Washburn University Apeiron απειρον

April 19, 2013

Schedule of Events

10:30 a.m. – 11:00 a.m. **Student Registration and Poster Setup**
Memorial Union - Washburn A & B Lobby

11:00 a.m. – 12:55 p.m. **Fine Arts Performance Session**
Mulvane Art Museum & Carole Chapel

1:00 p.m. – 2:50 p.m. **Oral Presentation Session**
Henderson Learning Resources Center

- Session α: Room 203
- Session β: Room 207
- Session γ: Room 208
- Session δ: Room 217
- Session ε: Room 303
- Session ζ: Room 307

3:00 p.m. – 3:40 p.m. **Welcome**
Shaun Schmidt, Chair, Apeiron Committee
Memorial Union - Washburn B

Recognition of Student Designers
Morgan McGrath and Tricia Peterson
Regina Cassell, Apeiron Committee

Introduction of Last Lecture
Barry Crawford, Professor,
Department of Philosophy

Last Lecture
Jorge Nobo
Professor Emeritus of Philosophy
Memorial Union - Washburn B

3:40 p.m. – 5:00 p.m. **Poster Session and Reception**
Memorial Union - Washburn A

www.washburn.edu/apeiron

Last Lecture

"Belief and Science"

presented by

Jorge Luis Nobo, Ph.D.

Professor Emeritus of Philosophy

Dr. Nobo joined Washburn's Philosophy Department in 1972 and completed his phase retirement in 2011. Born in Havana, Cuba, he first came to the States as a child and lived in the then small town of Orlando, Florida, for three years, during which time English became his second native language and the U.S. his second home country. He completed his secondary studies in Cuba and returned to the U.S., this time to stay, in 1960. In 1966 he became a naturalized citizen and received his BA from the University of Miami, Coral Gables. In that same year he began his graduate studies at the University of Texas at Austin, where he would eventually meet his wife-to-be, Patricia, and from which he would receive his Ph.D. in philosophy in 1973.

Dr. Nobo is the author of *Whitehead's Metaphysics of Extension and Solidarity*, SUNY Press (New York: 1986, 439 pp.) and co-editor of *The Individual and Society*, Southwestern Journal of Philosophy Press (Norman: 1978, 213 pp.) Dr. Nobo's articles on metaphysics and process philosophy have appeared in various books and refereed journals or have been presented to various professional societies. Dr. Nobo has been a visiting scholar at the Universities of Salamanca and Harvard, and a participant in two NEH Institutes. He is currently working on a book on experience and reality.

Memorial Union – Washburn B
3:00 p.m.

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

Past Last Lectures presented by:

Dr. Reinhild K. Jenzen	2012	Dr. Howard Faulkner	2011
Dr. William O. Wagnon	2010	Dr. Ron Ash	2009

Schedule of Oral Presentations

(HC = Henderson Learning Resources Center)

Time/Location	Presenter	Title
1:05 pm – 1:25 pm		
HC 203	**Colby A Berry**	Are the Poor Only Visiting Dental Clinics for Emergencies?
HC 207	**Christian Gilbert**	Impact of Colonialism on Gender Roles Among the Maasai
HC 208	**Kristopher Roberts**	Early American Coverlets: 1780-1860
HC 217	**Tara D Wallace**	A Study of Voluntary Self-Care Practices of Social Workers and Other Helping Professionals
HC 303	**Trevor McDaniel**	Teaching Mathematics using LEGO
HC 307	**Jacob J Dobler, Zac Glenn, and Hezekiah J Phelps**	The Effect of Social Activities on Pair Programming: Results from an Experiment
1:30 pm – 1:50 pm		
HC 203	**Olivia L Butler**	The Impact of Project Food Aid on Developing Nations Agriculture and Gross-Domestic Product: An Empirical Study
HC 207	**Cassandra E White**	Thomas More: Dedication to the Law and a Life of Opposition
HC 208	**Margeaux E. Seymour**	I Saw It on Facebook: Comparison of Connectedness Based on Modality of Communication
HC 217	**Xueting Li**	We teach children like this ——comparison of preschool education between the United States and China
HC 303	**Tray T Massengale**	The Xtreme Dream
HC 307	**Skyler J Bock, Zachary E Phillips, and Lindsay Taylor**	Women and Minorities in Computer Science Majors: Results on Barriers from Interviews and a Survey
2:00 pm – 2:20 pm		
HC 203	**Nicholas K Campbell**	No Child Left Behind: Has the United States been left behind
HC 207	**Michael Kitowski**	Romans XIII and American Founding: How the Protestant Interpretation Afffected Law and Polity in the Late Eighteenth Century
HC 208	**Rachel J Fechter, LeeAnna E. A. O'Dell, and Grace Sheple**	Amazon: A look into the future
HC 217	**Claire M Crawford**	Shawnee County Juvenile Detention Alternatives
HC 303	**Tyler W Wade**	Analysis of the Statistical Properties of a Dice Game Featuring Changing Face Value
2:25 pm – 2:45 pm		
HC 203	**Jake Watson**	The Effects of the 2005 Voter Identification State Legislation on Voter Turnout in Indiana
HC 207	**Adam Payne**	The Transformation Of The Jaguar: An Analysis of Syncretism and Missionization in Jesuit Guarani Missions in Colonial Rio de la Plata
HC 217	**Qianhui (Jera) Zhang**	The Perception Of Sex Among Chinese Male And Female University Students
HC 303	**Brandon R Marshall**	Complex Variables: What can we see?

(Put Washburn campus map on this page)

Fine Arts Performance Session
11:00 a.m. – 12:55 p.m.

►11:00 a.m. **Mulvane Art Museum** **Moderator: Chris Kelts**

Studying Songs of Stephen Sondheim
Rachel Kay Cross, Anna Tague, Phillip M. Watson, and Brendan J. Boyle
Mentor: Sylvia Stoner-Hawkins, Music

A presentation about Sondheim's "Little Night Music" including excerpts from scenes, short selections of music from the show, and a brief talk about Sondheim's use of lyrics.

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

Admit It
Elise N. Barnett
Mentor: Penelope Weiner, Theatre

Dishing on relationships, the future, and what it means to be happy, Sara and Grayson yell, cry, and laugh their way through all life has to throw at them. This short piece explores the dynamic between two post-collegiate girls as they tackle the quarter life crisis. A relatively new developmental stage in our society, the quarter life crisis speaks to those freshly graduated twenty-somethings who are just starting to realize that their entire life is in front of them and they need to start making some serious decisions. With a large dose of humor, this piece focuses on these issues in the voice of someone from the current generation of post-grads.

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

Lone Wolf
Tess Wilson
Mentor: Penelope Weiner, Theatre

In the Fall Semester of 2012, I was fortunate enough to take a class with Penny Weiner that taught me not only about my writing but about myself. Principles of Playwriting gave me the opportunity to hear my work read out loud by others, which was an extraordinary experience. This scene, "Lone Wolf," explores a friendship, a relationship, and what happens when the two collide.

►11:40 a.m. **Carole Chapel** **Moderator: Penny Weiner**

Blue
Ashley M. Vaughan
Mentor: Sharon Sullivan, Theatre

Reality is just an illusion.

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►11:55 a.m. **Mulvane Art Museum** **Moderator: Dennis Etzel Jr.**

How to: Live
Elise N. Barnett
Mentor: Dennis Etzel Jr., English

How to: Live is an experimental poetry series that chronicles various emotional moments and ideas through the combination of poetry, memoir, and the list.

►12:10 p.m. **Mulvane Art Museum** **Moderator: Dennis Etzel Jr.**

Fable: A Non-Facsimile
Tess Wilson
Mentor: Dennis Etzel Jr., English

Last September, I saw a sign in the summer hallways of the English Department advertising a class in contemporary forms of poetry. On a whim, I registered for the course. We plunged headlong into our material and, from the first day, my professor began to change my perception of the possibilities of words. Together, we found new ways to define poetry and, with every text, my eyes widened. EN399 forced me to machete my way through a jungle of strange forms and functions, so that I could emerge with an eagerness for the new and a reignited passion for the old. For Apeiron 2013, I will be presenting some of the work that came out of this experience.

►12:25 p.m. **Mulvane Art Museum** **Moderator: Dennis Etzel Jr.**

Hybrid Poetry Reading
Amanda Cal Phoenix
Mentor: Dennis Etzel Jr., English

This reading highlights and explains writing theory behind some contemporary forms of poetry through the personal journey that one writer has explored. Samples of writing utilizing a few, different styles will be read and the process of their organization explained. The presentation is also meant to advocate for contemporary forms as legitimate and successful forms of writing.

►12:40 p.m. **Mulvane Art Museum** **Moderator: Dennis Etzel Jr.**

My Beads, My Creeds
Adam Vlach
Mentor: Eric McHenry, English

I shut the door and nix the light With trembling hands I grab my beads My knuckles white I squeeze so hard It was a perfect autumn night I came to see what mother needs But on the ground she lay so marred Rage and tears and shock and fright Her broken body bleeds and bleeds And in her neck a metal shard My father could make things all right I checked his study where he reads And there his body lay quite charred I don't know why God gave this plight Pray, Who could do such evil deeds? Forever now I will be scarred So here I am, tears blur my sight I bow my head and pray the creeds And ask my God if me he'll guard.

Oral Presentation Session
1:00 p.m. – 2:50 p.m.

^{WTE} Denotes Washburn Transformational Experience

Session α **Moderator:** John Paul

►1:05 p.m. Henderson, Room 203

Are the Poor Only Visiting Dental Clinics for Emergencies?
Colby A. Berry
Mentor: Steven Cann, Political Science - Geography

In the wake of the enactment of the Affordable Care Act, much uncertainty still remains for individuals at lower poverty levels seeking dental coverage. In this study, analysis is performed to find an association between dental patients at these extreme poverty levels and their propensity for needing either emergency or regular care upon first contact with a dental clinic. It primarily focuses on the need for emergency visits for vulnerable demographics at declining poverty levels to see who is currently faring the worst. The data comes from Marian Clinic Dental, a Topeka, Kansas-based safety-net clinic and spans the year 2011. Through contingency analysis, it is discovered that there is a statistically significant relationship between declining poverty levels, and the relationship remains fairly consistent throughout several of the key demographics analyzed.

►1:30 p.m. Henderson, Room 203

The Impact of Project Food Aid on Developing Nations Agriculture and Gross-Domestic Product: An Empirical Study
Olivia L. Butler
Mentor: Steven Cann, Political Science - Geography

Several studies have been done over the years, typically in the form of case studies that look to analyze the effect of sending food aid to the developing world by using specific examples. Today, the nature of food aid itself has changed and there is a need for analysis over the effect of different types of food aid to determine how they affect the developing world. This paper analyzes the effect of project food aid from the World Food Programme (WFP) on the developing world. Specifically, I consider WFP food aid and its effect on countries' real Gross-Domestic Product (GDP) per capita, agricultural output of cereals, and countries' GDP (% growth). Using linear and multiple regression analysis, the three hypotheses were tested. As modeled in this paper regression results indicate that project food aid has no statistically significant relationship to a country's agricultural output, real GDP per capita, or GDP (% growth). Future studies are recommended to help reduce bias and resolve questions of validity.

►2:00 p.m. Henderson, Room 203

No Child Left Behind: Has the United States Been Left Behind?
Nicholas K. Campbell
Mentor: Linsey Moddelmog, Political Science - Geography

This study analyzed the effect No Child Left Behind (NCLB) had on test scores compared to other countries. By looking at scores and comparing how the United States scored before and after NCLB to other countries, we can have a better idea of the effectiveness of the law. I will further delve into this issue by looking at what types of variables affect a country's scores. I looked at reading and science test scores from 1999 and 2007 by TIMSS and compared them. Then, I looked at other variables to see if they had a correlation with test scores. Furthermore, I found that NCLB did not increase U.S. standing compared to other countries in test scores.

►2:25 p.m. Henderson, Room 203

The Effects of the 2005 Voter Identification State Legislation on Voter Turnout in Indiana
Jake Watson
Mentor: Steven Cann, Political Science - Geography

A recent phenomenon in the American political landscape is the increasing amount of states that are passing voter identification laws. Many argue that this sort of law disenfranchises certain constituents' right to vote. The aim of this case study was to examine how this law has affected voter turnout in Indiana, a state with the strictest form of a photo identification law. It was hypothesized that the law would negatively impact voter turnout. Voter turnout was examined in two elections before the passing of Indiana's photo identification law and compared to two elections after the implementation of the law. Two midterm elections were evaluated and two presidential elections were evaluated. Results show that the law did not negatively impact voter turnout for either the midterm or presidential elections.

Session β **Moderator:** Tony Silvestri

►1:05 p.m. Henderson, Room 207

Impact of Colonialism on Gender Roles Among the Maasai
Christian Gilbert
Mentor: Mary Sundal, Sociology - Anthropology

The Maasai are a Nilotic transhumance pastoralist group that resides in East Africa throughout Southern Kenya and Northern Tanzania. They are located along the Great Rift Valley which creates a hot, humid, and windy climate that produces rains sporadically throughout the year. Today, there are approximately half a million Maasai that still live in this area and have held onto many aspects of their traditional way of life. However, colonialism affected Maasai gender roles through its patriarchal politics that diminished the status of women. First, we will discuss

how the age grade system affected their way of life. Then we will discover the differences in gender roles pre- and post-colonialism. Finally, we will see how tradition has remained in many aspects of the Maasai culture and how modernity has also permeated their society.

►1:30 p.m. Henderson, Room 207

Thomas More: Dedication to the Law and a Life of Opposition
Cassandra E. White
Mentor: Alan Bearman, History

This essay is a study of Thomas More (1478-1535) the English humanist, author, statesman, philosopher and, most importantly for my work, lawyer. More is famously known today for his book Utopia, published in 1516. He was imprisoned in 1534 for his refusal to take the oath for the First Succession Act. In 1535 he was convicted of treason and beheaded. More lost his life and became a martyr for both the Roman Catholic Church and the Church of England because of his steadfast attitude towards the law and his refusal to allow the law to be bent for the benefit of the individual.

►2:00 p.m. Henderson, Room 207

Romans XIII and American Founding: How the Protestant Interpretation Affected Law and Polity in the Late Eighteenth Century
Michael Kitowski
Mentor: Alan Bearman, History *WTE*

This essay seeks to examine how the Protestant interpretation of Romans XIII affects the American view on government. Historically, Romans XIII has been used to defend the status quo of politics and overthrow tyrants.

►2:25 p.m. Henderson, Room 207

The Transformation of the Jaguar: An Analysis of Syncretism and Missionization in Jesuit Guarani Missions in Colonial Rio de la Plata
Adam Payne
Mentor: Kim Morse, History

What is the difference between intent and practice? Throughout history the intent of one event leads to the arrival of a different practice. No different is the Jesuit presence in the Rio de la Plata and the attempted hispanicization of the Guarani. The original intent of the Jesuit Order was the conversion of the Guarani. The practice resulted in the fusion of native and western practices. When syncretism is put into motion the expected outcome is a product. In practice the process of missionization is the result, and in the case of the Guarani people a failure. To reveal the misconceptions of the process of syncretism, one must evaluate who the Jesuits were, who the Guarani people who were the targets of missionization were, and what ways, if any, did the daily life and religious practices of the Guarani change after interaction with the Jesuit Order.

Session γ **Moderator:** Sharla Blank

►1:05 p.m. Henderson, Room 208

Early American Coverlets: 1780-1860
Kristopher Roberts
Mentor: Kelly Watt, Art

While today woven textiles are cheap and readily available, cloth in the newly-established United States was a costly commodity. Especially valuable were coverlets, which were elaborately designed, expensive and time-consuming bedcovers. While their ostensible purpose was for warmth while sleeping, they were also decorative objects, status symbols, and family heirlooms. Though we in the 21st century think that every household had cloth-producing capabilities, in fact, only a small minority of East Coast families during the period even owned looms capable of producing these patterned fabrics. In addition, the notion that women were usually weavers is a misconception propagated in the late 19th and early 20th centuries; most professional weavers, including those of coverlets, were men trained in the profession. Eventually, the elaborate detail that made coverlets so coveted contributed to their downfall when the time and money invested in them could not compete with mass-production as the Industrial Revolution took hold.

►1:30 p.m. Henderson, Room 208

I Saw It on Facebook: Comparison of Connectedness Based on Modality of Communication
Margeaux E. Seymour
Mentor: Greg Preuss, Psychology

This research studies the connectedness levels people feel via face-to-face and with Facebook communications. Participants took an online survey consisting of a demographic section, two 13-item Likert questionnaires researchers created related to connectedness and a closeness question. Results supported the hypothesis that individuals feel more connectedness communicating face-to-face than on Facebook. Generational comparisons and relationship differences would be conducive for future research.

►2:00 p.m. Henderson, Room 208

Amazon: A Look into the Future
Rachel J. Fechter, LeeAnna E. A. O'Dell, and Grace Shepler
Mentor: Gary Baker, School of Business

Our group will be writing a term paper for BU483: Investments. The goal of our paper is to perform a “top down” analysis on Amazon, a publicly traded company. We will apply our knowledge and capabilities to make a forecast about the firm’s future performance over the next three years. We intend to pass judgment on whether or not it would be a smart investment decision to buy or sell the stock. For the purpose of research and creating our forecast, we will be

looking at twenty-one different economic indicators. These indicators can be found on Washburn's Applied Portfolio Management website, http://www.washburn.edu/sobu/apm/page2/market.html. Alongside these indicators we will also examine the online industry in which Amazon and its competitors operate, and apply an extended Dupont analysis. Recent speculations about the stock price make this a particularly interesting company. Amazon's stock price has seen steady growth over the last five years. However, many investors believe it is overvalued and therefore likely to take a large hit in the near future. Hopefully, our research can shed light on these speculations.

Session δ

Moderator: Yvette Jenkins

►1:05 p.m. Henderson, Room 217

A Study of Voluntary Self-Care Practices of Social Workers and Other Helping Professionals
Tara D. Wallace
Mentor: Bassima Schbley, Social Work

An analysis of work-related stress reveals one challenge facing helping professionals: maintaining high levels of mediocre service to more clients or engaging in self-care and providing higher levels of good service to fewer clients. According to Barak, Nissly and Levin (2011), high stress levels in helping professionals results in negative impacts to the quality, consistency, and stability of service to clients. Helping professionals often find themselves mentally and emotionally committed to the needs of their clients with complete disregard for their own need to engage in self-care. This research explores the voluntary self-care practices of social work and other helping professionals beginning with the development of a definition for self-care by one agency key to the profession of social work. Next it identifies the need for self-care in assisting helping professionals to maintain a balance between professional practice and personal awareness by exploring the many factors hindering engagement in self-care. Finally it explores the effectiveness of including self-care curriculum in higher education by analyzing current research on the subject and reviewing a qualitative survey of the self-care habits of college students in helping profession majors.

►1:30 p.m. Henderson, Room 217

We Teach Children Like This – Comparison of Preschool Education Between the United States and China
Xueting Li
Mentor: Bassima Schbley, Social Work

There is an old adage in China that we can tell what adults will be when they are very young children. Differentiation has already begun in preschool. We all sing songs, but what are the meanings of them? We all draw pictures, but what are the styles of them? We all read books, but what is the content of them? We all play games, but what are the rules of them? We all learn math, but what are the expectations of it? Having observed in a preschool for almost one year,

this study explores the mutual effect between culture and education. By making best of both worlds, children will receive a better education.

►2:00 p.m. Henderson, Room 217

Shawnee County Juvenile Detention Alternatives
Claire M. Crawford
Mentor: Vicki Arnett, Social Work

The Juvenile Detention Alternatives Initiative (JDAI), created in 1992 by the Annie E. Casey Foundation, aims for all youth involved in the juvenile justice system to have opportunities to develop into healthy, productive adults. One of the nation's most effective, influential, and widespread juvenile justice system reform initiatives, JDAI promotes changes to policies, practices and programs to reduce reliance on secure confinement, improve public safety, reduce racial disparities and bias, save tax payers' dollars, and maximize youths' chances for personal transformation. This initiative strives for a juvenile justice system that holds delinquent youth accountable while helping them redirect their lives, that protects communities, and that only locks up youth who truly need to be confined. In 2010, under the supervision of site coordinator, Angela McHardie, the Shawnee County Juvenile Detention Alternatives Initiative site was established. Since its inception, the Shawnee County site has been actively revamping policies, practices, and programs to align their juvenile justice system with the values and mission of the Juvenile Detention Alternatives Initiative and the Annie E. Casey Foundation.

►2:25 p.m. Henderson, Room 217

The Perception Of Sex Among Chinese Male And Female University Students
Qianhui (Jera) Zhang
Mentor: Sangyoub Park, Sociology - Anthropology

The traditional Chinese perception of sex has gradually changed in recent years. The Chinese university students are those who have the easiest exposure to the western idea of sex. What they think about sex can be a great indicator of this changing process. This study examines the gender difference about the perception of sex and focuses on the undergraduate students in a university in Southeast China. The result indicates that the male students' self-evaluation of the sexual idea shows more openness. Both gender groups show similar attitudes towards love and sex in a relationship, as well as several sex facts (homosexuality, premarital sex, abortion, one night stand, and prostitution). They are still conservative and take female's chastity seriously, especially when it happens to themselves.

Session ε **Moderator:** Kevin Charlwood

►1:05 p.m. Henderson, Room 303

Teaching Mathematics Using LEGO
Trevor McDaniel
Mentor: Gaspar Porta, Mathematics & Statistics

How does one begin to understand the deep and rich algebraic structures? From the elementary concept of addition to the more abstract ideas of rings and fields, Manipulatives like elementary base ten blocks to algebra tiles have been used to assist students in understanding algebra for over twenty years. This activity will allow students of mathematics to view examples of algebraic structures and concepts in a concrete model using Lego. The Lego manipulatives will assist the students in relating the algebraic structures and concepts from a concrete, 3-D representation to the abstract, and vice versa. The use of Lego manipulatives provides older students an opportunity to participate in manipulative use, similar to the elementary use of base ten blocks or algebra tiles. Lego also offers a variety of models, bringing students' learning to the more complex concepts versus the blocks or tiles.

►1:30 p.m. Henderson, Room 303

The Xtreme Dream
Tray T. Massengale
Mentor: Esmond Alleyne, School of Business

It's no secret, math is important. Used every day by everyone, math drives important decisions. However, let's narrow the scope to just the business world: How can a strong education in math be useful in the business? My Xtreme Dream shows one answer to that question. By using my own personal mathematical expertise, I will demonstrate that I can realistically transform my small company into a million dollar business in just one year. This is a challenge. I do this by taking actual data and realistic constraints that currently face the market to design a model that accounts for fixed and variable change. This is all done in an attempt to show that one year from today, math has transformed me into a millionaire.

►2:00 p.m. Henderson, Room 303

Analysis of the Statistical Properties of a Dice Game Featuring Changing Face Values
Tyler W. Wade
Mentor: Gaspar Porta, Mathematics & Statistics

The purpose of this research is to explore the statistical properties of an adversarial, two-player dice game with changing face values. An algorithm was developed to calculate the exact probability of arbitrary game states after a specified number of turns. An computer implementation of this algorithm was used to calculate probabilities for dice with a large number of sides. We hoped to find a general rule for determining an optimal configuration by manipulating matrices composed of these probabilities.

►2:25 p.m. Henderson, Room 303

Complex Variables: What Can We See?
Brandon R. Marshall
Mentor: Donna LaLonde, Mathematics & Statistics

The work described in this presentation is an investigation of complex numbers through an emphasis on what visual representations teach us. As is stated in the description of complex numbers on Wolfram Mathworld, "Complex numbers are useful abstract quantities that can be used in calculations and result in physically meaningful solutions." The work investigates applications dealing with fluid and heat flow. This provides the opportunity to give a physical context to explore and understand complex functions. Building on the "Rule of 3" work suggested by the calculus reform work, this project exploits tools for visualization. The work will answer the question, "what can we see?"

Session ζ **Moderator:** Bruce Mechtly

►1:05 p.m. Henderson, Room 307

The Effect of Social Activities on Pair Programming: Results from an Experiment
Jacob J. Dobler, Zac Glenn, and Hezekiah J. Phelps
Mentor: Nan Sun, Computer Information Sciences *WTE*

Pair-programming is a programming method where two people use one computer to work simultaneously on the same programming assignment. Previous research suggests pair-jelling plays an important role in how pairs perform. Pair-jelling is where the pair engages in activities to solidify and enhance their partnership. However, little empirical research has been done in the area of pair-jelling. In this paper, we explain the theory behind working in pairs. We will also conduct an experiment to investigate the benefits of pair-jelling by comparing the quality of a programming assignment between two groups of pair programmers, one of which are engaged in a pair-jelling activity.

►1:30 p.m. Henderson, Room 307

Women and Minorities in Computer Science Majors: Results on Barriers from Interviews and a Survey
Skyler J. Bock, Zachary E. Phillips, and Lindsay Taylor
Mentor: Nan Sun, Computer Information Sciences *WTE*

In this research we investigate why women and minorities are underrepresented in the Computer Science major. We would like to find out the barriers that are keeping women and minorities from pursuing Computer Science degrees. We plan to conduct three studies: 1) demonstrate the trend of women and minorities in computer science over time by using Taulbee data; 2) Interview a sample of women/black students who do not pursue computer science degrees; 3) Conduct a random survey of college students. The purpose of this research is to gain a better

understanding of how students outside of the major perceive Computer Science. From the students' answers we can conclude what barriers affect women and minorities the greatest. Once the barriers are identified it will hopefully provide clarity into the problems so that these barriers may be addressed.

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

WTE Denotes Washburn Transformational Experience

1

Using Lean Manufacturing Principles to Improve Productivity and Efficiency in Healthcare
Hannah J. Boos
Mentor: Zach Frank, Allied Health *WTE*

A case study was performed analyzing how one health care facility implemented Lean principles to improve the productivity and efficiency of their company. The administration was taught lean principles because the facility's productivity levels were below expected levels. This case study focuses on the rehabilitation department within the health care facility. A team was formed from the different job classifications within the department to implement their own Lean projects into their department. The results demonstrated an improved productivity within the company after the concepts were applied, leading to increased revenue that was sustained for months following the implementation. Several suggestions for implementation are provided that appear beneficial in the success of the Lean principles in this specific case study.

2

Smoke-Free Campus
Joshua N. Schell
Mentor: Lori Edwards, School of Nursing *WTE*

Smoking is the number one preventable cause of death in the United States. In an effort to make Washburn University healthier, I want to change the current smoking policy to make WU a smoke-free campus. A survey was created and made available to all students, faculty, and staff at WU to collect information and determine if there was an interest to make WU smoke-free. This information was presented to WSGA on October 24, 2012. I plan to meet with Faculty Senate in March to propose making WU a smoke-free campus.

3

Happy Hands Hand Washing Program
Kathryn I. Chapple, Jeanette Miller, and Erin R. Rankin
Mentor: Patricia Joyce, School of Nursing *WTE*

Hand washing education was conducted through the use of demonstration and presentation. We implemented this program in a local pre-school and evaluated the presentation and found there to be a need. The goal of the project was to implement a hand washing education program into student's daily routine to promote the decrease in the spread of germs. We provided a brief lesson plan that included an explanation of what a germ is, what germs can cause, and how to properly wash hands. Through the use of a black light and glow germ gel we gave students the opportunity to see the germs on their hands and understand the importance of proper hand

hygiene. In addition we developed a sustainable kit with our lesson plan and resources for education to be continued in the future. Our goal is to have our program integrated into Washburn's pediatric curriculum for nursing students to use in clinical settings.

4

Progress Toward the Synthesis of Porphyrins with β-Azo-linkage to Other π-Conjugated Systems

Bonnie K. McKee
Mentor: Sam Leung, Chemistry

Porphyrins represent a group of aromatic organic compounds composed of four pyrrole molecules connected by methine (CH) linkages. Porphyrins and related compounds have been used as photosensitizers in photodynamic therapy (PDT) for cancer. Currently used porphyrin-based PDT photosensitizers absorb light at no longer than 650 nm. One of the important goals in designing PDT photosensitizers is to achieve absorption at longer wavelengths (> 650 nm) by the photosensitizer. The longer wavelengths (650 – 800 nm) are preferred in PDT because light with longer wavelengths can penetrate tissues more deeply. Increasing the conjugation of the π system in a molecule can often help increase the wavelength of absorption. Adding conjugated systems to porphyrins has been studied by other groups. It was reported that among different types of linkages, an azo linkage in the meso position on a porphyrin provides the largest increase in the wavelength of absorption. The purpose of our research is to determine whether the addition of a conjugated system bridged by an azo linkage at the β position on a porphyrin would be better or worse than the meso position in regard to the wavelengths of absorption (Will an azo linkage at the β position help increase the wavelength of absorption more?). We have successfully synthesized the pyrrole precursor with a β-azo linkage. This pyrrole precursor should allow us to complete the synthesis of the target model porphyrin in the future.

5

Synthesis of a Dipyrroyl-α,β-unsaturated Ketone: a Key Precursor to an Expanded Oxophlorin

Matthew J. Rush
Mentor: Sam Leung, Chemistry

Expanded oxophlorins are macrocycles resembling porphyrin, and to our knowledge no expanded oxophlorins have yet been synthesized. Expanded oxophlorins have the potential to be used as photosensitizers in photodynamic therapy (PDT) because of their similarities to the currently used PDT photosensitizers, which are porphyrin derivatives. Attempts were made at the synthesis of a dipyrroyl-α,β-unsaturated ketone, which is a key precursor to an expanded oxophlorin. Various reaction schemes were utilized in order to form this precursor. A method was devised using the Heck reaction to efficiently attach an α,β-unsaturated tert-butyl ester to a pyrrole. The tert--butyl ester was subsequently removed using trifluoroacetic acid to yield the carboxylic acid. Then the carboxylic acid was converted to the acid chloride using thionyl chloride. Eventually, this acid chloride will be attached to an α-free pyrrole via Friedel-Crafts acylation to yield the desired dipyrroyl-α,β-unsaturated ketone.

6

Anthropometric Somatotypes of Mission Valley School District: Health Outcome and Fitness Measures in a Rural School District in Kansas

Andrew Collie, Stafford Gosser, Laura McMullin, Courtney Partridge, Sara Peres, Tanner A. Speake, Catherine P. Speake, Carolyn Steinlage, and Krista Weishaar
Mentor: Young Sub Kwon, Kinesiology

The purpose of the present study was to verify somatotypical characteristics of K-12 students in the Mission Valley School District in Eskridge, KS. The somatotypical values of 197 students were elaborated by the Heath and Carter's method. Anthropometric data were taken to classify students in each grade in the following areas: Ectomorphy, Mesomorphy, and Endomorphy. Using these data we can chart and analyze how each grade compares to another. Anthropometric standardization reference manual (ASRM) and international biological program (IBP) references were pursued for antropometrical measurements. Triceps, subscapular, supraspinale measurements and the thickness of calf and skin, humerus bicondylar, femur bicondylar, biceps girth, weight, and height measurements were used in somatotypical calculations. Statistic program for social sciences (SPSS) was used for statistical evaluation and ANOVA analyses. Significant differences were found among grade groups. From these results, it appears that grades K-3 are ideal compared to other grade groups. It means this school district might implement student physical activity and wellness education programs into earlier grades such as 3rd grade.

7

The MgtE Transporter Contributes to Magnesium Homeostasis and Heat Tolerance in Bacillus subtilis

Corey Scott Suelter
Mentor: Andrew Herbig, Biology

Magnesium ions (Mg^{2+}) play fundamental roles in numerous biological processes including enzymatic and structural roles, and are necessary in all living cells. The gram-positive bacterium *Bacillus subtilis* expresses a homolog of the MgtE family of Mg^{2+} transporters that has a 34% amino acid identity to that in Thermus thermophilus. A *B. subtilis* strain deleted for mgtE (ΔmgtE) was used to study its role in Mg^{2+} transport and heat tolerance. Cells lacking MgtE exhibit growth defects in both low and high Mg^{2+} concentrations. Compared to other divalent cations, Mg^{2+} alone restores normal growth to the ΔmgtE strain. The ΔmgtE mutant was more sensitive compared to the isogenic wild-type (WT) when grown at 50 °C. Together, our data suggest that Mg^{2+} homeostasis may provide a protective effect during growth at elevated temperatures. We are currently constructing a plasmid that will permit xylose-inducible regulation of mgtE. This will allow us to test the effects of overexpression of MgtE on Mg^{2+} homeostasis and heat tolerance. We hypothesize that a *B. subtilis* strain with increased MgtE expression will be less susceptible to heat-killing compared to WT.

8

Continued 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.

9

A Closer Look into the Costa Concorida Crisis
Leah I. Piper
Mentor: Leslie Reynard, Communication *WTE*

I will be doing a case analysis of the Carnival Cruise Line's Costa Concordia that sank off of the coast of Italy in January 2012 to determine what image restoration forms of crisis management communication strategies the parties are using.

10

A Working Field Guide to the Ethnobotany of Northeast Kansas
Kimberly Courtner
Mentor: Jason Emry, Biology *WTE*

All archaeological sites have plant remains present, but few archaeologists have a working knowledge of plant identification. The goal of this project is to create a plant identification guide for plants that are commonly found in archeological digs in northeastern Kansas. A list of plants native to Kansas was compiled with an emphasis on those families or species that were utilized for food or medicinal purposes by Native American peoples and early settlers. To refine our list, we surveyed previous ethnobotanical studies of this region to determine which taxa are most commonly found in local archeological dig sites. During the course of this project the Washburn herbarium was digitally catalogued, making it available as a database of existing plants specimens. Representative samples from the herbarium were photographed and used in coordination with our plant list as pictorial examples to aid in the identification of the taxa. Because the herbarium contains many plant specimens from the 19th century, it is a valuable resource to historical archaeologists, enabling researchers to examine real, available specimens from the era. This project created a plant identification guide that will be useful to both amateur and experienced archaeologists alike.

11

Hippotherapy

Christine Logan
Mentor: Marilyn Masterson, School of Nursing

WTE

Hippotherapy is therapy done on a horse for those with intellectual and physical disabilities, focusing on working with children. I will be presenting how hippotherapy benefits this population using the bio-psycho-social-spiritual framework, or as I call it "the four pillars of hippotherapy". My target group is nurses, PT, and OT. I would like to make this group aware of the benefits of this therapy.

12

Do Carbonated Beverages Affect Endurance Athletes' Performance?

Jessica E. Kopp and Leah R. Talley
Mentor: Tracy Wagner, Biology

Many athletes are told by coaches that drinking carbonated beverages will affect performance. Certainly the effects of drinking soda right before an event (increased stomach pressure, possible nausea) would be uncomfortable and could affect performance, but what about effects at the cellular level? The Wagner lab has studied the effect of consuming carbonated beverages on lactate levels in the blood, as well as different measures of athletic performance. In the past, these studies have been run using short, maximal exertion protocols. These could easily lead to the production of other sources of acid, which might confound results. This study is being done to determine if similar results are seen when subjects are asked to perform endurance-type exercises to volitional fatigue. Each subject will be given the opportunity to ride a bike with increasing resistance. Resistance levels will start at a low of 50 watts, and rise 30 watts every 5 minutes. Subjects will be asked to continue pedaling at a minimum of 60 RPM until they can no longer do so. At each 5-minute interval, lactate levels and "Rate of Perceived Exertion" (RPE) will be recorded. The subject will complete two trials, one drinking Gatorade made with plain water and one with carbonated water. We will then compare these two sets of trials to determine if lactate levels, RPE, and maximal performance data are altered between the two treatments.

13

Sarcasm: Who Uses It? Who Likes It? Who Hates It?

Lauren S. Henry
Mentor: Greg Preuss, Psychology

WTE

Sarcasm has always been identified as a controversial type of humor. This comprehensive review of literature explores numerous theories and motivations behind sarcastic humor elicitation. In addition, this presentation will explore the many different reactions this provocative type of humor can have on disparate audiences in varying social contexts.

14

Analysis of an Outbreak of a Specialist Herbivore on the Patch Dynamics of the Common Paw Paw

Tyson Paulson
Mentor: Rodrigo Mercader, Biology

The effect of herbivorous insect population outbreaks on understory plant dynamics is relatively unknown. In particular, the influence of herbivore behavior on plant patch dynamics during outbreaks is poorly understood. During the summer of 2012, an outbreak of the asimina webworm moth, *Omphalocera munroei*, was observed at the Karlyle Woods (Shawnee Co., KS). The asimina webworm feeds exclusively on the common paw-paw, *Asimina triloba*, a patch forming clonal understory tree. A grid was established using regularly spaced coordinates to estimate the distribution of the infestation. Plant size and herbivore damage levels were recorded for 429 individual paw paws distributed in 9 clonally formed patches. Among sampled paw paws, 63.4% experienced levels of defoliation over 75%. Results indicate that individual size within a patch, neighbor size, and neighbor damage were significant predictors of infestation level. Results indicate a strong potential for moth ovipositional behavior and population size to influence patch dynamics.

15

Skill-Related Components of Fitness and Body Mass Index in Male SWAT Unit Members

Andrew Collie, Joseph D. Geha, Stafford Gosser, and Brett R. Johnson
Mentor: Young Sub Kwon, Kinesiology

Applying skill-related components of fitness like agility and speed to the specific tactical situation is beneficial to a SWAT team unit. The purpose was to explore the relationship of skill-related components of physical fitness on SWAT team members in normal (NO), overweight (OW), and obese (OB) BMI groups. It was hypothesized that there would be significant differences in skill-related components of physical fitness among different BMI groups. Twenty seven male SWAT team members completed a pro-agility run and 10yard dash for a skill-related component of physical fitness test. Significant differences were found in both pro-agility run and 10yard run test among different BMI group. In SWAT team members, reaction time did not have an impact; however, higher BMI and percent body fat affected the pro-agility run and 10yard dash performance. Therefore, in order to increase pro-agility run and 10yard dash, male law enforcement officers may need to reduce their fat mass and improve BMI level up to at least the overweight classification.

16

The Abolitionist Women of Kansas: Their Moral and Righteous Fight to Make the Kansas Territory a Free State

Deborah Newby
Mentor: Kelly Erby, History *WTE*

The abolitionist women of Kansas were strong and resolute that slavery must not be allowed in their Kansas Territory. These women, unlike women anywhere else, lived in the war zone known as Bleeding Kansas. They knew that no one was safe from the pro-slavery men who came to

town to cause violence. For Kansas to become a free state they must stand up and fight against slavery. The abolitionist women of Kansas would justify their political involvement in the most controversial matter of their time by arguing that abolitionism fell within a women's primary sphere of influence: morality. Notable abolitionist women Clarina I.H. Nichols, Julia Louise Lovejoy, Augusta Stewart, and Sara T. L. Robinson would use their moral influences to try and stop slavery swiftly and immediately. These women waged their fight with lectures, letters, and aiding those in the free-state process. Their letters to newspapers in the East, public speeches, organization of relief for Kansas settlers, and all around ability to garner support aided to their free state cause helped Kansas become a free state.

17

Cyclization to Form a Cross Protected Tetraazamacrcycle

Jenna M. Frick
Mentor: Shaun Schmidt, Chemistry

Macrocyclic complexes have been used for many years as both imaging agents and in radiotherapy. [4^6]Adamanzane is envisioned to be an alternative to the macrocycles currently used due to the advantages of its potential chemical inertness from the total encapsulation of the metal ion. One of the final steps in the process of forming this molecule is to complete ring formation of this macrocycle. It has been hypothesized that using an acid chloride and an amine could be used in the ring formation to form an amide linkage. This research is focused on using a model amine phenethylamine and a model carboxylic acid hydrocinnamic acid, to determine the most effective coupling agents and reaction conditions without a slow addition. These optimum conditions were then extended on the model compounds to millimolar concentrations and slow addition conditions necessary for cyclization. It was determined that the acid chloride was not stable enough to be used under slow addition and high dilution conditions, because it reacts back to a carboxylic acid. Therefore, using a carboxylic acid in amide formation is unreliable, so other pathways for ring formation will be explored in coming research.

18

Characterization of Advanced Perennial Wheat Amphiploids Via in situ Hybridization and Microsatellite Analysis

Casey R. Meyer
Mentor: Matthew Arterburn, Biology

WTE

Perennial wheat lines are generated through crosses between wheat (*Triticum aestivum*, 6n = 42) and its wild wheatgrass relatives such as *Thinopyrum ponticum* (10n = 70) and *Thinopyrum elongatum* (2n = 14). These plants have increased root mass and are of significant benefit in controlling soil erosion. The downside of perennial wheat is poorer end-use characteristics, particularly grain quality, due to alleles contributed by the non-domesticated wheatgrass parent. Collaborators at Washington State University have generated numerous perennial wheat lines containing the full perennial and annual wheat genome content. In this study we characterized a new perennial wheat line (SSJ-PFX) of unknown lineage that exhibits heightened apical dominance and has potential as a forage crop. We investigated 12 microsatellite loci with known polymorphic sequences in the E genome of *Th. elongatum* (2n=14) as a means of identifying specific chromosome arms in amphiploid lines that have been subjected to repeated generations of selection. We characterized SSJ-PFX using microsatellite PCR, karyotyping and genomic in situ hybridization (GISH). Our results demonstrate the utility of simple-sequence repeat PCR for

rapid screening of karyotypically unstable breeding populations while evaluating the genome content of a plant that exemplifies a unique approach to perennial wheat breeding that is independent of grain quality.

19

Golden Shiner Risk-Taking Behavior and Size

Trey M. Moss
Mentor: Rodrigo Mercader, Biology

Our appreciation of the importance individual variation in animal behavior can have on shoaling behavior has been rapidly increasing. Various studies conducted on shoaling fish such as the golden shiner, *Notemigonus crysoleucas*, have shown that one fish can assume a leadership role and strongly influence shoal behavior. For example, individuals prone to risk-taking can increase the likelihood that novel food sources are discovered and used by the group. Here, we were interested in understanding if, like many behavioral traits, risk-taking behavior is correlated with size. To do this we placed two golden shiners of varying sizes in an aquarium and presented a completely new food source presented in a novel way. They were then recorded and we were able to collect data of the size of the fishes and how long it took each one to investigate the new food source as well as which fish investigated it first.

20

Spread of the Bean Beetle, Callosobruchus mauculatus, in Laboratory Mesocosms

Molly A. Lykins
Mentor: Rodrigo Mercader, Biology

The ability to predict how local habitat variation affects the expansion of newly founded populations is essential for efficiently targeting resources to prevent the spread of invasive species. Invasive species models generally consider the spread of the invasive in terms of both local demography and dispersal, and how those two interact. An underlying message in these models is the importance of the interaction between increased dispersal and reduced population growth expected with varying resource quality. Unfortunately, minimal information relating those two factors currently exists, and even fewer instances of replicated invasions to test these effects. Here we use a model system consisting of laboratory mesocosms of the bean beetle, *Callosobruchus mauculatus*, to test the effects of resource quality on spread in repeated invasions. Specifically, we look at adult dispersal, ovipositional behavior, and larval development of the bean beetle on three hosts; mung beans (preferred host), black eyed peas (secondary host), and chick peas (marginal host).

21

Carbonated Beverages: H^+ Intake and Removal to Maintain pH Homeostasis

Yu Shen
Mentor: Paul Wagner, Biology

In recent years, making soda with products like the SodaStream® has become very popular. People enjoy being able to vary the flavor and carbonation to their own preferences. We had two basic questions we were interested in answering. 1) Does adding more carbonation to the water change the pH? 2) How is the carbonation (and H^+) eliminated from the body once it is

consumed in the form of the drink? To answer the first question, we will vary the amount of carbonation. (1 to 10 "buzzes" as recommended by the SodaStream® manufacturer.) We will then measure the pH at each level of carbonation to determine the relationship between "buzzes" and $[H^+]$ (pH of the solution). This will let us know if there is a difference in $[H^+]$ consumed, based on the level of carbonation in the drink. To answer the second question, we will use two different methods. We will first ask subjects to come in and allow us to measure their respiratory rates and amount of oxygen consumed/carbon dioxide produced. After this baseline measurement, the subjects will drink a bottle of Gatorade made with either plain or carbonated water (10 buzzes). We will again measure their respiratory values and compare these to the baseline levels to determine if the acid is being removed via the respiratory system. Secondly, we will ask students to take a urine sample before drinking one of the Gatorade beverages, and then take urine samples afterwards to determine if acid is being removed by the renal system.

22

Formation of High-Efficency 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 QDs were produced with CdSe core diameters of 2.94 nm, and coated with a ZnS shell several monolayers thick. These dots were purified and the initial trioctylphosphine oxide ligands were exchanged with 11-mercaptoundecanoic acid in order to prepare monolithic wet gels. These wet gels were dried with liquid carbon dioxide 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 conductive adhesive which will then be used to adhere a copper electrode to the bottom of the synthesized QD aerogels. Once constructed, the QD aerogel PV cell will then be tested for functionality and efficiency. Synthetic steps toward the application of quantum dots (QD) in a photovoltaic cell (PV) are reported. CdSe/ZnS core/shell QDs were produced with CdSe core diameters of 2.94 nm, and coated with a ZnS shell several monolayers thick. These dots were purified and the initial trioctylphosphine oxide ligands were exchanged with 11-mercaptoundecanoic acid in order to prepare monolithic wet gels. These wet gels were dried with liquid carbon dioxide 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 conductive adhesive which will then be used to adhere a copper electrode to the bottom of the synthesized QD aerogels. Once constructed, the QD aerogel PV cell will then be tested for functionality and efficiency.

23

Defining the Biological Roles of CorA and CorB in Metal Ion Homeostasis in Bacillus subtilis

Makayla Horn
Mentor: Andrew Herbig, Biology

All organisms strive to maintain an optimal intracellular concentration of metal ions. Cells may starve if metal levels are too low, whereas high concentrations have toxic effects. In order regulate metal ion homeostasis, cells produce specific proteins that allow the import or efflux of

metal ions to avoid deficiency and toxicity, respectively. We are interested in how the bacterium *Bacillus subtilis* maintains metal ion homeostasis. Two *B. subtilis* proteins, CorA and CorB, are related to a large family of proteins implicated in delivering magnesium (Mg) to cells. Our working hypothesis stated that both of these proteins would also act to import Mg into B. subtilis. Using bacteriological techniques, our experiments indicate that CorA and CorB contribute to metal ion homeostasis but not by managing levels of cellular Mg. Wild-type, corA, and corB mutant strains showed identical growth rates in low Mg conditions. Our evidence also indicates that CorB may act in metal ion efflux, not import, as cells defective in CorB function are more resistant to metal chelation by EDTA. Cells deleted for either corA or corB genes also display differential resistance to cobalt, indicating a role for these genes in cobalt transport. In other results, we report the effects of deleting the MgtE Mg transporter on endospore germination rates in *B. subtilis*.

24

Quantitative Analysis of Matrix Metalloproteinase–27 Gene Expression in the Developing Chick Limb

Leslie Taylor
Mentor: Duane Hinton, Biology

We are interested in understanding how digits are formed during limb development. There is much known about the apoptosis of cells occupying the interdigital spaces, but little is known about how the extracellular matrix (ECM) is degraded. We are interested in examining the expression of an ECM degrading enzyme called matrix metalloproteinase-27 (MMP27). We will determine the expression of MMP-27 throughout the development of the chicken limb by real-time PCR. A series of chicken eggs are incubated and embryonic limbs are isolated throughout a fifteen-day period. These samples are run through TRI reagent to isolate the RNA that was present in those cells at the time of sampling. The RNA is reverse transcribed to produce cDNA, which is then PCR amplified using a quantifying thermocycler. This will allow us to ascertain not just that MMP-27 was being expressed at a certain time but also how much it was being expressed. This additional information will prove useful in telling how and when MMp-27 is most important in this process.

25

Electronic Medical Records: A Patient Bonus or Privacy Nightmare?

Chantelle Darrow
Mentor: Barb Quaney, Allied Health *WTE*

The implementation of electronic health care records is occurring nationwide throughout various health care facilities. Some health care professionals are concerned of the impact of this digital form of recordkeeping for the delivery of healthcare. Our aim is to investigate the benefits and/or negative impacts of the electronic medical record from the perspective of the healthcare provider. The purpose of this study is to determine the effectiveness of electronic medical records (i.e., "EPIC" system) on healthcare delivery and patient response at a local hospital. We hypothesize that digital electronic medical records will increase efficiency, reduce medical errors, and advance the accuracy of the medical record. We will assess the effectiveness of electronic compared to paper records in a hospital setting from the viewpoint of the medical staff. We will explain the advantages and the disadvantages of converting to electronic records from the centuries-old process of paper medical charts on healthcare delivery.

26

Swan-Ganz Catheterization

Rhiannon Rae Flinn
Mentor: Jane Robinson, School of Nursing

WTE

Swan-Ganz catheterization (SGC) is “a soft, flow-directed catheter with a balloon at the tip for measuring pulmonary arterial pressures, right atrial pressures, left atrial pressures, reflected left ventricular end-diastolic pressure, and cardiac output” (Miller-Keane & O’Toole, 2003). SGC is indicated in patients with cardiogenic shock, discordant ventricular failure, severe chronic heart failure, suspected “pseudosepsis,” and other critical conditions. Routine use in high-risk cardiac and non-cardiac patients is not recommended. There are risks involved. Potential complications of SGC are perforated pulmonary artery, decline in organ function, and risk for knotting of the catheter. The benefits of catheterization include around-the-clock hemodynamic monitoring providing data to direct courses of treatment (Chatterjee, 2009). Before consenting to this invasive procedure, it is important the patient be able to compare the risks and benefits. Without proper understanding, the patient’s practice of autonomy is invalid due to lack of informed consent. It is crucial for the nurse to assess the patient’s understanding of SGC before obtaining written consent because our ultimate goal as nurses is to provide the utmost beneficence to our patients.

27

Coaches and Concussions

Stephanie K. Madden
Mentor: Lori Edwards, School of Nursing

WTE

My topic of choice is making concussion management training mandatory for high school coaches, as many coaches do not even have basic concussion management training and do not know how to recognize concussion symptoms, when to take the player out of a game, or when to let the player back in the game. Most high schools do not have enough certified personnel to be at every athletic game and many times concussions go missed or not treated properly because of the lack of trained individuals present. The incidence of concussions has increased dramatically throughout the years and research is showing devastating results either occurring immediately after the injury or much later in life. By educating coaches on the dangers of concussions, warning signs, when to get help, what to do once a concussion is suspected, and when to put a player back in the game, the outcomes of the devastating injury will improve.

28

Posttraumatic Stress Disorder (PTSD) Awareness and Importance

Kaitlyn Rochelle Crews
Mentor: Marilyn Masterson, School of Nursing

WTE

What is Posttraumatic Stress Disorder (PTSD)? It is an anxiety disorder resulting from an individual being exposed to a traumatic event. This disorder is characterized by re-experiencing the event, numbing/avoiding, and hyper-arousal. PTSD can affect anyone and the National Center for PTSD has found that about 60% of men and 50% of women will be exposed to at least one trauma in their lifetime and 8% of the population will have PTSD from it. There are several myths surrounding PTSD such as "PTSD only affects war veterans" and "PTSD is a sign of

weakness." The purpose of this poster presentation is to debunk these myths as well as increase knowledge on this disorder. This topic is important for individuals to know for several reasons. One being that as stated before many individuals are exposed to trauma at least once in their lifetime which can precipitate this disorder. Another is PTSD is under-recognized by practitioners. Because of this fact, many will not receive the appropriate mental health care. You may have a family member, friend, or coworker who may have PTSD, but have not been properly diagnosed. Being aware of these symptoms and prevalence rates can be crucial in getting those with PTSD the care and treatment that they need.

29

Happy Hands Hand Washing

Samantha L. Davis and Stefanie A. Dawkins
Mentor: Patricia Joyce, School of Nursing

WTE

This project was done as a change project for Leadership class. Our project “Happy Hands” hand washing was designed to increase the awareness of hand washing for preschool students and staff, and to maximize understanding of how to implement proper hand washing techniques. First, we completed a review of literature regarding hand washing and its effects on absenteeism among preschool students. Next we chose a preschool, brainstormed ideas for a lesson plan, came up with survey questions for measurable outcomes, and created a lesson plan that would be applicable to the preschool age group. In creating our lesson plan, we found ideas from the K-State Extension office and purchased educational materials for the kit from the Brevis website. After completing our lesson, we distributed a staff survey asking if they enjoyed the program and if they believed the lesson was sustainable. We also created a survey that would be applicable to the students and would demonstrate what they have learned. In order to complete our project, our group met once a week until we presented our project.

30

Making the Change: Denture Loss Prevention

Rhiannon Rae Flinn, Kristina Hanson, Michelle Renea Langer, and Jessica Sievers
Mentor: Bonnie Peterson, School of Nursing

WTE

Denture loss can be a serious problem for patients in the hospital because it affects their safety, nutritional status, mastication, communication, and quality of life. In a review of literature it has been determined that "there is a need for all staff working in a hospital to be made aware of the need to guard against the possibility of dentures being lost" (Michaeli 2007). Due to the seriousness of this issue we implemented the change of placing a "Dentures" label outside of patient's rooms who have dentures. This change increased staff awareness and provided necessary staff education about the health benefits of dentures, which in turn increased the accurate documentation of denture status and the overall well being and safety of the patients with dentures.

31

Changing Healthcare in the United States: Is Taiwan's Model an Option?
Alayna Nigus
Mentor: Zach Frank, Allied Health

WTE

The controversy revolving around the United States pending national health care system under the Patient Protection and Affordable Care Act, signed by President Obama in March of 2010, continues as people are divided about the potential outcome of this legislation. National health care in the United States is not a new idea; several influential individuals in history have tried to implement such a system without success due to skeptics. In delving deeper into successful national health care systems in different countries, specifically Taiwan, the United States can utilize information to potentially build our inevitable national system and control and decrease national health care expenditures. The future of our pending system is still in question, and without the influence of successes/failures of other nations, the unknown is our nation's biggest disadvantage.

32

Inscape 2013
Tess Wilson
Mentor: Thomas Averill, English

For Creative Writing majors, the senior capstone project includes a position on the editing staff of *Inscape*, a Topeka literary and art magazine. This extraordinary opportunity allows undergraduates the chance to make editorial decisions and work as a team towards a printed, final product. Four students who have been involved with the magazine in a variety of ways – from editing to design to marketing – will share their experiences.

33

Chemigrams: Making Art With Photographic Chemicals
Nicole J. Wilson, Drew Douglas Simons, and Qiwen Wang
Mentor: Mary Dorsey Wanless, Art

The chemigram process was discovered by Pierre Cordier in 1956. It is a unique process that uses resists on photographic paper resulting in painterly photos. A resist can hold back the chemical effects of developer and fixer on black and white photo paper. We have been experimenting with numerous resists, such as food, chemicals, and the effects of burning. The results are unique artworks, which may be presented as a single piece or continued into a mixed media work.

34

GPGPU-Accelerated Ray-Tracing using CUDA
Tyler W. Wade
Mentor: David Bainum, Computer Information Sciences

Ray-tracing is a technique for rendering visual scenes with a high degree of visual fidelity, especially with regards to reflections and refractions. In this project, a ray-tracing rendering engine will be implemented using CUDA. CUDA is an architecture for performing general purpose computation on modern graphics processors, which are both highly parallel in nature and well suited for floating-point calculations. The goal of this project is to achieve favorable levels of performance compared to similarly complex CPU-based implementations.

35

Logic Gate Simulation of MARIE Instruction Set
Michael J. Burns
Mentor: Bruce Mechtly, Computer Information Sciences

This is a simulation of the MARIE Instruction Set made with the Logisim logic gate simulator. MARIE is a simple, 16-bit accumulator-based computer architecture which is used to teach Washburn's CIS students the fundamentals of assembly languages and how computers operate at the lowest level. Several programs will be demonstrated live, ranging from simple arithmetic operations to more complex programs, such as calculating the Fibonacci series.

36

Artifacts of Reflection- Research in Ceramic Concept, Material, and Form
Eleanor Marie Heimbaugh
Mentor: Glenda Taylor, Art

The works in the series, Artifacts of Reflection, are the result of extensive research, observation, and discovery. My art says what I cannot say in words. The ultimate goals of this series include: stirring the viewer’s imagination, heightening their awareness of everyday detail, and giving them the same satisfaction of discovery while viewing the work that I have while making it. The quest for a means to communicate these goals begins with researching an idea in the studio. As an artistic researcher, I am looking for the most effective form of expression to convey my concept. This means letting the concept evolve across media. The process of changing from medium to medium is important for me because it allows time to really focus and grasp the concept at hand. The process is well underway when I am able to interpret something ordinary as extraordinary. Sometimes, by the end of this process I discover a new concept that takes precedence over the original. It is through this journey of research that new ideas are born and previous ideas are finally understood.

Reception

3:40 p.m. – 5:00 p.m.

(concurrent with the Poster Session)

Memorial Union – Washburn A

"A Taste of Kenya"

Menu

Vegetable Samosas
East African Donuts
Kachumbari Salad
West African Peanut & Sweet Potato Stew with Craisins
Nyama Choma (grilled flank steak)
Chapati Bread - Wali (coconut Rice)
MiniSouth African Milk Tart
South African Ginger Cookies
Piri Piri Hot Sauce (like Siracha)
Iced Black Chai Tea
Limeade
Ice water

Washburn Art Department Student Exhibit 2013

Mulvane Art Museum
April 5 – June 9, 2013

Free and open to the public

This is an exhibit juried by
Dylan J. Beck, Assistant Professor & Ceramics Area Chair
at Kansas State University, Manhattan, KS

Apeiron Committee 2013

Shaun Schmidt, Chair
Administrative Support by Joyce Hutchins

Print Materials and Program
- Erin Chamberlain (Chair)
- Matt Arterburn
- Paul Byrne
- Donna LaLonde
- Sam Leung

Food and Reception
- MaryDorsey Wanless (Chair)
- Denise Ottinger
- Ann Marie Snook
- Sarah Ubel

Poster Presentations
- Brian Thomas (Chair)
- Kevin Charlwood
- Young Sub Kwon
- Rodrigo Mercader
- Harrison Watts

Oral Presentations
- Sharla Blank (Chair)
- Susan Bjerke
- Yvette Jenkins
- John Paul
- Tony Silvestri

Fine Arts Presentations
- Courtney Sullivan (Chair)
- Chris Kelts
- Kelly Watt
- Penny Weiner

Publicity
- Regina Cassell (Chair)
- Bassima Schbley

Web Content and Registrations
- Bruce Mechtly (Chair)
- Steve Black

Library Representaive
- Lori Rognlie

Student Representative
- Bonnie McKee

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