

# Wayne State College

Wayne State College Honors Program  
Student Abstracts, Spring 2011 Honors Colloquium

**CASSANDRA CAVANAUGH**      **“THE ROLE OF ROBOTICS IN THE THERAPEUTIC  
TREATMENT OF DEBILITATING MENTAL ILLNESSES”**

Instructor: Ms. Molly Curnyn

Presentation: Tuesday, April 26, 2011; 4:30 p.m.; Gardner Building, Room 115

Abstract

It is estimated that approximately 5.4 million Americans are living with Alzheimer's disease. Since the year 2000, deaths from Alzheimer's have risen 66%, making it the 6<sup>th</sup> leading cause of death. At the same time, 24,000 new Autism cases are diagnosed each year in the United States. In 2009, one in every 91 children were diagnosed with moderate to severe Autism, and even more with milder forms such as Asperger's, Pervasive Development Disorder, and other spectrum disorders. Both of these diseases are rising rapidly within the population, giving cause for more people to require cognitive, emotional, and physical support. This explorative paper goes into the identification and analysis of the role of robotics in therapy for Autism and Alzheimer's patients. The methodology used was a literary review focused on the synthesis and understanding of the past, present, and future roles of robotics in psychological treatment; the results of which have been organized into a very basic logical structure. The research indicated that the use of robotics is innovative in the treatment of Alzheimer's and Autism. Future studies could provide models or direction for the use of robotics in psychological therapy.

**KASSANDRA CONNELL**      **“SYNTHESIS OF PENICILLIN DERIVATIVES AND THE  
USE OF PLANT EXTRACTS IN THE FIGHT AGAINST  
ANTIBIOTIC RESISTANCE”**

Instructor: Dr. David Peitz

Presentation: Friday, April 29, 2011; 12:30 p.m.; Carhart Science, Room 122

Abstract

Today's medicines are facing a growing resistance from various bacteria. This is a complication that will affect many in our society both at home and in the hospital. In this research antibiotic resistance will be studied and addressed, specifically resistance to penicillin-based antibiotics. The mechanism of  $\beta$ -lactam antibiotic resistance is inactivation of penicillin by lactamase (which hydrolysis of the amide bond in penicillin). A series of plant extracts and synthetic derivative of penicillin are studied to see if the effects of sulbactam (a known inhibitor of antibiotic resistance) can be increased or duplicated. Antibiotic resistant bacteria (*E.coli*), ampicillin, sulbactam, plant extracts, and phenolic derivatives and ampicillin are screened for possible inhibition of antibiotic resistance. Data on the combination of extracts in the presence of antibiotics and/or sulbactam, affecting the growth of the *E. coli* will be presented.

**ALICIA GREGERSON**

**“THE NEW COUPLE: AN INTERPRETIVE INQUIRY”**

Instructor: Dr. Deborah Whitt

Presentation: Wednesday, April 27, 2011; 2:00 p.m.; Humanities Student Lounge

Abstract

The purpose of this study is to discover how newly married couples manage their formation as a new couple. Every individual brings a set of expectations to marriage that gets integrated to some extent (comfortable or uncomfortable) into the relationship through the couple's communication. Communication is the primary tool for developing relationships and creating feelings of connection and closeness. Using Janet Yerby's five tasks involved in building a marriage relationship and Ronald Arnett's Interpretive Inquiry as a Qualitative Research methodology, this study illuminates how couples describe their relationship, what they expect of their relationship, and how their relationship is connected to their family orientation. Through their conversations with each other, partners assign meanings and organize their relationship, assign duties, rights, and privileges to each other and develop the patterns that characterize their couple interaction.

**NEAL HAHN**

**“THE EFFECT OF PLASMID SIZE ON TRANSFORMATION  
EFFICIENCY IN G10 CELLS”**

Instructor: Dr. Douglas Christensen

Presentation: Friday, April 15, 2011, 11 a.m.; Nebraska Academy of Sciences, Lincoln, Nebraska

Abstract

Many bacterial cells harbor plasmid DNA which code for typically non-essential proteins including those that may result in resistance to antibiotics. These plasmids can be transformed into other competent bacterial cells, often resulting in the rapid spread of antibiotic resistance. The size of the plasmid may play a critical role in the efficiency of transfer from one organism to another. In order to determine the influence of plasmid size on its ability to be taken in by competent cells, three plasmids of varying size, each containing an ampicillin resistance maker, were transformed into chemically competent *Escherichia coli* cells under controlled conditions. The transformed cells were grown on ampicillin plates allowing the number of transformed cells to be compared on a plasmid to plasmid basis. These results are not meant to mimic natural transfer by F<sup>+</sup>/F conjugation pile but instead to provide insight on the uptake of plasmid from local environments by natural competence. This research was funded by the Nebraska INBRE Grant Number P20 RR016469.

**JENNIFER HARNEY**

**“INVESTIGATION OF THERMOCHROMIC  
COMPOUNDS AND THEIR POSSIBLE  
INTERCALATION INTO AN ALUMINUM OXIDE  
MATRIX”**

Instructor: Dr. Mary Ettel

Presentation: Friday, April 29, 2011; 12:00 p.m.; Carhart Science, Room 122

Abstract

Aluminum metal naturally forms a protective barrier oxide layer called aluminum oxide, or alumina, on its surface when exposed to air. This layer prevents further corrosion and oxidation to the metal. In a controlled laboratory setting, we are able to manipulate this process using an electrochemical technique known as anodizing. By making aluminum the anode of a circuit, we can artificially grow a porous and durable oxide layer on its surface. Numerous samples of aluminum were examined to determine which source would produce an adequate oxide layer in a timely fashion within an undergraduate chemistry laboratory. Other variables that were examined include anodization pretreatments, duration, and post-

anodization sealing. Once a successful and reproducible procedure was established, various substances could be added to the oxide matrix. Frequently, industrial anodizing involves dyeing the treated metal after it has been anodized to yield an aesthetically pleasing colored metal. An array of dye types were examined in the laboratory including: a histological stain, food coloring, water-soluble markers, pigmented chemicals, laboratory goggle dye, and dye made specifically for anodized aluminum. Special interest and focus was dedicated to the creation and application of a thermochromic compound into the alumina pores. This was achieved by the formation of copper II ferrocyanide from potassium ferrocyanide and copper II sulfate in a complex ion exchange reaction which took place in the oxide pores. Thermochromism was demonstrated using a Bunsen burner as a heat source. A rapid color change took place from dark red to black. This process appeared to be reversible. The procedure was replicated and documented so that future undergraduate students will be able to successfully duplicate these results.

**MARA HJELLE      “YOUTH IN CRISIS: IMPROVING THE CONDITION OF YOUTH  
TRANSITIONING OUT OF THE FOSTER CARE SYSTEM”**

Instructor: Dr. Keith Willis

Presentation: Wednesday, April 27, 2011; 1:00 p.m.; Brandenburg Education Building, Room 101

Abstract:

At present, there is a growing number of youth in America who are exiting the foster care system because they are “aging out.” Upon their 18<sup>th</sup> birthday, adolescents in the system are no longer qualified to receive the protection and services that the system had previously bestowed on them, and consequently, must start living an independent adult lifestyle. It is a huge adjustment for the majority of this population because they lack the necessary social, capital, and human resources needed to start their early transition into adulthood. This paper takes an in-depth look at the process and hardship these youth go through during their “aging out” process. Included is a discussion of what current policies and legislation has done to address the issue, what are the areas of concentration for improvement, and what improvements can be made in the future. Focusing on the areas of housing, employment, education and mental health, and improving the collaboration between various agencies, policymakers, social workers, and advocates can do a lot to make the transition process easier for these youth.

**BRANDON HOFFMANN      “AN EXPLORATORY STUDY OF SOCIAL  
NETWORKING AND ITS RELATED PERCEIVED  
EFFECTS ON BUSINESS AND COMPUTING  
STUDENTS”**

Instructor: Ms. Molly Curnyn

Presentation: Tuesday, April 26, 2011; 4:00 p.m.; Gardner Hall; Room 115

Abstract

Social networking sites have been rapidly adopted by people of all age worldwide, enabling new opportunities for the presentation of the self, learning, construction of a wide circle of relationships, and the management of privacy and intimacy. There are many potential effects with social networking sites and the individuals that use them. Social networking online involves using web sites to share information with others and connect with them by creating a profile that may include a personal web page and a blog. Social networking sites allow users to add friends, send messages and comment on other profile pages. It is also one of the most popular internet activities among today’s society. This study describes the phenomenon of social networking and identifies the range of positive and negative reinforcements social networking has on a subset of the students and faculty at the School of Business and Technology at Wayne State College.

**NATASHA HORN**

**“INTIMATE COMMUNICATION IN ROMANTIC COUPLES: A  
LOOK AT SELF-DISCLOSURE”**

Instructor: Dr. Deborah Whitt

Presentation: Wednesday, April 27, 2011; 2:30 p.m.; Humanities Student Lounge

Abstract

All individuals experience intimate communication and most individuals will experience intimate communication through marriage or dating. These individuals may come from different backgrounds and cultures. These backgrounds may affect how individuals communicate in future intimate relationships. The purpose of this study is to determine if romantic couples will reflect the same level of intimacy and self-disclosure with one another as they do with their families. Using a quantitative research methodology, this study explains if couples do communicate on the same level with one another as they do with their families. The results show that if people have high levels of self-disclosure within their families then they will display high levels of self-disclosure within their romantic relationships.

**EMILY LAUCK**

**“CHILD ABUSE: DEFINING THE EDUCATOR’S ROLE”**

Instructor: Dr. Pamela Langlie-Willers

Presentation: Thursday April 28, 2011; 2:00 p.m.; Benthack Hall, Room 103

Abstract

Each year millions of children are found to be victims of child abuse and neglect across the United States. While it is seen as a taboo topic in many peoples’ eyes, it is an issue that clearly needs to be spoken about in order to protect our children. All Nebraska citizens are mandatory reporters of child abuse and neglect and so it is important to be aware of the issue and be willing to help protect our nation’s children. This paper is a literature review of articles pertaining to the signs and symptoms and the different categories of child abuse and neglect as well as the educator’s role in this epidemic.

**NICK McCORMICK**

**“SOCIAL MEDIA: WHY IT IS A NECESSARY COMPONENT  
FOR EMPOWERING EMPLOYEES IN TODAY’S BUSINESS  
ENVIRONMENT”**

Instructor: Ms. Molly Curnyn

Presentation: Tuesday, April 26, 2011; 4:00 p.m.; Gardner Building, Room 115

Abstract

The popularity of social media has grown significantly over the last 10 years. With over 500 million people using Facebook, it seems as if social media has become a part of everyday life for a large number of people. With social media networks now accessible on the move with Smartphone apps, many customers are more empowered when they walk into a store than the employees who work there. Many companies have created a presence on social media networks in an effort to make user more aware of their company. This is a good first step; however it will be difficult to progress without empowered employees. Empowered employees can do so much more with social media. Empowered employees are more likely to implement a successful social media strategy than employees without an empowering work environment. An empowering environment creates employees who are able to provide quicker, friendlier, and more accurate service to customers. These employees also feel the freedom to find new creative solutions to solve problems. Many empowered employers realize the power of social media and recognize

the countless possibilities it holds for their company. By allowing their employees to develop social media uses for their company, employers are empowering their employees in several ways. Through a review of literature, several examples of companies empowering employee's through social media were found. The usefulness of social media to businesses is just being discovered and many more uses will be realized in the near future.

**JENNIFER MORGAN      “FAITH-BASED ORGANIZATIONS: LIMITATIONS ON  
EFFECTIVENESS IN RURAL SOCIAL SERVICE DELIVERY”**

Instructor: Dr. Monica Snowden

Presentation: Thursday, April 28, 2011; 3:30 p.m.; Connell Hall, Room 131

Abstract

Shifts in political ideology and social culture within the United States have resulted in the devolution of responsibility for the provision of social services from the federal government to state, localities and non-profit organizations. One outcome of this devolution is federal legislation that now allows faith-based organizations to compete equally with secular non-profits for publicly funded grants. This study utilizes a qualitative research design using semi-structured in-depth interviews of local secular and faith-based social service providers to explore how faith-based organizations are meeting needs in their serves in rural northeastern Nebraska. Results also find that the relationships between secular and faith-based agencies are interconnected and in many cases, interdependent, indicating that a significant amount of collaboration between groups is essential to the success of many of these organizations. Further, the results suggest that the most efficient use of limited resources is to better fund the services already provided by faith-based organizations rather than offering grants that force organizations to compete.

**KALENE NIELAND      “3-D MODELING FOR CHARACTER DESIGN”**

Instructor: Mr. Steven Elliott

Presentation: Wednesday, April 27, 2011; 3:45 p.m.; Peterson Fine Arts Building, Room 204

My goal for this project was to create a 3-D character model using Autodesk Maya software. Before working with this challenging software, I started exploring 3-D rendering with Google SketchUp. Exploring the basic tools in this program eventually allowed me to construct a simple rendering of a chair and a table. This led to my experimentation with the human form. I then used The Modeling & Animation Handbook to aid me in learning the Autodesk Maya program. After spending several months following the steps laid out in the book to produce a pre-determined character, I became comfortable enough to take my work to a step further to create my own character. This was a challenging and time intensive project that has helped me to become more familiar with three-dimensional modeling software.

**KATIE REIKOFSKI**

**“A COMPARISON OF STUDENT-ATHLETE AND NON-STUDENT-ATHLETE ACADEMIC PERFORMANCE AT WAYNE STATE COLLEGE”**

Instructor: Dr. Kristi Hinnerichs

Presentation: Thursday, April 28, 2011; 2:30 p.m.; Connell Hall, Room 131

Abstract

Students must overcome a number of social and academic factors in order to be successful in college. A broad range of studies have examined the wide variety of variables affecting college academic success and how these variables affect athletes compared to their non-athlete counterparts. One identified variable is the type, availability, and usage of academic support services on campuses. The purpose of this study was to examine the similarities and differences in academic performance as well as awareness, use, and opinions of academic support services for student-athletes and non-athletes at Wayne State College. Full-time college students 18-23 years of age were recruited to complete a survey inquiring about academic performance, knowledge and use of academic support services, as well as opinions regarding academic support services available. After basic analysis, it appears that there is no significant difference between student-athletes and non-athletes with regards to a majority of responses related to awareness, use, and opinions of academic support services.

**ALYSSA OLSEN**

**“A QUALITATIVE RESEARCH PROPOSAL ON HOW EXERCISE AFFECTS ALZHEIMER’S DISEASE”**

**Instructors:** Dr. Randa Garden & Dr. Barbara Hayford

Presentation: Monday, May 2, 2011; 1:00 p.m.; Humanities Building, Room 319

Abstract

As our population ages, the number of people diagnosed with Alzheimer’s disease (AD) continues to rise. Programs and strategies are needed to help individuals suffering from this life-altering disease. There is a wide body of research that confirms the benefits of exercise in delaying the progression and onset of Alzheimer’s disease. Given the impact of Alzheimer’s disease on society, and the growing number of people affected by the disease, more research is needed. In the first phase of my research, I did an in-depth review of literature which sheds light on the cognitive improvement Alzheimer’s patients experienced when placed on an exercise program during the early stages of being diagnosed. In the second phase of my research, I will design a full research proposal for a qualitative research study on how exercise affects Alzheimer’s disease. In my research proposal, I will detail how I intend to gather information from people recently diagnosed with Alzheimer’s disease who were placed on an exercise program. I will also be collecting stories from their family caregivers to get a better understanding of how exercise affects their Alzheimer’s disease.

**JASON YOUNGMEYER**

**“TREATMENT OF VIETNAM VETERANS AND A NUMBER OF REASONS WHY THE AMERICAN PUBLIC BEHAVED THAT WAY”**

Instructor: Dr. Randy Bertolas

Presentation: Thursday, April 28, 2011; 3:00 p.m.; Connell Hall, Room 131

Abstract:

The Vietnam War was a major conflict in American History. It was also a dark moment in American history, not because America lost the war, but because of the way America treated its returning veterans. The Vietnam War is a sensitive topic, even today, because of the guilt the American people feel for their veterans. This paper will take an in-depth look at the treatment of Vietnam veterans, and it will

investigate possible reasons why that happened. In addition, two Vietnam veterans from the Wayne Community contributed on their experiences as Vietnam soldiers.

**JULIE WAGNER**

**“THE ANALYSIS OF S.B. 1070 AND THE COPYCAT  
LEGISLATION IN NEBRASKA”**

Instructor: Dr. Mark Leeper

Presentation: Thursday, April 28, 2011; 4:30 p.m.; Connell Hall, Room 131

Abstract

In April 2010, Arizona governor Jan Brewer signed the Support Our Law Enforcement and Safe Neighborhoods Act, a tough new immigration law widely known as S.B. 1070. Even after U.S. District Court judge Susan Bolton issued a preliminary injunction to prevent the core provisions of S.B. 1070 on July 28<sup>th</sup>, 2010, both opponents and proponents are still attempting to assess its impact on the residents of Arizona, both native-born U.S. citizens and immigrants alike. This paper presents evidence to suggest that the enforcement-only strategy which S.B. 1070 and other copycat laws, such as L.B. 48 in Nebraska, adopt do not solve the problems with the broken immigration system in the United States today.

**THOMAS WARZYWAK**

**“DUELING IN EARLY NATIONAL AMERICA: A  
CULTURE OF POLITICAL MADNESS”**

Advisor: Dr. Randy Bertolas

Presentation: Thursday, April 28, 2011; 4:00 p.m.; Connell Hall, Room 131

Abstract

The practice of dueling and its connection to the early national period of American history is a little known cultural phenomenon that played a large role in the lives of the men who participated in the development of the American republic. Not only did many of the prominent men of the period engage in affairs of honor, their activities were much more widespread than is generally understood. The purpose of this paper is to explore and learn more about the duel and its place in early national America. In addition, a separate goal will be to examine exactly how meaningful dueling and the code of honor were to the culture and the important people of the period.

To accomplish these goals, the details of the duel and the code of honor will be explored, with the purpose of discovering what they were, how they worked, and why they were important. From there, the various occurrences that coincided with the "affairs of honor" will be studied, with specific emphasis on the consequences and impact they had on the lives of the men who participated in them. Finally, the difficult question of the overall place of the duel in the American culture will be addressed, and why it either occupied a legitimate, meaningful place or was nothing more than occasional political madness.

