IU South Bend
Undergraduate Research Conference
Friday, April 8, 2011
2011 INDIANA UNIVERSITY SOUTH BEND
UNDERGRADUATE RESEARCH CONFERENCE

Conference Program and Abstracts

Schedule

Friday, April 8, 2011

8:30 – 9:00 am  Registration                          DW east hallway
9:00 – 10:00 am  First Concurrent Sessions           DW 1150 – DW 1180
10:00 – 10:45 am Poster Presentations and Coffee Break
              DW east hallway
10:45 – 11:45 pm Second Concurrent Sessions          DW 1150 – DW 1185
12:00 – 1:15 pm  Lunch and Keynote Presentation      The Grille
1:30 – 2:30 pm   Third Concurrent Sessions           DW 1150 – DW 1180
ACKNOWLEDGEMENTS

The organizers of this conference (Julie Elliott, Yilei Qian, David Blouin and Lisa Zwicker) would like to thank all the students who have taken the time and made the effort to present their research or creative activity at this conference. We hope that they continue to be life-long seekers of knowledge. Their faculty mentors (named in parentheses in this program) are also to be commended for their dedication to developing scholars.

We appreciate the support provided to this conference by Vice Chancellor for Academic Affairs Alfred Guillaume. This event is made possible with funding from his office and time donated by committed IU South Bend instructors and staff—including the members of the Undergraduate Research Advisory Council.

Finally, we would like to thank Jonathan Kitchens for contributing his artwork for the conference poster and program cover.

PROFESSIONAL COURTESY

Please be considerate during the student presentations. Participants in a session should remain in the room during their colleagues’ presentations. The research delivered in each session may offer new and relevant information from which they can expand their own ideas. Other audience members should refrain from entering and leavings session rooms during presentations so as to cause the least disruption. Cell phones should be turned off or switched to vibrate during the sessions.
FIRST MORNING SESSION

Biology/Chemistry (DW 1150)
Moderator: Yilei Qian

9:00 Electrocatalytic Oxidation of Phenolic Estrogenic Compounds at a Nickel Modified Glassy Carbon Electrode
Adam Kaylor (Muna)

9:15 Cannabinoids in Insects?
Jared Shepherd (Clark)

9:30 Presence of Genes Associated with Increased Virulence Found in Fusarium Species Associated with the Plant Hydrophyllum
Ryan Lubelski (Marr)

The Background of Piers Plowman (DW 1160)
Moderator: Bobby Meyer-Lee

9:00 Piers the Plowman: An Allegorical Representation of Christ’s Power and Humanity and the Importance of Hard Work
Kristin L. LaFollette (Meyer-Lee)

9:15 Piers Plowman: Passus V. and the Intrusion of Authorial Anxiety
T. J. McNally (Meyer-Lee)

9:30 Achieving Salvation in a Corrupt World
Mandy McKee (Meyer-Lee)
**Criminal Justice & Food Safety** (DW 1170)
Moderator: Dennis Rodriguez

9:00  Vico: Curtailing Mechanistic Cartesianism in Food Safety
Stephanie C. Merryfield (Lambert)

9:15  The Criminal Justice Dilemma—Individual Rights and Social Order
Bryan Payne (Colanese)

9:30  Felon Disenfranchisement: How the Focus on Punishment has Damaged Democracy
Jake Jones (Gerencser)

**20th Century History** (1180)
Moderator: Lisa Zwicker

9:00  Unintended Consequences: Cause for the Russian Famine of 1921
John Baldwin (Zwicker)

9:15  Frankenstein: The United States in Afghanistan During the 1980s
Michael R. Szymanski (Nashel)

9:30  Words as Weapons: The CIA’s Propaganda Efforts and Connections to the American Press in the 1950s and 60s
James DeBew (Nashel)

9:45  High Stakes on the High Seas: The Cold War, the CIA, and Project Azorian, 1968-74
Patrick Stevens (Nashel)

**POSTER SESSION AND COFFEE BREAK**

10:00  View the following posters and talk to presenters while enjoying coffee and doughnuts

Assembly and Testing of the Large Area multi-institutional Scintillator Array
Mathieu Ndong (Hinnefeld)

Electrocatalytic Oxidation of Phenolic Estrogenic Compounds at a Nickel Modified Glassy Carbon Electrode
Adam Kaylor (Muna)
An Assessment of Commercial Mouthwashes on Oral Bacteria
Adriana Klinedinst (Qian)

Designing, Constructing, and Testing the Sono Clamp
Emily Grace Kuehnemund (Levine)

Unique Thermal Hysteresis Antifreeze Glycolipid Confers Cryoprotection to Non-cold-tolerant Geranium Cells
Celeste Warrell (Anderson)

The Intraflagellar Transport Proteins of Tetrahymena thermophila
Elaina Breznau (Wilkes)

Work and Play in Facebook Profiles
Megan Waugh & Sikholisile Nyoni (Wells)

The Role of Dynein Light Chain 4 in Cilia Function
Evelynn Lape (Wilkes)

Dandelions Used to Determine Presence of Tomato Ring Spot Virus in Orchards
Calvin Streeter, Mitchell Moseng, & Matthew Bobus (Anderson)

Symptoms of ADHD, Coping Skills and Reasons for Living
Andrea F. Jones (DeBrule)

SECOND MORNING SESSION

Physics (DW 1150)
Moderator: Yilei Qian

10:45  The Effects of Specular Reflection in Acoustic Transducer Backings Used for Dark Matter Detection
       Emily Grace Kuehnemund (Levine)

11:00  Cosmic Censorship in Extremal Black Holes
       Joshua Eby (Schimmrigk)

11:15  Detectors and Data Acquisition for the St. George Recoil Mass Separator
       Nathan Smith (Hinnefeld)
Literature & Film (DW 1160)
Moderator: Jake Mattox

10:45  Anti-Imperialist Implications of Charles W. Chesnutt’s The Conjure Woman
Hannah Stowe (Mattox)

11:00  A Modern Day Edgar Allan Poe: The Contemporary Gothic Works of Stephen King
Kristin L. LaFollette (Michaels)

11:15  Looking at Me, Looking at You: What Does the Camera in American Film Represent?
Rebecca Gibson (Nashel)

11:30  How to Kill for Profit: The Attack on Objectivity Present in the Mockumentary Man Bites Dog
Brandi David (Michaels)

Political Science (DW 1170)
Moderator: Jamie Smith

10:45  Expanding the Base of Civically Engaged College Students
Hannah Dill (Bennion)

11:00  The True Approval of Going Public
Ethan Legg (Smith)

11:15  Women in the Legal Profession: Disparity in Law School, Inequality as Lawyers
Angela Johnson (Bennion)

11:30  The Constitutionality of Indiana’s Voter ID Law and the Burdensome Effects it Has On The Fundamental Right to Vote; Why Indiana’s Voter ID Law Does not Withstand Strict Scrutiny and A Criticism of the Supreme Court’s Decision in Crawford v Marion County Elections Board not to Apply the Standard
Brandon Rickey (Gerenscer)

History (DW 1180)
Moderator: Jonathan Nashel

10:45  Yugo-nostalgia: Remembering and Rebuilding a Nation through Music
Gordan Skaro (Zwicker)

11:00 The Markale Mortar: Unraveling the Mystery
John Baldwin (Zwicker)

11:15 An Analysis of Industrial Alcohol and Government Policy During Prohibition
Chris Wachs (Zwicker)

11:30 The Soil Conservation Service: Rebuilding the Dust Bowl
Kristen Thomasberger (Zwicker)

**Anthropology** (DW 1185)
Moderator: Josh Wells

10:45 Colic: A Culture-Bound Syndrome
Bridget McGann (Foley)

11:00 Flood Narratives: Fiction or FACTion
Lance Burchett (VanderVeen)

11:15 Cuckoo for Cacao: The Significance of Cacao Use Among the Maya
Meredith McCabe (VanderVeen)

11:30 Beverage Bottles Found on Dig Sites: Possible Origins and Contents
Michael H. Passini (VanderVeen)

**LUNCH AND KEYNOTE PRESENTATION (The Grille)**

12:00 American Night: Labor and the Radical Novel After World War II
Dr. Alan Wald, H. Chandler Davis Collegiate Professor of English Literature,
University of Michigan

**AFTERNOON SESSIONS**

**Psychology** (DW 1150)
Moderator: Cathy Borshuk

1:30 SUDS and the Expressive Writing Paradigm
Drew Whiteford (DeBrule)
1:45 Exposure to, Attitudes Toward and Knowledge of Suicide  
Andrea F. Jones (DeBrule)

2:00 Marriage and Conflict  
Melissa Brandenberger (Rodriguez)

2:15 Commonalities of Creativity and Suicide in College Students  
Christopher Drapeau (DeBrule)

**Concept of Free Will in *Piers Plowman* (DW 1160)**  
**Moderator: Bobby Meyer-Lee**

1:30 Langland’s Will, Recklessness, and Search for Grace  
Bryan Foster (Meyer-Lee)

1:45 The Equivocal Nature of Free Will: the Misconception of Free Will in *Piers Plowman*  
McKenzie Tozan (Meyer-Lee)

2:00 The Almighty’s Umbrella: Practicing Free Will in *Piers Plowman*  
Meghan Coughlin (Meyer-Lee)

**Facebook** (DW 1170)  
**Moderator: Jay VanderVeen**

1:30 Facebook and Self-Identity  
Lynlee Swartz (Merrill)

1:45 Virtual Culture?: An Ethnography of Facebook Behavior  
Lance Burchett (Wells)

2:00 Facebook and Social Networking  
Michael H. Passini (Wells)
Potpourri (DW 1180)
Moderator: David Blouin

1:30  Analyzing Richard Dawkins’ Treatment of Einstein and Einsteinian Religion: Convergences and Divergences in Dawkins’ "The God Delusion" Jared Shepherd (Zynda)

1:45  Organ Donation: The Ethical Challenges Within the Current System Sharon Eggleston (McGuire)

2:00  Production and Reproduction: A Feminist Look at the Implications of les Politiques Natalistes in Contemporary France Timothy Dann-Barrick (Walker)

2:15  Teen Pregnancy Kellirae Boann (Gerken)

Undergraduate Publications & Research Panel (DW 1185):
Chris Wachs – Editor, Undergraduate Research Journal in History
Rebecca Gibson – Editor, Undergraduate Research Journal
Mia Avramescu – Editor, Analecta
Sara Lowe – 2010 Winner of Library Prize for Undergraduate Research

Panel will discuss undergraduate research and publications and answer students’ questions.
ABSTRACTS

John Baldwin
The Markale Mortar: Unraveling the Mystery

On February 5th, 1994, a 120mm mortar round slammed into a crowded Sarajevo market place killing 68 civilians and wounding another 200. This assault on the Bosnian Muslim population of Sarajevo caught the attention of the international media and thereby escalated multilateral plans for military involvement by the UN and NATO. Heretofore, the frequent Bosnian-Serb inflicted violence in Sarajevo led to a rather obvious conclusion that the Bosnian-Serbs were responsible for yet another intentional attack. However, experts and scholars have not been able to factually confirm the specifics of this attack; and all the while, the Bosnian-Serbs have continued to deny their official involvement. Some have even shockingly proposed that the Bosnian-Muslims intentionally attacked their own people. The vilification of their foes would allow the Bosnian-Muslims to gain both political and military support from the international community.

Primary research for this project has included 18 accounts of the incident as published by the New York Times, Times of London, and the Economist. Secondary research provided diverse perspectives and conflicting conclusions of this event. Their accounts presented compelling arguments to support their claims, but as expected the evidence presented was not conclusive. However, keeping this issue alive in academic discussion in hopes of finding the truth will not only bring honor to the families of the victims, but will also allow us to perceive future events of this sort with a more discerning eye before rushing headlong into another conflict.

John Baldwin
Unintended Consequences: Cause for the Russian Famine of 1921

In 1921, Russian agrarian lands buckled under tragic famine conditions, and five million people perished. Famine and starvation have frequently scourged other climes and times throughout history, the causes for which can be attributed to various natural, economic, and political circumstances. This particular famine however, followed the Bolshevik Revolution, and thus communism has by some been seen as its attributing cause. However, communism neither produced nor exacerbated this famine. This narrative began with dreadful weather conditions appearing at a time of a political civil war. These effects were further intensified by hasty and poorly implemented governmental reforms and accompanied by gross corruption. The culmination of these events led to tragic unintended consequences, which have been used by
some to forever tarnish communism’s reputation.
The purpose of this research project was to investigate to what extent the basic ideas of communism played in this catastrophe. After considering communism’s contributions, the presentation will then address some of the other factors that played a role in both causing and aggravating the famine conditions. Such factors include natural causes, the protracted effects of the Great War, the Russian Civil War, the implementation of War Communism, and gross inefficiencies perpetuated by a corrupt bureaucracy.

Kellirae Boann
Teen Pregnancy
The impetus for this research was a curiosity about adolescent pregnancy in our community, specifically the South Bend area of St. Joseph County, Indiana. More specifically, why a certain percentage of the adolescent population make a conscious choice to become pregnant. In addition to reading several studies done in other communities, I have interviewed two local professionals; MJ Murray-Vachon, LCSW, in practice for twenty-five years, and Dr. Tim Harmon, a gynecologist/obstetrician with OB/Gyn Associates for fourteen years. Both have worked extensively and closely with teenagers, before, during, and after their pregnancies. I have also examined different curricula being used in the South Bend area targeting sex education and/or self-esteem. All research performed with human subjects was done via personal interviews and has been approved by the Internal Review Board of Indiana University’s South Bend campus (protocol #08088).

Melissa Brandenberger
Marriage and Conflict
The purpose of this study was to assess which conflict topics have the greatest impact on marital satisfaction. Previously, studies identified finances, conflict over children, and division of household chores as high stress conflict sources that contribute to the decline of marital satisfaction. These factors, however, were researched independently of one another. This study explored these three factors together along with several others to examine the effect they have on marital satisfaction from the highest problematic area to the lowest. Participants were married adults who responded to Facebook and email recruiting scripts. Participants completed an online questionnaire which consisted of a marital satisfaction inventory as well as a conflict questionnaire. This study hypothesized that in line with previous studies, financial conflict, conflict over children, and division of household chores would be greatest contributors to the decline of marital satisfaction with financial conflict rated at the top.
Elaina Breznau
The Intraflagellar Transport Proteins of *Tetrahymena thermophila*

Cilia are hair-like extensions of cells. They are present in many different organisms and have a wide variety of functions. Cilia are composed of a core structure of microtubules, dynein motors, and hundreds of other components. These cell structures are very important in human physiology, as cilia dysfunctions are the cause for a wide range of human diseases, termed ciliopathies, such as polycystic kidney disease, Bardet Beidel syndrome, and Kartagener’s disease. *Tetrahymena thermophila* is an ideal system for the study of ciliary function, as these cells use cilia for essential functions such as feeding, swimming, and cell division. Cilia are constructed and maintained by the process of intraflagellar transport (IFT). IFT is the bi-directional movement of proteins required to build and maintain the cilia. This movement is mediated by molecular motors and IFT proteins that form trains to carry cargoes. IFT has been investigated in various organisms and the basic model is well conserved. However, many exceptions have been described including retrograde IFT in *Tetrahymena*. To begin to elucidate this process, we compared *Tetrahymena* IFT genes to 12 representative eukaryotic species to determine evolutionary relationships. *Tetrahymena* expresses 16 of the 19 known IFT genes. To provide further evidence that these proteins are essential for IFT in *Tetrahymena*, we used qRT-PCR to quantify IFT gene expression during ciliogenesis by comparing mRNA levels of resting cells and cells during ciliogenesis. Fifteen of the 16 genes showed increased expression indicative of proteins involved in the process of IFT.

Lance Burchett
Flood Narratives: Fiction or FACTion?

Man has long tried to create connections between ancient cultures. Great flood and deluge stories permeate the ancient world. While stories of a great deluge are found in myths and legends around the world, there is one aspect that causes these stories to be of particular interest: scientific evidence. This flood was perhaps not global, but evidence exists that shows flooding massive enough to account for the origin of such stories. My approach to this research is a holistic one. By examining flood stories from various cultures along with scientific evidence of a massive, ancient flood one gains a broader perspective and greater appreciation for the validity of the claim that this event actually occurred. As such, this manuscript is comprised of two sections. The first section illustrates the various flood myths from a cultural perspective and analyzes the inherent similarities. The second section describes the scientific aspect of the evidence. I conclude that there was indeed an actual event (or events) which led to the proliferation of deluge
narratives. What is most interesting, however, are the striking similarities of the stories which originated from peoples who were separated geographically. These similarities are telling of the shared collective consciousness of mankind.

Lance Burchett
Virtual Culture?: An Ethnography of Facebook Behavior
In today’s society, advanced information technologies (AITs) are becoming increasingly pervasive. The popularity of internet-based social networking applications has exploded over the last decade. Some of these sites, such as Facebook, boast more members than the populations of entire countries. Given the site’s vast number of members and the capacity for social interaction, the question has been raised as to the cultural significance of Facebook. How do people use Facebook? What types of information do they present? Does Facebook have a culture of its own? This manuscript details an ethnographic study conducted on a group of Facebook users. Their Facebook activity was monitored, catalogued and analyzed. After conducting this ethnographic study, the results indicate that there is no discrete Facebook culture. The ways in which people use Facebook and the information they present seem to be as varied as the individuals who comprise the membership network. Given that Facebook possesses no culture of its own, it stands to reason that observations made within the context of this virtual world can be applied to the actual world culture from which the members hail from. Social networking sites can provide valuable data and insights about human behavior and the data can be collected without the (sometimes) interfering presence of the ethnographer.

Meghan Coughlin
The Almighty’s Umbrella: Practicing Free Will in Piers Plowman
In his long-winded though heavily praised poem, Piers Plowman, William Langland explores his life through a series of identities, personified characters and the dreams in which they all exist. With the poem’s heavy religious tones and messages and the bias it holds in that sense, characters such as Free Will carry a somewhat false identity, an unreliable definition of their personification. In this case, the introduction of Free Will to readers and the ideas and influences he represents leave him too deeply under the influence of God to be classified as the simple, naked decision of man. With the introduction of Free Will as a character, the Dreamer and Langland’s readers are presented with the idea that God is the influence behind choices; His will cannot be denied without receiving punishment. If the decisions between good and evil or right and wrong are God-given, and we must follow his plan for us, where does Free Will even exist? This paper will
argue that Langland created a character representative of God’s will, not man’s, and while the majority of Langland’s characters fit properly into their personifications, Free Will remains a biased argument of God’s power over man.

Timothy Dann-Barrick
Production and Reproduction: A Feminist Look at the Implications of *les Politiques Natalistes* in Contemporary France

While North Americans tend to idealize the French and view their policies as highly progressive, French women deal with a number of barriers in regards to career. My paper will explore the *politiques natalistes* treating the positive and negative implications of these policies. For example, according to an extensive article recently published by the French magazine *Le Point*, women represent 52% of the population, 75% of "those employed in socio-professional (sic) classes" and only 8.9% of those in senior management. Additionally, women represent less than 20% of the Assemblée Nationale according to an article published in the New York Times. While French women face significant difficulties in the working world, they are highly productive as mothers resulting in the highest birthrate in all of Europe, 2.02 children per family. I will also explore the sociological implications of a society that values motherhood above productive women in the workplace.

Brandi David
How to Kill for Profit: The Attack on Objectivity Present in the Mockumentary *Man Bites Dog*

Documentary films are widely assumed to be objective statements of truth while mockumentary films use the stylistic conventions of this genre to pose arguments about the form and content of the documentary genre as a whole. *Man Bites Dog* is a mockumentary film depicting a French serial killer named Ben and the film crew following him. Despite the desire to remain impartial, objective observers the filmmakers get drawn into Ben’s social and business circles, just as Ben simultaneously shifts from the subject of the film to becoming formally involved with the project as a patron and pseudo-filmmaker. Through the changing dynamic of the relationship between these parties, the actual filmmakers—as opposed to the implied filmmakers within the film—use the documentary form to create a fictitious narrative to mock the relationship between objectivity, expected within documentary films, and subjectivity, the reality of all documentary films.
James DeBew
Words as Weapons: The CIA’s Propaganda Efforts and Connections to the American Press in the 1950’s and 60’s

This paper examines the interaction between the CIA and various world-wide media organizations from the time of DCI Allen Dulles to the Watergate scandal. By examining this critical period in the agency’s history we discover that the CIA was responsible for the propagandizing of American citizens via the media within the context of our national struggle against the ‘Communist threat’ in Eastern Europe, Latin America and the Third World. This matter is important because it was widely understood that the CIA charter pertained ‘strictly to the field of foreign intelligence’ and that the agency should have ‘no rights in the domestic field’, which clearly includes no legal standing in which to support or influence U.S. foreign policy by inserting propaganda into our nation’s public arena. This paper raises the question of the extent to which the CIA overstepped the mandates of its legal charter and to what degree it was aware of the extra-legal consequences resulting from its covert and clandestine operations abroad. The paper is sourced utilizing period articles from the New York Times and well-researched, scholarly works by a number of prominent historians and journalists.

Hannah Dill
Expanding the Base of Civically Engaged College Students

Service learning is a teaching pedagogy that has proven to be a successful tool in increasing students’ learning outcomes, course grades, and motivation to become civically engaged. Civic engagement has many dimensions including the broad categories of community and political involvement. Community involvement can include: volunteering for organizations, and being an active member or leader in a civic group or association. Political involvement includes: volunteering in political campaigns or organizations, voting, contacting public officials, or the media, and mobilizing others to get involved in the policy-making process as voters, activists, or elected officials. Research confirms that the students who participate most in service-learning programs tend to be those who had high levels of self-reported civic engagement at the start of the program. Because of this self-selection process, course program assessments comparing program participants to non-participants are often biased. However, research shows that students with low initial interest can yield promising increases in their civic motivation. Colleges can further their civic missions by incorporating service-learning pedagogies in general education courses to promote engagement to a wider variety of students. Through my meta-analysis of over 60 articles that promote service-learning I will reveal the best techniques to improve
students’ learning outcomes and suggest how their application to an undergraduate general education course could benefit all students.

Christopher Drapeau
Commonalities of Creativity and Suicide in College Students
More than 1,000 college students die by suicide each year. Commonly found among these suicides are students who are highly creative, mentally ill, and attending highly competitive schools. Research has demonstrated that the risk of suicide is most acute in students displaying hypomania, impulsivity, psychosis, and a personality trait called psychoticism. Interestingly, these four risk factors are also exhibited in highly creative college students. Hypomania was the most significant contributor to creativity and suicide among the four variables. Elevations in hypomanic symptoms were found among the most creative students and those at risk for repeated suicide attempts. A self-report questionnaire entitled the Hypomania Checklist-32 (HCL-32) identifies two dimensions of hypomania (active/elated and irritable/risk-taking). Future research should investigate potential relationships between the two dimensions, and creativity and suicide in college students. The active/elated dimension may contribute to higher creativity while the irritable/risk-taking dimension may lead to increased risk for suicidal behavior.

Joshua Eby
Cosmic Censorship in Extremal Black Holes
Extremality in black holes is considered to be the limiting condition on black holes; specifically, Reissner-Nordstrom (charged) black holes are constrained to a proportionality of the mass and the charge. But due to quantum fluctuations in the vacuum, a pair production in which one virtual particle crosses the event horizon and the other does not could present a problem for extremal black holes. Some have proposed the idea of a 'cosmic censorship', in which such an event is ruled out, but the mechanism for this is not so well understood. It is by examining the proper distances such a particle would have to travel that this problem can be solved. Once this is done, we turn to the Kerr (rotating) black hole to see if the same mechanism can be found to be at work.

Sharon Eggleston
Organ Donation: The Ethical Challenges Within the Current System
The government continues to discuss proposals to increase and mandate organ donation. The current manner of donation has not been fully evaluated for the ethical dilemmas it currently has based upon the complex monetary, personal, and psychospiritual questions this procedure elicits. This discussion, while important, is taboo for many who
do not want to think about their death or someone else’s. If organ donation is mandated it will create ethical, racial and religious dilemmas; it will further create ethical disparities and destroy human-kinds good faith gesture to donate. This will be investigated through the following:

1. In recent years Congress had suggested many ethically disturbing possibilities to mandate and increase potential organ donation.
2. Organ donation should be a decision of free will unclouded by money, coercion by friends or family, or the government.
3. Currently the act or decision to donate happens by required consent from the patient and family and does not trap or manipulate people into donation.
4. If organ donation becomes mandatory in the United States stricter guidelines will need to be implemented in the handling of organs for donation.
5. Forcing a person into donation creates ethical, racial and religious dilemmas

This research paper will focus on the ethical challenges within the current system and the effects of proposed donation efforts, government, ethics, race, and religion.

Bryan Foster
Langland’s Will, Recklessness, and Search for Grace

In William Langland's Piers Plowman, the narrator, the pseudo-autobiographical Will, undertakes an allegorical journey through a series of dream visions to discern the true way of Christian living. The use of dream visions is a common tactic for medieval works of fiction, often employed in the interest of verisimilitude. Piers Plowman is a richly dense text, written and revised over the course of decades, encompassing the near entirety of Langland’s adult life. One of the many complexities of the work is the way in which the narrator himself is presented. Questions are raised of Will’s position in the moral and social hierarchies of his day; even his authority in writing the very work in which he appears is challenged. This is especially relevant in a passage around halfway through the text, where, already in the midst of a dream vision, the narrator slips into another dream, where he is tempted on a physical level, an event without textual precedent, and meets the character Recklessness. Recklessness is presented similarly to Will himself; his moral position is ambiguous. The similarity is anchored when Recklessness and the narrator become the same character. The evidence pertaining specifically to this dream-within-a-dream all point to an interesting conclusion: that the events in this particular sequence do not occur within the narrative on a literal level. These events, and all the
characters in them, exist within the narrator's imagination. This conclusion shows Langland's presentation of the mind and imagination and abandonment of verisimilitude as remarkably complex.

Rebecca Gibson
Looking at Me, Looking at You: What Does the Camera in American Film Represent?
Within the discipline of film theory, much attention is paid to both the history of film as a media genre, and the representation of history and historical events within films. This divide separates how film has performed as a both a reflective and a clarifying lens for social issues, and how films of different eras have looked at and manipulated historical events. Although the women of films fill up the lens with their shining beauty or dark rage, a fascinating aspect of films throughout cinematic history is how the camera, and through it the America public, looks at men.

One question rarely asked by American society is the question of what influences the American males’ viewpoint on their own masculinity. An answer to this question can be found in American films. It is my conjecture that in certain films portraying the American man, his essence has shown distinct shifts in the ‘stereotypical man’. This paper will consider the portrayals of the American male through the performances of the leading men in the following films: Henry Fonda in Young Mr. Lincoln, Humphrey Bogart as Rick Blaine in Casablanca, Dana Andrews, Hoagy Carmichael, and Harold Russell as Fred Derry, Butch Engle, and Homer Parrish in The Best Years of our Lives, George C. Scott and Sterling Hayden as Buck Turgidson and Jack Ripper in Dr. Strangelove, and finally, Sidney Poitier in as John Prentice in Guess Who’s Coming to Dinner.

Angela Johnson
Women in the Legal Profession: Disparity in Law School, Inequality as Lawyers
Contrary to popular belief based on recent news stories, editorials, and college textbooks, males continue to comprise the majority of law students. Moreover, women’s experiences in law school are in stark contrast to their male classmates. Three-quarters of law school faculty are male and the disparity is increasing every year. But the inequality doesn't begin in law school; women earn lower LSAT scores and apply to law schools in lower numbers. Beyond law school, women comprise just 30% of practicing attorneys and just 19.2% of law firm partners. Women comprise nearly 1 out of every 2 law firm associates, but only 1 out of every 6 equity partners and 99% of law firms report that their highest-paid lawyer is a man. Women lawyers earn just 75% of what their male counterparts earn. Female judges represent just 20% of the judiciary.
Using a wide range of academic sources, this presentation explores the competing explanations for continued gender inequality in the legal profession and explains why this gender disparity is damaging to both men and women in law school, the courtroom, and in society at large. An online blog (www.womenaslawyers.wordpress.com) was utilized to share research findings while highlighting the author’s abilities and expertise in this research area. Accordingly, the presenter will also demonstrate the potential for blogging as a new model for future research projects as researchers become public intellectuals who share their research beyond the classroom, campus, law review journals, and academic articles.

Andrea F. Jones
Exposure To, Attitudes Toward and Knowledge of Suicide

Exposure to suicide has been consistently cited as a risk factor for suicidal behavior (Ventrice, Valach, Reisch & Michel, 2010). The goal of the present study was to examine if attitudes and knowledge could be moderating factors between exposure and future suicidal behavior. It was hypothesized that exposure at a younger age would lead to more accepting attitudes toward suicide. It was also hypothesized that exposure at an older age would equate to increased knowledge seeking and knowledge in general.

Sixty-nine participants completed the General Social Survey’s questions about attitudes toward suicide and euthanasia in specific circumstances. Exposure was measured by having the participant list their relationship to the person who died by suicide, age at the time of the exposure and the emotional closeness with this person. Knowledge of suicide was measured using the Expanded Revised Facts on Suicide Quiz. There were additional questions on age, gender and ways participants gained knowledge of suicide. The hypotheses were not supported; however, significance was found between number of ways participants had gained knowledge of suicide and knowledge scores. Also, taking an entire class on suicide, or visiting a suicide prevention website or hotline, led to increased knowledge scores. Finally, exposure in general led to more accepting attitudes toward suicide. The results demonstrate that the most effective way to learn about suicide is through targeted interventions and classes. Also, knowing that exposure moderates attitudes is an important first step in altering the link between exposure and future suicidal behaviors.
Andrea F. Jones  
Symptoms of ADHD, Coping Skills and Reasons for Living

Many researchers have attempted to identify risk factors for suicide which can include: psychiatric disorders, impulsivity, poor coping skills and comorbidity. Psychiatric disorders have been studied extensively, but few studies have focused on ADHD and suicide, although there is much overlap between ADHD and risk factors for suicide. A major hypothesis of the present study was that symptoms of ADHD, in general, and impulsivity specifically, would be correlated with more maladaptive coping skills and less reasons for living. Ninety participants completed a demographics questionnaire that contained questions about age, sex, diagnosis of ADHD, mood disorders and anxiety disorders, and suicide exposure. The Adult ADHD Self-Report Scale measured symptom severity from among the three most common symptoms of ADHD. The Brief COPE measured positive and negative coping mechanisms. The Reasons for Living Inventory was used to rate reasons why participants would not commit suicide, if the thought ever occurred. As predicted, people with more severe ADHD symptoms experienced more negative coping and fewer reasons for not committing suicide. Surprisingly, significant relationships were found between all symptoms of ADHD and the use of negative coping mechanisms. Additionally, the symptoms of inattention and hyperactivity led to significantly lower global scores on the RFL. However, contrary to the hypothesis, impulsivity was only related to specific facets of the RFL. The results help establish how poor coping may moderate the link between ADHD symptomatology and suicidal behaviors. Also of importance is how specific symptoms, regardless of diagnosis, lead to increased negative coping and suicide.

Jake Jones  
Felon Disenfranchisement: How the a Focus on Punishment has Damaged Democracy

Throughout the United States different felon disenfranchisement laws are put into practice for different reasons. The overall claim is that such measures help to purify the ballot box. Yet it is never taken into account how such laws that limit participation can be damaging to democracy. Through research of multiple state policies and rationales the true reasoning behind felon disenfranchisement is revealed, and the detrimental impacts presented.
Adam Kaylor
Electrocatalytic Oxidation of Phenolic Estrogenic Compounds at a Nickel Modified Glassy Carbon Electrode

Phenolic estrogenic compounds (PECs) occur naturally in the human body and are necessary for normal functioning. In this report, the electrocatalytic oxidation of PECs at a Ni modified glassy carbon electrode is reported. PECs are easily oxidized at GC electrodes, however, accumulation of the reaction products foul the electrode making electrochemical detection difficult on bare electrodes. The GC electrodes used in the presented work were modified electrochemically with a nickel oxide film which was generated using cyclic voltammetry. The data show that the film was able to minimize electrode fouling by forming a barrier such that the reaction products are not easily accumulated at the electrode surface, as well as facilitating the electrocatalytic oxidation of the analyte. When compared to bare GC electrodes, the anodic peak currents were significantly enhanced. For example, the catalytic oxidation of a 20 μM estriol solution gave a signal that was enhanced by a factor of 206 on the Ni-GCE. The current enhancement capability of the electrode was found to depend on the thickness of the nickel oxide film indicated by the magnitude of the Ni(III)/Ni(II) peak current. Data on the preparation, surface analysis, and characterization of Ni-GCEs, as well as, the electrocatalytic behavior of these electrodes towards PECs will be presented.

Adriana Klinedinst
An Assessment of Commercial Mouthwashes on Oral Bacteria

Background: There are many different brands of mouthwash on the market today, however there is a lack of published data on their ability to effectively kill oral bacteria. In addition to the oral flora, organisms that are used for probiotic purposes have recently been linked to some cases of oral infections, raising the concern that whether mouthwashes can be used to prevent oral diseases caused by both endogenous and exogenous pathogens.

Methods: In this study, we isolated a Lactobacillus species from organic yogurt to represent a gingivitis model. For the hard-tissue disease model, we used a strain of Bifidobacterium dentium that was originally isolated from dental caries. As a control, a fecal isolate of B. dentium was also studied. The mouthwashes used were the anticavity Crest Pro-Health and Act mouthwash, and the antimicrobial Listerine mouthwash. The effectiveness of individual mouthwashes against the test organisms was evaluated by the agar diffusion method where the size of zone of
inhibition indicates the organism’s sensitivity towards the chemical on the disc. The minimal lethal concentrations (MLC) of the mouthwashes were also determined for these three species.

Results: Crest Pro-Health produced the largest zone of inhibition for all organisms tested, with Act the second but Listerine produced no zone of inhibition. All three mouthwashes killed the test organisms within 5 min, but the MLC value for Crest Pro-Health was the lowest compared to that of Listerine and Act.

Conclusion: The mouthwashes were effective against the test organisms, but Crest Pro-Health consistently showed a superior ability to kill the bacteria. Act mouthwash was an intermediate, while Listerine was the least effective in killing the bacteria according to our methods. Also, it appears that the different species of organisms had the same level of susceptibility to the mouthwashes.

Emily Grace Kuehnemund
Designing, Constructing, and Testing the Sono Clamp

COUPP and PICASSO are two direct detection dark matter research experiments that utilize acoustic transducers in their detectors. These acoustic transducers are comprised of a piezoelectric acoustic sensing element and an embedded preamplifier, all of which are surrounded by a Faraday cage and encapsulated in an epoxy backing. I have been working to improve the acoustic properties of this backing layer. To do this, we have designed a device called the Sono Clamp. The Sono Clamp has been tested and accurately measures the speed of sound in known materials and has been used to measure the acoustic properties of candidate backing materials.

Emily Grace Kuehnemund
The Effects of Specular Reflection in Acoustic Transducer Backings Used for Dark Matter Detection

Eighty-five percent of the mass of the universe is comprised of dark matter. Dark matter particles have not yet been detected in any laboratory. The COUPP and PICASSO experiments are using superheated fluids to detect dark matter-ordinary matter collisions. When a particle collides with a nucleus of a superheated fluid, the recoiling nucleus
causes an explosive phase transition from liquid into gas. Superheated liquid detectors are sensitive to potential dark matter particles as well as background sources from radiation.

It was recently discovered that alpha particles (from radioactive decay) and neutrons (from a neutron source) make different sounds in the detectors. This discovery was made using acoustic transducers developed at IUSB. My project has involved improving these transducers by modifying the backing layer to better differentiate between background events and dark matter events. The backing has been modified to increase the acoustic impedance so that it is better matched to the sensing element. We have also been testing the effects of specular reflection in the backing layer by adding lead and tungsten flakes. Metals are dense and have a high impedance which will cause the sound wave to scatter in the backing. This will reduce the chance that the sensing element will read the same sound signal multiple times.

Kristin L. LaFollette
A Modern Day Edgar Allan Poe: The Contemporary Gothic Works of Stephen King

Gothic literature has spanned throughout history in popular classic novels such as Bronte’s *Wuthering Heights* and Stoker’s *Dracula*. Gothic literature encompasses the realm of the grotesque and incorporates eerie, shocking, and sometimes barbaric subject matter to expose the psychology, fears, and uncertainties of the characters in the works. As a classic American Gothic author, Edgar Allan Poe incorporated aspects of the horrifying and the macabre into all of his pieces. Several of Poe’s short stories, including “The Tell-Tale Heart” and “The Masque of the Red Death,” involve the typical Gothic grotesqueness of murder, insanity, and death. These are all aspects common to the field of Gothic literature, and Poe writes with impeccable classic Gothic style, enthralling readers with a sense of terror and unrest. Gothic literature has evolved since Poe’s time in the 1800s to include modern Gothic authors such as Stephen King.

Stephen King is a highly successful author whose novels and short story collections delve into the realm of the horrifying and the grotesque. This paper performs comparative analyses of King’s novels and short stories and Poe’s short stories and poems, displaying the true contemporary Gothic nature of King’s works in comparison to the classic nature of Poe’s works. Close readings of the pieces deconstruct them to expose characteristics of the Gothic both classically and contemporarily, displaying the evolution of the Gothic genre over time.
Kristin L. LaFollette  
**Piers the Plowman: An Allegorical Representation of Christ's Power and Humanity and the Importance of Hard Work**

William Langland's *Piers Plowman* is an allegorical narrative that chronicles the dream visions of Will, the main character in the poem. Throughout Will's journey, he encounters many allegorical figures including Conscience and Reason. Langland's work is an explorative poem in which Will is searching for "truth," the concept that Holy Church, an allegorical figure, claims will save Will's soul. Will experiences dream visions after falling asleep in western England and receives guidance from Piers the Plowman, Will's devout assistant. Piers is an allegorical representation of Christ in the poem. The poem is divided up into sections known as "passus," and in the seventh passus, Piers is assigned Christ-like characteristics when he asks others to follow him. Through this, Christ's power and authority is displayed through Piers. However, in the eighth passus, Piers is given simplistic, human qualities, further displaying Piers' representation of Christ by showing the dual nature of Christ's authority and humanity.

This paper explores Langland's representation of Christ through Piers the Plowman and the credibility that is established through Piers as a result. By applying Christ-like qualities to Piers, he is given credibility similar to Christ in the poem and his preaching is given more depth and authority. Piers is given ultimate credibility and believability when discussing issues in the poem, showing to readers the utmost importance of aspects like hard work in achieving salvation.

Evelynn Lape  
**The Role of Dynein Light Chain 4 in Cilia Function**

Cilia, Latin for “eyelashes”, are small hair-like projections (up to 10 micrometers long) found on the surface of many types of cells. Cilia can be motile or sensory; motile cilia wave to move a cell or to move fluid across the cell surface. Structurally, cilia are made from a framework of microtubules, dynein molecular motors (which provide the force for movement), and hundreds of other components. A wide variety of species – from single-celled organisms to humans – contain cilia. In the human body, cilia remove germs and other contaminants from the lungs, push the ovum down the fallopian tubes, move sperm cells, assign the orientation of the heart and other organs during early development, and perform many other important tasks. Proper ciliary function is crucial for human health and even survival. We know that calcium is important for the regulation of ciliary movement. However, we do not know with which of the hundreds of components in the cilia calcium interacts.
Dynein light chain 4 (LC4) binds to calcium and is part of the dynein motor that drives ciliary beating. To determine if LC4 bridges the gap between calcium and the regulation of ciliary beating, we are using the protozoan *Tetrahymena*, a single-celled eukaryote that is covered with hundreds of cilia. We created a *Tetrahymena* mutant cell line that does not contain the gene that codes for LC4 and are characterizing the cells phenotypically to identify defects related to cell swimming and the function of cilia.

Ethan Legg
The True Approval of Going Public

Within the modern Presidency the use of Going Public is a tool that is utilized quite often especially in the case of our most recent President, Barrack Obama. There are few experiments done to compare the presidential approval ratings with the use of “going public”, which is a direct appeal to the people to persuade legislatures on legislation. This use of “Going Public” is one of the most important tools that the President can use and therefore we should be more informed about it. The approval ratings of the President are also very important to the public for the fact of it is assessing the President’s abilities. These are utilized more and more because of this new era of the President. Since both of these are utilized to depict a President, I believe a new analysis of a current President is needed that uses both of these.

The past theories are obsolete with no analysis from this new era of the President. Analyzing the Obama Presidency using the State of the Union addresses along with a selected few press conferences that mention either the Health Care bill or the National Debt. These statements will then be compared with the approval ratings of the President from Gallup polling using specific dates of the ratings and the statements that the President releases to the public through the press. Through this comparison I should be able to find if there is a correlation between “Going Public” and the approval ratings of the President.

Ryan Lubelski
Presence of Genes Associated With Increased Virulence Found in *Fusarium* Species Associated With the Plant *Hydrophyllum*

Plant pathogens can range from highly virulent (cause severe disease symptoms in the host) to benign (minimal disease effects in the host). Recent studies have identified genes that affect the degree of virulence in the fungal pathogen *Fusarium oxysporum* f.sp. *lycopersici* that infects
tomato plants. These genes include SIX1 and SIX6, which code for secreted proteins involved in infecting root hairs of the host plant. I tested whether these genes for virulence are present in other species of *Fusarium* that infect native understory plant *Hydrophyllum*. I found SIX1 to be present in 12 out of 12 samples tested. Sequence similarities between SIX1 for these 12 samples was compared to those of SIX1 from *Fusarium* that infect tomato plants using the Basic Local Alignment Search Tool (BLAST). BLAST results show a 95% max identity between the SIX1 genes present in *Fusarium* that infect *Hydrophyllum* compared to the SIX1 genes present in *Fusarium* that infect tomato plants. Current work is being done to identify the presence of the SIX6 gene, and if present I will compare sequence similarities with that of *Fusarium* strains infecting tomato plants.

Meredith McCabe  
**Cuckoo for Cacao: The Significance of Cacao Use Among the Maya**

Throughout history, cacao, or chocolate, has acquired many uses and different beliefs associated with it. For the Maya, cacao is an essential aspect of their mythology, and is rooted in their beliefs regarding sexuality, gender roles, fertility, death, and regeneration. The mythology of cacao is explored using references to the *Popol Vuh*, existing codices and ceramics. How the cacao was prepared and consumed by the ancient Maya points to its important role within society, and its link to fertility, sexuality, and women. Cacao also has a significant role in curing ceremonies and burial rituals conducted by the Maya. From the Mayan concept of the soul continuing on after death, cacao gains a pivotal role in the rebirth of the soul. This paper offers an in depth glimpse at cacao's acquired prestige from one of the earliest human groups to utilize it.

Bridget McGann  
**Colic: A Culture-Bound Syndrome**

In this presentation I will discuss the evolutionary, physiological, and cultural dimensions of the long-evolved infant communication system, particularly with regards to the tendency of Western infants towards excessive crying. Why must millions of parents lose sleep during their childbearing years? This presentation will draw on the work of Ronald Barr of the University of British Columbia, James McKenna of the University of Notre Dame, Sarah Hrdy of UC Davis and others to discuss how the development of the bipedal pelvis and the increasing size of the cranium resulted in a human infant that is uniquely vulnerable among mammals, and the adaptations that it developed in order to survive. I will explore the finely-tuned communication system wherein the infant
regulates its internal state by making noise (crying) to attract the attention of caregivers. This particular adaptation has come into conflict with the Western lifestyle, manifesting itself as colic, which I believe to be not a pathological condition as it is considered by Western biomedicine, but a culture-bound system unique to our culture. Understanding infant behavior from an evolutionary perspective and applying more biologically appropriate caregiving strategies may be therapeutic for infants who are diagnosed with colic. This research has implications in the field of Applied Anthropology, in the clinical practice of pediatricians and, possibly most importantly, in aiding the prevention of Shaken Baby Syndrome.

Mandy McKee

*Piers Plowman: Achieving Salvation in a Corrupt World*

William Langland’s narrative poem, *Piers Plowman*, endeavors to investigate the source of corruption in the 14th century by exploring both the problems with the religious dogma at the time and how the very order that was created to extinguish moral corruption inevitably perpetuates it. While Langland might find the fault to rest solely on the shoulders of religious authorities for abusing their positions, through critical analysis it is possible to see that the poem is critical not only of the church itself, but also finds fault with unchecked hierarchies of power and the money that fuels them. *Piers Plowman* lays the foundation for protesting any system (government, religion, etc) that operates without checks and balances and while it does not explicitly offer a concrete solution, it does offer the first steps to solving some of these issues.

In my paper, I intend to explore the ways in which the poem is drawing attention to specific examples of how corruption is entrenched in the religious system and a couple of the causes that are outlined in the text. My paper will show that a combination of the Christian dogma, absolute power, and greed has corrupted an otherwise noble set of intentions, and that the best way to start reforming a broken system is to change the way in which that system is perpetuated, which is through its pockets.

T.J. McNally

*Piers Plowman: Passus V and the Intrusion of Authorial Anxiety*

In the C Version of William Langland’s fourteenth century alliterative poem *Piers Plowman*, there is a passage that does not appear in either of the previous versions. The passage is particularly curious because the narrator had previously gone to sleep in the Malvern Hills far to the
northwest of London, has an allegorical dream, and then wakes up in the Cornhill neighborhood of London. There is no explanation of how the change in geography took place during the narrator’s slumber. It may be that this was simply an editorial error, since scholars have shown that William Langland was not working with an original copy of his poem when he revised the B version and produced the C. However, the autobiographical nature of this waking episode, coupled with the particular facets of the poem’s central question (“How may I save my soul?”) lead one to believe that there is more than just a mistake here.

In my paper, I will examine how the beginning of Passus V highlights the author’s concern not just with teaching others how to save their souls but also with ensuring that he is not himself damned. My argument is that the waking episode is part autobiography, part apologia, and part recursive reflection on the relationship between work and salvation, for Langland continually revisits the distinction between good and bad beggars and between good and bad minstrels—two occupations to which he seems to belong.

Stephanie C. Merryfield
Vico: Curtailing Mechanistic Cartesianism in Food Safety

Despite the best efforts of food scientists and technologists, the American population remains at risk for exposure to food borne pathogens. In my multimedia presentation, I explore concurrent factors that undermine food safety as portrayed in the Oscar nominated documentary film, *Food, Inc.* My major, English, increasingly recognizes film as a relevant text through which to view American culture, and which provides an innovative means for critical analysis of our global media culture. Moreover, the inherent rhetorical strategies employed by food scientists and technologists are germane to the study of Speech Communications, my minor. A segment of this film provides a discursive text to discuss the scholarship of Giambattista Vico in his efforts to curtail the Cartesian focus on using mathematical models and mechanisms to govern social decision-making. Vico’s philosophy has gained interest among many scholars of late, including Emory University, which created an institute wholly dedicated to understanding his erudite scholarship. While I avoid delving viscerally into the correlations, Vico’s concepts can help us identify how the technological nature of industrialized production of food motivates the destruction of natural resources. Furthermore, the implications of the presentation are relevant in yet another field of study: environment and sustainability.
My presentation argues that the absence of the Vichian praxis of sensus communis and imaginative reasoning hinders the delivery of safe food to Americans. The juxtaposition of these theoretical concepts can help to unseat an unhealthy techno-scientific hegemony and ultimately promote the rethinking of food safety.

Mathieu Ndong
Assembly and Testing of the Large Area multi-institutional Scintillator Array

The Large-area multi-Institutional Scintillator Array (LISA), a neutron detector being constructed at nine primarily undergraduate institutions, will extend the capabilities of the MONA-Sweeper setup at the National Superconducting Cyclotron Laboratory (NSCL) by allowing measurements of higher decay energies in studies of light nuclei (Z<9) at and beyond the neutron drip line. Like MoNA, LISA will use an array of 144 individual plastic scintillators to produce a position sensitive system with multi-hit capability. Each module is a 200 x 10 x 10cm3 bar of EJ-200 organic plastic scintillator with a photomultiplier tube (PMT) mounted on each end. Timing between signals from the two ends of the bar allows a measurement of the interaction position along the bar’s length. Sixteen detector bars are being assembled and tested at each of the nine institutions. This presentation will describe the work carried out at Indiana University South Bend, including construction of PMT bases, mounting of the PMT’s on the detector bars, checks for light leaks, gain matching of the 32 PMT’s, attenuation length measurements of the individual scintillator bars, and position resolution measurements.

*This project is supported by National Science Foundation grant number PHY-0922537.

Michael H. Passini
Beverage Bottles Found on Dig Sites: Possible Origins and Contents

Last summer I was involved in an archaeological field school, and the results yielded on everything that was found was quite interesting. I decided to focus on the beverage bottles that we had found at two different sites, one site in particular had a myriad of glassware and china that was found in a privy. The problem with this find although a lot of items were found, was that there was little to no context of strata that they could be determined to be from. Research indicated that these bottles that I focused on had been mainly manufactured in the immediate to regional area, and that local companies had utilized these bottles for different reasons.

This research paper looks at different possibilities, not only of said origins
of manufacturers and usage, but as to the history of machine made bottles in the beginnings of machine production, but also handmade and blown bottles and the backdrop of change represented by this. Everything that is made and used in society gives you a slight glimpse into the changes taking place, as evidenced by local, regional and national manufacture of any item and the possible history surrounding these artifacts.

Michael H. Passini
Facebook and Social Networking

The question has arisen about the changes and how we interact on a daily basis, the hive mind does seem to be relevant, yet of course there is still quite a bit of difference in user frequency and the reasons users interact. Both of the subjects studied along with those studied by my colleagues all had different reasons for utilizing Facebook and also were active quite often or were hardly ever on the site, as one of my subjects had little to moderate usage and the other was on somewhat frequently. Both of my subjects that I studied, as well as the glimpse of those studied by others in my research group fit in perfectly with this quote taken from “Portable Communities” in which a subject studied had this to say: “I can keep in touch with people that normally I would not have made the effort to keep in contact with” (Chayko p.92).

So, are our values changing, due to instant communications, do we communicate more frequently, less frequently, is this new form of social interaction creating a new sense of community? One of my colleagues had a subject that had two Facebook accounts, one that was strictly for professional use and one that was purely for personal usage, which puts this subject into two separate categories of community and frequency. This question of the reason for a mode of communication and the resulting amount of usage is one of main aspects I am looking at.

Brian Payne
The Criminal Justice Dilemma—Individual Rights and Social Order

How do citizens keep the law and protect their civil rights at the same time, how does enforcing the law and protecting civil liberties happen simultaneously? It is one of the great challenges facing law enforcement and the enforcers (the Police). The criminal justice system wholly, is faced with hardship in seeking to maintain law and social order while protecting the civil rights and liberties of citizens and residents.
This paper will cover a few of the many factors that constitute the criminal justice dilemma and seek to unravel the mediums that bridge the dilemma. The following will be the focal points to convey the message of this paper; Purpose of the law, Civil rights and liberties, Police functionality/roles in bridging the law and civil liberty, Police style of policing and Police discretion.

Brandon Rickey

The Constitutionality of Indiana’s Voter ID Law and the Burdensome Effects it Has On The Fundamental Right to Vote; Why Indiana’s Voter ID Law Does not Withstand Strict Scrutiny and A Criticism of the Supreme Court’s Decision in Crawford v Marion County Elections Board not to Apply the Standard

The Author notes the historical precedent of the Application of Strict Scrutiny to restrictions on fundamental rights-especially the right to vote as established in the cases of as established by the Supreme Court in the cases of , Lane v Wilson, Dunn v Blumstein, and Harper v Virginia Board of Elections. the Author notes that S.E.A 483, better known as Indiana's Voter ID law, does not withstand the elements of standard of strict scrutiny because 1) the government does not have a "compelling interest" because widespread voter fraud has been proven by scholarly research to be a myth and the state of Indiana has never prosecuted anyone for voter fraud. 2) the Law is not "narrowly tailored" to further the government's interest because voter ID requirements only apply to in-person voting despite the fact absentee voter fraud is more prevalent 3) there are more effective and less restrictive ways to fight voter fraud without burdening the right to vote. The Author also argues that the Court should have applied the standard of Strict Scrutiny based on the Empirical evidence that voter ID laws burden the right to vote.

Jared Shepherd

Analyzing Richard Dawkins’ Treatment of Einstein and Einsteinian Religion: Convergences and Divergences in Dawkins’ The God Delusion

Evolutionary biologist Richard Dawkins is the author of the controversial book The God Delusion. This best-selling book seeks to demonstrate that persistent belief in a personal God, in light of strong contradictory evidence, constitutes a delusion. This has of course garnered criticism from religious apologists. One of the more interesting criticisms came from famed former atheist turned deist, professor and notable philosopher of religion, Antony Flew. Flew focuses on Dawkins’ portrayal of Einstein's religious views, which Dawkins considers innocuous because Einstein's God is not a personal one, and hence (according to Dawkins) Einstein's views are not really "religious" at all. However, according to Flew, Dawkins misrepresents Einstein's views on religion. As part of my
coursework for HPSC-T 390 with Dr. Zynda (which required two researched essays relevant to the relationship between religion and science), I wrote a thorough analysis that addressed the dispute between Dawkins and Flew. The purpose of the essay was to—in a fair manner—(1) evaluate and summarize Einstein’s philosophy of religion, (2) evaluate and summarize Dawkins’ treatment of Einstein in *The God Delusion* (especially in Chapter 1), and (3) determine how Dawkins’ representation of Einstein converges and or diverges from how Einstein presented himself. The purpose of this presentation will be to summarize my main findings. In particular, I argue that Einstein's complex religious views align most closely with those of Spinoza—against Dawkins’ presentation of Einstein—and therefore ought to be considered truly religious.

Jared Shepherd

Cannabinoids in Insects?

The effects of certain chemicals (i.e., cannabinoids) found in *Cannabis sativa* L. on humans are due to interactions with the endocannabinoid system (ECS)—the target of much pharmaceutical research. All of the scientific literature (to my knowledge) concerning the ECS and its evolution in marine animals was reviewed and subsequently expanded to evolutionary history in general. The ECS and its role in energy homeostasis appeared to be highly conserved across a wide range of taxonomic groups. A 2001 computer analysis of gene and protein sequences led researchers to conclude that cannabinoid receptors (type 1 and 2) are absent in insects. This is unexpected as blocking expression of the receptors in mice increases mortality. Their analysis considered *Drosophila* while our own proteomic analysis of *Aedes aegypti* (mosquito) also revealed little homology. However, two additional cannabinoid receptors have been proposed and cannabinoids can interact with other receptors and proteins.

Therefore, there may be functional activity of cannabinoids in insects even if cannabinoid type 1 and 2 receptors are absent. Hence, functional assays are needed. Expanding on pharmacological research conducted under the supervision and mentorship of Dr. Clark using mosquito larvae, we have begun working out a number of functional assays for testing the effect of various cannabinergic agents on mosquito larvae. I present here my findings on the ECS, the implications of the loss of a functional cannabinoid receptor in insects, our reasons for questioning this claim and the progress of our functional assays thus far.
Gordon Skaro
Yugo-nostalgia: Remembering and Rebuilding a Nation through Music

The essay builds on Svetlana Boym’s definitions of “restorative” and “reflective” forms of nostalgia as a model that sheds light on political, social, and cultural conditions in the former Yugoslavia. The essay’s main focus will be nostalgia in Bosnia & Herzegovina, Croatia and Serbia, three of the largest and most populous former Yugoslav republics where most of the 1990s civil war, which brought an end to Yugoslavia, was fought. “Reflective” nostalgia deals remembering and longing for the past, while “restorative” nostalgia deals with rebuilding whatever it is the nostalgic is longing for. Both forms of nostalgia are present in the former Yugoslavia and the essay will utilize evidence from songs and concerts throughout the three former republics in order to illustrate that restorative nostalgia is becoming more prevalent. There will be examples from both pre-war and post-war musicians who have created restorative atmospheres at their concerts, while singing songs that could be interpreted as restorative. People are increasingly listening to musicians from their neighboring countries. Some secondary sources are denying that nostalgia for Yugoslavia even exists, while others mention it as a side note in their work. Primary sources like song lyrics and concert attendance at nostalgic concerts through the three republics provide sufficient evidence to argue that not only Yugo-nostalgia is on the rise, but that the restorative form of nostalgia is prevalent. This is a significant phenomenon because longing for unity between the Yugoslav peoples is emerging just fifteen years after the civil war devastated their homeland. But music from the former republics is slowly bringing the people back together.

Nathan Smith
Detectors and Data Acquisition for the St. George Recoil Mass Separator

George is unique in that it has been designed with large angular and energy acceptances, so that it will be well suited for a variety of capture reactions. Low energy reactions will be studied using inverse kinematics in order to better understand helium burning processes in stars. Reacted products will be identified using mass measurements based on energy and time-of-flight (E-TOF). In addition to a dedicated set of detectors, St. George will have a dedicated data acquisition (DAQ) system. This DAQ system has been commissioned with a measurement involving detection of alpha particles with an existing prototype E-TOF system, consisting of a silicon detector and a microchannel plate detector. In parallel with the commissioning measurement, a simulation of the planned E-TOF system using GEANT4 has been developed. The purpose of the simulation is to investigate effects of a variety of possible detector capabilities, including
position-sensitivity for the energy and MCP detectors, on the ability to clearly differentiate between reacted and unreacted beam. If the mass resolution is high enough, St. George will be useful for measuring reactions in the future. Preliminary results of the simulations will be presented, along with details of the DAQ system and results of the commissioning measurement.

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Patrick Stevens
High Stakes on the High Seas: The Cold War, the CIA, and Project Azorian, 1968-74

The Soviet Union’s ballistic missile submarine, the K-129, sunk carrying a crew of 98 soviet sailors to their deaths in one of the deepest sections of the Pacific Ocean near Pearl Harbor, Hawaii carrying three nuclear missiles on March 8th, 1968. While most Americans consider Pearl Harbor to be the site of the tragic events in which the Japanese attack upon U.S. naval forces and forced the American entry into World War II. However, to the CIA during the Cold War era, Pearl Harbor held a very different meaning. Many secret battles were waged off of the coast by the CIA in and under the deep sea to recover the lost secrets of the Soviet submarine. Had this operation succeeded it would have been worth the expense to the CIA, however, this would never make it past the American people.

The Cold War was an era in U.S. history that was marked with much bloodshed and secret manipulation by the CIA. Project Azorian is a striking example of how the excessive fear of Soviet communism was able to bring the CIA to use any means necessary to learn about the secrets that lie within the sunken nuclear sub, the K-129. This operation was exorbitant and of high risk because it was carried out in plain sight of the Soviet Union and done so without their knowledge. These negative attributes were not offset by any great gain in intelligence making this arguably one of the CIA’s most expensive blunders.

Hannah Stowe
Anti-Imperialist Implications of Charles W. Chesnutt's The Conjure Woman

In this paper, I examine the relationship between U.S. expansionist ideology, at the time of the Spanish-American War, and Charles Chesnutt’s 1899 collection of stories entitled The Conjure Woman. Drawing on primary sources like Congressman John Esch’s 1899 speech on “The Manifest Destiny of the Republic” and Frederick Jackson Turner’s
1893 essay “The Significance of the Frontier in American History,” I illustrate how Chesnutt’s stories implicitly challenge the rationales behind the U.S.’s colonization of the Philippines. Richard E. Welch, Jr., argues that Turner’s equation of U.S. national identity and land conquest helped create a rationale for expansion—into the Philippines, for instance. The Conjure Woman, on the other hand, presents a relationship between people and land that is different than Turner’s, one which does not include domination. In so doing, Chesnutt’s stories contest part of the thinking behind U.S. colonization of the Philippines. The Conjure Woman challenges U.S. imperialism not only by addressing the flawed view of land inherent in imperialistic ideology, I argue, but also by implicitly disputing the popular representation at the time of Filipinos as helpless individuals. In his speech, Esch attempts to justify the United States’s colonization of the Philippines by comparing Filipinos to “children” and “students,” arguing that they need the U.S. to act as a “parent” or “teacher.” In The Conjure Woman, however, characters in similar circumstances to the Filipinos display wisdom and independence. Thus, the stories implicitly challenge the idea at the time that the U.S. had a paternalistic responsibility to the Philippines.

Calvin Streeter, Mitchell Moseng & Matthew Bobus
Dandelions Used to Determine Presence of Tomato Ring Spot Virus in Orchards

Tomato ring spot virus (ToRSV) is a common pathogen to many plants, including fruit trees important in US agriculture. This virus is transmitted by the microscopic nematode Xiphinema americanum. Although a tree may harbor many virus particles, detecting the virus is difficult because it requires boring a hole into the graft site, resulting in possible death of the tree. It was hypothesized that other plants in the orchard would be exposed to the nematode and thus test positive for ToRSV. To test this hypothesis, dandelions, commonly found in orchards, were collected from various suspected orchards. The prepared extract was analyzed via antibody based ELISA to determine the presence of the virus. The virus was detected in dandelions, which correlated to orchards suspected of being infected by the virus.

Lynlee Swartz
Facebook and Self-Identity

Since the beginning of the internet, much knowledge received and given on it has either been in the form of or involved pictures. Pictures have been a crucial key to gaining information about products or people. They are used for selling and buying products, any form of advertisement, and viewing what anything looks like, including people. With people, exactly
what pictures that are posted to be viewed can become complicated. Just as with magazines and television, pictures of people are censored. When children are involved in the picture, it is censored even more. There are all types of rules and regulations regarding what pictures people can and cannot post on the internet. Facebook is one such place on the internet where pictures can be posted as long as certain rules and regulations are followed.

Using George Hebert Mead’s theory of the self, Erving Goffman's book The Presentation of Self in Everyday Life, and Emile Durkheim’s work in The Division of Labor in Society, connections can be made as to why there is a general consensus of what types of material in photographs are or aren’t acceptable on internet websites such as Facebook.

Michael R. Szymanski
Frankenstein: The United States in Afghanistan during the 1980s and 1990s
For nearly the past quarter century, the U.S. has been involved in covert operations in a region of the world that most people could not locate on a map. Invisible wars being fought by the U.S. and other foreign intelligence agencies in Afghanistan sowed the seeds for the attacks on September 11, 2001. From the Soviet invasion in 1979 to the summer of 2001, intelligence agencies from around the globe have had a steak in supplying, training, and funding the very same people who carried out those terrible attacks. In the middle of this chaotic time period, Osama bin Laden used political manipulation to devise a plan that would leave a scar on the face of a nation for many years to come. This research will give a history of the U.S. government’s involvement in Afghanistan during the 1980s and 90s. The Taliban and Al-Qaeda would rise from the ashes of the Soviet conflict to become the new enemy of America. In order to combat these new faceless adversaries, historians need to look at the mistakes made in the past in order to prevent similar tragedies in the future.

Kristen Thomasberger
The Soil Conservation Service: Rebuilding the Dust Bowl
This paper discusses the effectiveness of the farming techniques implemented by the Soil Conservation Service in order to combat the drought and dust storm that plagued the Great Plains during the 1930s. This paper uses newspaper articles from the era of the dust storms and a variety of secondary sources to evaluate the impact of the programs of the SCS. When severe drought devastated the farmland in the dust bowl,
the dry land conditions and high winds created dust storms that depleted the region’s fertile top soil. The horrific dust storms not only had a severe impact on the region’s agriculture, it also devastated the living conditions of those living in the region. In order to combat the paralyzing drought and wind erosion, Hugh H. Bennett, the director of the Soil Erosion Service, asked congress to create a program backed by the Department of Agriculture focused on soil conservation. In April 1935, Bennett was successful when the congress created the Soil Conservation Service and passed the Soil Conservation Act. Though this was a triumph for Bennett, many of the farmers in the afflicted region were not accepting of the government interfering with their farming practices. Although the farmers fought these regulations, Bennett and the Soil Conservation Service implemented new farming practices that would help retain moisture in the soil and revive agriculture.

McKenzie Tozan
The Equivocal Nature of Free Will: The Misconception of Free Will in *Piers Plowman*

Throughout William Langland’s *Piers Plowman*, there is the question of the Vision and the Life – the learning and accepting of Christ, followed by the living as a reflection of His life (as well as in Eternity). Not only is the book-long poem divided into the Vision (first ten Passus) and the Life (the remaining Passus), but this is also demonstrated through the character of Free Will, who does not lend himself to this division but creates his own division purely by existing. While Free Will is commonly seen as the key agent to discovering and accepting Christ, as well as living like Him upon acceptance, the Free Will depicted in *Piers Plowman* focuses much more on his positive connotations, and leans away from the importance of choice – whether good or evil. Because of this shift in focus, Free Will offers an interpretation to the importance and intent of the overall poem, which may demonstrate this received-as-Christian-poem… as not really being so Christian after all.

Chris Wachs
An Analysis of Industrial Alcohol and Government Policy During Prohibition

The 19th amendment criminalized the production, distribution, and sale of alcoholic beverages, denying a right to the citizens of the United States for the first time in US constitutional history. In the end, of course, Prohibition was repealed, due in large part to the fact that it proved impossible to enforce. One of the ways in which thirsty citizens obtained illegal liquor was through the “renaturing” of industrial alcohol, which by law was required to have additives that discouraged consumption. However, chemists in the employ of organized crime were able to
reconstitute “denatured” industrial alcohol into drinkable ethyl alcohol. The US government responded by establishing policies that amplified the toxic nature of denatured alcohol to a degree that limited the effectiveness of the “renaturing” process. This policy led directly to the deaths and disablement of thousands of US citizens, and elevated the pursuit of law enforcement at the expense of public health. This paper traces the history of industrial alcohol and the renaturing process that converted it back into consumable alcohol. It will also address the rationale behind the government policy, through original newspaper accounts, congressional hearings, and the words of leading officials and policy makers. It will also assess recent policies concerning marijuana and heroin; related issues that balance law enforcement with the mandate to ensure public health.

Celeste Warrell
Unique Thermal Hysteresis Antifreeze Glycolipid Confers Cryoprotection to Non-cold-tolerant Geranium Cells

Surviving subzero temperatures involves one of two strategies, freeze-avoidance or freeze-tolerance. Freeze-avoiding species cannot survive freezing, while freeze-tolerant species survive freezing in the extracellular space and actually promote ice formation in the extracellular fluid. However, cytoplasmic freezing is lethal, even in freeze-tolerant species. Biomolecules that contribute to the organism’s survival include antifreeze proteins, which bind to ice crystals, making continued ice growth impossible until the temperature is lowered. This ice-binding activity produces a difference between the ice crystal’s melting and freezing point, a phenomenon known as thermal hysteresis. A recently discovered antifreeze glycolipid located on cell membranes and having antifreeze protein-like activity was isolated from the freeze-tolerant Alaskan beetle, Upis ceramboidea. We hypothesize that this antifreeze glycolipid prevents the spread of extracellular ice into the cytoplasm by virtue of its position on the membrane and its ability to bind to ice, thereby preventing lethal cytoplasmic freezing. A similar and possibly identical antifreeze glycolipid has been identified in the freeze-tolerant plant Solanum dulcamara, a more easily-accessed source of the antifreeze glycolipid. The goal of this project was to determine whether the Solanum antifreeze glycolipid (AFGL) has a cryoprotective effect on non-cold tolerant geranium protoplasts (Pelargonium hortorum). Preliminary evidence suggests that a highly diluted sample (1:20 dilution) of the Solanum AFGL having an original thermal hysteresis activity of ~2.4°C significantly enhances protoplast survivorship at 5°C, with a difference in percent survivorship of 20%. Further research to determine the mechanism of the AFGL’s cryoprotection is currently underway.
Megan Waugh & Sikolisiile Nyoni
Work and Play in Facebook Profiles

This poster describes a study of how people utilize the social networking site Facebook for work and play. During the fall 2010 semester we documented the activity on the Facebook walls of 18 subjects. These subjects allowed us to “friend” them in order to conduct this study. We logged their activities into different emotional and life categories an individual may use to communicate with family, friends and professional contacts. Compartmentalization of profiles is a growing trend, and Facebook allows each individual to decide what to share. This project provides insight into how users choose the messages or images they wish to convey on their profiles.

The findings from our study show that even with compartmentalization of profiles the amount of play in profiles is occurring at a much larger rate than work, even when those profiles are known to be compartmentalized for work. The categories that the posts were assigned indicate that the use of Facebook is in some way used to reintegrate play into the lives of the people we studied.

Drew Whiteford
SUDS and the Expressive Writing Paradigm

In my brief PowerPoint presentation I will present some history behind the Subjective Units of Distress Scale (SUDS) and how Dr. DeBrule is implementing it into his study on expressive writing.