The Honors School
Spring Research Conference
2009

Fifth Honors School Research Conference

Magill Commons Club Room 107, 108, 109
Saturday, April 25, 2009
8:30 a.m. - 5:00 p.m.

It is with great pleasure that the Honors School presents its Fifth Honors Research Conference

Student presenters include research in the fields of:
- Anthropology
- Biology
- Business
- Communication
- Criminal Justice
- Education
- English
- Health
- History
- Music
- Political Science
- Psychology
- Social Work

Order of Events

8:30 a.m. Welcoming Remarks

Andrew Musick (PS)    Heather Tyrrell (BY)    Michelle Maiorano (PY)
Katie Kaminski (ED)    Meghan Shaw (BY)    Krista T. St. Louis (PY)
Dana Pompeka (ED)      Paul Carrera (BY)    Aubrey Clark (PY)
Melissa Burro (CJ)     Tara Shirk (BUBA)    Lauren Acquaviva (SW)
Amanda Phipps (AN)    Lauren Behrens (BUBA) Katelyn Mirabelli (EN)
Tara O’Neil (ANFS)     Rocco Ignorza (BUBA) Jenna N. Gaudio (CO)
Jessica Adamko (HE)    John Knox (BUBA)    Veronique Blostein (CO)
Kristopher Jackson (HE) Robert Pyksh (BUBA) Celia Roche (CO)
Marian Gaballah (BY)   Elizabeth Alexander (BUBE) Quinn Gilly (HS)
Jillian Stokely (BY)   Jaclyn Marie Isaac (BUBK) Nicole Stevens (HS)
                      Arce Guzman (PY)    Jaelyn Verbitski (MU)

Additional students completing Thesis* but not presenting:
- Shawna Kelly (PY)
- Mourin Khaleel (BY)
- Anoop Shah (BY)
- Michele Zook (BY)

*Please see last page of program for Thesis title, Chief Advisor, and Second Reader.
The Guatemalan Civil War spanned more than three decades and included some of the most heinous civil rights abuses of the 20th century. The most violent period of the civil war occurred during the early 1980s under the rule of U.S. backed dictator Jose Efrain Rios Montt. It was during this time the scorched earth campaign swept the mountainous highlands resulting in 626 massacres, completely wiping out villages and killing innocent Mayan civilians. These mass killings were not the result of action taken by lower-level military personnel. According to the Commission for Historical Clarification, they were part of a centrally planned national campaign, backed by the Central Intelligence Agency of the United States of America.
Presenters (cont.)

Tara O'Neil
Effective Adult ESL in New Jersey: Social and Cultural Factors
Affecting Language Acquisition
This project seeks to highlight different cultural and social factors that affect adult English language learners in order to help adult ESL teachers and programs better serve their students. Some of these factors directly affect language acquisition, while others influence the classroom setting or structure. These social and cultural issues include: the differing proficiency levels and expectations of students in a classroom; the level of familiarity with school tasks; issues of time, money, childcare, and transportation; different cultural norms for gender interaction, the differing cultural categorizations of words, the cultural boundedness of concepts or phrases; and attitudes toward English language and American culture. An understanding of these factors can help ESL programs better adapt to the learning needs of their students.

Chief Advisor: Dr. Dorothy Lobo
Second Reader: Dr. Richard Veit

Jessica M. Adamko
A Cross-Cultural Comparison of Health Behaviors and Life Expectancy in France and the United States
The French paradox is typically classified by relatively low rates of coronary heart disease despite a diet rich in saturated fats. The scientific community and western world dietary recommenders typically correlate saturated fats with an increased risk for CHD. Americans typically follow this standard; however, CHD mortality rates are much higher in the U.S. than they are in France. This phenomenon is known as the French Paradox and has provided the scientific community with stimulation for research for many years. Suggested explanations for the paradox are numerous; however, the absence of a unanimously accepted explanation stimulates curiosity. Explanations of the paradox include the red wine theory, the Mediterranean diet, as well as lifestyle factors including attitudes towards food, physical activity and stress management. Uncovering the truth behind the paradox can provide incredibly valuable information to the American health care system which might be applied for improved health status in the U.S.

Chief Advisor: Dr. Rosemary Barbera
Second Reader: Dr. Dennis Rhoads

Kristopher Jackson
Hardiness: A Concept Analysis and Implications for Wellness in Contemporary America
Hardiness as described by Kobasa (1979) is comprised of three key elements: commitment, control and challenge. These three elements comprise an individual’s ability to overcome stressful life experiences. A "hardy" individual is more likely to internalize and learn from these stressful life experiences to avoid or deter the effects of a similar experience in the future. Research has shown that stress and health outcomes are directly related; therefore, there is reason to believe that possessing a hardy personality makes one more resilient to the negative effects of stress on the human body. In America today, healthcare costs are rising and preventative medicine is considered to be one of the most effective methods of containing these costs. This analysis explores the origins of hardiness theory, the methods of assessing hardiness, past research involving hardiness theory, and the implications of hardiness for improving wellness in contemporary America.

Chief Advisor: Dr. Laura Kelly
Second Reader: Jane DeTullio

Marian Gaballah
Altered Response to Cellular Stress Upon Contact Inhibition
Cells in different stages of proliferation demonstrate changing levels of mitogen-activated protein (MAP) kinase pathway proteins, which may affect the response of cells in culture to oxidative stress. Previous results indicate increased MAP kinase phosphatase (MKP) levels upon contact inhibition in healthy fibroblasts, corresponding with decreased levels of phosphorylated extracellular signal-regulated kinase (ERK) and p38. Cancerous fibrosarcoma cells do not exhibit contact inhibition, and no change in active kinase or MKP levels was seen. Western blot analysis and chemiluminescence were used to obtain relative MKP-1, JNK, p-JNK, and cleaved PARP levels in subconfluent and confluent fibroblast and fibrosarcoma cell cultures following oxidative stress by H2O2. A relationship between culture density and a response to stress as indicated by MKP kinase and phosphatase activity was seen. JNK-1, a MAP kinase, remained inactive in cells during all stages of proliferation. However, following induced oxidative stress by, cleaved PARP as well as higher phosphorylated JNK (p-JNK) levels were detected in subconfluent cells in relation to confluent cells, indicating the early stages of apoptosis. Based on these results, a correlation can be established between confluency of the cell culture and the response to oxidative stress, as determined by varying levels of protein expression and activity within the cells.

Chief Advisor: Dr. Dorothy Lobo
Second Reader: Dr. Dennis Rhoads
Jillian Stokley  
**Distribution, Diversity, and Abundance of Marine Sponges in Cape Eleuthera, the Bahamas**

With the increasing pressure on local fish stocks to sustain their economy, there is an unambiguous need for alternative and sustainable sources of income for the local communities of the Bahamas. The modern Bahamian sponge industry is currently underdeveloped despite the growing global demand in the cosmetic, medical, pharmaceutical, and chemical markets (cei.bahamas.org). The goal of this research is to categorize the species diversity and abundance in the surrounding marine areas of Cape Eleuthera. The information recorded will then be used to determine the location and abundance of commercially viable species. The sponges in this particular study are located in the semi-tropical waters of Cape Eleuthera, the Bahamas. Observers counted and identified sponge species located within one meter of a 10 meter transect line. Five transects were conducted at five different locations in Cape Eleuthera. The locations represented different habitats including those with wave energy and without. The data were then analyzed using the Shannon Diversity Index as an indicator of biodiversity. Diversity indices were statistically compared across locations to determine site effect.

Heather Tyrrell  
**Optimizing the Potential for Sponge Harvest in Eleuthera, The Bahamas:**

**Growth and Regeneration Studies on Commercially Valuable Sponge Species**

Global demands for natural sponge products are beginning to grow. This increase has been fueled by a variety of markets including traditional domestic products and more recently, cosmetic, medical, pharmaceutical and chemical industries. With increasing pressures on commercial fish stocks in The Bahamas, there is a clear need for alternative and sustainable sources of income for small local communities. Sponge aquaculture has the potential to become one such alternative. Although the sponge fishery has encountered setbacks with disease, overfishing, and the introduction of synthetic sponges, commercial sponge farming continues to be a valuable industry that small island communities can potentially develop into a productive sustainable source of income. Spongilla tuberifera (Grass sponge) and Spongia pertusa (Hard Hat or Hard Head sponge) are considered to be commercially marketable native sponges with a spongiform fibrous skeletal framework. This study examines the growth rates of parent sponges after they have been cut to supply a donor sponge while also exploring the potential for a future sustainable sponge fishery in small island communities. This is an important step to understanding the stability of the sponge industry and the impact it will have on local wild sponge populations.

Meghan Shaw  
**Effects of Sub-lethal Concentrations of Methylmercury on Morphology in Larval Mummichog, Fundulus heteroclitus**

Mummichog Fundulus heteroclitus is an estuary-dependent fish and an important component of mid-Atlantic estuarine food webs. Estuarine sediment in the urban northeast US often contains anthropogenic methylmercury, which can bioaccumulate in fish tissue, causing neurological effects, morphological damage, and ultimately mortality. Other researchers have found that sub-lethal concentrations of methylmercury may affect behavior without gross morphological change. However, analyses of subtle morphological changes at sub-lethal concentrations have not been conducted previously. This research compared the effects of sublethal concentrations of methylmercury on larval mummichog morphology. Mummichog larvae were reared in control and 5, 10, 20, and 40 ppb methylmercury-contaminated water. Larvae were sampled every three days post-hatch for 40 days for image analysis. Photography was performed using a Zeiss image analysis system with stereoscope and AxioCam HS. Morphometric analyses were conducted with Zeiss AxioVision software.

Paul Carrera  
**Effects of Salinity Stress on Origanum (x)majoricum and Origanum onites**

**Essential Oil and Phenol Production and Their Related Antioxidant Activity**

The purpose of this study was to analyze the effect of salinity on Origanum onites and Origanum (x)majoricum growth, essential oil production, total phenols, and antioxidant activity. The treated plants were analyzed for produced essential oil mass and volume as well as composition as well as fresh weight and dry weight. Their total phenols were measured, as well as antioxidant activity. The results indicated that different concentrations of NaCl affected O. (x)majoricum growth positively and O.onites growth negatively. Essential oil production was altered as well as composition with salinity changes. Antioxidant activity was shown to increase with salinity as was total phenols. Based on the results, it would seem that increasing the concentration of NaCl does positively influence essential oil production, alter essential oil composition, increase phenol production, and increase antioxidant activity.

Tara Shirk  
**Proposed Estate Tax Legislation and the Effect on Estate Planning**

The current estate tax laws, passed by the Bush administration in 2001, are set to temporarily expire in 2010 before returning to the harsh 2001 levels in 2011. Congress is currently debating the correct action to be taken in reforming the law. This thesis will discuss the most realistic alternatives, and then determine the plan most likely to go into effect. It will also discuss the difficulties faced in developing a fair estate tax system, particularly consideration of estates that are primarily non-liquid. The thesis will then provide a discussion of estate planning tactics, which will be used in a comprehensive example of a typical estate plan.
The Three Pillars of "Urban Improvement" In the 21st Century

My goal for the thesis is to find and establish three specific pillars of urban improvement that cities can use for a reference in the 21st century. The pillars are to be relevant to the times, and incorporate past ideas of urban renewal to today’s new ideas of revitalization. Upon completion of the majority of my research, I established three of my own ideas for what I thought a successful revival of a city should encompass: a mosaic locality, infrastructure improvements, and the advancement of the community itself through activities and programs. Though they may seem like broad categories, my goal was to provide working guidelines for what each category encompasses, and how each pillar should be implemented.
An Examination of the Effectiveness of Cognitive-Behavioral Skills Training on Juvenile Delinquents with Symptoms of Conduct Disorder

Adolescents get involved in delinquency for a variety of reasons. There are individual risk factors and social risk factors. One of the biggest risk factors out of the two categories is Conduct Disorder, as children and adolescents with this disorder are more likely to be delinquent. A variety of therapeutic techniques have been used to eliminate some of the behaviors that occur with Conduct Disorder. Cognitive-Behavioral Skills Training is one of the more popular techniques. The effectiveness of this technique is questionable, however. Therefore, the purpose of this study was to evaluate the effectiveness of Cognitive-Behavioral Skills Training on juvenile delinquents with symptoms of Conduct Disorder.
### Presenters (cont.)

**Katelyn Mirabelli**  
**Narrative Circularity in Charlotte Brontë’s Work**  
My discrete contribution to the field of Brontë studies is an analysis of how one could not only symbolically, but textually link three of Charlotte Bronte’s novels: *The Professor*, *Jane Eyre*, and *Villette*. There are certain scenes and elements which seem to be the “seed” of the work that follows chronologically; I describe this quality in her work as “narrative circularity.” Brontë’s work has a circular feel because *The Professor*, although written first, was published last. Thus, she essentially re-wrote the same novel three complete times over in what was deemed an initial failure with *The Professor*. I also examine how these three novels reflect Brontë’s overall development as an author. Brontë did not live to see her first novel published, and she was in the early stages of writing a fourth “master-pupil” novel at the time of her death. Her attempts to perfect this type of story illustrate her growth because she continually re-works similar elements in her novels throughout her life. Essentially, this project provides a new way to look at Brontë’s novels by examining the close textual linkage between them. Exploring these relationships will hopefully provide readers with an increased respect for a writer who spent most of her life dedicated to perfecting this narrow type of fictional genre.

**Jenna N. Gaudio**  
**Media Ratings: Age Restrictions vs. Content Report**  
The content of American cinema has been constantly criticized and progressively categorized since the first motion picture was created. This research examines the history and future of regulating media for its audiences. By studying the effectiveness of ratings and how closely they represent the actual content, it was concluded that ratings are more useful when descriptive rather than restrictive.

**Veronique Blostein**  
**Body Image: Portrayal in Music Videos and its Effects on Men and Women**  
This thesis explores the topic of body image in the media and includes a cross-examination of issues of gender and race. Issues of eating disorders and cosmetic procedures are also discussed. Personal research was conducted to determine if the presentation of bodies in music videos has any effects on how people perceive themselves and what lengths they would consider going to in order to achieve the goal of an ideal body image.

**Celia Roche**  
**The Connection between the Academic Experience and a Corporation**  
**Internship at People Magazine.**  
In the four years acquiring a degree, a student is required certain general and major classes by their university. There are also a certain number of electives to choose from, and countless student-run activities, organizations, and clubs. The connection between the academic experience and the corporate world is explored in this research. More specifically it will explore connections of the academic experience of a Spanish/Communication major and the corporate experience of being an intern at the public relations department at *People Magazine*. The responsibilities of an intern are identified and examined, then courses and other academic related activities that have provided either knowledge or experience to be able to fulfill the responsibility are recognized. This allows the connection between academic experience and the corporate world to be established.

**Quinn Gilly**  
**Their Beloved Banjar: West Africa’s Forgotten Contribution to an American Musical Tradition**  
Banjos are often portrayed by popular culture as an artifact of white Southern Americana, as a unique invention of Southern mountain folk culture. Though this perception has been widely accepted as truth, the actual origins of the banjo lay with the millions of enslaved Africans brought to America during the transatlantic slave trade era. This project’s analysis of early American banjos and primary evidence will prove that the American banjo is actually an artifact of a West African folk lute tradition which flourished among its retainers in the New World. It was from these enslaved peoples whom the white Americans discovered the banjo, eventually accepting it as a part of their own culture by the mid nineteenth century.
Nicole Stevens
**The Catholic Church and the Road to Anti-Semitism: A Controversial History from the Crusades to the Holocaust**

Chief Advisor: Dr. Kenneth Campbell
Second Reader: Susan Douglass

In the decades following the Holocaust of the twentieth century; the Catholic Church made various attempts to justify its controversial actions during this tragedy, but it was not until nearly the century’s end that the holy institution finally made a formal statement, in which it declared its lack of responsibility for the Holocaust and the rabid anti-Semitism associated with it. However, many historians believe that such a statement failed to convey the true history of the Church's controversial relationship with the Jewish people—a relationship which was indeed characterized by both feelings of anti-Judaism and anti-Semitism. In reality, history will prove that since medieval times, the Catholic Church has both successfully fostered and unsuccessfully hindered feelings of anti-Judaism and anti-Semitism throughout the Christian world and consequently helped build an atmosphere in which such utter hatred and persecution could lead to the most infamous genocide in world history.

Jaclyn Verbitski
**Rückblick: How “Backward Glances” Shape Present Visions**

Chief Advisor: Dr. David Tripold
Second Reader: Michael Thomas

Artists respond to others’ art in their own work by some form of replication or imitation, because nothing can be created which is not shaped by past experiences and knowledge. Imitation in art is a means by which the artist finds his or her individual voice. The concept of imitation should be used by aspiring composers if they wish to create work that is significant and meaningful when examined beyond musical borders. Essentially, any piece of music can be entirely lost on a listener’s ears if heard superficially only once or twice. But before an audience can wish to delve extensively into a composition, it is first the composer’s job to give them something to search for. While the historical context is important, the main thesis includes the creation of an original song cycle with piano and voice.

**Additional Students Completing Thesis**

*Shawna Kelly
**Measurement of Homicidal Ideation**

Chief Advisor: Dr. Jack Demarest
Second Reader: Dr. Michele Van Volkom

*Mourin Khaleel
**Computational Determination of Energy Landscapes and Conformer Distributions of Dibenzo[a,c]anthracene**

Chief Advisor: Dr. Robert Topper
Second Reader: Dr. Danuta Szwajkajzer

*Anoop Shah
**Identification of HIF Target Genes**

Chief Advisor: Dr Michael Palladino
Second Reader: Dr. Dennis Rhoads

*Michele Zook
**Altered Expression of Receptor Protein in Adolescent Alcohol Dependency**

Chief Advisor: Dr. Dennis Rhoads
Second Reader: Dr. Dorothy Lobo