



April 20, 2012

Schedule of Events

- 10:30 a.m. – 11:00 a.m.** **Student Registration and Poster Setup**
Mabee Library
- 11:00 a.m. – 12:40 p.m.** **Fine Arts Performance Session**
Carole Chapel
- 1:00 p.m. – 3:00 p.m.** **Oral Presentation Session**
Henderson Learning Resources Center
- Session α: Room 103 • Session β: Room 107
 - Session γ: Room 118 • Session δ: Room 203
 - Session ε: Room 207 • Session ζ: Room 208
 - Session η: Room 217
- 3:00 p.m. – 3:40 p.m.** **Welcome**
Shaun Schmidt, Chair, Apeiron Committee
Mabee Library
- Recognition of Student Designers**
Lynda Zook and Melissa Kershner
Regina Cassell, Apeiron Committee
- Introduction of Last Lecture**
Penny Weiner, Associate Professor,
Department of Theatre
- Last Lecture**
Reinhild Janzen,
Professor Emeritus of Art
Mabee Library
- 3:40 p.m. – 5:00 p.m.** **Poster Session and Reception**
Mabee Library

Schedule of Oral Presentations

(HC = Henderson Learning Resources Center)

Time/Location	Presenter	Title
1:05 pm – 1:25 pm		
HC 103	Samantha Leeds	<i>ETA e IRA</i>
HC 107	Lakeisha E. Grier and Taylor Simone Drain	<i>Is the Growing Use of Electronic Devices Academically Beneficial?</i>
HC 118	Anna Lischke	<i>Utilizing Mathematical Modeling to Study the Distribution of Phytoplankton in Water</i>
HC 203	Kristina Marie Gaylord	<i>Lucy Parsons and the Women Wobblies</i>
HC 207	Hannah E. Thompson	<i>Chivalry Bites: Violence and Knightly Conduct in Medieval Werewolf Lays</i>
HC 208	Johnathan M. Reeves	<i>A Comparative Analysis of Voter Turnout in 36 Countries</i>
HC 217	Austin Douglas LaFreniere	<i>The Education Debate: Are Students Better Off in Public or Private Schools?</i>
1:30 pm – 1:50 pm		
HC 103	Joshua C. Nemechek	<i>Curando a Pacientes Latinos en Nuestro Sistema Sanitario Hoy en Día</i>
HC 107	Delaney L. Fish, Elizabeth L. Unrein, and Joshua Boeker	<i>Living in Denial: A Comparison of DDoS Mitigation Methods</i>
HC 118	Joshua N. Thomason	<i>Formation of High-Efficiency Photovoltaic Quantum Dot Aerogel Lattices</i>
HC 203	Jane Billinger	<i>Motivation Behind Hatred: German-American Persecution in World War I</i>
HC 207	Mary-Lucia Thao Darst	<i>Prodigious Brilliance, Familial Rebellion: Mozart's Mitridate</i>
HC 208	Lance M. Cahill and Michael A. Austin	<i>The Feldstein-Horioka Puzzle: An Extended Analysis of the Eurozone and China</i>
HC 217	Robert J. Pilgrim	<i>Abstinence-only Education: What Impact Does It Have on Teen Pregnancy Rates?</i>
2:00 pm – 2:20 pm		
HC 103	Michael J. Goehring	<i>My Families, My Job, and My Life</i>
HC 107	Ty B. Lewis	<i>Studying Statistical Stochastic Processes on Dice with Changing Face Values</i>
HC 118	Diana M. Crain	<i>Progress Towards a Multi-gram Scale Synthesis of 1,11-Diaza-6,16-ditosylamidacycloicosane: A Key Intermediate in the Synthesis of [4⁶]Adamanzane</i>
HC 203	L. Rachele Potter	<i>"Starving Chinese Take Hunger into their Own Hands...Military Has Been Dispatched, but There is No Anxiety for the Safety of Americans": Internal Conflicts of the Hunan Rice Riots of 1910</i>
HC 207	David G. Reno	<i>Thomas Müntzer - Transitioning from Reformer to Revolutionary</i>
HC 208	Kate M. Fechter	<i>Does Self-concept Structure Share a Correlation with Affect and Defense Mechanisms?</i>
HC 217	Brenna S. Hofelt	<i>Where Did All the Women Go?: A Literature Review and Textbook Analysis of Gender Bias in Educational Materials within the Social Studies</i>
2:25 pm – 2:45 pm		
HC 103	Shad D. Cox, Stafford Gosser, and Alix K. Hernandez	<i>A Comparison of the Activity Survey between Local SWAT and Law Enforcement Units</i>
HC 107	Travis E. Shafer, Powledge Mitchell, and Eric Russell	<i>The Effects on Comparing Prices with Smartphones on Consumers' Shopping Behavior</i>
HC 118	Riley E. Ross	<i>Synthesis of the Precursors of Expanded Oxophlorins</i>
HC 203	Emily J. Simons	<i>T.M.I.: The Dangers of Forbidden Knowledge in Doctor Faustus and Frankenstein</i>
HC 207	Sara K. Conoley	<i>A Critical Analysis of a Primary Source Document Pertaining to the Northamptonshire Witch Trials of 1612</i>
HC 208	Riley C. McDougal	<i>Does the Questioner's Tone of Voice Influence the Accuracy of Eyewitness Testimony?</i>
HC 217	Deanna M. Steinert	<i>Confidentiality Concerns in the Digital Age: Dilemmas for Professionals</i>

(Washburn campus map)

Last Lecture

presented by

Reinhild K. Janzen

Professor Emeritus of Art

Reinhild Kauenhoven Janzen is a native of Germany where she received her undergraduate education, interrupted by a year as a scholarship student at Bethel College in North Newton, Kansas. There she met her husband-to-be, which explains why her second home has become Kansas for the past forty years. She and her husband John M. Janzen were honored by Bethel College with its Outstanding Alumni Award in 2011. Professor Janzen received her M.A. in art history from the University of Chicago and her Ph.D., also in art history, from the University of Kansas. Her areas of specialization include the Northern European Renaissance, African art, the cultural history and art of European and North and South American Mennonites, as well as the history and role of the visual arts in hospitals and healthcare settings. She has lectured, curated exhibitions and published widely in all of these diverse areas of investigation.

Prior to joining Washburn University's Art Department in 1996, Professor Janzen worked for many years at the University of Kansas Museum of Anthropology and as Curator of Cultural History and Director of Education at Kauffman Museum, Bethel College, in addition to teaching at both institutions and raising three children who later rewarded her and her husband with seven grandchildren. During her years as a museum professional, Professor Janzen served as President of the Kansas Museums Association and as President of the Warkentin House Association in Newton. She volunteered for the National Save Outdoor Sculpture project, and served for fifteen years as Humanities Scholar/Speaker for the Kansas Humanities Council. At Washburn University she was appointed Interim Director of the Mulvane Art Museum (2006-2008) where she organized a major exhibition of contemporary Paraguayan art.

Professor Janzen's scholarly work and her teaching is informed by a very broad international perspective, gained through her extensive experience of travel, research, and collecting abroad, in Canada, in South America, in Central and Eastern Europe and in Central, Southern and Eastern Africa. For example her and her husband's volunteer work with Mennonite Central Committee following the genocide in Rwanda in 1994 led to their jointly written book *'Do I still have a Life': Voices from the Aftermath of War in Rwanda and Burundi*.

Mabee Library

3:00 p.m.

This lecture is made possible with support from the Washburn University Foundation. This year Dr. Janzen has generously requested this contribution be made to an Art Department scholarship fund.

Past Last Lectures presented by:

Dr. Howard Faulkner 2011

Dr. William O. Wagoner 2010

Dr. Ron Ash 2009

Fine Arts Performance Session

11:00 a.m. – 12:40 p.m.

^{WTE} Denotes Washburn Transformational Experience

► 11:00 a.m. **Carole Chapel** **Moderator: Penny Weiner**

No Where Bound
Ashley M. Vaughan
Mentor: Sharon Sullivan, Theatre

An alcoholic singer and her songwriter husband attempt to resolve their crumbling marriage.

► 11:20 a.m. **Carole Chapel** **Moderator: Penny Weiner**

Driving
Elise Nicole Barnett
Mentor: Penelope Weiner, Theatre

“Driving” is a short play about a father and daughter confronting the issues in their relationship during a six hour car ride. Though the topic might initially feel like worn-out territory, this piece challenges what most people consider to be the rules of theater because it is such a character-driven piece. There is little action and the dialogue is about them, about their history, and about their future. Suspense and intensity are created through the understanding of past events and emotions instead of with movement or setting. The opportunity to share written dialogue through the medium of speech is invaluable to the playwriting process and is crucial in exposing areas of the play that may struggle and need to be edited. I hope to develop this piece into a production-ready drama through the insight and feedback gained by a dramatic reading.

► 11:45 a.m. **Carole Chapel** **Moderator: Penny Weiner**

The Spirit of Hope
Arissa L. Utemark
Mentor: Sharon Sullivan, Theatre

^{WTE}

A monologue depicting one woman's journey into discovering what really matters.

► 12:00 p.m.

Carole Chapel

Moderator: Christopher Kelts

The Brass Music of Giovanni Gabrieli

Jonathan S. Ward, Joshua Carter, Colin John Scott, and Isaac Hopkins

Mentor: Mark Norman, Music

The purpose of this presentation is to bring awareness of the brass music of Giovanni Gabrieli written in the late 15th and early 16th centuries to the students and faculty of Washburn University. Hopscard Brass will perform 3 selections by Giovanni Gabrieli, and discuss the compositional techniques and style that were common to this era. The discussion will include composer information, use of instrumentation, and the historical significance at St. Mark's Cathedral in Venice. This information will be gathered through research utilizing written and online documents. The expected result of this presentation is to further the appreciation and awareness of Gabrieli's contributions to the brass repertoire.

Oral Presentation Session

1:00 p.m. – 3:00 p.m.

WTE Denotes Washburn Transformational Experience



Session α Moderator: John Paul

► 1:05 p.m. Henderson, Room 103

ETA e IRA

Samantha Leeds

Mentor: Miguel Gonzalez-Abellas, Modern Languages

WTE

I will do an oral presentation of my senior thesis, which I completed last semester. The paper compares the conflict between the Basque separatist group, the ETA and the Spanish government with the conflict between the Northern Irish Government and the radical IRA. I will draw from historical evidence to explain the current status of these conflicts as well as make predictions about their future.

► 1:30 p.m. Henderson, Room 103

Curando a Pacientes Latinos en Nuestro Sistema Sanitario Hoy en Día

Joshua C. Nemechek

Mentor: Miguel Gonzalez-Abellas, Modern Languages

WTE

Durante este tiempo de aumento de la población latina en los Estados Unidos, el personal médico necesita entender el método apropiado para examinar y tratar a los pacientes latinos. La población latina es la que está creciendo más rápidamente y para cuidar a estos pacientes en una manera decente con el mayor respeto es necesario investigar la cultura y las normas latinas para estar preparado. Se necesita entender de dónde viene, cuántos años ha vivido en los E.E.U.U., de qué generación es, y muchos otros aspectos en la revisión del paciente. Especialmente durante esta época de la reforma del sistema sanitario y de la inmigración de muchos latinos es importante entender las reglas sociales. Lo que quiero enseñar es lo que se necesita entender, hacer y preparar antes de un reconocimiento de un paciente latino de cualquier situación.

► 2:00 p.m. Henderson, Room 103

My Families, My Job, and My Life

Michael J. Goehring

Mentor: John Paul, Sociology - Anthropology

For the last year and a half I have been observing two police officers, in particular, the former assistant chief of police in St. Marys, Kansas. In this presentation you will find a photo essay approach to the everyday life of small town police officers as they protect and serve the residents of their town. St. Marys may seem like a small town, but behind closed doors there is a lot that goes on especially when it comes to the duties of a police officer.

► 2:25 p.m. Henderson, Room 103

A Comparison of the Activity Survey between Local SWAT and Law Enforcement Units

Shad D. Cox, Stafford Gosser, and Alix K. Hernandez

Mentor: Park Lockwood, Kinesiology

The purpose of this study was to observe and compare the physical challenges and activities reported by local SWAT teams and other law enforcement units. Twenty-six participants who were police officers as well as SWAT team members were given a survey to compare differences in routine activities performed by police officers versus SWAT team members. The survey was specifically designed for each agency to document the physical requirements of the job based upon their daily activities and responsibilities. The survey included 26 items scored on a likert scale. After participants completed the survey, data were analyzed and differences between police officer and SWAT responsibilities and activities were examined. Results indicated significant differences ($p < 0.05$) between certain routine tasks performed by local SWAT teams and police officers on 15 of the 26 items. Activities such as running over short distances, sprinting, jumping over obstacles, using firearms, and aggressively pursuing suspects were some of the activities done more frequently within the SWAT units. Results indicated that there are differences in the activities performed by police officers and SWAT teams with SWAT activities being more physically demanding. This information is important when establishing training programs for the different law enforcement units.



Session β

Moderator: Bruce Mechtly

► 1:05 p.m. Henderson, Room 107

Is the Growing Use of Electronic Devices Academically Beneficial?

Lakeisha E. Grier and Taylor Simone Drain

Mentor: Nan Sun, Computer Information Sciences

WTE

In this study, we investigate the relationship between academic performance and the use of computer technology. We would like to find out whether the growing use of electronic devices is academically beneficial to high school students' academic performance. Our method of data collection will include both a survey of high school students and an analysis of national SAT and ACT scores from the past decade. The surveys ask questions regarding time spent on electronic devices, GPA, standardized test scores as well as demographical data. We are still compiling data and we will present our findings at Apeiron.

► 1:30 p.m. Henderson, Room 107

Living in Denial: A Comparison of DDoS Mitigation Methods

Delaney L. Fish, Elizabeth L. Unrein, and Joshua Boeker

Mentor: Nan Sun, Computer Information Sciences

WTE

Denial of service attacks is becoming increasingly common. While good network security policies can help prevent a DoS attack, there is little that can be done to eliminate the chance of one happening. Therefore, mitigation of the effects of these attacks is a problem. Several packet filtering programs and mitigation techniques exist, but no one strategy has been tested and proven effective. In this experiment, we set up a network and server and simulate an HTTP request attack where the effectiveness of three Apache modules and a script called (D)DoS Deflate is tested. We collect data on server uptime and packets filtered by each program separately and in combination. Finally, we compare and contrast the methods and identify the one that provides the best mitigation against a DDoS attack.

► 2:00 p.m. Henderson, Room 107

Studying Statistical Stochastic Processes on Dice with Changing Face Values

Ty B. Lewis

Mentor: Gaspar Porta, Mathematics & Statistics

WTE

The purpose of this research is to investigate the dynamics and distributions that arise using dice with variable sides. We studied statistical processes and their dynamics after carrying out experiments that result from modifying the faces of Lego® dice. This was accomplished both by carrying out computations by hand, using spreadsheets, and SPSS on data we collected through extensive computer simulations. Our goals were to discover characteristics of the distributions for some of these dynamical systems as well as to compute limit values of certain experiments we carried out. Additionally we hoped to verify experimental values found empirically with theoretical calculations.

► 2:25 p.m. Henderson, Room 107

The Effects on Comparing Prices with Smartphones on Consumers' Shopping Behavior

Travis E. Shafer, Powledge Mitchell, and Eric Russell

Mentor: Nan Sun, Computer Information Sciences

WTE

Research on the use of smartphones has been somewhat limited in specificity. One area with inadequate research is how people use them as a consumer information tool while shopping. This paper reports the results of a random survey we conducted to gain a better understanding of how consumers use smartphones to price compare items while in a store. Furthermore, we gain a perspective of the resulting actions consumers take after the price comparison. Researchers can use this data to form ideas of how retailers are, or might be, affected by technologically enabled shoppers.



Session γ

Moderator: Lisa Sharpe Elles

► 1:05 p.m. Henderson, Room 118

Utilizing Mathematical Modeling to Study the Distribution of Phytoplankton in Water
Anna Lischke

Mentor: Brian Thomas, Physics & Astronomy

The vertical distribution of phytoplankton in water is still not completely well-understood. Some factors have been taken into account in existing models, and it is the purpose of this project to further build on these models and to set the groundwork for what can someday be a robust mathematical model describing this distribution. This presentation will describe some background information necessary to understanding the factors involved, as well as a mathematical description of the model.

► 1:30 p.m. Henderson, Room 118

Formation of High-Efficiency Photovoltaic Quantum Dot Aerogel Lattices

Joshua N. Thomason

Mentor: Stephen Angel, Chemistry

WTE

Synthetic steps toward the application of quantum dots (QD) in a photovoltaic cell (PV) are reported. CdSe/ZnS core/shell QD's were produced with CdSe core diameters of 2.68, 2.83, 3.25, 3.35, and 3.46 nm, and coated with a Zn/S shell several monolayers thick. These dots were purified and the initial trioctylphosphine/trioctylphosphine oxide ligands were exchanged with 1-mercaptopundecanoic acid in order to prepare monolithic wet gels. These wet gels were dried in a supercritical dryer to produce the desired QD aerogels. Graphene oxide (GO) was synthesized and purified using a modification of methods described in literature. The GO will ultimately be used as a component in the formation of a p-doped conductive adhesive which will then be used to adhere a copper mesh electrode to the bottom of the synthesized QD aerogels.

► 2:00 p.m. Henderson, Room 118

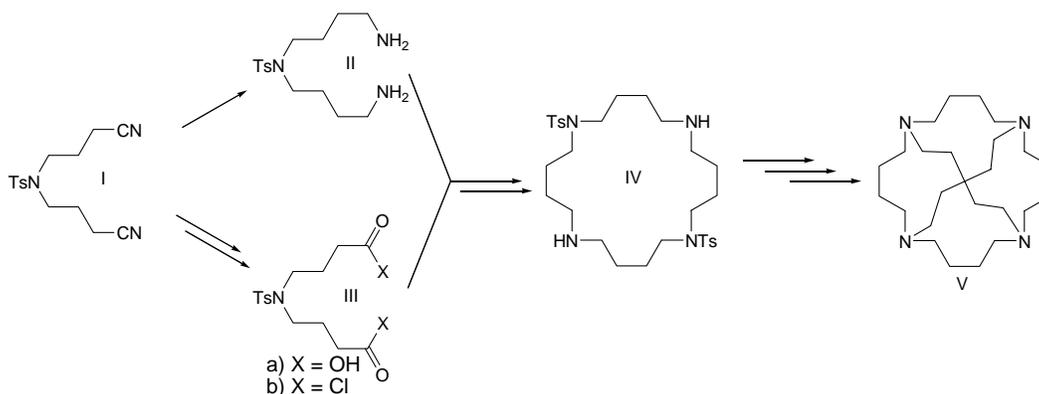
Progress Towards a Multi-gram Scale Synthesis of 1,11-Diaza-6,16-ditosylamidacycloicosane: A Key Intermediate in the Synthesis of [4⁶]Adamanzane

Diana M. Crain

Mentor: Shaun Schmidt, Chemistry

WTE

This project focuses on scaling up and applying both previously developed and new methodologies to synthesize several grams of 1,11-diaza-6,16-ditosylamidacycloicosane (IV), the key intermediate to synthesizing [4⁶]adamanzane (V). Current work includes determination of the use of either compound IIIa (with DCC) or IIIb in the cyclization. Both halves of cross-protected intermediate (IV) are synthesized from the same dinitrile (I); compound II is synthesized via a borane reduction of compound I. Compound IIIa is synthesized by hydrolyzing compound I, and compound IIIb is synthesized from compound IIIa. All synthesized compounds have been characterized using IR and ¹H-NMR spectroscopy. High-resolution mass spectrometry will be performed to confirm a cyclized monomer.



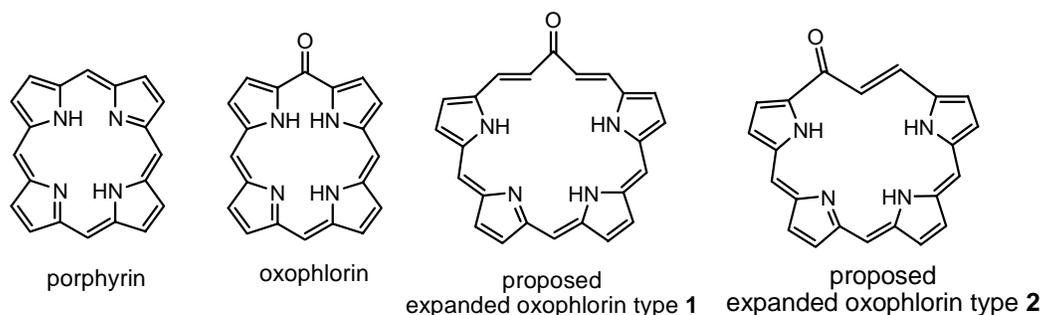
► 2:25 p.m. Henderson, Room 118

Synthesis of the Precursors of Expanded Oxophlorins

Riley E. Ross

Mentor: Sam Leung, Chemistry

Oxophlorins are porphyrin-like compounds that contain a carbonyl group between two of the pyrrole subunits in the macrocycle. This research project involves the synthesis of precursor compounds that can later be used to attempt the synthesis of expanded oxophlorins, which contain additional carbon-carbon double bonds within the macrocycle of a normal oxophlorin. Computational chemistry is also being applied to project possible visible absorption red shifts associated with expanded oxophlorins. The synthesis of expanded oxophlorins may spur the development of new photosensitizers for photodynamic therapy (PDT) for use in the treatment of cancer, where red shifting absorptions is beneficial to deep tissue treatment.



Session δ

Moderator: Kerry Wynn

► 1:05 p.m. Henderson, Room 203

Lucy Parsons and the Women Wobblies

Kristina Marie Gaylord

Mentor: Kerry Wynn, History

WTE

Lucy Parsons was a black native female, born in slavery, who would move on to become a leader in labor reforms and one of the female founders of the Industrial Workers of the World. The

Industrial Workers of the World was a labor union founded in 1905 which wanted to unionize all wage workers, with no prejudice against race and gender. Despite having strong female members such as Parsons, there is little information available about women in the IWW. By better understanding women's place in this early and radical union a better understanding of women's labor history can be obtained. Parsons offers a view of women Wobblies through her editorialship of a major IWW publication, the Liberator. Through this publication an understanding of Wobbly women can be gained, as well as a better understanding of Lucy Parsons herself.

► 1:30 p.m. Henderson, Room 203

Motivation Behind Hatred: German-American Persecution in World War I

Jane Billinger

Mentor: Kerry Wynn, History

WTE

At the beginning of World War I, the Midwestern States of the United States experienced a surge of anti-German sentiment. Thrust into an international conflict, those states identified Germany and anything related to it as their enemies. This home front sentiment quickly manifested into severe acts of persecution towards anyone associated with German heritage. The German language was banned, books burned, businesses forced to close, and even cases of lynching occurred as a result of anti-German thoughts. "Motivation Behind Hatred: German-American Persecution in World War I" examines the reasoning behind the discrimination. This research focuses on what led up to these events and why the persecution happened. It discusses the motivation behind the extreme acts of violence that the Midwest witnessed on the home front during World War I.

► 2:00 p.m. Henderson, Room 203

"Starving Chinese Take Hunger into their Own Hands...Military Has Been Dispatched, but There is No Anxiety for the Safety of Americans": Internal Conflicts of the Hunan Rice Riots of 1910

L. Rachelle Potter

Mentor: Kim Morse, History

On April 13, 1910, in Changsha, the capital of the southeastern province of Hunan, China, the Wesleyan China Inland Mission, the Methodist China Inland Mission, and the Norwegian Mission burned to the ground, and the Yale Mission Hospital sat looted, as thousands of people took their hunger into their own hands. The natives rebelled against inflation caused by the despotism of the rich who refused to engage in fair-trade systems. However, in order to understand the "Rice Riots," one must first understand the gentry and feudal relationships within food trade. Throughout the Qing dynasty, from 1644-1911, riots emerged due to breakdowns in supply and demand. Inflation, fueled by the possession of rice by the rich and lack of subsistence by the poor, resulted in rioting and demands by the labor class for basic subsistence rights. The Chinese resented the westernization of their cities, and the missionaries who represented it. The modernization of Changsha and the increased presence of foreign investors and military caused the Chinese people to strike out against the foreign agents and their local authorities, blaming them for the famine. There were over thirty rice riots in various regions, directly influencing the local and countrywide trade dynamics within China. The Rice Riots of 1910 influenced and

changed both foreign and domestic relations, resulting in local trade collapse and increased military presence, as well as the establishment of the New Army.

► **2:25 p.m. Henderson, Room 203**

T.M.I.: The Dangers of Forbidden Knowledge in Doctor Faustus and Frankenstein
Emily J. Simons

Mentor: Corey Zwikstra, English

WTE

Forbidden knowledge is the guiding force for characters in an array of literary works, including Christopher Marlowe's *Doctor Faustus* and Mary Shelley's *Frankenstein*. This paper examines the ambition, isolation, and regret experienced by John Faustus and Victor Frankenstein, which Marlowe and Shelley use to demonstrate that some knowledge should not be pursued in an unrestrained manner. Both stories overwhelmingly reveal that the desire for forbidden knowledge often leads to undesirable consequences, including the loss of relationships and death. The authors warn readers that like Dr. Faustus and Dr. Frankenstein, they can become engineers of their own destruction by ignoring limitations and boundaries set forth by society and God when they do more than wonder at unlawful or forbidden knowledge. One implication of this paper, therefore, is that anyone who has a dream that far exceeds moderation is at risk to experience isolation and regret. Because both works exist in multiple versions, it is important to note that this paper examines Roma Gill's edition of *Doctor Faustus*, based on the A text, and the 1831 text of *Frankenstein*, edited by Johanna M. Smith.



Session Ƶ

Moderator: Toni Silvestri

► **1:05 p.m. Henderson, Room 207**

Chivalry Bites: Violence and Knightly Conduct in Medieval Werewolf Lays
Hannah E. Thompson

Mentor: Tony Silvestri, History

“No one had ever seen such a well-mannered wolf,” commented the retinue of King Arthur in “Melion” when they encountered a wolf that approached the king subserviently and made obeisance to him. In this and other medieval werewolf tales, the wolf was actually a knight trapped in lupine form who had retained his human reasoning. The wolf's acceptance of the king as liege lord symbolized his denunciation of the wild and his promise to abide by the laws of chivalry and proper knightly conduct. The tensions apparent between the socially recognized nature of wolves as vicious beasts and the attitude of the tranquil wolf-knight accurately reflected contemporaneous concerns regarding the potential uncontrolled violence represented by the knight who was not firmly under the thumb of a strong lord. As a result, these stories articulate proper behavior both for knights and kings and reflect concerns of knightly excess through the violence of the wolf; however, the stories are ultimately positive in their depictions of knights who live up to the ideal elements of chivalry and conduct under the supervision of their liege lord.

► 1:30 p.m. Henderson, Room 207

Prodigious Brilliance, Familial Rebellion: Mozart's Mitridate

Mary-Lucia Thao Darst

Mentor: Tony Silvestri, History

Wolfgang Amadeus Mozart composed his first opera seria, *Mitridate, Re di Ponto*, at the age of fourteen. The letters exchanged among the Mozarts from this period testify to growing familial tensions. The score of the opera shows aberrations from strict musical convention, indicating that Mozart had begun to broadly challenge authority. The libretto of the opera, written by Vittorio Cigna-Santi, recounts a story of rebellion and difficult parent-child relationships, themes reflected in the Mozart family. Though this opera has fallen into relative obscurity, it is a record of the emotional and mental state of the young composer as his relationship with his father began to deteriorate.

► 2:00 p.m. Henderson, Room 207

Thomas Müntzer - Transitioning from Reformer to Revolutionary

David G. Reno

Mentor: Rachel Goossen, History

The Radical Reformation which swept through Europe during the sixteenth century developed some extraordinarily interesting and controversial figures, but few Protestant reformers have received such enduring and divisive attention as Thomas Müntzer. Throughout the nearly five hundred years following his capture in Eisenach and beheading at Örmar, Müntzer continues to draw the attention, and occasional ire, of scholars and students alike. While modern research has been largely successful in developing a reliable account of Thomas Müntzer's life, writings, and interactions, scholars tend toward interpretations that emphasize either his reformist tendencies or his revolutionary ones. This essay defends the idea that restricting scholarship to the disjunctive Reformer/Revolutionary paradigm neglects the dynamic and evolving nature of Müntzer's life and work, and ultimately befuddles his place in the historical record. Ultimately, Müntzer's revolutionary inclinations need to be placed in the context of the rejection that he experienced from fellow reformers, as well as the growing socioeconomic and political unrest in Reformation-era Europe.

► 2:25 p.m. Henderson, Room 207

A Critical Analysis of a Primary Source Document Pertaining to the Northamptonshire Witch Trials of 1612

Sara K. Conoley

Mentor: Vanessa Steinroetter, English

WTE

This paper provides a critical analysis of 17th century printed information and propaganda in the form of a primary source pamphlet entitled "The Witches of Northamptonshire," published in 1612. The pamphlet covers the witchcraft trials that occurred in the shire during that year and seeks to educate the public as to the goings-on of the trial, as well as contribute to the fame of the accused. The paper addresses questions such as stereotypes, social stigmas, and the reliability of primary sources and their authors.



Session ζ

Moderator: Yvette Jenkins

► 1:05 p.m. Henderson, Room 208

A Comparative Analysis of Voter Turnout in 36 Countries

Johnathan M. Reeves

Mentor: Linsey Moddelmog, Political Science

WTE

This work examines a variety of factors that influence voter turnout across 36 democracies. The hypothesis contends that unitary parliamentary proportional representation systems will create the highest level of turnout. Previous works have indicated institutional factors are the major influence explaining increased turnout. This cross sectional analysis of CSES data support the hypothesis and creates a clearer picture of a governmental system designed to influence the most voter turnout. A voter turnout “sweet-spot” is confirmed consisting of small magnitude PR districts with limited political parties.

► 1:30 p.m. Henderson, Room 208

The Feldstein-Horioka Puzzle: An Extended Analysis of the Eurozone and China

Lance M. Cahill and Michael A. Austin

Mentor: Dmitri Nizovtsev, School of Business

Economic theory predicts that with perfect capital mobility there should be no relationship between changes in a country's savings and changes in a country's investment. Economic agents will maximize returns without regard to geographic boundaries. Martin Feldstein and Charles Horioka (1980) found that despite attempts at integrating world capital markets, capital mobility was low in OECD countries. This has since been called the Feldstein-Horioka Puzzle. We extend Feldstein-Horioka's analysis to more recent data for OECD countries, examine Eurozone countries to see if adoption of the Euro improved capital mobility, and examine Chinese capital mobility for the period prior to Deng Xiaoping's South China Tour in 1992 and the period after. We find that capital mobility in the OECD has increased, the Euro improved capital mobility and that China's capital mobility has increased since Deng's visit to south China.

► 2:00 p.m. Henderson, Room 208

Does Self-concept Structure Share a Correlation with Affect and Defense Mechanisms?

Kate M. Fechter

Mentor: Greg Preuss, Psychology

WTE

Based on previous research, a study was conducted with undergraduate psychology students to determine how they group their positive and negative self-beliefs. Affect and defense styles were also examined. Participants completed questionnaires and a thought-listing task. A multiple hierarchical regression was used to determine relationships between the variables.

► 2:25 p.m. Henderson, Room 208

Does the Questioner's Tone of Voice Influence the Accuracy of Eyewitness Testimony?
Riley C. McDougal
Mentor: Greg Preuss, Psychology

The effect of vocal intonation on the accuracy of eyewitness testimony was examined. After watching a videotaped car crash, participants were asked, in either a neutral or accusatory tone, to estimate the speed of each vehicle. An independent sample's t-test was used to analyze the data.



Session η Moderator: Sharla Blank

► 1:05 p.m. Henderson, Room 217

The Education Debate: Are Students Better Off in Public or Private Schools?
Austin Douglas LaFreniere
Mentor: Steven Cann, Political Science

In this study, we analyze what factors dominate school performance amongst high school juniors in the areas of reading and math. This study is to take into account comparisons between public and private school proficiency scores in reading and math, as well as to discover how important teacher quality is, and how proficiency scores are affected by socio-economic factors. Fifty-two Kansas schools were classified by their public or private status, percentage of economically disadvantaged students, racial diversity, and licensed teachers as well as the percentage of students at or above proficiency in reading and math. Throughout the study, we were able to find that whether a school is public or private does not affect performance and that it all depends on socio-economic trends like the percentage of disadvantaged and racial diversity.

► 1:30 p.m. Henderson, Room 217

Abstinence-only Education: What Impact Does It Have on Teen Pregnancy Rates?
Robert J. Pilgrim
Mentor: Steven Cann, Political Science - Geography

In this study, analysis was performed on the effect of abstinence-only funding on teen pregnancy rates. Its focus is on states that accepted Title V, Section 510 funding in the United States throughout the program's existence and the impact that funding had on teen pregnancy rates. Further analysis was performed by taking into account multiple variables that might have a more statistically significant impact on teen pregnancy rates than abstinence-only funding. Data was gathered on teen pregnancy rates of populations in all 50 states over a period of 10 years. Through analysis, it was determined that abstinence-only funding was not only a negative statistical significance variable impacting teen pregnancy rates, it actually had a negative impact on STI and STD rates for this group as well.

► 2:00 p.m. Henderson, Room 217

Where Did All the Women Go?: A Literature Review and Textbook Analysis of Gender Bias in Educational Materials within the Social Studies

Brenna S. Hofelt

Mentor: Timothy Fry, Education

Throughout my education and my participation in today's public schools, I have noticed a startling trend in the social studies: women are missing! Classroom materials should be dependable, as well as equitable. Such lack of equity is only doing a disservice to our students. Through current literature review and analysis of textbooks, I explore just how prevalent gender bias is in today's social studies materials. I have found that women are still grossly underrepresented in our schools' social studies text books, and misrepresentation of women's contributions in history and stereotypical gender-roles in today's educational materials is still a problematic issue. Specifically looking at a lack of the representation of women and how material relating to women is presented in the textbooks, I explore the possible reasons for the gender bias in education materials. In presenting my research, I aim to educate others of the gender inequality of social studies material in today's schools.

► 2:25 p.m. Henderson, Room 217

Confidentiality Concerns in the Digital Age: Dilemmas for Professionals

Deanna M. Steinert

Mentor: Bassima Schbley, Social Work

What is privacy? According to Marilyn Fetter, privacy is "viewed as the ability to control information about one's self, such as medical or personal data." (*Mental Health Nursing*, 2009) Another question is: is privacy a human right? Most people would have answered this question as a yes, but Hannu Vuori states "privacy is clearly one of values not of technicalities." (*Journal of Medical Ethics*, 1977) With the digital age privacy becomes one of the technicalities instead of the human error issues of lost records. Now we face the issues of privacy being invaded by a breach of security, an unauthorized professional gaining access to our records, or an authorized professional who implements a right to know. In 1995 the federal government enacted laws that ensured that all health agencies had security in place to protect the right to privacy. This law was called HIPAA (Health Information Privacy and Portability ACT). It was later revised so it would include a rule called the "privacy rule." This work considers whether or not these and subsequent changes in the law go far enough. We discuss our safety as clients in the age where health care providers are going to be required by 2014 to have all records electronic.

Poster Session
3:40 p.m. - 5:00 p.m.
Mabee Library

WTE Denotes Washburn Transformational Experience

1

Explorations in Clay

Eleanor Heimbaugh

Mentor: Glenda Taylor, Art

Focus A series of tea sets ranging in utilitarian sizes will be constructed from hand built and thrown clay parts. At least three different clay bodies and various glazing and firing processes will be explored. Decals and the use of imagery on these forms will also be experimented with. Additional goals include: a conceptual visual experience for the viewer and merging the line between sculptural and utilitarian. The purpose of my work focuses on textures and imagery that we are surrounded by every day. From the most secluded inhabitants to the largest city in the world, power lines and industrial linear patterns are everywhere. They are a reflection of the people and the place, the population and the time. We often pay little if any attention to these individual and unique landmarks in passing. The circular capped cylinder form is chosen because of its universality in function. A completed form is reminiscent of a storage silo, tank, or a house.

2

Documenting the Dominican Republic

Stefanie Lea Stuever

Mentor: Mary Dorsey Wanless, Art

Thanks to the extensive help and cooperation of the Washburn Art Department and International Programs, I traveled to Jarabacoa in the Dominican Republic for the 2011 spring semester to complete an Art Internship at Doulos Discovery School. My extended time in the Dominican allowed me to not only observe and learn about the culture but to literally be absorbed into the community. While helping teach art to kindergarten through 12th grade students, I also sought to document the people and the culture with the help of my camera. The Dominican Republic is a giant mixture of colors and cultures: African, Spanish, American, French, Creole, Native American and more. Streets are lined with bright colored houses. Comodos serve as small corner stores with basic groceries. Dominos are played after dinners of sancocho. Through this independent study, I sought to capture the essence of the people and their island through documentary photography. I will be presenting the images made during my time abroad. My internship at Doulos and the experience of living abroad in the Dominican were life changing because I was immersed in Dominican culture and gained perspective and independence.

3

Developing and Printing With Caffenol

Nicole J. Wilson

Mentor: Mary Dorsey Wanless, Art

Caffenol is a photographic alternative process whereby caffeine, sodium carbonate and optionally Vitamin C are used in aqueous solution as a film and print photographic developer. Other basic (as opposed to acidic) chemicals can be used in place of sodium carbonate, however

sodium carbonate is the most common. There are many formulas for caffenol. All are based on preparations which contain caffeine (i.e. coffee and tea) and a pH modifier, most often sodium carbonate. The chemistry of caffenol developers is based on the action of the reducing agent caffeic acid as well as caffeine. After spending much time researching the 3 main types of caffenol developer, I chose to use the Caffenol C-L recipe (which is a semi-stand developer) to achieve the least amount of grain and the smallest chance of fogged negatives. I will be showing my negatives and prints that resulted from this process.

4

Interchange Social Network

Kris Antonetti, Donald W. Hinton, Andrew J. Edmonds, and Matthew L. Calovich

Mentor: Bruce Mechtly, Computer Information Sciences

WTE

This project is an exploration in the creation of an all-in-one social and media web content management system. Unlike conventional micro-blogging social networking sites, Interchange will be developed around a fully user customizable portal and directory tree structure. This project is intended to demonstrate the ability to fully integrate all forms of social and media web content, blogging, chat, images, video, email, web shopping, and social networking all into one web application. Interchange will be utilizing the Liferay open-source content management framework, Java portal 2.0 standards, Mysql DMS, Linux server and storage, and HTML 5.

5

Implementing a Virtual Environment for Artificially Intelligent Robots

Joshua N. Wurtz

Mentor: Bruce Mechtly, Computer Information Sciences

Users wishing to experiment writing artificial intelligence code for a robot are limited by battery life, cost of robot, and the real world idiosyncrasies of a machine. A software implementation gives users a better environment to learn artificial intelligence code. Through use of Java and JOGL, a java implementation of OpenGL, a virtual robotics environment was created. In this environment users are able to pass commands to up to ten robots, modify the robots operating environment by creating walls, and experiment with implementation of their artificial intelligence code. We used vector algebra to detect collisions of robots with walls and other robots.

6

Social Media Use at Midwestern News Organizations: Bringing the World to You

Robert W. Burkett

Mentor: Maria Raicheva-Stover, Mass Media

I have compiled data from more than 40 different media organizations over the impact of social media on the field of journalism. The results will illustrate the evolving way media organizations throughout the Midwest are accessing new media and presenting news to the world.

7

Massing Practice Produces Equal or Superior Recall than Spacing Practice in Specific Conditions: A Review

Angela J. Peralta

Mentor: Michael McGuire, Psychology

A literature review was conducted in order to summarize conditions in which massed practice produces equal or superior recall to spaced practice. This review limits the research to verbal learning in experimental, quantitative conditions. The conditions include type of stimuli, contextual factors, participant ability, and type of test. The results indicate that spacing practice is not superior to massing when other retrieval cues are present during study. Therefore, massing should not be eliminated as a method practice. This review also describes issues with varying operational definitions of spaced practice, and describes how metacognition affects the choice to space or mass practice.

8

The Effects of Lou Gehrig's Disease on Veterans

Lisbeth M. Hollenbeck

Mentor: Barbara Stevenson, School of Nursing

Since the Gulf War, countless veterans have been diagnosed with MS, ALS, or a brain tumor. There is a connection between these diseases and serving overseas. My presentation will include research-based evidence for the effects of Lou Gehrig's disease on veterans.

9

The Relationship between Atrial Septal Defect, Patent Foramen Ovale and Cryptogenic Stroke: What is the Evidence?

Rebecca Marie Lange

Mentor: Barb Quaney, Allied Health

WTE

The etiology of cryptogenic stroke (CS) remains elusive, yet accounts for 30-40% of all strokes. Possible causes include patent foramen ovale (PFO), or a defect where the foramen ovale opening in the fetal atrial septum which allows blood flow between the atria does not appropriately close after birth. Similarly, another congenital defect called an atrial septal defect (ASD) manifests itself as a hole anywhere along the wall of the right and left atria of the heart, although it is frequently found at the site of the PFO. Many studies have shown a strong occurrence of both ASDs and PFOs in cryptogenic stroke cases. Within this presentation, the factors of ASD and PFO resulting in cryptogenic stroke are assessed along with the affected population and treatment options. The possible biomarkers of stroke, effective diagnostic evaluation methods, and treatment options post-stroke are also discussed. We also determine the efficacy of surgical closure of a PFO based upon scientific results from prior studies.

10

Can an On-line Program Make Students “Masters” of Material?

Casey Marie Cochran

Mentor: Tracy Wagner, Biology

WTE

In recent years, technology has begun to play an increasing role in education. At one extreme are universities and secondary schools that are completely on-line, but even in traditional class settings, more computers are being used within and outside of class. In keeping with this trend, many textbook companies are offering “pre-packaged” on-line question banks, activities, and testing options. Many educators have switched to these programs because it can decrease preparation and grading time, and provide data on areas where students struggle. Additionally, it can free up lecture time for other activities. Students appreciate the flexibility it gives them to do the work on their own schedule. The downside to this approach is that it can increase distance between the students and educator, and allow students to feel that class attendance is superfluous (thus negating a possible benefit on the educator side). Thus, the question remains: Is technology actually benefiting education? In order to test the benefit of such a program in Human Physiology at Washburn, the investigators compared student performance on specific test questions, overall class grades, and student comments to determine if use of Mastering A and P (on-line program) would decrease student learning. Anecdotal evidence from comments made to the educator for this course seem to indicate that it does not, but perceptions may not always be an accurate predictor.

11

Effects of Perennial Homoeologous Chromosome Groups on Quality Characteristics in Perennial Wheat Amphiploids

Alicia A. Burris

Mentor: Matthew Arterburn, Biology

Perennial wheat lines are generated by crossing annual hexaploid bread wheat (*Triticum aestivum*, $2n = 6x = 42$, AABBDD) and perennial wheatgrass species such as *Thinopyrum elongatum* ($2n = 14$, EE) and doubling chromosome content with colchicine to generate amphiploids such as the line AgCS ($2n = 8x = 56$, AABBDDDEE). This process mimics polyploidization events that have occurred throughout evolutionary history in the plant tribe Triticeae. Such lines demonstrate the dominant perennial habit and are used in sustainable agriculture systems because they reduce soil erosion. They have depressed yield and agronomic qualities when compared to their annual parents, so we have attempted to optimize the ratio of perennial and annual chromosomes in a particular wheat offspring that possesses both the annual and perennial traits that allow for perennial regrowth and high agronomic qualities in one plant. We examined AgCS addition lines, which contain the entire AgCS annual wheat genome plus one E chromosome from the *Thinopyrum elongatum* genome. We utilized fluorescent genomic in situ hybridization (FGISH) to determine the arm ratio and relative size of the perennial chromosomes in the addition lines. From this, we developed a karyotype of each of the seven perennial chromosomes that was used to determine which chromosomes are present in our perennial plant and how those particular chromosomes are linked to its phenotype.

12

Mutation of Magnesium Ion Channels Affects Environmental Stress Responses in Bacillus subtilis

Corey S. Suelter

Mentor: Andrew Herbig, Biology

Metal ions are essential for all living cells. Aside from enzymatic and structural roles, some metal ions have been demonstrated to offer protective effects against environmental stress. Magnesium (Mg), the most abundant cellular divalent cation, plays a structural and functional role in many biological processes, but the contribution of Mg homeostasis to combatting environmental stress is poorly understood. The gram positive bacterium *Bacillus subtilis* expresses two homologs from the CorA family of Mg channels (CorA1 and CorA2) and one homolog from the MgtE family of Mg channels. We studied environmental stress responses in *B. subtilis* strains deleted for one or more of these Mg channels. Sporulation efficiency was decreased in all deletion strains tested, with combination mutants most severely affected, compared to the isogenic wild-type (WT). In response to heat-shock stress, Mg channel mutants were more sensitive than WT. When challenged with hydrogen peroxide, strains deleted for one or both CorA channels were more sensitive than WT. We conclude that proper maintenance of Mg homeostasis in *B. subtilis* is crucial to the cell's ability to respond to starvation, heat-shock, and oxidative stresses.

13

Interactions of Herpes Simplex Virus Type 1 UL34 Protein

Jayne S. Barnes and Kyle Z. Schmidt

Mentor: Susan Bjerke, Biology

HSV-1 consists of a large double-stranded, linear DNA genome within a capsid that is enclosed in an envelope. The UL34 gene of the herpes simplex virus 1 (HSV-1) is highly conserved in the herpesvirus family. Upon expression, UL34 assists the virus in escaping the nucleus, but its exact function remains unknown. We are performing pull-down experiments with tagged UL34 protein to investigate interactions between UL34 and cellular and viral proteins. A tag is used to purify UL34 from an *E. coli* bacterial culture. Upon purification, UL34 is added to mammalian cell lysates (uninfected and UL34-null infected) to determine if UL34 interacts with other mammalian cell proteins. After proteins are allowed to interact, the lysates are washed to remove non-specific binding partners. Results are then viewed on SDS-PAGE gels. Modifications in the buffer, glutathione bead concentration, mammalian cell lysates concentration, temperature, and incubation time were all attempted. Adjusting the concentration of the wash detergent and number of washes allowed for the pull-down of potential UL34 binding partners. Future studies include modifications to the procedure in order to pull-down greater concentrations of binding partners. Once enough protein is present in the gel, UL34 binding partners will then be identified.

14

*The Effects of Aging on the Ovipositional Behavior of the Cabbage Butterfly (*Pieris rapae*)*

Morgann Christina McMurry

Mentor: Rodrigo Mercader, Biology

As with many plant feeding insects, the larvae of the cabbage white butterfly, *Pieris rapae*, develop on a single host plant selected by the adult female. For this reason, host selection behavior is considered to play a key role in understanding the evolution of plant-insect interactions. Age is expected to have a significant effect on the host selection process, because it affects both the time available for host selection and the relative egg availability. However, relatively little experimental data exists regarding the effects of aging on host selection by ovipositing female insects. The purpose of this experiment was to examine the effects of aging on the ability of the cabbage butterfly to identify and select a host. *P. rapae* are specialists on plants in the Brassicaceae family, but exhibit significant preferences between plants within this family. The hosts that the cabbage butterfly were able to choose from included mustard greens, collard greens, and cabbage. A non-host plant was also used to determine if the butterflies made host selection mistakes. By viewing the butterflies in an observation arena at the various stages of aging, the effect of aging on host preference was determined. In addition, the time required to make decisions during the ovipositional process was quantified and used to determine the effects of aging on ovipositional behavior.

15

Visual Adaptation of a Herbivore and a Carnivore Insect

Teresa H. Chui

Mentor: Ursula Jander, Biology

WTE

Insect eyes are very special and different from camera eyes of most animals, in that they are composed of many single eyes. Each of the single eyes (ommatidia) produces one pixel of a composite image. Therefore, the more single eyes an insect has, the greater the resolution the whole eye provides. We are interested in comparing the eyes from a predatory praying mantis (*Tenodera sinensis*) and a herbivore stick insect (*Anisomorpha buprestoides*) and determine their respective resolution. Our prediction is that the predatory insect will have a higher resolution because predators need more accuracy in their vision. In order to determine the resolution we have to count the number and size of the ommatidia, as well as their distribution over the entire eye. In addition, we have to determine the visual direction of each single eye which represents the visual angle. To achieve this goal we dissected and flattened the eye surface. Pictures were obtained from microscopic images. The number and diameter of the ommatidia was calculated from the printed pictures. To measure the angle we rotated an intact eye under the microscope and observed the directional angles over the periphery in consecutive intervals of 20 degrees. The eye parameter (product of diameter and interommatidial angle) for both insects indicates the herbivore and carnivore adaptations of the stick insects (herbivore) and praying mantis (carnivore).

16

Cat Food and Glow Sticks as Bait for Attracting Aquatic Organisms

Jeremy Steven Slavens

Mentor: Lee Boyd, Biology

This experiment was based on research by Grayson and Roe 2007 but taken a step further. Their experiment was using glow sticks to attract different aquatic creatures, mostly amphibians. They found that the glow sticks worked very well at attracting tadpoles and newts. They hypothesized that glow sticks would work well at attracting other aquatic creatures. In this experiment we were not only testing how well glow sticks would attract various aquatic organisms into traps but we also tested capture rates of using cat food and unbaited traps. Based on the information from Grayson and Roe 2007, we already know that glow sticks work well to attract some amphibians, but we would like to find out if it works just as well for other aquatic creatures as compared to cat food. Our hypothesis was that the glow sticks would attract more creatures and a higher diversity of them than the cat food and unbaited trap. Our trapping occurred in three different locations so we were able to test the biodiversity of all three locations.

17

Detection of Sequences Conferring Resistance to Cephalosporium Stripe Disease in Wheat Via in situ Hybridization with a Thinopyrum-Specific Transposon Probe

Peter D. Newman and Christian L. Gomez

Mentor: Matthew Arterburn, Biology

WTE

The fungal pathogen *Cephalosporium* stripe disease attacks cereal crops, including wheat and can cause a loss of over 50 percent in yield due to decreased seed size and reduced seed production. We investigated *Cephalosporium*-resistant wheat lines developed at Washington State University. The pedigrees of these wheat lines incorporated parents from the wheatgrass *Thinopyrum*, which has an ability to withstand a variety of crop diseases including *Cephalosporium* stripe disease. We hypothesize that sequences retained from the *Thinopyrum* lineage are responsible for the disease resistance in these lines, and were incorporated into the wheat genome through chromosomal translocation or DNA crossover. We isolated a *Thinopyrum*-specific transposon sequence from wheat-*Thinopyrum* amphiploids. This transposon was fluorescently-labeled and employed as a probe for in situ hybridization to detect regions of *Thinopyrum*-derived chromatin in the resistant wheat lines WA7970, WA7971 and WA8000 as well as in control lines. Our use of a genome-specific transposon probe is intended to provide greater binding specificity than our previous methods employing fluorescently-tagged whole genomic DNA, which can bind to common sites on both *Thinopyrum* and wheat chromosomes.

18

The Role of MMPs in Digitation of the Chick Limb

Blake R. Shinn

Mentor: Duane Hinton, Biology

Development of chick embryos is an ideal model for the study of limb development. Limb formation occurs through a series of morphological changes including the proliferation of cells; the aggregation of specific cell populations; cellular differentiation and cell death. Extensive tissue remodeling is required to produce functional digits, utilizing growth factors and enzymes to eliminate cells and extracellular matrix (ECM). BMPs and FGFs are known to induce

apoptosis in the regions between the digits, but little is known about how the ECM is removed. Matrix metalloproteinases (MMPs) are one group of enzymes that must be employed in order to breakdown and remove the ECM in the interdigital spaces. Utilizing Morpholino oligos to inhibit the translation of MMP-2, we propose that decreased enzyme activity will slow or inhibit the degradation of the ECM and possibly slow or inhibit the apoptosis of the cells located in the interdigital spaces. The Morpholino were injected into the vasculature of the chick embryo on day four of gestation for delivery via circulation. On days six & seven of development, limb buds were isolated to measure MMP-2 inhibition by gelatin zymography and to observe the relative rates of interdigital apoptosis by propidium iodide staining. Our results show that these Morpholinos are effective in inhibiting MMP-2 enzyme activity. In addition, we observed a 16.4% decrease in apoptosis in Day 6 limbs and an 8.6% decrease in apoptosis in Day 7 limbs.

19

Progress Toward the Synthesis of an Expanded Oxophlorin

Matthew J. Rush

Mentor: Sam Leung, Chemistry

Expanded oxophlorins are potentially useful compounds because of their similarities to currently used photodynamic therapy (PDT) photosensitizers such as porphyrins. Little work has been done in the synthesis of expanded oxophlorins. In this project we hope to synthesize an expanded oxophlorin and study its chemical properties: its metal ion binding, stability, and potential use as a PDT photosensitizer. Some precursors to the expanded oxophlorin have been synthesized in our group, including 2-acetyl-3-ethyl-4-methylpyrrole.

20

Initial Studies for the Use of Sodium for the Deprotection of Tosylamides

Claire F. Hopps

Mentor: Shaun Schmidt, Chemistry

The long term goal of this research is the synthesis of polymacrocyclic cage systems for transporting metal ions through the body. The focus of this research was to find an ideal method for deprotection of tosylamides. Sodium amalgam was synthesized to be used as a reducing agent as described in the literature for similar systems. A model compound, 4,7,10-tritosylamida-1,12-tridecadiene, was also synthesized and used due to the presence of both tosylamides and alkene moieties. The sodium amalgam successfully removed tosyl groups from the compound. However, isolation of the pure product in a reasonable yield with standard acid/base extractions proved problematic.

21

Professor Email Signature on Student Perception of Professor Credibility, Approachability, Immediacy, and Student Level of Respect for Professor

Grace M. Hildenbrand

Mentor: Sarah Ubel, Communication

WTE

This is a quantitative study examining the influence of professor email signature on student perception of professor credibility, approachability, immediacy, and student level of respect for professor. The email signatures being studied include: "Dr.", "Professor", and first name. Participants will be undergraduate students enrolled in a basic communication course. They will fill out a quantitative online survey consisting of informed consent, stimuli, measurements of

dependent variables, and demographic information. The results of this study will provide insight for professors to see how to create a positive learning environment for their students.

22

Moving from School to the Workplace: Washburn University Communication Graduates' Process of Assimilation Into the Organization

Danielle Allison SanAntonio

Mentor: Tracy Routsong, Communication

WTE

Based on the Assimilation Theory, this qualitative study explored the process by which Communication graduates assimilate into organizations after graduation. The study looked for the use of information seeking tactics, of which were learned at the collegiate level, to determine how graduates put to use their communicative knowledge and what they are doing to “belong” and “fit in” to the organizational culture at their workplace. A survey was administered to Communication graduates via email. Results were analyzed through a Constant Comparative Method and thematic analysis. Analysis examined what is being done more recently to reduce uncertainty and further understand the organizational culture which a newcomer enters. Results indicated that the Communication processes are essential and have a significant impact on graduates as they make sense and reduce uncertainty about their new environments. These same results portrayed the use of the Assimilation Theory and the same prevalent themes were evident in present day also.

23

The Use of Aggression and Humor in the Classroom, Friend, or Foe?

Lauren S. Weigand

Mentor: Sarah Ubel, Communication

WTE

This is a quantitative study examining the influence aggression and humor has while being used by the professor towards the student in the college classroom. Participants will be undergraduate students enrolled in introductory communication courses. They will fill out quantitative online surveys and scales including informed consent, measurements and scales including demographic questions. The results will provide insight for professors to see how their use of humor or aggression has an effect on the classroom environment.

24

Harnessing the Hot Air: An Analysis of Environmental Marketing Strategy

Jon Rowland

Mentor: Leslie Reynard, Communication

WTE

Environmental issues tend to be polarizing, and this conflict can become the creative base from which a marketing strategy is developed. TradeWind Energy is a wind-energy development company which serves as the focus for this study of rhetorical strategies appealing to consumers, political entities, and energy markets. The strategies that TradeWind incorporates into its web-site and external web-links are analyzed using Theory of Reasoned Action, stakeholder theory, and Toulmin’s model of argumentation as applied in persuasive marketing. The company seems to have segmented the stakeholders and developed individual messages, with distinct claims and backing targeting each. Deconstruction of the TradeWind web-site and its links demonstrates that strong logical appeals joined to appeals to shared values, especially as these are embedded in

concerns about “the Heartland,” provide an umbrella appeal to a broad stakeholder spectrum to achieve marketing objectives.

25

A Comparison of Somatotypical Values from the Members of Two SWAT units

Andrew Collie and Ryan M. Haverkamp

Mentor: Young Sub Kwon, Kinesiology

The purpose of this study was to investigate the correlation between anthropometric measures and SWAT team performance and requirements. Results from this study can be used to evaluate current SWAT team members’ physical ability and body composition as well as setting physical requirements for future applicants. Anthropometric data of height and weight was taken from two different local SWAT teams. Data was used to classify SWAT team members in ectomorphy, mesomorphy, and endomorphy. Using this data we can chart and analyze how both SWAT teams compare to recommendations. The Local SWAT Team 2 measured as having significantly higher levels of physical fitness and composition than did the Local SWAT Team 1. Using anthropometric data charts, SW1 members were found to be significantly off from recommendations and acceptable ranges whereas SW2 members were closer to recommended ranges. From the results Local SWAT Team 1 should consider lowering percentage body fat along with increasing fat-free mass (FFM) by decreasing body weight. Local SWAT Team 2 should only consider decreasing body weight as FFM is acceptable for SW2.

26

Stages of Reasoning Development in the Mathematics Classroom

Stacy A. Rottinghaus

Mentor: Janet Sharp and Donna LaLonde, Mathematics & Statistics

WTE

In the mathematics classroom, students have computations filled with numbers and symbols thrust at them, and they are expected to arrive at the correct answer. In an environment filled with assessment, and that assessment being evaluated on correct processes, students are going through a learning progression where understanding and reasoning is pushed to the wayside. Instead of understanding the why, students just want to know the how. This project looks at the stages of understanding students go through while learning in the math classroom. Observations were made in a five credit hour college algebra classroom by having students answer three algebra questions and explain their reasoning. By looking at how students approach mathematical manipulations, the teacher can better direct instruction to foster a more complete understanding in the student.

27

Astrophysics and Life on Earth

Brock Robert Snyder II

Mentor: Brian Thomas, Physics & Astronomy

WTE

The effect of deep space gamma ray bursts are explored using computer modeling of the interaction between high-energy radiation events and the atmosphere of Earth. The depletion of the ozone layer and the resulting increase in various radiation spectra on the surface are explored and provide further research opportunities into ecological models of the effect on the biosphere.

28

Self-Compassion vs. Self-Esteem

Christine Hurla

Mentor: Jenna Glover, Psychology

WTE

Research has shown that there can be negative effects of striving to increase self-esteem, such as increased anxiety and narcissism (Crocker & Park, 2004). Researchers have found that self-compassion, an attitude of kindness to oneself, may be a healthier way to relate to oneself than self-esteem (Neff, 2003). The purpose of the current study is to replicate a study by Leary et al. (2007) in which participants were experimentally induced into perspectives of either self-esteem or self-compassion. The study will compare the effects of inducing a self-esteem perspective with the effects of inducing a perspective of self-compassion.

29

Project Healthy Hands

Brooke Powell

Mentor: Laura Sidlinger, School of Nursing

WTE

The Centers for Disease Control and Prevention (CDC) estimates that over 20,000 children under the age of five are hospitalized due to complications from influenza and up to 125,000 children under the age of one are hospitalized due to respiratory syncytial virus (RSV) in the United States each year. Children that are immunocompromised are at a higher risk for contracting illnesses such as these and are more susceptible to complications associated with these disease processes. Often the nurse's role is reactionary, by treating immunocompromised children who have already contracted and are suffering symptoms of these potentially deadly infections. The purpose of Project Healthy Hands is to prevent common infections in immunocompromised children by providing information and resources related to hand hygiene and vaccinations. In January 2012, three hundred educational tools were provided for distribution to aid nurses in educating families of neonatal and pediatric patients under twenty-four months admitted to Stormont Vail hospital. Proper hand hygiene is a proven technique in reducing the spread of infectious agents and a skill that is easily taught within the hospital setting. Vaccination of both the child and those in close contact with the child is also an important element in reducing the incidence and severity of illnesses in immunocompromised children.

30

Alcoholics Anonymous for Adults in Stormont-Vail West

Lisa D. Bellanga

Mentor: Maryellen McBride, School of Nursing

My focus is on psychiatric nursing and how improvements can be made to treat patients diagnosed with a co-occurring disorder (COD), previously known as a dual-diagnosis. After speaking with Rob Loehr, part-time instructor for Washburn School of Nursing and nurse practitioner at Stormont-Vail West, I was able to identify a recurring inadequacy regarding follow-up treatment for adult patients admitted with COD. He informed me that the primary focus was on the mental illness rather than the addiction accompanied. My change project will keep two goals in mind: Firstly, I am going to bring awareness to the medical staff of Vail West working in the adult unit of the need to correct substance abuse in order to treat mental illness. Secondly, I am going to provide pamphlets with a number for patients to call that can direct them to the most convenient Alcoholics Anonymous (A.A.) meeting. I will also include reasons A.A. has proven to be helpful.

31

Comparative Study of Child Maltreatment Laws and Protocols of the State of Kansas and Paraguay

Jimena Vallejos Barriocanal

Mentor: Nan Palmer, Social Work

WTE

This presentation will include an overview and comparison of International, National and State laws and protocols that protect children in the State of Kansas and Paraguay. The interest of the comparative study arises from the student's country of residence and the partnership that Kansas has with her country, Paraguay, through which the student came to Washburn University, as well as the student's interest on child maltreatment. Issues such as definitions, age of the child, reports of abuse, right to counsel, and degree of proof will be compared.

Apeiron Committee 2012

Shaun Schmidt, Chair
Administrative Support by Joyce Hutchins

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- Matt Arterburn
- Paul Byrne
- Donna LaLonde
- Sam Leung

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Publicity

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Index of Presenters

(presenter, page number)

- Antonetti, Kris, 19
Austin, Michael A., 15
- Barnes, Jayme S., 22
Barnett, Elise Barnett, 5
Bellanga, Lisa D., 29
Billinger, Jane, 12
Boeker, Joshua, 9
Burkett, Robert W., 19
Burris, Alicia A., 21
- Cahill, Lance M., 15
Calovich, Matthew L., 19
Carter, Joshua, 6
Chui, Teresa H., 23
Cochran, Casey Marie, 21
Collie, Andrew, 27
Conoley, Sara K., 14
Cox, Shad D., 8
Crain, Diana M., 10
- Darst, Mary-Lucia Thao, 14
Drain, Taylor Simone, 8
- Edmonds, Andrew J., 19
- Fechter, Kate M., 15
Fish, Delaney L., 9
- Gaylord, Kristina Marie, 11
Goehring, Michael J., 7
Gomez, Christian L., 24
Gosser, Stafford, 8
Grier, Lakeisha E., 8
- Haverkamp, Ryan M., 27
Heimbaugh, Eleanor, 18
Hernandez, Alix K., 8
Hildenbrand, Grace M., 25
Hinton, Donald W., 19
Hofelt, Brenna S., 17
Hollenbeck, Lisbeth M., 20
Hopkins, Isaac, 6
Hopps, Claire F., 25
Hurla, Christine, 28
- LaFreniere, Austin Douglas, 16
Lange, Rebecca Marie, 20
Leeds, Samantha, 7
- Lewis, Ty B., 9
Lischke, Anna, 10
- McDougal, Riley C., 16
McMurry, Morgann Christina, 23
Mitchell, Powledge, 9
- Nemechek, Joshua C., 7
Newman, Peter D., 24
- Peralta, Angela J., 20
Pilgrim, Robert J., 16
Potter, L. Rachelle, 12
Powell, Brooke, 28
- Reeves, Johnathan M., 15
Reno, David G., 14
Ross, Riley E., 11
Rottinghaus, Stacy A., 27
Rowland, Jon, 26
Rush, Matthew J., 25
Russell, Eric, 9
- SanAntonio, Danielle Allison, 26
Schmidt, Kyle Z., 22
Scott, Colin John, 6
Shafer, Travis E., 9
Shinn, Blake R., 24
Simons, Emily J., 13
Slavens, Jeremy Steven, 24
Snyder, Brock Robert II, 27
Steinert, Deanna M., 17
Stuever, Stefanie Lea, 18
Suelter, Corey S., 22
- Thomason, Joshua N., 10
Thompson, Hannah E., 13
- Unrein, Elizabeth L., 9
Utemark, Arissa L., 5
- Vallejos Barriocanal, Jimena, 29
Vaughan, Ashley M., 5
- Ward, Jonathan S., 6
Weigand, Lauren S., 26
Wilson, Nicole J., 18
Wurtz, Joshua N., 19

Index of Mentors

(mentor, page number)

Angel, Stephen, 10
Arterburn, Matthew, 21, 24
Bjerke, Susan, 22
Boyd, Lee, 24
Cann, Steven, 16
Fry, Timothy, 17
Glover, Jenna, 28
Gonzalez-Abellas, Miguel, 7
Goossen, Rachel, 14
Herbig, Andrew, 22
Hinton, Duane, 24
Jander, Ursula, 23
Kwon, Young Sub, 27
LaLonde, Donna, 27
Leung, Sam, 11, 25
Lockwood, Park, 8
McBride, Maryellen, 29
McGuire, Michael, 20
Mechtly, Bruce, 19
Mercader, Rodrigo, 23
Moddelmog, Linsey, 15
Morse, Kim, 12
Nizovtsev, Dmitri, 15
Norman, Mark, 6
Palmer, Nan, 29
Paul, John, 7
Porta, Gaspar, 9
Preuss, Greg, 15, 16
Quaney, Barb, 20
Raicheva-Stover, Maria, 19
Reynard, Leslie, 26
Routsong, Tracy, 26
Schbley, Bassima, 17
Schmidt, Shaun, 10, 25
Sharp, Janet, 27
Sidlinger, Laura, 28
Silvestri, Tony, 13, 14
Steinroetter, Vanessa, 14
Stevenson, Barbara, 20
Sullivan, Sharon, 5
Sun, Nan, 8, 9
Taylor, Glenda, 18
Thomas, Brian, 10, 27
Ubel, Sarah, 25, 26
Wagner, Tracy, 21
Wanless, Mary Dorsey, 18
Weiner, Penelope, 5
Wynn, Kerry, 11, 12
Zwikstra, Corey, 13