

11th Annual Undergraduate Research Conference

University at Albany

State University of New York



April 25 – April 26, 2014

Lecture Center Concourse

Undergraduate Research Conference Schedule

Friday April 25, 2014

Poster Session	2:30 – 3:30
Welcome and Award Presentations	3:30 – 4:30
Presentation Session I	4:30 – 6:00

Saturday April 26, 2014

Presentation Session II	12:00 – 1:30
Break	1:30 – 1:45
Presentation Session III	1:45 – 3:15

Conference Schedule

Friday April 25, 2014

Please See Abstract Section for Abstracts of Presentations

Poster Session 2:30 – 3:30

Lecture Center Concourse between LC 30 and LC 31

Christie Allen - "Assessing the Challenges of the Rural Elderly through a Social Work Lens"

Rachel Brotman - "Learning to Differentiate "Mates" from "Maids": Optimal Training Strategies to Reduce Cognitive Uncertainty When Remembering Accented Speech"

Timothy Carnevale - "Increasing Condom Use Intention through Induced Cognitive Dissonance In College Aged Females"

Ashley Chung - "How does long-term hospitalization impact the emotional well-being of a child?"

Adam Goodcoff - "Study of ECM Deposition upon a Bioengineered 3D Human Trabecular Meshwork"

Gabriela Melillo - "The effect of emotional intelligence on the relationship between negative mood and risk taking"

Lindsey Oltz - "The Role of the DDX6 Prion-like Domain in Hepatitis C Virus Gene Expression and Virus Assembly"

Collin Reynolds - "The effects of seminal priming on nausea and vomiting during pregnancy"

Joseph Toth - "Subcloning of Potassium Ion Channel H-K2P12 Insert into pmax (+) Backbone"

Ashley Zenner - "The Role of Social Expressiveness Expectancies and Body Image in College Students' Alcohol Use: A Moderation Model"

Welcome and Award Presentations 3:30-4:30

James Dias Ph.D., Vice President for Research

Presentation Session I 4:30 – 6:00

LC 3A: Music

Caitlin Abbott - "Techniques Used in John Corigliano's Piano Works"

Lance Troiano - "The Musical Style of Thomas 'Fats' Waller"

Nicole Evensen - "The Music of Billy Joel"

Janel Strachan - "The Musical Contributions of Aaron Copland, 'The Dean of American Composers'"

Emma Suarez - "A Gendered Performance: Liberace"

Nicholas Manteria - "Scott Joplin"

Delia Sheehan - "Minimalistic Music"

LC 3B: History and Linguistics

Genevieve Franck - "Ideophones in Manyika Shona"

Zachary Sedefian - "Obligatory Contour Principle violations in a previously undocumented dialect of Manyika (Bantu)"

Alease Holden - "The Knowledge of Prepositional Verbs amongst Heritage Speakers of Spanish"

Anthony Balzano - "An Ideological Schism: More Regulation or Less?"

Luke Burns - "WWII Veterans Effect on the NYSCT"

LC 3C: Biology, Psychology and Chemistry

Kelsey O'Leary - "Resveratrol: A potential therapy for hippocampal insulin resistance and Alzheimer's pathology"

Alvin George - "LPS-induced inflammation facilitates insulin resistance and neurodegeneration characteristic of Alzheimer's disease"

Ewelina Mistek - "Race and gender differentiation from human blood traces by Attenuated total reflectance-Fourier transform infrared (ATR-FTIR) spectroscopy for forensic purposes"

Cece Hong - "Toxicity of aminoglycosides antibiotics and human helix 69 rRNA"

Augusta Barger - "Behavioral addiction to video gaming: Assessment, prevalence, and psychosocial correlates"

Saturday April 26, 2014

Please See Abstract Section for Abstracts of Presentations

Presentation Session II 12:00 – 1:30

LC 3A: Music

Benjamin Sponable – “Jelly Roll Morton”

Paul Bleck – “Disability in Music: Visually Impaired”

Dilson Hernandez – “Piano attributes in Rock n’ Roll”

Azzuræ Jenkins – “American Composer and Pianist Duke Ellington”

Jason Kartis – “The integration of popular and jazz-like elements with symphonic techniques in *Rhapsody in Blue*”

LC 3B: Math and Science

Daniel Hono – “On a Certain Max Difference Equation with Periodic Coefficient Sequence”

Yufeng Li – “Elementary inequalities about Mahler measure of polynomials”

Ernesto Findlay – “Analysis on the origins of east Pacific easterly waves”

Umaru Barrie – “Effect of the abiotic digestion of spent ground coffee (SGC) on the bioavailability of antioxidants and growth of a commercial probiotic strain (*Lactobacillus casei* DN114)”

LC 3C: English and Art History

Chloe Houseman – “Fetish and the Female Form in the Eighteenth Century”

Marisa Mazart - “Breaking Bad: On the Western Genre and Audience Reception”

Emily Wierzbowski – “The Isolated Self: A Re-imagining of the Human in Mary Shelley’s *Frankenstein* and Mamoru Oshii’s *Ghost in the Shell* films”

Maria Belyea – “Time and Immortality”

Presentation Session III 1:45 – 3:15

LC 3A: Political Science, Public Policy, and Atmospheric Science

David Gill – ““Evangelists and Entrepreneurs: Bitcoin as Collective Action”

Gloria Moran – “Regulation Blood: Determining alternative approaches to the FDA's MSM Blood donor screening regulation through probabilistic modeling”

Kyle Pallozzi – “The Effects of Downsloping on Precipitation Distributions in the Capital District of New York State”

Kristin Kozlowski – “In what ways, if any, do situational crime prevention techniques impact male-on-female sexual offending?”

LC 3B: Biology

Megan Gura – “The 5'-Untranslated Region of SOCS2 mRNA, a Gene Involved in Successful Central Nervous System Axon Regeneration in *Xenopus laevis*, is Alternatively Spliced”

Katie Brown – “Molecular mechanisms of adaptation to SIV (simian immunodeficiency virus) at the host CD4 locus.”

Spencer Weintraub – “Structure Activity Relationship Studies of Small Molecules Directed Against the T-box Specifier Loop”

Jeremy Manheim - “Differentiation of Human, Animal and Synthetic Hair by ATR FTIR Spectroscopy”

LC 3C: English

Joseph Meringolo - “The Sanity of *Furor Poeticus*: Romanticism's Demystification of 'Madness' and Creativity”

Stephen Hitt – “Gothic Histories: The Interplay of Narrative and Subjectivity in Austen's *Northanger Abbey*”

Hannah Stahl – “A Different Type of Teddy Bear: Looking at Books of Hours and *Ediciones Vigia* Books as Transitional Objects”

Jake Edwards – “Rupture in Rapture: *2K Games' BioShock* as an Auto-Critical Metatext on the Addictive Power of the Videogame to Rupture the Individual Subject”

Bridget Flynn – “‘It's a Scream, Baby': The Role of Parody in Horror Film”

Partial Funding for the Undergraduate
Research Conference is provided by
University Auxiliary Services

2014 Presidential Undergraduate Research Award Recipients

Christie Allen: Social Welfare: “Assessing the Challenges of the Rural Elderly through a Social Work Lens”
Faculty Mentor: Professor Blanca Ramos

Anthony Balzano: History: “An Ideological Schism: More Regulation or Less?”
Faculty Mentor: Professor Carl Bon Tempo

Rachel Brotman: Psychology: “Learning to Differentiate “Mates” from “Maids”: Optimal Training Strategies to Reduce Cognitive Uncertainty When Remembering Accented Speech”
Faculty Mentor: Professor Laurie Feldman

Katie Brown: Biology: “Molecular mechanisms of adaptation to SIV (simian immunodeficiency virus) at the host CD4 locus”
Faculty Mentor: Professor Caro-Beth Stewart

Alvin George: Psychology: “LPS-induced inflammation facilitates insulin resistance and neurodegeneration characteristic of Alzheimer’s disease”
Faculty Mentor: Professor Ewan McNay

Megan Gura: Biology: “The 5'-Untranslated Region of SOCS2 mRNA, a Gene Involved in Successful Central Nervous System Axon Regeneration in *Xenopus laevis*, is Alternatively Spliced”
Faculty Mentor: Professor Ben Szaro

Yufeng Li: Mathematics: “Elementary inequalities about Mahler measure of polynomials”
Faculty Mentor: Professor Rongwei Yang

Kristin Kozlowski: Criminal Justice: “In what ways, if any, do situational crime prevention techniques impact male-on-female sexual offending?”
Faculty Mentor: Professor Graeme Newman

Jeremy Manheim: Chemistry: “Differentiation of Human, Animal and Synthetic Hair by ATR FTIR Spectroscopy”
Faculty Mentor: Professor Igor Lednev

Marisa Mazart: English: “Breaking Bad: On the Western Genre and Audience Reception”
Faculty Mentor: Professor Jennifer Greiman

Gabriella Melillo: Psychology: “The effect of emotional intelligence on the relationship between negative mood and risk taking”
Faculty Mentor: Professor Edelgard Wulfert

Gloria Moran: Public Policy: “Regulation Blood: Determining alternative approaches to the FDA's MSM Blood donor screening regulation through probabilistic modeling”
Faculty Mentor: Professor David Anderson

Lindsay Oltz: Biology: “The Role of the DDX6 Prion-like Domain in Hepatitis C Virus Gene Expression and Virus Assembly”
Faculty Mentor: Professor Cara Pager

Zachary Sedefian: Anthropology: “Obligatory Contour Principle violations in a previously undocumented dialect of Manyika (Bantu)”
Faculty Mentor: Professor Lee Bickmore

Emily Wierzbowski: English: “The Isolated Self: A Re-imagining of the Human in Mary Shelley’s *Frankenstein* and Mamoru Oshii’s *Ghost in the Shell* films”
Faculty Mentor: Professor Patricia Chu

Abstracts

Arranged by Session and Room

All project titles and abstracts are printed as received.

Friday, April 25th

Poster Session

Christie Allen: School of Social Welfare: "Assessing the Challenges of the rural Elderly through a Social Work Lens"

Faculty Advisor: Professor Blanca Ramos

Of the 59 million people living in census-designated rural areas of the United States in 2010, more than 7.7 million of them were elderly (over 65). Many live in precarious conditions and experience several risk factors for their health, including barriers to standard healthcare services such as preventive medicine. This can be due to lack of transportation to medical facilities or a lack of financial resources to pay for medical care. At the same time, elders living in rural areas have a number of strengths and have demonstrated resilience in building social capital and networking through family, church and community groups. During their lifetimes, they have faced many struggles including job security, environmental isolation, and lack of social services. Barriers to healthcare include absence of formal services; clinics are shut down due to lack of government and corporate funding, and local stores and pharmacies providing essential goods to support a healthy lifestyle and healing. This paper introduces the notion of technology as a bridge to services that can meet the needs of some elders living in rural areas such as: telemedicine technology already used by the Veterans Administration to serve rural-dwelling veterans. Telemedicine technologies can be utilized with landline, cellphone, and internet-connections, thus facilitating access to quality healthcare without the necessity of face-to-face interactions, which is not always possible. This paper also adapts a Needs Assessment listed in social work practice to aid elders in rural areas.

Rachel Brotman: Department of Psychology: "Learning to Differentiate "Mates" from "Maids": Optimal Training Strategies to Reduce Cognitive Uncertainty When Remembering Accented Speech"

Faculty Advisor: Professor Laurie Feldman

This experiment investigated techniques to enhance memory of foreign accented speech. Native American-English speakers listened to, repeated, or imitated Dutch-accented English words at study and were later tested on these items using a forced-choice recognition memory task followed by an identification task. Real-time mouse-tracking measures assessed reaction time, accuracy and the curvature of mouse paths towards target and foil responses in order to capture underlying cognitive processes. In the memory task, imitation most improved memory as measured by linear mouse trajectories. Across all conditions trial-by-trial self reports of confidence differed, where high confidence resulted in more accurate responses, faster time to respond, and more linear trajectories. Results imply that imitation may be a particularly useful study strategy in domains that require recognition of unfamiliar accented speech.

Timothy Carnevale: Department of Psychology: "Increasing Condom Use Intention through Induced Cognitive Dissonance in College Aged Females"

Faculty Advisor: Professor Mitch Earleywine

Female college students constitute a very high risk population for transferring and contracting sexually transmitted diseases including the Human Immunodeficiency Virus (HIV). Interventions aimed to increase condom use have produced mixed results; however, by altering condom attitudes and by inducing hypocrisy, a form of cognitive dissonance, overall increases in condom use may be possible. The current study examined cognitive dissonance as a means of altering condom use attitudes and increasing condom use intentions among a sample of college aged females. A total of 374 college females participated in the study. Participants completed a scale measuring condom attitudes and measures of their intended future condom use and drinking behaviors. Participants also completed a calendar behavior recall aid; a questionnaire designed to express the pros and cons of a particular behavior, and wrote a testimonial for their specific target behavior (condom use or binge drinking) designed to induce cognitive dissonance. Participants then completed the same scale measuring condom attitudes and the same measures of intended future condom use and drinking behavior. A MANOVA revealed a significant effect across time. Subsequent univariate repeated-measures ANOVAs suggested that the cognitive dissonance group did not differ from the alcohol group and that improvements across time did not reach conventional levels of significance after controlling for the number of dependent variables.

Ashley Chung: Department of Sociology: “How does long-term hospitalization impact the emotional well-being of a child?”

Faculty Advisor: Professor Angie Chung

The question I attempt to answer with my research is: How does long-term hospitalization impact the emotional well-being of a child? I am measuring the impact on development and emotional state that hospitalization has on an individual that is still in the process of determining their self-identity, while also identifying the consequences of childhood illness. A necessary emphasis is placed on the vulnerability created by long-term hospitalization and the separation from home; a focus on the feelings of isolation and loss of security created by loved ones is essential in understanding the role that family plays in the hospitalization of a child. Also, I am trying to understand the impact that various aspects of inequality have on how a child that is hospitalized over a long period of time adjusts to their period of hospitalization. The methodology for this thesis mostly involves secondary data analysis where I gather data previously conducted by research on the same and similar topics in addition to an interview with an individual that was hospitalized in adolescence to act as a supplement to the secondary data I collected.

Adam Goodcoff: Department of Biology: “Study of ECM Deposition upon a Bioengineered 3D Human Trabecular Meshwork”

Faculty Advisor: Professor Susan Sharfstein

Glaucoma, or increased pressure within the eye is the second leading cause of blindness as described by the World Health Organization. While there is currently no cure for the disease, treatments focus on decreasing the pressure caused by trapped aqueous humor. Currently, treatments focus on the “conventional outflow pathway”. This pathway is only responsible for a minority of the pressure buildup, and thus new treatments would be much more effective with a greater understanding of the “trabecular outflow pathway”, the dominant pathway. My project aims to better understand the deposition of Extra Cellular Matrix (ECM) on a bioengineered scaffold that we have created in the clean room at CNSE. This in-turn may allow for the discovery of additional therapies for the trabecular pathway. Once we are able to prove that we have created an accurate representation of the cells “normal” structure, we can test drugs while monitoring pressure across our model.

Gabriela Melillo: Department of Psychology: “The effect of emotional intelligence on the relationship between negative mood and risk taking”

Faculty Advisor: Professor Edelgard Wulfert

Emotional intelligence is conceptualized as encompassing perception, utilization, and management of emotion. Research suggests that the managing one’s own emotions subscale (MOE) may be particularly relevant to risky behaviors such as substance use and gambling. The present study examined the effects of emotional intelligence and mood manipulation on risk taking. Participants were randomly assigned to a happy, sad, or neutral mood condition. Baseline measures of mood state were obtained by the Positive and Negative Affect Schedule (PANAS), followed by self-report questionnaires. Participants were then presented with a brief film clip for the mood manipulation. Immediately thereafter, a second PANAS was completed, followed by the Iowa Gambling Task (IGT) to simulate risk taking, and a third PANAS. A mixed model repeated measures analysis indicated that the mood induction was effective. Moderation analyses revealed that under high levels of negative affect change, MOE moderates the relationship between change in negative affect and advantageous selections on the IGT. The results indicate that MOE may play a prominent role in reducing risk taking when in a negative mood state. This study has implications for addiction, as individuals with higher emotional intelligence may engage in less risk taking when in a negative mood, whereas individuals with lower emotional intelligence may be prone to risky behaviors.

Lindsey Oltz: Department of Biology: “The Role of the DDX6 Prion-like Domain in Hepatitis C Virus Gene Expression and Virus Assembly”

Faculty Advisor: Professor Cara Pager

Currently over 180 million people are infected with Hepatitis C virus (HCV) worldwide. Antiviral therapies are limited and vaccines are not available, thus new antiviral strategies are needed. The Pager lab discovered that DDX6, a DEAD-box helicase involved in microRNA gene regulation and mRNA decay, is required for HCV gene expression and virus assembly. DDX6 contains conserved motifs as well as an extended N-terminus that contains a 60 amino acid prion-like domain (PRD). I hypothesize that the PRD facilitates the localization and function of DDX6 at HCV assembly sites. To test this hypothesis I have deleted the PRD within DDX6 and cloned this mutant protein first into 3xFlag mammalian and then a lentivirus vector. These will be used to examine the effect of the DDX6 PRD mutant on: 1) DDX6 protein expression and localization, and 2) HCV gene expression and virus assembly.

Collin Reynolds: Department of Psychology: “The effects of seminal priming on nausea and vomiting during pregnancy”

Faculty Advisor: Professor Gordon Gallup

Nausea and vomiting during pregnancy (NVP), or “morning sickness,” impacts a majority of women and can lead to dehydration, weight loss, hospitalization, and overall reduced quality of life. The ultimate and proximate mechanisms of this condition are poorly understood. The maternal embryo protection hypothesis (MEPH) offers an evolutionary explanation of how NVP could have come about by selective pressures from pathogens in susceptible foods such as meats. There is conflicting evidence in support of this hypothesis. The current paper examines the relationship of seminal priming and NVP. It was predicted that seminal priming would act a graded challenge to the mother’s immune system, decreasing symptoms through a process of toleration. 122 biological mothers answered an online questionnaire in the form of a sexual behavior inventory. A correlation of $r = 0.19$ $p < 0.05$ was found between insemination frequency and severity of symptoms. The initial hypothesis was not supported though semen may play a role in NVP

Joseph Toth: Department of Biology: “Subcloning of Potassium Ion Channel H-K2P12 Insert into pmax (+) Backbone”

Faculty Advisor: Professor Haijun Chen

To effectively analyze two-pore potassium ion channels the second and fourth residue in the selectivity motif TxGxG was mutated. The dynamic characteristic of these channels will be analyzed by employing subcloning techniques to ligate the insert h-K2p12 and the backbone pmax (+) to study ion selectivity of these channels. The insert h-K2p12 or THIK-2 may be selectively expressed given certain cellular stressors, which may enable cells to modify their intracellular potassium levels and may contribute to conditions such as hypokalemia. Both h-K2p12 and the backbone pmax (+) were subject to a single restriction digestion reaction to isolate complementary fragments. The restriction digestion for this experiment was unsuccessful for each plasmid DNA component; in turn ligation was unable to be performed. Via gene map analysis the h-K2p12 vector was found to not possess an EcoR1 site, but the pmax (+) vector did have the necessary recognition site. When provided a new insert DNA fragment with a EcoR1 site precautionary measures will be taken to assure restriction digestion of the backbone, and insert is successful. Given successful ligation the gene of interest on the insert fragment can be studied using patch-clamp techniques. Further analysis of the gene of interest will yield a better understanding of the causes of disorders such as hypokalemia, and spark new interest in preventative medicine strategies to decrease the prevalence of this disorder.

Ashley Zenner: Department of Psychology: “The Role of Social Expressiveness Expectancies and Body Image in College Students’ Alcohol Use: A Moderation Model”

Faculty Advisor: Professor Edelgard Wulfert

College students fall within the age group that holds the strongest positive expectancies for alcohol use. Research suggests that college students, and perhaps women especially, seem to turn to alcohol to be able to be more relaxed and confident in unfamiliar situations. This study examined the effect social expressiveness expectancies has on the relationship between body image and alcohol use, as well as body image and consequences of alcohol use in undergraduate students. Participants were asked to complete a set of anonymous questionnaires via a web-based survey program and one paper based questionnaire (body image questionnaire). A moderation model was used to assess the effect that social expressiveness expectancies has on the relationship between body image and alcohol use, as well as body image and consequences of alcohol use. The moderation analyses revealed that for women college students specifically, high social expressiveness expectancies moderates the relationship between poor body image and increased alcohol use. The results provide a potential moderating variable that may help account for the relationship between body image and alcohol use. Specifically, the expectancies that women hold are another variable that attributes to increased alcohol use. This study has implications for understanding the development of potentially detrimental alcohol use and for points of prevention of alcohol use disorders.

Presentation Session I

LC 3A: Music

Caitlin Abbott: Department of Music: "Techniques Used in John Corigliano's Piano Works"
Faculty Advisor: Professor Victoria Von Arx

John Corigliano is an American composer born in New York City in 1938. His choral, symphonic, orchestral, and piano works are well respected among contemporary classical composers. He is a distinguished professor of music at Lehman College at the City University of New York, and is well known for his work as assistant producer on Leonard Bernstein's *Young People's Concerts*. This project will compare two of his piano works, "Fantasia on an Ostinato" (1986) and "Chiaroscuro" (1997) to show how he uses both minimalistic and quarter tone techniques. Composer Charles Ives used quarter tones as early as the 1920's. In "Chiaroscuro," Corigliano manages to combine and modify these techniques in a way that journalist Frank Oteri describes as "so downright sneaky". Similarly, the devices heard in "Fantasy on an Ostinato" can be found in works by great minimalist composers like Steve Reich and Philip Glass. Corigliano has taken post-modern composition to an exciting and thoughtful level with these two pieces, positioning himself as one of the great American composers of the century.

Lance Troiano: Department of Music: "The Musical Style of Thomas 'Fats' Waller"
Faculty Advisor: Professor Victoria Von Arx

This project looks at music of Thomas 'Fats' Waller. The goal is to develop on his and contribution to the music of his time. This presentation will take the audience through a series of many compositions he has worked on over his life. The collection of pieces such as, *Handful of Keys*, *Smashing Thirds*, *Numb Fumblin'* and *Valentine Stomp* will help develop on his contribution to Harlem stride Piano. Upon examination of these songs, it becomes clear of Waller's talent through musical technique and structure. An analysis of his later life explains his involvement in popular song and compositions for musical performance. The aspects of his performance and stage presence will further look into his life as an entertainer and his claim to fame as one of the fathers of Harlem Stride Piano. The final stage of this presentation will explore the variety of the many compositions that he had published along with his popular songs and his scores of musical performance in collaboration with many popular musicians of the time. Though Thomas 'Fats' Waller lives on in memory, this research highlights the importance of his technique, style, and influence in music history

Nicole Evensen: Department of Music: "The Music of Billy Joel"
Faculty Advisor: Professor Victoria Von Arx

In this presentation, I will focus on Billy Joel's contribution to classic rock and roll music through his many popular songs, and his accomplishments as a pianist and singer. Billy Joel is an artist who took the piano which usually was not seen as an important instrument in rock and roll music, and made it an integral part of his performances. Billy Joel is best known as a songwriter and solo performer, and has written over 140 songs in his time as a professional musician. His music has been an important part of rock and roll history from the early 1970's until today, and he has become a major influence on pop music. Billy Joel is in the Rock and Roll Hall of Fame as one of the most talented musicians and accomplished songwriters of his time. He is still alive today, is now sixty-five years old and is still performing his unique, original music.

Janel Strachan: Department of Music: "The Musical Contributions of Aaron Copland, 'The Dean of American Composers'"

Faculty Advisor: Professor Victoria Von Arx

In my paper, I will examine Aaron Copland's contribution to American music and to an American style. I will focus on his famous work, "Piano Concerto." I will use Copland's various interviews and writings to explain how he successfully embodied American music. I will use his Piano Concerto, composed in 1926, to identify different areas in which Copland introduced jazz, blues, and ragtime influences. The Piano Concerto was essentially a blend of African and European musical sensibilities. He accomplished this by drawing from elements such as sounds from Native American rhythms and African syncopations. That unique mix can be considered American music, and I will develop it more in my presentation.

Emma Suarez: Department of Music “A Gendered Performance: Liberace”

Faculty Advisor: Professor Victoria Von Arx

The main focus of my paper is to investigate aspects of American music within the context of gender and sexuality studies. The subject for my study is Wladzio Valentino Liberace, who came to be widely known simply as “Liberace.” Liberace rose to fame through his gift of piano playing and became one of the 20th century’s iconic performer and celebrity. Liberace was a “modern virtuoso.” He was possessed the capability to incorporate popular musical material into the context of classical music. His personality, fashion sense and how he performed that aid in this claim. Liberace didn’t only perform music. He performed gender. Liberace presented himself in a manner atypical of societal norms. He carried himself flamboyantly, and femininely. It was almost obvious that he was gay. But in the 1950’s life for lesbians and gay was less than thrilling. The Fate of a gay person could mean several things: spiritual rehabilitation camp, electro-shock therapy, lobotomies (in extreme cases), etc... It made Liberace’s presence all the more important. He kept on with simply denying the accusations and continuing with his performances and was celebrity that used his entertaining gender performance to his advantage, captivating audiences and entertaining them through music.

Nicholas Manteria: Department of Music: “Scott Joplin”

Faculty Advisor: Professor Victoria Von Arx

Scott Joplin was the most influential ragtime composer in history. Recognized as the inventor of ragtime music, he holds an important place on the timeline of American composers. He wrote 44 ragtime pieces during his brief career and came to be regarded as “The King of Ragtime.” Joplin’s music was enjoyed by a wide audience consisting of upper-class white folks as well as lower-class citizens. His unique compositions set him apart from other composers of his time. Up until the late 1800s, no one had heard of anything like the pieces that he composed. His accomplishments seem even more extraordinary when taking into consideration his social status as a lower-class laborer. I will talk about the characteristics of Joplin’s music. The use of “oom-pa’s” created an up-beat feel throughout his works. Ragtime style originated from African and European influences. For example, tunes originally referred to as “jigs,” and meant to be played on banjo, were later performed on the piano. Music like this was one of the sources of Joplin’s ragtime style. I will use compositions by Joplin such as *Swipsey Cakewalk* and *Sunflower Slow Drag* along with other various pieces to demonstrate the sounds of his African roots as well as European influences.

Delia Sheehan: Department of Music: “Minimalistic Music”

Faculty Advisor: Professor Victoria Von Arx

Minimalism is a style of music that originated around the 1960s and was related to minimalist art. It is a style consisting of short musical motifs, steady pulse, slow transition and a simple harmonic idiom. Each motif is repeated many times so it can maximize the hypnotic effect. This music served as an antidote for modernism. Minimalism is often related to non-western music, jazz and rock. Minimalism was conceived as an alternative to modernism during the 1960’s. Through this presentation I want to show that even though there is repetition in minimalist music, it is not as simple as it may seem. Composers have developed different techniques that have defined different styles within this genre.

LC 3B: History and Linguistics

Genevieve Franck : Department of Linguistics: “Ideophones in Manyika Shona”

Faculty Advisor: Professor Lee Bickmore

Ideophones are a class of words which occur in many languages throughout the world, but are relatively uncommon in English. Though often mimetic, ideophones are not to be confused with onomatopoeia since they extend well beyond the narrow scope of sound symbolism. In the past, ideophones have been difficult for linguists to categorize and understand due to their limited usage in many of their native European languages. These words stand out, or are marked, in a language due to their divergent phonology, syntax, or both. Ideophones often vividly depict one or more sensory events, ranging from sight to emotion. This presentation will discuss the use of ideophones in Manyika Shona, a Bantu language of Zimbabwe.

Zachary Sedefian: Department of Linguistics: “Obligatory Contour Principle violations in a previously undocumented dialect of Manyika (Bantu)”

Faculty Advisor: Professor Lee Bickmore

My honors thesis presents the description and autosegmental analysis of the verbal tonology of a previously undocumented variation of Manyika (Bantu) called Jindwi. The data used in this analysis was collected first-hand in a field methods course in anthropological linguistics, from a native speaker of Manyika. It became apparent that a dialectical division exists within Manyika when comparing the collected data to the tonal patterns that were present in a contemporary article on Manyika verbal tonology (Johnson, Pastor 2012). A special process of tone reduction occurs in Manyika verbs. A phonological process called Meeussen’s Rule (MR) predicts that two consecutive underlying High tones will result in the lowering of the second tone. In the Jindwi variation that our consultant spoke, this canonical form of MR was present in nouns, but not verbs. In verbs, MR takes a special form that requires the postulation of the phonological presence of morphological boundaries.

Alease Holden: Departments of Linguistics and Spanish: “The Knowledge of Prepositional Verbs amongst Heritage Speakers of Spanish”

Faculty Advisor: Professor Julio Torres

Heritage language (HL) speakers are bilinguals who grow up speaking a family or community language while English becomes their dominant language through formal education in the US context. Access to the HL varies greatly from person to person, resulting in widely differing levels of proficiency. The grammars of HL speakers undergo structural changes and simplification in comparison to monolingual speakers of the HL (Montrul, 2009). According to first language acquisition studies, prepositions are acquired over the course of a child’s first 10 years, building from simple locative semantic formations to complex adverbial structures (Owens 2012; Kvaal 1988). Oftentimes, if a structure is not fully acquired or has undergone attrition, HL speakers will transfer parallel features from their dominant language in order to fill in the missing gaps of their grammar (Montrul, Silvina, and Ionin 2010). Therefore, the goal of this study is to test HL speakers’ knowledge of post-verbal prepositions and determine the degree of transfer occurring from their dominant language, English. In the current study, a group of adult HL and native speakers of Spanish completed two tasks that included an oral elicitation task (OET) and a written interpretation task (WIT). Results revealed that HL participants answered 65.3% of the questions correctly during the OET. Of the incorrect responses given, 76% yielded answers that suggest English interference into Spanish. For the WIT, participants answered correctly slightly above chance at a rate of 59.7%. Likewise, the data revealed that English prepositions were being used at the high rate of 86.2% amongst the incorrect responses. Overall, the findings support transfer effects from the dominant language (English) into the HL (Spanish) to compensate for gaps in HL speakers’ grammars.

Anthony Balzano: Department of History: “An Ideological Schism: More Regulation or Less?”

Faculty Advisor: Professor Carl Bon Tempo

The Interstate Commerce Act of 1887 was the first extensive attempt by the federal government to regulate commerce in America. This law foreshadowed the rise of the modern regulatory state and the transformation in the philosophy of governance in the United States. In 1887, New York State was the wealthiest state in the union in both population and commerce, but its Senators, Warner Miller and William M. Evarts, had very different views on the government’s role in the regulation of commerce and the ICA. The former supported the Act while the latter opposed it. The political discourse between these senators illuminates a divide between ideologies and interests. An examination of this division will provide a better understanding of the formation of the modern regulatory state, as well as the origins of a question still prominent today: to what degree should the federal government regulate commerce? The focus of my presentation will be on Senator Evarts, he represents the beginning of a conservative tradition in America to try and limit government regulation of business.

Luke Burns: Department of History: “WWII Veterans Effect on the NYSCT”

Faculty Advisor: Professor Laura Wittern-Keller

The purpose of my research is to shed light on the effects of the Servicemen’s Readjustment Act on the New York State College for Teachers at Albany, and just as importantly, its effect on the veterans themselves. Through archival information and data, detailed secondary sources, and first-hand accounts, the development of the college into a university and the veteran into a citizen will be articulated. Veterans were able to influence the educational framework at the College at Albany as well as institutions throughout the nation, so this article ends with a proposition to their residual effect on another major intertwining subject such as sport.

LC 3C: Biology, Psychology and Chemistry

Kelsey O'Leary: Departments of Biology and Psychology: "Resveratrol: A potential therapy for hippocampal insulin resistance and Alzheimer's pathology"

Faculty Advisor: Professor Ewan McNay

Antioxidants participate in maintaining overall health. Without antioxidants, reactive oxygen species (ROS), including O_2^- , H_2O_2 , and HO^- , can wreak havoc on cellular structures and cause a domino effect of conformational changes in lipids, proteins, and even DNA. These changes can have detrimental effects on cellular integrity and are implicated as a potential cause of many neurodegenerative diseases, including Alzheimer's, Parkinson's, and ALS. Resveratrol, a polyphenol antioxidant found in red wine, is known to ameliorate these effects, exhibiting many beneficial effects both *in vitro* and *in vivo*. With a primary rat hippocampal neuronal cell culture, an administration of varying doses of resveratrol ultimately ameliorated damage caused by oxidative stress. By probing for components of the insulin-signaling cascade, this previous project revealed activation patterns in crucial signaling molecules and helped further the connection between Type II Diabetes and Alzheimer's disease with respect to resveratrol therapy. This previous research, along with an extensive literature review, culminate in this thesis proposal and subsequent project, which should reveal the inner molecular mechanisms of chronic resveratrol treatment on systemic and hippocampal insulin resistance as well as Alzheimer's pathology.

Alvin George: Departments of Biology and Psychology: "LPS-induced inflammation facilitates insulin resistance and neurodegeneration characteristic of Alzheimer's disease"

Faculty Advisor: Professor Ewan McNay

Changes in gut flora in response to various diets have been well documented across the literature. Specifically, in response to a high fat diet the composition favors those strains that produce more lipopolysaccharide, a pro-inflammatory bacterial endotoxin. LPS has been linked in the provocation of insulin resistance via the stimulated release of TNF-alpha which inhibits insulin receptor substrate-1, inhibiting the insulin signaling cascade. Evidence for this chain of events has only been seen in the periphery. LPS has also been known to activate the resident macrophages of the brain, the microglia. Activation of these cells not only releases more pro-inflammatory factors, but also releases cytotoxic factors that could damage neighboring neurons. The connection of high fat diet-induced increases in LPS to insulin resistance and neurodegeneration of the central nervous system has yet to be established, and is the primary aim of this study.

Ewelina Mistek: Department of Forensic Chemistry: "Race and gender differentiation from human blood traces by Attenuated total reflectance-Fourier transform infrared (ATR-FTIR) spectroscopy for forensic purposes"

Faculty Advisor: Professor Igor Lednev

Blood is one of the most common and informative forms of trace evidence found at a crime scene. The standard procedures for analyzing this body fluid focus on DNA and the proteins, enzymes and antigens present in the blood. These methods are destructive for the sample, based on biochemical reactions and need to be performed in a laboratory. Attenuated total reflectance-Fourier transform infrared (ATR-FTIR) spectroscopy provides information on the (bio)chemical composition of a sample. The method is confirmatory, nondestructive and rapid, requiring no sample preparation. In this study, dried blood samples from various donors were measured by ATR-FTIR spectroscopy. Chemometric analysis was applied to distinguish the race and gender of different donors. Two Partial Least Squares-Discriminant Analysis (PLS-DA) models were built and demonstrated entire separation between different groups: males and females as well as Caucasian, Black and Hispanic donors. 100% accuracy was achieved based on both gender and race differentiation. This study shows ATR-FTIR spectroscopy's great potential for bloodstain analysis. This technique appears to be a very powerful tool in forensic investigations to analyze trace evidence at a crime scene.

Cece Hong: Departments of Biochemistry and Molecular Biology: “Toxicity of aminoglycosides antibiotics and human helix 69 rRNA”

Faculty Advisor: Professor Paul Agris

Aminoglycoside antibiotics are a well-known antibiotic family used to treat various bacterial infections in humans and animals by binding to ribosomal RNA and inhibiting protein synthesis. Unfortunately, aminoglycosides have been found to be toxic to humans in some cases [1]. The primary binding site of aminoglycosides has been widely known as helix 44 in the small subunit of the ribosome. However, recent findings showed that aminoglycosides also bind to helix 69 in the large subunit [2]. Since little is known about the interaction of aminoglycosides with helix 69, we sought to better understand the toxicity of various aminoglycosides to helix 69. Using gentamicin, kanamycin, apramycin and hygromycin B, we were able to gain insights about the efficacy of aminoglycosides by comparing the affinity towards human and bacteria helix 69. Furthermore, we investigated the structure change in helix 69 due to the addition of the antibiotics. According to our study, we report that aminoglycosides display an equal affinity towards human as bacteria and aminoglycoside antibiotics affected the phosphate and ribose regions of human mitochondrial H69 most significantly.

Augusta Bargeron: Department of Psychology: “Behavioral addiction to video gaming: Assessment, prevalence, and psychosocial correlates”

Faculty Advisor: Professor Julia Hormes

There is ongoing debate as to whether video gaming should be considered a behavioral addiction. This study systematically examined the assessment, prevalence, and psychosocial correlates of excessive video game use. 148 frequent users of video games ($Mage=21.29$, $SD=6.63$) completed modified versions of DSM IV-R diagnostic criteria for pathological gambling and the Penn Alcohol Craving Scale, re-worded to capture maladaptive patterns of video game use. Respondents also completed the Satisfaction with Life, Depression Anxiety and Stress, and Barratt Impulsiveness Scales. 24.4% of respondents ($n=22$) endorsed four or more modified DSM criteria, suggesting potentially problematic patterns of use of video games. A series of univariate and multivariate analyses of variance suggested that these respondents not only spend significantly more hours gaming on each occasion ($p=.03$), but also experience greater craving for games ($p<.001$), significantly elevated levels of depression ($p=.003$), anxiety ($p=.01$) and stress ($p<.001$), lower satisfaction with life ($p<.001$), and greater motor impulsivity ($p=.03$). Findings point to potential similarities between excessive video game use and other behavioral addictions in terms of their association with marked impairments in psychosocial functioning. The use of modified DSM diagnostic criteria in the flexible assessment of maladaptive patterns of use of video games appears feasible and should be examined further.

Saturday, April 25th **Presentation Session II**

LC 3A: Music

Benjamin Sponable: Department of Music: “Jelly Roll Morton”

Faculty Advisor: Professor Victoria Von Arx

Most great composers are identified with a particular music style, signifying their contributions to that type of music. Bach is practically synonymous with the baroque, Mozart and Beethoven with the classical, and Debussy was an excellent example of a French impressionist. Ferdinand “Jelly Roll” Morton is similarly identified with jazz and even proclaimed himself as the inventor of jazz. In this paper I will study the variety of Morton’s compositions. Focusing on his time with his band Red Hot Peppers when he composed the *Black Bottom Stomp* and *The Pearls*. I will also examine some of his piano works such as *Fingerbuster*, which he composed to display his remarkable technique. I will examine his early career playing in the New Orleans brothels and track his travels across the United States, focusing on his musical ambition, his social affairs, how he acquired his nickname, Jelly Roll, his history of gambling, and his reputation among other musicians.

Paul Bleck: Department of Music: “Disability in Music: Visually Impaired”

Faculty Advisor: Professor Victoria Von Arx

In this presentation I will be discussing Stevie Wonder, Ray Charles and George Shearing, all of whom are blind pianists/ composers in the 20th – 21st Century. These composers, with the exception of Ray Charles, they never actually saw a keyboard and yet they are as proficient as any musical composer or player. I will be discussing whether or not their disability was or was not a setback in their development as musicians. Stevie Wonder made blind due to a hospital error at his birth which resulted in him having detached retinas. Ray Charles was not born blind but became blind due to untreated glaucoma. He was completely blind by the age of seven. George Shearing was blind from birth. I will consider their habits and mannerisms as well as their various modes of audience perception of disabilities in performance.

Dilson Hernandez: Department of Music: "Piano attributes in Rock n' Roll"

Faculty Advisor: Professor Victoria Von Arx

When first introduced to the American public, the genre of Rock n' Roll was seen as something edgy, raunchy, and exciting. It exhibited these characteristics in both lyrics and musical style. It was something mainstream culture was not used to hearing. However, when looking closely at the musical elements used in Rock n' Roll, one easily notices similar attributes in other earlier genres. The basis of my paper revolves around this concept, the innovations along with recycling of earlier characteristics in piano music contributed to the Rock n' Roll genre. I will talk about the showmanship aspect of rock piano. I will touch upon how Blues was a major influence on Rock and Roll with its I-IV-V harmonic scheme and its 12 bar A-A-B structure. And lastly, I would advance the hypothesis that Rock n' Roll came from urban areas (like Memphis and Chicago) where blues music was already present due to the black musicians that migrated to the north. The artists of those areas were very versatile in their blues playing and knowledge so it was inevitable that they were going to come up of new ways to expand the genre. Hence, the invention of Rock n' Roll.

Azzuræ Jenkins: Department of Music: "American Composer and Pianist Duke Ellington"

Faculty Advisor: Professor Victoria Von Arx

Pianist, bandleader, and composer Edward Kennedy "Duke" Ellington is considered one of the most prominent, pivotal figures of jazz history. His career lasted over 50 years, and he continued to lead his orchestra from 1923 until he died. Ellington would come to earn 16 honorary doctorates, a star on the Hollywood Walk of Fame and 13 Grammys. In my presentation I will discuss how The Duke's exposure to Harlem lifestyle during the Prohibition Age and after, in conjunction with Stride culture, influenced his technique as a pianist, and show how they distinguished Ellington from other musicians of the time. My discussion will display music and footage of performances, as a basis to explore the musical traits that mark Duke Ellington is as a noted bandleader and composer, as well as a skilled and inventive pianist.

Jason Kartis: Department of Music: "The integration of popular and jazz-like elements with symphonic techniques in *Rhapsody in Blue*"

Faculty Advisor: Professor Victoria Von Arx

George Gershwin was a composer who made great contributions to American music. His music, most notably, *Rhapsody in Blue*, uniquely combined both popular and classical genres in a way that was never before done. His impact on American music is still widely recognized today. In this presentation, I will focus on *Rhapsody in Blue* by exploring the integration of popular and jazz-like elements with symphonic techniques. An analysis of *Rhapsody in Blue* reveals many groundbreaking and innovative features that impacted the course of music history and American music.

LC 3B: Math and Science

Daniel Hono: Department of Mathematics, Computer Science and Applied Mathematics: "On a Certain Max Difference Equation with Periodic Coefficient Sequence"

Faculty Advisor: Professor Edward Thomas

Difference equations are important to many different areas of mathematics, and even to subjects outside of mathematics such as biology and computer science. Seemingly simple examples may turn out to have many surprising, deep, and interesting properties. There are also numerous open problems concerning specific difference equations. In this project, we studied the periodic phenomena of a certain nonlinear second-order max difference equation with periodic coefficient sequence. We investigated the structure of certain cycle solutions and proved results about them.

Yufeng Li: Department of Mathematics: "Elementary inequalities about Mahler measure of polynomials"

Faculty Advisor: Professor Rongwei Yang

This proposal is based on my independent study and research under the direction of Professor Yang in the Department of Mathematics and Statistics. It started in September 2013. The topic is on the zeroes of polynomials. Polynomials are the most elementary functions we encounter in mathematics. Although much is known about their properties, there are still many unsolved problems about them, one of which is the Lehmer's problem regarding distribution of their zeros. With the Lehmer's problem in the backdrop, the goal of our research is to look for relationships among certain sums of zeroes, the entropy, and the Mahler measure of polynomials. Our research discovered two clean inequalities. In this process, we used derivatives of exponential functions, Fundamental Theorem of Calculus, eigenvalues and determinant of square matrices, all of which are topics I learned in my freshman and sophomore years. I feel really excited about this research.

Ernesto Findlay: Department of Atmospheric Science: “Analysis on the origins of east Pacific easterly waves”
Faculty Advisor: Professor Eric Maloney and Professor Adam Rydbeck

The east Pacific Ocean is the second most active hurricane basin in the world. According to the National Hurricane Center, approximately 70% of tropical cyclones in the east Pacific are said to be seeded by African easterly waves. However, this statistic assumes continuous propagation of easterly waves from the Atlantic to the east Pacific. This study focuses on investigating the origins and tracks of easterly waves in the east Pacific during the months of June-November when EWs are most active. It is hypothesized in this study that most of the easterly waves (EWs) in the east Pacific are not linked to EWs originating in Africa but are initiated in-situ. The bight of Panama appears to be a climatologically favorable environment for the development of easterly waves due to the low-level cyclonic flow and precipitation maximum. Easterly waves are analyzed using lag correlation and composites plots of 2-10 day filtered meridional winds and precipitation from NCEP/NCAR reanalysis and TRMM, respectively. From these analyses, we compare the relationship between easterly waves in the Atlantic to those in the east Pacific. A limited WRF simulation was also utilized to compare the location and track of easterly waves to observations during August 2005. Composites and lag correlations of easterly waves support the idea that most easterly waves are generated in the east Pacific rather than initiating in Africa, as the analysis does not support the propagation of easterly waves across Central America and Mexico.

Umaru Barrie: Departments of Human Biology and Chemistry: “Effect of the abiotic digestion of spent ground coffee (SGC) on the bioavailability of antioxidants and growth of a commercial probiotic strain (*Lactobacillus casei* DN114)”

Faculty Advisor: Professor Dolores del Castillo

Coffee is one of the most popular beverages drunk by millions of people around the world. Recent decades have seen a major increase in both coffee production and consumption, as a result an increase in the generation of coffee waste. Spent ground coffee (SGC) is one of the main by-products and this residue contains usable components that have potential health and nutritional benefits. Recently, SGC has been proposed as a natural source of antioxidant insoluble dietary fiber. The present investigation aimed to gain insight on those issues. SGC samples provided by a Spanish coffee company were digested mimicking the abiotic physiological digestion conditions. The dietary fiber content of the SGC sample was determined by the enzymatic-gravimetric AOAC method. The chemical composition, antioxidant properties and prebiotic character of the digests were also assessed. Prior to analysis the samples were fractionated, freeze-dried and stored at -20°C until analysis. The chemical characterization of the digests was performed by analysis of total and individual carbohydrates (glucose, fructose and mannose). The overall antioxidant capacity of the digests was analyzed by ABTS assay. A tentative identification of the antioxidants present in the digests was performed by analysis of chlorogenic acids (CGA) by CE. We also investigated the effect of the digests on the growth of the probiotic strain *Lactobacillus casei* DN114. As expected, SGC had high total dietary fiber content (83.3 %) with the insoluble accounting the majority of it (82.9 %). Digests exhibited antioxidant properties of 0.058 to 0.132 mg equivalents of chlorogenic acid per mg of digested sample. Carbohydrates in concentrations ranging from 0.018 to 0.53 mg equivalents of mannose per mg of digested sample were also detected. Both of these components are relevant to the nutritional application of SGC. Results also indicated that the antioxidant properties of the digests may not be associated to coffee phenolic compounds. In addition, the extracts did not supplement the growth of the *Lactobacillus casei* DN114. These findings are of interest since antioxidants and dietary fiber have an outstanding role in health area, and wide applications in the food industry. Further investigation should be conducted to evaluate the effect of the raw material supplemented to a food matrix and to identify the structures responsible for the bioactivities found in the present research.

LC 3C: English and Art History

Chloe Houseman: Department of Art History: “Fetish and the Female Form in the Eighteenth Century”
Faculty Advisor: Professor Sarah Cohen

My research focuses on how clothing alters the female form, in relation to sexuality and fetishism. I will examine why certain modifications to the form were desirable, and how they relate to the male gaze. Although I mostly focus on the eighteenth century, I will make connections with the nineteenth and twentieth centuries, to further illustrate points and to connect more with a contemporary audience. I will be focusing on a few garments, the first of which being the corset. This piece of clothing is almost synonymous with fetishism in contemporary media, but how did its original use as a structural garment give way to this view? I will be looking at how this occurred. Secondly, I will be examining the high-heeled shoe. Originally worn by men, it eventually became the sole domain of ladies. I will be questioning why this item became a symbol of femininity, and how it lends itself to fetishization. Finally I will be discussing the mask, and how its use at masquerades helped it become a staple of fetish culture. I will also argue that the idea of hidden or altered identity plays a major role in being fetishized.

Marisa Mazart: Departments of English and Art History: “Breaking Bad: On the Western Genre and Audience Reception”

Faculty Advisor: Professor Jennifer Greiman

“*Breaking Bad*: on the Western Genre and Audience Reception” is about how culture affects the popularity of TV shows. By focusing on the popular TV show *Breaking Bad*, and examining it as a cultural artifact moving across what Hall defines as the parts of the circuit of culture – production, identification, representation, consumption and regulation – I will be able to answer the question of why the show is so popular and to consider the significance of that popularity. While the cultural scholar and political philosopher Robert Pippin argues that the Western genre is the building of modern bourgeoisie law abiding society, I argue the opposite — that *Breaking Bad* reverses the Western narrative by updating the concept of ‘winning the West.’ While the popularity of the TV series can simply be attributed to the excitement and pleasure surrounding an average father’s secret life as a meth kingpin, I am discovering that there are gaps between the meanings imbued by sources like the network, writers, actors, and producers and those that the audience interprets and receives. I demonstrate how the underlying cultural forces of our time are in tension with our individual agency causing a negotiated interpretation of the dominant message of *Breaking Bad* by examining the reactions by *Breaking Bad* fans on blog posts and comments on the internet.

Emily Wierzbowski: Department of English: “The Isolated Self: A Re-imagining of the Human in Mary Shelley’s *Frankenstein* and Mamoru Oshii’s *Ghost in the Shell* films”

Faculty Advisor: Professor Patricia Cho

Through the posthuman identities explored in Mary Shelley’s 1818 *Frankenstein* and Mamoru Oshii’s *Ghost in the Shell* (1995) and *Ghost in the Shell 2: Innocence* (2004) along with new conceptions of the body and the individual introduced, one can find a complete revision of the human in the lack of a “natural” human subject. In this new conception of the human, the individual is not a singular entity composed of merely two separate but interconnected parts, but includes other parts and can even be missing some. This ushers in a redefinition of the individual in a posthumanist setting from a complete and isolated being to one that is fragmented and integrated.

Maria Belyea: Department of English: “Time and Immortality”

Faculty Advisor: Professor Lana Cable

The conundrum of man’s desire for immortality and the reality of aging and death has been something that poets have pondered for centuries. What is our purpose in this life if we are destined to die? How can we leave a legacy? Do we leave it through creating progeny? Is it our great deeds that will outlive us in memoriam or do we build monuments to validate our existence? In “Time and Immortality,” I explore sonnets by William Shakespeare, Edna St. Vincent Millay and Park Benjamin, to illustrate that the problems of mortality and time are indiscriminate, not a respecter of persons, and like a juggernaut, uncontrollable and perhaps even cruel. It is only through the intangible memory that the impediments of time can be overcome.

Presentation Session III

LC 3A: Political Science, Public Policy, Criminal Justice, and Atmospheric Science

David Gill: Department of Political Science: “Evangelists and Entrepreneurs: Bitcoin as Collective Action”

Faculty Advisor: Professor Anne Hildreth

The creation and growth of Bitcoin offers scholars of contentious politics and institutional entrepreneurship a fascinating case study. The concept of a currency backed by a decentralized computer network rather than the state inherently challenges society’s reigning norms, beliefs, and values regarding its governmental and economic structures. This conflict was acknowledged in the very first days of the network, and the movement soon became known for its member’s fierce support of libertarianism and Hayekian economics. The Bitcoin protocol governs the values of variables stored on the computers of its users; alone, these numbers are meaningless. It is only with the belief and commitment of adherents that these bitcoins* became valuable. The growth of this collective action can be traced through the community message boards where efforts to promote the network were coordinated, as well as in media reports and records of the exchange rate between bitcoins and dollars. By using these primary sources, this presentation will attempt to explain the role that ideology played in Bitcoin’s growth, the roles taken on by adherents, and the innovation of computer-networks-as-contentious-performances.

Gloria Moran: Department of Public Policy: "Regulation Blood: Determining alternative approaches to the FDA's MSM Blood donor screening regulation through probabilistic modeling"

Faculty Advisor: Professor David Andersen

The FDA's current zero-risk approach to blood donation screening regulations requires the indefinite deferral of MSM (Men who have had Sex with Men) after 1974 - the start of AIDS epidemic in America. Under this regulation, low-risk men, often in healthy long-term monogamous relationships, are denied. This study uses Bayesian inferences to compare the MSM regulation versus a High-Risk Behavior (HRB) approach in their effectiveness of blood donor screening in NYS. The HRB approach to blood donor screening would replace the MSM regulation while still screening out the high-risk MSM along with non-MSM also at high risk of transmission. This study aims for a non-discriminatory policy that has equal if not increased effectiveness in screening out donors at high risk for HIV/ AIDS infection. This study also addresses social issues such as donor-recipient trust and non-compliance, alienation and stigmatizing of homosexuals, and the progress of AIDS awareness and education.

Kyle Pallozzi: Department of Atmospheric Science: "The Effects of Downsloping on Precipitation Distributions in the Capital District of New York State"

Faculty Advisor: Lance Bosart

Downsloping is a process which has been observed to have a high impact on precipitation distributions during many events in the Capital District of New York State. Forecasting the magnitude and westerly extent of precipitation decreases due to downsloping in the Hudson Valley is a major forecast challenge. This study seeks to address that issue by determining the best predictors for such events. Thus far individual 850 hPa and 925 hPa winds from soundings at Albany (KALB) and storm mean 850 hPa and 925 hPa wind vectors derived from NARR (North American Regional Reanalysis) data have been examined. Preliminary results from this study suggest that when winds have a strong easterly component at 850 hPa and 925 hPa, lower precipitation values in the Hudson Valley are most favored. A more surprising finding was the very small difference in precipitation totals between the two easternmost locations in the study area (despite the large elevation difference). Future work will be done to examine other variables such as surface wind and surface geostrophic wind at Albany to assess their relationship to downsloping cases in the Hudson Valley.

Kristin Kozlowski: Department of Criminal Justice: "In what ways, if any, do situational crime prevention techniques impact male-on-female sexual offending?"

Faculty Advisor: Professor Graeme Newman

This paper looks at the potential impacts of situational crime prevention on sexual offending. It will attempt to analyze the standard twenty-five techniques of situational crime prevention and determine which can offer the greatest impact on preventing male-on-female sexual offending and the types of male-on-female offending it impacts, by looking at current forensic literature. Along with looking at current research on sexual assault by strangers, this research will look into the types of environments that give rise to acquaintance and partner-based offending and if a situational prevention model can be effective there. Implications for implementing these strategies are discussed.

LC 3B: Biology

Megan Gura: Department of Biology: "The 5'-Untranslated Region of SOCS2 mRNA, a Gene Involved in Successful Central Nervous System Axon Regeneration in *Xenopus laevis*, is Alternatively Spliced"

Faculty Advisor: Professor Ben Szaro

The amphibian *Xenopus laevis* has the ability to regenerate axons in its spinal cord before metamorphosis and its optic nerve throughout life. Earlier studies have implicated Suppressor of Cytokine Signaling 2 (SOCS2) as playing an important role in the complex regulation of central nervous system axon regeneration and development. In this study, I experimentally examined the 3' and 5' ends of the *Xenopus SOCS2* mRNA sequence using Rapid Amplification of cDNA Ends (RACE) and discovered that the sequences in the genome database were incomplete. In extending these sequences, I determined the complete sequence of the *SOCS2* mRNA 3'UTR, which now contained the expected termination and polyadenylation signal marking the 3' ends of eukaryotic mRNAs, and discovered two alternative splice forms of the 5' UTR. I am currently making probes to locate where and when following optic nerve injury in *Xenopus laevis* the two splice forms are expressed.

Katie Brown: Department of Biology: “Molecular mechanisms of adaptation to SIV (simian immunodeficiency virus) at the host CD4 locus.”

Faculty Advisor: Professor Caro-Beth Stewart

Chimpanzees and gorillas harbor endemic SIV strains in the wild, yet tend to be resistant to SIV/HIV infection. The key protein I have been studying is CD4, the primary receptor for SIV/HIV on T cells. Last semester, I was responsible for retrieving CD4 allelic sequences from many great ape genomic databases, assembling the mRNAs from short sequence reads, and sorting out the various alleles. I found evidence of ancestral adaptation to SIV on the lineages leading to gorillas and chimpanzees, but not on the lineage leading to humans. In addition, I found evidence of ongoing adaptation to SIV within the chimpanzee and gorilla populations. Finally, I also found that alternative forms of CD4 mRNAs seem to exist in humans and gorillas. My honors thesis research project is aimed at further characterization of these alternative CD4 mRNA transcripts in humans, other primates, and other mammals through bioinformatic searches and PCR assays.

Spencer Weintraub: Department of Biology: “Structure Activity Relationship Studies of Small Molecules Directed Against the T-box Specifier Loop”

Faculty Advisor: Professor Paul Agris

Many drug-resistant pathogens have risen in frequency and lethality. The development of antibiotics with new targets against multi-drug resistant organisms, such as *Staphylococcus aureus*, is imperative. The T-box regulatory mechanism is specific to Gram-positive bacteria and many essential genes required for bacterial growth are controlled by this process. The T-box Specifier loop is a novel target for antibacterial drug discovery as we hypothesize that a small compound bound to the Specifier loop will inhibit transcription of essential bacterial genes resulting in bacterial cell death or growth arrest. Using *in silico* analysis of the T-box Specifier loop, small compounds that are likely to disrupt T-box function were identified. Bacterial growth arrest studies identified two hit compounds that specifically target Gram-positive organisms and display little to no cytotoxicity in human cells. Based on this data, we began structure activity relationship studies (SAR) with disk diffusion assays against *S. aureus* with structural analogs of our initial hits. Our results revealed structural components of each hit compound necessary for antibacterial activity. SAR studies are ongoing and include micro-dilution assays against *S. aureus* and the Gram-negative bacterium *Escherichia coli* for analogs that displayed antibacterial activity with disc diffusion assays.

Jeremy Manheim: Department of Forensic Chemistry: “Differentiation of Human, Animal and Synthetic Hair by ATR FTIR Spectroscopy”

Faculty Advisor: Professor Igor Lednev

Hair and synthetic fibers are a common form of trace evidence found at crime scenes. Currently, the methodology of microscopic examination of potential hair evidence is absent of statistical probability and is inherently subjective. Here, Attenuated Total Reflectance (ATR) Fourier Transform Infrared (FTIR) Spectroscopy, coupled with advanced statistics, was used to identify a fiber, within a specific confidence, solely from its spectrum. Ten spectra were collected for each of ten human, cat, and dog donors and a single synthetic fiber for 310 total spectra. Two Partial Least Squares-Discriminant Analysis (PLS-DA) models were constructed: one to differentiate natural hair fibers from synthetic fibers and the second discriminating human hair from animal hair. Both internal models were successful in separating the desired class from another; synthetic hair was completely separated from actual hair in the binary approach and all human samples were predicted as human in the species specific model. An external validation of ten untrained donors confirmed our species specific model's ability to correctly classify a sample as human. This method is able to quantitatively identify a sample of hair as human with a high degree of confidence, is non-destructive, requires no preparatory work and is extremely quick, signifying its importance to the field of forensic science.

LC 3C: English

Joseph Meringolo: Departments of English and Communications: “The Sanity of *Furor Poeticus*: Romanticism's Demystification of 'Madness' and Creativity”

Faculty Advisor: Professor Kir Kuiken

In “The Sanity of *Furor Poeticus*: Romanticism's Demystification of 'Madness' and Creativity”, I explore the ways in which psychologically afflicted poets of the Romantic era were able to use tropes of “artistic madness” in inventive ways to articulate a more insightful account of the interplay between mental illness and the creative process than could be found in existing paradigms of madness. Furthermore, I argue that these poets were able to respond to their period's flawed paradigms by sardonically using these tropes to subvert convention and, in doing so, help shift the paradigm towards our modern understanding. The poetry of John Keats and Samuel Taylor Coleridge will be examined alongside that of Charles Baudelaire to elucidate the important role that these poets had in advancing discourse on mental illness and creativity into our contemporary, “Postmodern” period.

Stephen Hitt: Department of English: “Gothic Histories: The Interplay of Narrative and Subjectivity in Austen’s *Northanger Abbey*”

Faculty Advisor: Professor James Lilley

While it may be difficult to trace a direct correspondence between Walpole, Radcliffe, Lewis, and Austen it is clear that there is a correlation beyond the surface tropes most often associated as markers of the Gothic mode. My research finds this connection in a political register of the term in the eighteenth century. Jane Austen’s *Northanger Abbey* sets up for its protagonist a juxtaposition of two places of historical possibility, one to be found in the gothic text and another to be found in the textbook. Austen’s novel concurs with the gothic writers that history itself is a fiction; she presents the two as a bifurcation to offer the Catherine Moreland temporal subjectivity. I ultimately seek to argue that the protagonist’s actions become a functional way to interact with a history that recognizes itself as a fraud from its inception.

Hannah Stahl: Department of English: “A Different Type of Teddy Bear: Looking at Books of Hours and *Ediciones Vigia* Books as Transitional Objects”

Faculty Advisor: Professor Helene Scheck

Books of Hours, a type of illuminated manuscript, contain devotional texts that were typically elaborately decorated. Usually, they were made for a specific individual and therefore, their elaborate images and scenes had personal meaning and connections for the owner and subsequent owners of a Book of Hours. A Cuban press, *Ediciones Vigia*, draws on the traditions of illuminated manuscripts like Books of Hours and adds new artistic elements. More importantly, both Books of Hours and *Ediciones Vigia* books function as transitional objects. They allow the owners or creators of the books to deal with a problem and move past it, much like the way a teddy bear or blanket allows a child to transition from being a baby to a child separate from his or her mother.

Jake Edwards: Departments of English and Human Biology: “Rupture in Rapture: *2K Games’ BioShock* as an Auto-Critical Metatext on the Addictive Power of the Videogame to Rupture the Individual Subject”

Faculty Advisor: Professor Jil Hanifan

This presentation focuses on the way in which videogames rupture the individual subject into both reader and player/observer, which generates both their dramatic power and addictive potential. *2K Games’ BioShock* is an auto-critical metatext which elucidates the mechanics by which videogames perform this split and subsequently use the interplay between the two pieces of the individual to express meaning. I draw on contemporary digital theorists such as Janet Murray, Espen Arseth, and Ian Bogost, as well as Wolfgang Iser and Roland Barthes to build a working theoretical framework with which to examine *BioShock’s* auto-criticism.

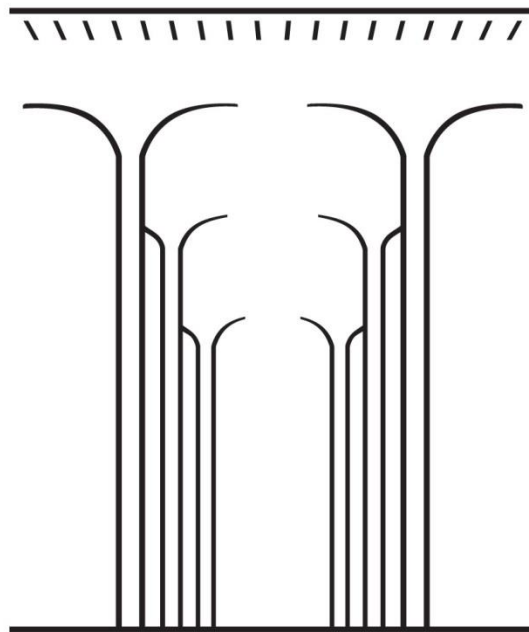
Bridget Flynn: Department of English: “‘It’s a Scream, Baby’: The Role of Parody in Horror Film”

Faculty Mentor: Ineke Murakami

Horror films serve as warnings in our society. They communicate morals of purity, expressing the idea that only the innocent can survive. We hear these warnings so often that they have become predictable and clichéd. Consequently, directors have taken the horror movie formula and turned it on its head through the use of parody. Parody horror imitates the traditional scary movie plotline, yet it draws attention to the rules the characters are expected to follow in order to survive. These statutes are a manifestation of the restrictions we live by in our real life culture. Yet each character in a parody disobeys this set of cultural norms and comes out as the victorious hero. Our culture is similar to the oppressive societies in these films. Though we are taught to believe we must play a certain role, we can break free of that label and still be successful in society.

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*"All experience is an arch
Where thro' Gleams that untraveled world."*

- Tennyson

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