of the enzyme in an O₂ – dependent reaction. Another method available is the use of polyacrylamide gel electrophoresis assays, which distinguish when the enzyme is induced under stress conditions. In future studies, we will be testing the response to heat stress by whiteflies fed on virus-infected plants.

Shapiro, Benjamin, THIRD PARTIES IN AMERICA: WHAT ARE THEIR CHALLENGES, WHERE ARE THEY HEADED?, Dr. Jean-Philippe Faletta, Political Science

This study examines the challenges faced by third parties in the United States at all levels (federal, state, and local). Using previous scholarly research two basic questions are addressed. First why are some third party movements somewhat successful, while others are not? Second, utilizing the work of Theodore Lowi, among others, what are possible avenues and approaches that third parties can take to increase their viability in America?

Simmons, Diana, GLOBALIZATION AND THE TRANSNATIONAL CORPORATION: TAILORING BUSINESS STRATEGIES TO THE REGIONAL MARK, Dr. Linda Pett-Conklin, International Studies

With the increase in multinational corporations and global trade, many conglomerates are not capable of infiltrating or remaining profitable throughout regional markets. Numerous management and marketing strategies within multinational corporations are inadequate and too often standardize procedures rather than addressing local issues that enable regional growth. Can multinational corporations generate the most efficient outcome if they are not operating sufficiently in all of the world's regional markets, and can regional markets be entered without appealing to the local preferences? My paper will define truly global corporations including, but not limited to, IBM, Nokia, Coca-Cola, LVHM and Intel, as well as study their methods of marketing and management that have enabled them to succeed globally. This study will then go on to examine non-global multinationals (McDonald's, Nike, Wal-Mart, Carrefour, and Volkswagen) which fail to comply with the standards of a truly global operation. These businesses will be observed to discover their shortcomings within a global realm and connect their methods of management and marketing to insufficient recognition of the local culture. To prove my stance, and to investigate possible routes of management and marketing, this research will look at numerous articles and statistics concerning the international corporations listed above, and corporate case studies regarding regional reactions to various methods of standardization and localization. In doing so, this paper seeks to establish that without using proper methods of localization, non-global multinationals remain efficient and cannot gain entry into the major regional markets.

Simon, Tommie; Gillette, Louis, SYNTHESIS OF CHALCONES CONTAINING PYRIDINE RINGS AND POLYQUATERNARY COMPOUNDS, Dr. Wheeler Crawford, Chemistry

Chalcones have been synthesized from 2-, 3- and 4-pyridinecarboxaldehyde and the corresponding pyridines carrying a methylketone substituent. The chalcone products were generally obtained in good yields with minimal formation of ketol and Michael adducts. Catalysts employed were choline hydroxide or

a strongly basic ion-exchange resin in the OH- form. In our hands, other basic catalysts such as potassium methoxide resulted in lower yields and more co-product formation. Ethanol was used as solvent. Temperature and reaction times were varied. The chalcone products were quaternized by reaction with 1,2-dichloroethane in refluxing acetone. These will be evaluated for biological activity.

Sistrunk, Christen, ATTITUDES TOWARDS SEEKING PROFESSIONAL PSYCHOLOGICAL HELP AMONG VIETNAMESE-AMERICAN ADULTS, Dr. Carl Scott, Psychology

This paper used archival data to examine the psychometric properties of the Attitudes Toward Seeking Professional Psychological Help (ATSPPH) scale. This scale was originally created by Fischer and Turner (1970) to rate a person's attitudes towards seeking professional psychological help when experiencing any type of personal distress. The authors validated the original scale on a sample of 492 females and 468 males. All of the participants were college students, their backgrounds, ages, and educational institutions varied amongst the participants. This paper will present descriptive statistics, internal consistency coefficient alpha, and factor analysis to examine the psychometric properties of the ATSPPH among a community sample of 349 Vietnamese Americans adults (data collected by Dr. Ngo). The results will be compared to the original psychometric data reported by Fisher and Turner (1970) to assess the cross-cultural usefulness of this measure.

Sistrunk, Christen; Balderas, Monique; Buckert, Kimberly; Ocampo, Alfredo; Pruneda, Lindsey; Boehm, Rachel; Oaxaca, Perla; Pihlaskari, Andrea; Shaw, Gina; Solis, Martha; Wissmiller, Curt, IDENTITY DEVELOPMENT AND SOURCES OF INFLUENCE IN COLLEGE STUDENTS, Dr. Trish Vandiver, Psychology

This research examined the association among identity development, source of influence on one's decision-making, and possible selves. College students were recruited from Psychology classes and offered extra credit for participating. Student came to the Psychology lab at appointed times and completed four instruments: the Identity Status Questionnaire, the Influence Questionnaire, the Thinking Disposition Questionnaire, and the Possible Selves Instrument. This research provides preliminary information about the role of sources of influence, concepts of possible selves (both desired and feared) and thinking about the self on the process of identity formation.

Lisa, Smith; Lentz, Jacob; Tsongas, Paul E.; Watson, Robert P. and Colton C. Campbell; Elazar, Daniel J., Virginia Gray, and Wyman Spano; Sebba, Leslie; Boone, Joseph; Graczyk, Michael; Avison, April; Bailey, Holly; Slater, Wayne; Shannon, Kelley; Fikac, Peggy, TWIN SONS OF DIFFERENT MOTHERS: A COMPARISON OF THE KINKY FRIEDMAN AND JESSE VENTURA CAMPAIGNS FOR GOVERNOR, Dr. Jon Taylor, Political Science

Jesse Ventura's successful campaign for Governor of Minnesota in 1998 has been cited by many scholars and political consultants as a template for both how to run and not run an independent campaign for public office. Hoping to follow in the footsteps of other entertainers-turned-governors, including Ventura, Arnold Schwarzenegger, and Ronald Reagan, Kinky Friedman announced an independent bid for Texas Governor in late 2005. His message for a time gained a substantial amount of popular support among many Texas voters. Friedman claimed that country-music lovers, college students, animal lovers, disaffected Republicans and Democrats, and anyone who did not vote in the last election were among his supporters. Although Friedman briefly enjoyed a high standing in the polls – to the point of seriously challenging Governor Rick Perry in the Summer of 2006 – his campaign began to fade toward Election Day as he became mired in a twenty-year old controversy. Friedman ultimately finished fourth with just under 13% of the vote. This paper will compare and contrast the Ventura and Friedman races, examining the similarities (such as their shared campaign strategists and celebrity-based campaigning) and dissimilarities (Minnesota's same-day registration versus Texas' challenging ballot access and registration laws), and present a discussion about the potential for future success for third party or independent candidates for statewide elective office in Texas.

Spofford, Jessica; Ocampo, Alfredo, PSYCHOMETRIC PROPERTIES OF THE WHAT I AM LIKE SCALE, Dr. Carl Scott, Psychology

This study used archival data to present the psychometric properties of the "What I Am Like" scale. This scale was originally created by Susan Harter, 1985, which was used to rate children's social, behavioral, and scholastic qualities. The scale assesses children's self-evaluation and parent's evaluation of their children on the dimensions of social, behavioral, and scholastic qualities. The sample consists of a total of 129 school-aged participants with age ranged from 7 to 14 years old. Various ethnic groups were included in the sample, which consisted of African American, Caucasian, Hispanics, and Asians. This study will report results of descriptive statistics and internal consistency coefficient alpha of the scale. Additionally, results on the correlation between the subscales will be presented. Note: The authors would like to thank Dr. Patricia Vandiver for the use of her data.

Spofford, Jessica, ST. THERESE OF LISIEUX: ON SUFFERING, SELF-ACTUALIZATION AND LOVE, Dr. Brooke Deely, Philosophy

This presentation on suffering, self-actualization and love will focus on St. Therese's Story of a Soul, her autobiography, with reference also to her Last Conversations. I will treat this topic in the perspective offered by psychologists Rollo May and Victor Frankl, with some reference also to the work of Conrad de Meester on Therese. I will show how Therese believed suffering gave meaning to her life. She felt that pain allowed her to become empathetic to the suffering of others while bringing her closer to God and His love.

Srubar, Marijean, FAMILIAR ENCOUNTERS, Dr. Janet Lowrey, English

This Creative Writing Fiction thesis entitled Familiar Encounters is a literary meditation on the family--its construction, its breakdown, the complexity of relationships within, and the lack of communication so prevalent in the family today. The beauty of family is that while it is so tangible--persons relating to one another--it still remains a mystery of interpersonal communicative relationships wherein the person him/herself is communicated to other persons. No matter what its construction or extent of inclusion, the family is fundamentally dependent upon communication. It is miscommunication, non-communication and the holding of secrets that threaten the solidarity of the family both from within and without. The short fiction pieces of my thesis expose different families--newlyweds in the first piece, an old married couple in the last, and growing families in the pieces between. These stories are all tragedies of secrets, miscommunication, and non-communication which I pose (via short fiction) are the most familiar destroyers of familial relations in contemporary society. It is from these original short stories revealing the crumbling of family at the hands of non-communication that I will read.

Stautberg, James, ENGLAND'S WATCHFUL EYE: IRELAND FROM AUGUST 1914-EASTER 1916, Dr. Joseph McFadden, History

The British and Irish have had a long, turbulent history, and the World War I era was no exception. The British felt the need to monitor the Irish in order to avoid any possible civil unrest, especially with a major war on the continent. My paper will look at the various ways the British monitored the Irish including media censorship, monitoring of both parcels and peoples, and various other aspects of investigation. I will examine British reports in the Dublin Castle Files to gather my information on all aspects of the various British monitory systems. The files contain a vast array of reports relating to British interaction with the Irish from the 18th to the 20th centuries, including police reports, governmental information on possible persons wishing to subvert the power of the crown, and more. My papers timeframe will range from August 1, 1914, the beginning of World War I, to Easter Sunday of 1916.

Stephenson, Timothy, TEXAS OPEN BEACHES ACT, Dr. Jon Taylor, Political Science

The Texas Open Beaches Act was first introduced in the year 1959 in order to ensure that Texas' public beaches remain open and free to the public. The act prohibits private structures on public beaches, which is defined as the land between the vegetation line and the water line. This means that if anyone's private property ends up on public land it is the job of the attorney general to remove these properties. The problem is that in most cases it is not the fault of the property owner that his/her property ended up on public land; it is nature's fault, for example a hurricane. So now the problem is that one of these owners of these houses spent millions of dollars to build a house right on the beach and now the government is threatening to remove their home because of an act that was initiated in 1959. The other point of view on this same topic is that since Hurricane Francis in 1998 there have been 102 homes that are located completely on public land. This paper will discuss the different points of view that surround this very controversial topic that hits very close to home for many Texas residents.

Stewart, Whitney, FROM THE SEDUCER TO THE SEDUCED: CHANGING CULTURAL VIEWS OF PROSTITUTION IN EARLY AMERICA, Mark Nicholas, History

This paper traces an important cultural transition in early America. By focusing on the cultural perceptions of prostitutes from the colonial era through the early American republic, this paper argues that views of womanhood after the American Revolution changed to disconnect women from the vile institution and empower them. Although in the colonial era prostitution was not a substantial public concern in places such as New York City, a print culture surrounding prostitution at this time still regarded women as prostitutes as "Nuances of Society." The view of women throughout the colonial era was shaped by printed texts such as the Bible, English poems, and political treatises. Men divinely ruled over political life, and thus also asserted Biblical power over the home, while women, according to well-read texts of the time, were led astray by their passions. Patriarchal authority was confirmed by the story of Adam and Eve, revisited by John Milton in *Paradise Lost*, and confirmed by the famous supporter of British patriarchy and royalism, the writer, Sir Robert Filmer. The transmission of cultural images in these texts had men as untrusting of women because female passions might be left unrestrained. After the American Revolution, the cultural image of the republican mother continued to assert that women were not free or equal, but should be placed in the home to cultivate the minds and morality of good republican children. However, by the early American republic different views of women as prostitutes emerged. In print, middle class reformists shifted the view of the prostitute from the seducer to the seduced. Men's behavior became the new target of reformist tracts, and such "confidence men" were thought to lure women into sexual relationships. Prostitution became not a fault of women's inherent biological differences, but was the fault of the limits of poverty and men who preyed on working class females. In short, moral reformists were looking to protect women in the fast-paced and fluid republic that they saw as debased by male seduction and vice.

Streeter, Mike, THE INNER LIGHT: ACCOUNTING FOR ABSTRACTION IN MILTON'S METAPHYSICS OF MATERIAL MONISM, Dr. Clinton Brand, English

John Milton's simultaneous embrace of the "inner light" and his unorthodox theory of material monism produce some tension, to say the least, in his philosophical outlook. On one hand Milton says that God created "all from one first matter," typifying his belief that matter and spirit are the same substance. Yet in line 587 of the final book of *Paradise Lost*, Michael advises Adam to cultivate "the paradise within thee, happier far" than the paradise on earth. This line arguably connotes a second notion of spirit in its implications that is poised differently from its metaphysical counterpart. Milton's interior paradise of Protestant individualism is akin to St. Augustine's interior proof of God, for Milton is speaking outside the delimiters of space and time; he is speaking epistemologically. Spirit, under this context, then, is not a retrograde form of matter but is an ontological substance that exists apart from matter. So in other words, Milton seems to be holding on to two contradictory schemes in his philosophy, substantial dualism and material monism. To reconcile this conflict, I will propose the simplest explanation possible, that Milton

just forgot that the traditional operation of abstraction is incompatible with his more innovative theory of material monism. I will account for this philosophical oversight by citing Milton's heritage of Cambridge Neo-Platonism, which he was never able to entirely repudiate in his later years of life when writing *Paradise Lost*.

Stubbs, Dereck, THE IMPLEMENTATION OF A SARBANES-OXLEY COMPLIANT BACKUP AND RESTORE SYSTEM, Dr. Beena George, Management Information Systems

This paper presents the case study of an organization implementing a backup and restore system designed to meet Sarbanes-Oxley (SOX) requirements. Energy, Inc. is an independent oil and gas company with a small staff yet large market capitalization. In the eyes of regulators, this put Energy, Inc. in the same group as large corporations with plentiful IT resources. Based on the review of third-party auditors, Energy, Inc. was required to change its existing financial backup and restore system. To meet this challenge, the organization examined its backup and restore policies and procedures from a five component perspective: (1) hardware additions; (2) software additions; (3) data growth and management requirements; (4) company procedure adaptation; and (5) additional personnel requirements and involvement. The organization was successful in identifying and implementing a backup and restore system that is cost effective, and satisfies external auditors as well as internal management. The case highlights the importance of examining a technology adoption decision from management and organizational perspectives, in addition to a technical perspective.

Tahvilian, Nadia, A BIOINFORMATICS REANALYSIS OF PRIMARY ENDOSYMBIONTS OF WHITEFLIES, Dr. Rosemarie Rosell, Biology

All whiteflies possess β -proteobacteria primary endosymbionts found in specialized insect cells called bacteriocytes. These endosymbionts have coevolved a mutualistic relationship with their host by providing vital nutrients, such as amino acids. Previously, 16s rDNA sequences [~900 base pairs (bp) in length] derived from the primary endosymbionts of 45 species of whiteflies were obtained and used to reconstruct a preliminary phylogeny. The goals of these experiments were to reanalyze our edited sequences and alignments, to reconstruct a more complete phylogeny using approximately 400 sequences from the 45 different species, and to incorporate previously published sequences into our phylogeny. We retrieved sequence data from GenBank of ~4000 base pairs of the 16s-23s rDNA from 22 species of whitefly endosymbionts. These sequences were trimmed to the same 900 bp 16s rDNA sequence as our previous data. We determined that with the shorter sequence, the phylogenetic tree remained as published, which gave us confidence that our own 900 bp sequence reflects an accurate phylogeny. To reanalyze our directly sequenced PCR products we have examined them using BioEdit, aligned the verified sequences using ClustalW and have used PAUP to reconstruct the phylogeny using maximum likelihood and parsimony methods. Future studies will focus on adding more sequences to further support the evolutionary relationship between the whitefly and its primary endosymbiont.

Tanner, Stephen, 10 YEARS AND COUNTING: ASSESSING THE IMPACT OF THE 1996 PERSONAL RESPONSIBILITY AND WORK OPPORTUNITY, Dr. Jon Taylor, Political Science

In 1996, Congress passed, and President Clinton signed the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA). PRWORA effectively reversed a 61-year trend of federal involvement in welfare policy by eliminating America's primary cash assistance program for families with children – Aid to Families with Dependent Children (AFDC) – and replacing it with the Temporary Assistance to Needy Families (TANF). Under TANF, states are generally free to design welfare programs in the best way they see fit, with some federal restrictions. The most striking change has been a 2 – 5 year lifetime limit on cash benefits for families. Proponents of the law have hailed its success, pointing to large declines in the welfare rolls and increased employment for former welfare recipients. Critics have noted that there is evidence which shows increases in extreme childhood poverty, an over-dependence on a low-wage job market, and increased hardships for families in finding adequate housing, child care,

and medical care. Given that the purpose of PRWORA is to get welfare recipients off the rolls and into work, this paper will focus on the welfare-to-work aspects of the law. Welfare reform has been effective at reducing dependence on welfare, reducing poverty, and lowering the rate of out-of-wedlock births. I will examine what is happening to people in the state systems and discuss how they are faring in the post-AFDC world.

Toledanes, Giancarlo, NMR DETERMINATION OF THE KINETICS OF DEUTERIUM EXCHANGE IN 3-PENTANONE, Dr. Thomas Malloy, Chemistry

The analysis of the base catalyzed exchange of the alpha protons in 3-pentanone yields a classic case of consecutive reactions with the second rate constant being smaller than the first. It was possible to independently follow the appearance and subsequent disappearance of partially exchanged species. The exchange process may be represented as the disappearance of a reactant A, the normal isotopomer, appearance and subsequent disappearance of an intermediate B, which is any species with CHD in the alpha position, followed by the appearance of the product, C with two D's in the alpha position. The disappearance of A, appearance and disappearance of B and appearance of C were all followed independently by monitoring and integrating different regions in the methyl region of the spectrum. This experiment can easily be completed in one undergraduate laboratory period. We are currently using this as a physical chemistry laboratory experiment. ∴ Partial support for this work was provided by the National Science Foundation's Course, Curriculum, and Laboratory Improvement program under Award No. 0536648. The Welch Foundation is acknowledged for support.

Trujillo, Carlos, ANALYZING TRANSIT ORIENTED DEVELOPMENT: THREE CASE STUDIES, Dr. Ravi Srinivas, Environmental Studies

Modern cities are faced with a number of challenges, most of which stem from past decisions and practices. These include issues of sprawl, transportation, environmental quality, and quality of life. Cities are developing and using strategies such as transit-oriented development (TOD) to rectify or improve conditions in a specific area or over broader regions. Though there are different types of programs, TODs usually involve residential and commercial growth along existing or new lines of transportation. Integration of different transportation modes also creates efficient development or an amelioration of previous problems. This poster presents a study in progress that analyzes the use of transit-oriented development (TOD) in three case studies using a set of specific criteria. Cities studied are Melbourne (Australia), Zurich (Switzerland), and Atlanta (USA). The criteria include: goals and objectives of TOD, design and strategy of the plan, city structure, environmental issues, and others. Conclusions about TOD, both specific to the case studies and in general, will be drawn from the research.

Vacek, Jacqueline, AIDS PANDEMIC CONTROL: FINDINGS FROM THE BRAZILIAN AND SOUTH AFRICAN MODELS, Dr. Gustavo Wensjoe, International Studies

The World Health Organization (WHO) estimates that nearly fifty million people worldwide are infected with the HIV virus which causes AIDS, mostly in the developing world. AIDS impacts countries experiencing a high level of poverty most profoundly considering they have fewer resources to allocate for disease control in a medical setting and for the implementation of public health policy on a social scale. At pandemic proportions, disabling diseases, like AIDS, can adversely affect nations' social and economic prosperity. Which factors should a nation consider when crafting policies to both contain and prevent the spread of AIDS? For the purposes of this paper, the outcomes of the South African and Brazilian public health models will serve as case studies. WHO reports indicate that the HIV virus was present in levels estimated to be less than 1% in the year 1982 in both countries; however, current levels of infection are 18.8% in South Africa and 1% in Brazil. This paper will identify some of the key factors present which caused South Africa and Brazil to exhibit different growth rates for HIV. After the identification process, both inter-policy and extra-policy factors that affect the mortality and morbidity rates attributable to AIDS

will be addressed. After assessing the level to which these factors are present in each study group, each factor will be evaluated as a discouragement or encouragement to progress.

Vo, Margaret; Santamaria, Elizabeth, THE ANALYSIS OF ORPHAN NUCLEAR RECEPTOR COUP-TFI SUB-CELLULAR LOCALIZATION DURING THE CELL CYCLE, Dr. Debra Bramblett, Biology

The purpose of this project is to examine the sub-cellular localization of COUP-TFI during mitosis. We will be examining tubulin, aurora-b and the transcription factor COUP-TF. In order to determine the sub-cellular localization of COUP-TF during mitosis, Hela cells are grown and passed. Then, a reporter gene for GFP is introduced into the cell through the process of transfection. Reporter genes can be used to determine the location of proteins within the cell. In this project the reporter gene GFP, a green fluorescent protein, was used. We are using a fusion protein, COUP-TF-GFP, in which the COUP-TF gene is fused in frame with the GFP gene. This plasmid construct allows us to visualize the normal COUP-TF sub-cellular localization by fluorescent microscopy. After transfection, the cells are grown, plated, and fixed during cytokinesis on coverslips. The cells are, then, prepared with primary antibodies and secondary antibodies for the application of immunofluorescence. Based on the data obtained from immunofluorescence, we know that COUP-TFI is expressed in the nucleus. Now, our immediate goal is the co-localization of aurora-b with COUP-TF to indicate its purpose in cell cycle control.

Vu, Lisa, PURIFICATION OF NATIVE ESCHERICHIA COLI PROTEINS, Dr. Michelle Steiger, Chemistry

Proteins are essential biological tools that are widely studied in biochemistry. They have a wide variety of biological functions including their service as catalysts for metabolism, receptors that allow cell to cell communication, important structural elements, and their involvement in the regulatory processes. Biochemical analysis of proteins often involves their purification from cells. The goal of this study is to obtain significant amounts of pure enzyme but at the same time, retain its biological activity without genetically modifying the bacterial source of the protein. Two enzymes, lactate dehydrogenase and alkaline phosphatase were purified using standard biochemistry techniques such as cell lysis, ammonium sulfate precipitation, dialysis, and anion exchange column chromatography. The enzymes were then assayed periodically with the spectrophotometer to monitor enzyme activity and concentration. These purification goals were successful for alkaline phosphatase protein but less so with lactate dehydrogenase. The lactate dehydrogenase results are likely caused by multiple forms of this enzyme present in Escherichia Coli (E. coli), and the most abundant forms use a different stereochemical substrate than the one used in our essay.

Weatherly, Katharine, THE 1881 ANTI-JEWISH POGROMS AND THE INTERNATIONAL REACTION, Dr. Lee Williames, History

My work will examine the 1881 anti-Jewish pogroms in Russia and will present a description of the violence perpetrated against the Russian Jewish population. It will also present a profile of selected international reactions to the persecution of the Russian Jews and the emigration resulting from the pogroms.

Whitaker, Alexander, AN AUSTRIAN BUSINESS CYCLE THEORY, Dr. Barry J. Wilbratte, Finance

My presentation proceeds step by step through a macroeconomic model of the business cycle following the theoretical framework of the Austrian School of Economics, which developed in the 19th and 20th centuries but remains valid today. The Austrian School is a school of economics devoted to the principles of free market and limited government and included a Nobel laureate, Friedrich von Hayek. Their business cycle theory contends that central banking measures do not correct economic fluctuations, but rather cause of economic cycles.

Wilbourn, Sarah Helen, TENNESSEE WILLIAMS AS A LEADING LADY, Dr. James Barloon, Fr. Romanus Muoneke, English

This paper examines the autobiographical elements of Tennessee Williams' plays *A Streetcar Named Desire* and *The Glass Menagerie*. Although Williams' female relatives may have inspired the major female characters in these two plays, it is Williams' own psychological suffering that defines Blanche Dubois and Amanda Wingfield. A combination of biographical information, literary structure, and Williams' confessional letters support this claim.

Wild, Shannon, THE MARRIAGE BED: AN EXAMINATION OF LEOPOLD AND MOLLY BLOOM'S MARRIAGE IN JAMES JOYCE'S ULYSSES, Fr. Romanus Muoneke, English

The complexities of the marital relationship have never been more beautifully expressed than in James Joyce's novel *Ulysses*, wherein he examines the way in which a married couple, specifically Leopold and Molly Bloom, search for a way to regain the bond with each other that they once shared. Joyce artfully accomplishes his task by transforming the physical marriage bed, which Bloom and Molly share, into the symbolic representation of their disconnection, failings, infidelities, and fears as well as their potential, desires, hopes, dreams, and triumphs both as individuals and as one flesh. Though Joyce provides his reader with only a brief snapshot of their lives, the thoughts and feelings that each conveys concerning their life together and apart, encompass a lifetime of poignant experience and chronicles the way in which a husband and a wife must continually choose each other despite all the things that would stand in their way. For Molly and Bloom, this choice is expressed in the simple word yes and a return to the marriage bed, and it is through the combination of word and action that Joyce binds Bloom and Molly together and aids them in discovering that a good marriage is built upon more than just love and passion, but also takes strength to survive difficulty, courage to forgive, and the conviction to say yes everyday; yes I will love you, yes I will care for you, yes I will honor you, and yes I choose you.

Williams, Veronica, AIN'T NO USE IN BEATIN' ON 'EM: DOMESTIC VIOLENCE IN ZORA NEALE HURSTON'S JONAH'S GOURD VINE, THEIR EYES WERE WATCHING GOD, Dr. Shannon Forbes, Dr. Janet Lowrey, English

In *Their Eyes Were Watching God*, Zora Neale Hurston's most famous novel, Janie, the female protagonist, as well as the all-black community of Eatonville in which the novel takes place, seem to regard domestic violence as normalcy, only to be questioned when "excessive." This is an oddity to say the least since female equality in marriage is a predominate theme in the novel. Janie endures two unhappy marriages in which she was physically and verbally abused before meeting the youthful Tea Cake. That even he, Janie's true love, beats her at one point and that the abuse is met with intensified devotion on Janie's part as well as admiration from the community, seems contradictory. Spousal abuse also occurs in Hurston's other writings such as the short story "Sweat"—a portrait of a bad marriage complete with three-fold spousal abuse (physical, verbal and emotional) and infidelity—and *Jonah's Gourd Vine*, a novel loosely based on Hurston's parents with verbatim quotes from Hurston's autobiography, *Dust Tracks on a Road*. The aim of my thesis is to reconcile the domestic violence motifs in these works to their common theme of marriage by examining Hurston's life and applying feminist criticism to analyze the texts.

Zapata, Maria Alejandra, HUMAN RIGHTS AND LEGITIMACY IN LATIN AMERICA: IMPUNITY OR ACCOUNTABILITY, Dr. Gustavo Wensjoe, International Studies

International human rights law is constantly being developed to address the needs and issues of the world today. Latin America is a region that over the past few decades has experienced massive human rights violations, contrasted by a movement toward greater economic stability and democracy. However, in order to establish a stable, legitimate democracy today, the painful past of state-sponsored violence needs to be addressed. Accountability for such crimes, in the form of truth commissions, criminal prosecutions and reparations provides justice and reconciliation for the victims and a standard for future

regimes. Thus, this paper argues that accountability for past abuses, rather than impunity, is the most effective way of preventing future regimes from engaging in a pattern of human rights violations. Dealing with past human rights violations constitutes a pressing issue as Latin America continues to cope with the challenges associated with legitimacy and governance. This paper will review the evolution and development of the human rights regime, paying close attention to the major conventions and courts that have greatly affected the practice of human rights in the region. Additionally, it will provide a study of the major instances of human rights abuses in Latin America, specifically in Argentina and Chile. Finally, there shall be a discussion of the multiple accountability initiatives in cases of human rights violations and of recent decisions and resolutions concerning those cases, as well as pending ones.