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## 2017 Academic Excellence Showcase Proceedings

Western Oregon University

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THURSDAY · JUNE 1 · 2017

12<sup>TH</sup> ANNUAL

# ACADEMIC EXCELLENCE SHOWCASE

A Conference of Student Work

POSTERS › TALKS › PERFORMANCES

FEATURING A SPECIAL  
PRESIDENTIAL PLENARY:

An exhibition of eclipse-themed student work with  
an introductory lecture by WOU faculty

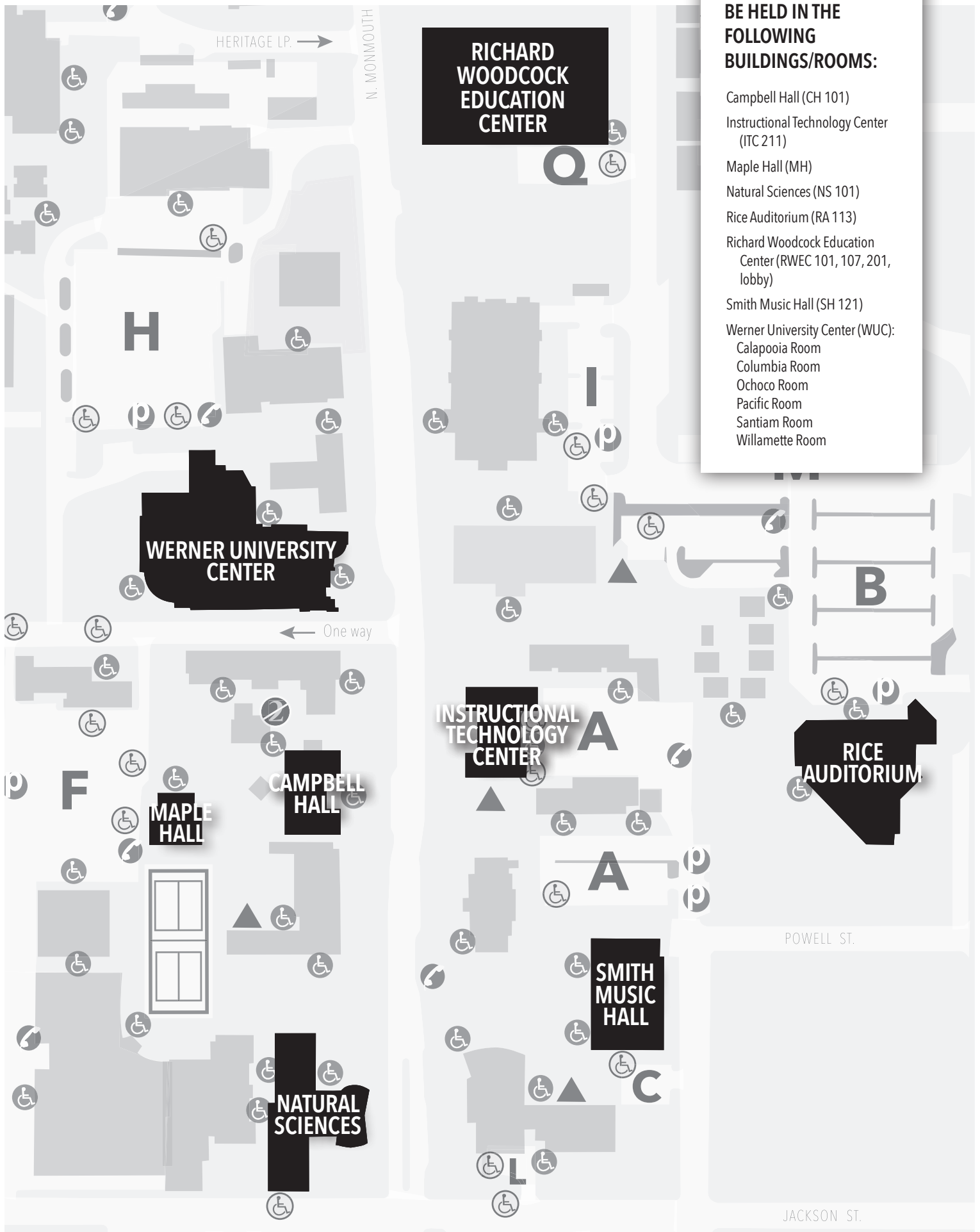
[wou.edu/aes](http://wou.edu/aes)

**pire**  
Program for Undergraduate  
Research Experiences



 **Western Oregon**  
UNIVERSITY

# INSET OF CAMPUS MAP



**AES EVENTS WILL BE HELD IN THE FOLLOWING BUILDINGS/ROOMS:**

- Campbell Hall (CH 101)
- Instructional Technology Center (ITC 211)
- Maple Hall (MH)
- Natural Sciences (NS 101)
- Rice Auditorium (RA 113)
- Richard Woodcock Education Center (RWEC 101, 107, 201, lobby)
- Smith Music Hall (SH 121)
- Werner University Center (WUC):
  - Calapooia Room
  - Columbia Room
  - Ochoco Room
  - Pacific Room
  - Santiam Room
  - Willamette Room

**RICHARD WOODCOCK EDUCATION CENTER**

**WERNER UNIVERSITY CENTER**

**INSTRUCTIONAL TECHNOLOGY CENTER**

**RICE AUDITORIUM**

**SMITH MUSIC HALL**

**NATURAL SCIENCES**

**MAPLE HALL**

**CAMPBELL HALL**

HERITAGE LP. →

N. MONMOUTH

← One way

POWELL ST.

JACKSON ST.

# ACADEMIC EXCELLENCE SHOWCASE

THURSDAY · JUNE 1 · 2017

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## A message from Rex Fuller, president, Western Oregon University

This year's Academic Excellence Showcase marks its 12th anniversary. This long-standing tradition is a fundamental aspect of Western's commitment to engaged learning. The presentations by our students provide strong evidence that Western Oregon University is, first and foremost, a university dedicated to student learning.

At Western, students are encouraged to explore the practical application of their studies under the guidance of faculty by engaging in professional-level research. Some of our students whose projects are abstracted in this publication will go on to present their work before state, regional or even national conferences. Some will be published in WOU's PURE Insights, a competitive journal of student work. Still others will be presenting work that has become the basis of a lifetime pursuit and passion.

Whatever comes after the Academic Excellence Showcase, these students are the embodiment of a thorough education that stimulates lifelong learning and exploration. I congratulate our faculty who motivate and engage our students to take their classroom experience on a journey that transcends the boundaries of the traditional classroom.

The Academic Excellence Showcase is one the university's highlights during the academic year. I want to thank the students who have chosen to share their work with us and the faculty for nurturing and guiding the pursuits of our students. Western Oregon University commends your dedication and we are proud of all you do.

### SPECIAL EVENTS:

8:30 to 9 a.m., WUC Willamette Room

#### **Phi Kappa Phi First Year Writing Awards**

Awards for outstanding essays produced in Writing 122 and 115.

11:15 to 11:45 a.m., WUC Willamette Room

#### **Peter Sears Poetry Prize and Meyer Prize for Excellence in Literature**

Awards for the best poems written by an WOU undergraduate and awards for the best essays in the study of literature

11:45 to 1:15 p.m., RWEC 101

#### **Health and Exercise Science Outstanding Student Award Reception**

Outstanding majors in Community Health and Exercise Science are recognized and celebrated for their academic achievement, professional development, community service and leadership experience.

1 to 2 p.m., WUC Columbia Room

#### **The Ethics of Caring for People in Uncaring Places**

This presentation explores the ethics of returning traumatized soldiers to settings known to produce trauma through a documentary film, titled *Mind Zone: Therapists Behind the Front Lines*. Psychologist Jan Haaken discusses the relevance of ethical issues in war zones to caregiving work on the home front.

7:30 p.m., Smith Recital Hall

#### **Guitar & Chamber Ensemble**

The Western Oregon University Guitar Ensemble is now in its 15th year, performing a wide variety of music from Bach to Nirvana, original compositions and arrangements of TV and video game themes. The ensemble is directed by Christopher Weitach, WOU professor of guitar.

## A message from Dr. Stephen Scheck, provost and vice president for academic affairs, Western Oregon University

Today's Academic Excellence Showcase provides compelling snapshots of the academic discoveries that take place every day at WOU -- on stage, in the lab, at the library or in the field. We are a place where the faculty encourages students to view learning as a dynamic process that extends beyond the traditional classroom, where students are urged to pursue their interests and to commit to a quest of creativity and inquiry. Today's showcase is vibrant evidence of that intellectual and personal growth, illustrating the richness in diversity of scholarship.

It is a pleasure for me both to acknowledge the efforts of our students presenting their work today and to convey my appreciation to our faculty for their support of our students. I strongly encourage those students participating today as observers to become involved and to take advantage of being at WOU, where professors are eager to mentor you in your own engagement of discovery.

### *Don't want to carry around a proceedings from session to session?*

For an electronic showcase schedule and to download events to your mobile device or calendar, go to:

[http://digitalcommons.wou.edu/aes\\_event/2017](http://digitalcommons.wou.edu/aes_event/2017)

## MAURICE UNDERGRADUATE

### \$5,000 AWARD

Werner University Center, Santiam Room  
3 - 4 p.m.

Please join us at this reception to celebrate the Maurice Challenge Competition, including the presentation of the \$5,000 award to the student winner of the 2017 competition, followed by a brief overview of the winning project by its students. Learn more about the competition, its student winners and how more students might participate in the future.

This year's finalists and their projects are:

#### **Cassidy Bek**

Personal Training at WOU

#### **Sandy Estelle Bazaldua and Juan Navarro**

Dreamers Awareness Project

#### **Cristina Garcia Toche and Mayra Mendoza**

Let's Make College Happen

#### **Ranjit Kayastha**

Bridges in Nepal

#### **Tami Montemayor**

CaN, Church and Neighborhood

## A message from the Western Oregon University Chapter of The Honor Society of Phi Kappa Phi

Western Oregon University's chapter of Phi Kappa Phi is pleased and honored to provide ongoing support to the university's important tradition of recognizing and celebrating student excellence through the 2017 Academic Excellence Showcase.

Founded in 1897, Phi Kappa Phi (PKP) is the nation's oldest, largest and most selective all-discipline honor society. PKP inducts approximately 30,000 students, faculty, professional staff and alumni each year. The society has more than 300 chapters ranging from Maine to the Philippines and from Alaska to Puerto Rico. Membership is by invitation only to the top 10 percent of seniors and graduate students and 7.5 percent of juniors. Faculty, professional staff and alumni who have achieved scholarly distinction also qualify. WOU's chapter was founded in 1979 and held the first initiation on May 9, 1980. For over 30 years, Phi Kappa Phi – with the support of its members, as well as faculty and staff across campus – has sponsored academic excellence on campus, celebrating our students' outstanding research and creative endeavors.



CO-SPONSOR OF THE 2017 ACADEMIC EXCELLENCE SHOWCASE SHOWCASE

## A message from the Western Oregon University Program for Undergraduate Research Experiences

The Program for Undergraduate Research Experiences (PURE) began in 2004, when a group of faculty formed a task force to examine the state of undergraduate scholarship at Western Oregon University. We were impressed by what we saw happening across the campus. We recognized that the research experience takes many forms – academic papers, exhibits, posters, laboratory investigations, performances and service learning projects, to name just a few. The PURE task force identified numerous ways to help facilitate and enhance undergraduate research experiences at WOU. One recommendation – to facilitate greater participation by the entire campus in celebrating our students' accomplishments – resulted in Academic Excellence Day. The Honor Society of Phi Kappa Phi, which had organized an Academic Excellence event for a number of years, partnered with PURE to sponsor the annual Academic Excellence Showcase. With our combined resources and planning committee, we developed a campus-wide event that has become a hallmark of the outstanding undergraduate experience offered at WOU. Again this year, the campus community has responded enthusiastically to the call for participation. The Faculty Senate has encouraged faculty to cancel classes so students may attend and present at the showcase. Nearly 100 faculty and staff members from across campus have volunteered their time and energy to serve as session chairs and faculty sponsors. As a result of their efforts, more than 400 students are scheduled to present at this year's showcase. This exciting event celebrates some of the most remarkable academic accomplishments made by WOU students. We hope you will join us in attending as many sessions as possible and congratulating students on their outstanding scholarship.



SPONSOR OF THE 2017 ACADEMIC EXCELLENCE SHOWCASE SHOWCASE

## INITIATIVE



Far left: Undergraduate students Maria Vargas and Sylvia Garcia won for their project, a network named L.E.A.D., (Learning, Engaging, Achieving, Diversifying). Honorable mention: Nathaniel Dunaway, for his entry: Student Short Film Festival and Jessica Yarely Flores, for Positively Impacting the Lives of Others. (2014). Right: Alfred Maurice with challenge winner Joshwa Salvador, who won for his project *Food Waste and Food Insecurities*.

### Maurice Challenge Committee

Daryl Thomas, chair  
Bob Hautala and Patricia Flatt, faculty members  
Adam Bishop, Corbin Garner, Celia Johnson, Obed Lopez and Amanda Short, student members

This unique competition offers WOU undergraduate students a rare opportunity to win an unrestricted cash award based on their ability to define a problem of importance to them and to pursue solving that problem relying on their creativity, innovation and execution. Participating in this competition helps students broaden their knowledge about themselves and their abilities, as well as learn

more about the global community. The winner(s) are chosen by the committee based on the a) innovation, design and execution of the project over its implementation, b) depth of knowledge gained through the student's project, c) impact of the project on the campus and community and d) the quality, clarity and appropriateness of the analysis report and presentation to the committee.

## ECLIPSE PLENARY

### PRESIDENTIAL PLENARY

Sponsored by: President Rex Fuller, Melinda Shimizu, Laurie Burton and PURE (Program for Undergraduate Research Experience)

4 to 6 p.m.

Werner University Center, Columbia Room

### *Bamboleo!*

On August 21 of this year, Western Oregon University will be in the path of totality for a solar eclipse. This talk explains what totality means, how one can be in the path of totality and how to view an eclipse safely. Bamboleo means to wobble and a key piece to this story is the "wobble" of the orbits of the moon and Earth. Other pieces to the story include lunar eclipses, the definitions for different types of solar eclipses and why we see phases of the moon. In addition to the scientific explanation of eclipses, a brief survey of historical eclipses and their roles in society and culture is included. Please join me as we explore this once-in-a-lifetime opportunity!

About Melinda Shimizu: I am an assistant professor of Earth Science and GIS at Western Oregon University, starting fall of 2014. My research projects include GIS education, data assessment, decision science, virtual and geographic dissemination of information and tectonic geomorphology. I earned my Ph.D. in Geographical Sciences from Arizona State University in 2014 under the guidance of Professor Elizabeth Wentz. My dissertation applied a geodesign approach to spatial decision support system design with a case study illustration for watershed management in the Niantic River watershed in Connecticut. I earned my M.S. in Geological Sciences from the School of Earth and Space Exploration, also at Arizona State University. I completed the degree in 2008 under the guidance of Professor Kelin Whipple.

My thesis used GIS to explore the relationship between hanging valley heights and tectonic rebound. I also completed a GIS Certificate that same year. My interest in geology began at Central Washington University, when I took an Intro Geology course from Professor Tim Melbourne. Under his mentorship, I completed undergraduate research in seismology and geophysics and I earned my B.S. in Geology from CWU in 2006.



Melissa Shimizu

### Kathryn Sinor

### Anthropology

*Poem: Total Solar Eclipse*

A poem related to the August 2017 total solar eclipse.

Faculty sponsor: Henry Hughes

### Nicole Inman

### Interdisciplinary Studies

*Poster: Famous Total Solar Eclipses in History*

Eclipses have been an important part of history and at times have had immense impacts on human societies. Noted throughout literature and science, these events have been cited with a range of outcomes from ending wars, to marking the death of historically prominent people, to greater gains in scientific knowledge. There are three main types of solar eclipses: partial, annular and total. A partial eclipse occurs when only part of the sun is blocked by the moon. An annular eclipse occurs when the moon appears smaller than the sun, because it is slightly further from Earth. Because it appears smaller, a thin ring of the sun remains visible around the moon during an annular eclipse. In a total eclipse, the moon blocks the sun perfectly, casting a shadow onto Earth. Areas that fall within this shadow will experience complete darkness for seconds or minutes due to the eclipse. This poster presents only the most famous total solar eclipses and what they were known for.

Faculty sponsor: Melinda Shimizu

### Nicole Inman

### Interdisciplinary Studies

*Poster: Ancient Explanations for Eclipses*

Ancient cultures had many fascinating stories to explain eclipses. Many of these cultures, even across continents or on the other side of the world, shared similar themes. And most, but not all, also viewed them as ominous omens or "devils" needing to be chased away since the sun is a life-giving force on Earth and to lose it, even for a moment, would have been terrifying to societies that had no scientific understanding of them. From the gory to the neat to the downright odd, here are the legends people had for eclipses from time gone by.

Faculty sponsor: Melinda Shimizu


### Landon Glynn

### Earth Science

*Poster: Jovian Eclipses*

Many people enjoy experiencing of the wonderful spectacle of solar eclipses on the Earth, but neighboring planets also grant eclipse viewing experiences many people overlook. Jupiter has a lunar arrangement that allows us to view eclipses cast onto its surface and in some cases, we can observe double or triple shadow events. However, timing and location is critical to a successful shadow event viewing. In order to observe a double shadow event, Jupiter needs to be perfectly visible from the region of the Earth the event is being viewed from and two of Jupiter's moons need to be casting shadows in Jupiter's surface. Viewing a single shadow event only requires a single moon to be casting a shadow and are much more common. This project will bring together data in order to display the dates and times in which single and double shadow event viewing will be optimal in the Pacific Northwest region for the rest of 2017 and 2018.

Faculty sponsor: Melinda Shimizu

AUGUST 21 • Monmouth & Independence  
**eclipse2017**  
  
wou.edu/eclipse

**Marvel Davis**  
**Jessica Donahue**

**Chemistry**

*Poster: Eclipse and Eye Safety*

The purpose of this presentation is to inform the general public about the dangers of viewing the sun during a solar eclipse and preventive measures taken to protect the eyes from permanent damage. Even though one cannot feel the pain of the damage from the sun, direct viewing can cause irreparable damage in mere seconds. There are several ways that an eclipse can be viewed safely without the possibility of short-term or long-term eye damage. Additionally, the lessons for safe sun-viewing provided here apply at all times not just during eclipses.

Faculty sponsor: Melinda Shimizu

**Morgan Roan**  
**Makenna Cleaver**  
**Jose Angulo**

**Mathematics Teacher Education**

*Poster: Mayan Eclipse Predictions*

The Mayans were one of many Mesoamerican civilizations throughout the years 6000 B.C. all the way up to 1500 A.D. Although they were part of such an ancient time period, they proved to be a very advanced culture. Astronomy and mathematics were essential for the Mayans. Their lives revolved around the outer world and because of this, they learned to calculate the Earth's rotation and were able to foresee the dates of eclipses almost as exactly as our calculations today. In this poster, we will investigate the Mayan culture and how it predicted lunar and solar eclipses. More specifically, we will be looking at the advanced mathematics behind the Mayan predictions. We will be studying the table of predictions of solar eclipses the Mayans made, as well as explore how the Mayans used their unique base-20 number system connected to the creation of their calendar and their predictions of eclipses.

Faculty sponsor: Laurie Burton

**Emily Carlston**

**Earth Science**

*Poster: Everything's Spinning: Planetary Motion's Effect on Lunar Phenomenon*

Understanding the natural world is a key to sustaining life. Often our understanding does not go beyond what we can tangibly see and touch, with the moon seemingly out of reach for many. Though the moon holds a special place to those who enjoy the night sky, it does much more than just provide a picturesque view. The moon affects the world around us in many ways during its lunar cycle, but how does it all work? The important details of this can be described using the concept of planetary motion that includes key aspects of the way the moon and Earth interact. The concept of planetary motion can also explain how eclipses occur, the different types of orbit and the fact that only one face of the moon is ever visible from Earth. Eclipses, both solar and lunar, are shadows of planetary bodies such as the moon and Earth. These shadows are created as they move past each other in space during their orbit. As complex as these ideas may seem, they are quite simple once broken down. Eclipses and other lunar phenomena will be explained in this poster using the concept of planetary motion.

Faculty sponsor: Melinda Shimizu

**Alec Smith**  
**Jazmin Chang**  
**Ashley Reardon**

**Chemistry**

*Poster: Ancient Chinese Astronomers Solar Eclipse Predictions*

Early Chinese astronomers believed events in the sky had a direct correlation to events on Earth. If a comet, or an eclipse were to appear, it was thought that something important and unexpected was about to happen on Earth, perhaps something like a major battle. What people don't realize is the importance of

eclipses to our planet and its environment. Not only does an eclipse cause a huge shadow to form across our planet's surface, it can affect weather and wind direction and from what we've discovered, many cultures are fascinated with the phases of eclipses. Chinese astronomers measured distances between the poles, measured the positions of the moon and dedicated years of effort to solve this enigma we still encounter today.

Faculty sponsor: Laurie Burton

**Taylor Hojnowski**  
**Alek Showalter**

**Chemistry**  
**Criminal Justice**

*Poster: How the Indians Predicted Solar Eclipses*

The earliest known document that mentions mathematics in India ever found, the Rigveda, suggests that mathematics was studied in India around 1400 B.C. The most prominent mathematician of the time was Aryabhata, who predicted solar and lunar eclipses, discovered that the sun is 400 times farther away from the Earth than the moon is and contributed to the explanation of the luminosity of the moon and the planets. Aryabhata used trigonometry to explain his findings about solar and lunar eclipses. In fact, he was influential in the definitions of sine, cosine, inverse sine and inverse cosine. It can be surmised that the Indians contributed a great deal to mathematics, especially in the field of trigonometry.

Faculty sponsor: Laurie Burton

**Eva Batenhorst**  
**Josh Omer**  
**Matt Strutz**

**Biology**  
**Computer Science**  
**Biology**

*Poster: Egyptian Solar Eclipse Predictions*

We will be covering Egyptian culture and how they studied celestial bodies. Our focus will be on how they studied stars and predicted solar eclipses. We will describe the mathematics they used to study astronomy. We will also cover how scientists today can confirm that the Egyptians studied the stars and eclipses by the historical findings throughout the years. We will also be covering how Greek culture heavily influenced Egyptian mathematics and influenced our ability to study ancient Egypt before its contact with Greece. We will focus on ancient Egyptian artifacts believed to be used for keeping track of the stars and proving that ancient Egyptians cared about the cosmos such as sundials, astronomical tomb ceilings and water clocks.

Faculty sponsor: Laurie Burton

**Ryp Ring**  
**Zach Coblens**  
**Will Paige**

**Computer Science**  
**Biology**  
**Chemistry**

*Poster: Solar Eclipses in Ancient Greece*

Since the dawn of time, mankind has been awestruck with the beauty of astronomy. Ancient civilizations viewed the sky as the key to unlocking the heavens. Our own sun, the moon and even the stars were viewed as the gods that look upon us from the heavens and bless us with their grace. Ancient Greek societies viewed the sun as a symbol of life, the key to which the living thrived with the moon as its counter. These symbols contributed to many different historical events such as peace treaties and the beginnings of war. But the one event that seemed to stump even the most brilliant of Greek minds was the complete solar eclipse. Years pass since the first witnessed Greek solar eclipse and many scholars are working on unlocking the key to its timeframe. Off the coast of Antikythera (what is now Crete) in the early 1900s, a fishing vessel discovered what is thought of as the world's first analog computer. What we didn't know is that this device that we call the Antikythera Mechanism was actually the key to unlocking the ancient mathematical formula for the original Saros dial.

Faculty sponsor: Laurie Burton



*Morning sessions*

**ART**

Art & Visual Communication Design Portfolio Presentations  
Session chairs: Jennifer Bracy and Jodie Garrison  
Campbell Hall (CH) 101

10:00 to 10:15 a.m., CH 101

**Ruoya Ma**

*Portfolio*

Faculty sponsor: Jodie Garrison



Ruoya Ma

10:15 to 10:30 a.m., CH 101

**Natalie Laswell**

*Portfolio*

Faculty sponsor: Jodie Garrison



Elaina Glasscock

10:30 to 10:45 a.m., CH 101

**Elaina Glasscock**

*Portfolio*

Faculty sponsor: Jodie Garrison

10:45 to 11:00 a.m., CH 101

**Adam Dutton**

*Portfolio*

Faculty sponsor: Jodie Garrison



Adam Dutton

11:00 to 11:15 a.m., CH 101

**Yu Chen**

*Portfolio*

Faculty sponsor: Jodie Garrison



Yu Chen

11:15 to 11:30 a.m., CH 101

**Julia Martinez**

*Portfolio*

Faculty sponsor: Jodie Garrison

11:30 to 11:45 a.m., CH 101

**Darien Campo**

*Portfolio*

Faculty sponsor: Jennifer Bracy

11:45 to noon, CH 101

**Margo Collins**

*Portfolio*

Faculty sponsor: Jennifer Bracy



Julia Martinez

BREAK

**BEHAVIORAL SCIENCES**

Behavioral Sciences Symposium

Session chairs: Jaime Cloud and Brent King  
Werner University Center (WUC) Calapooia Room

10:30 to 10:45 a.m., WUC Calapooia Room

**Danielle Payne**

*Stuttering and Stigma: A Look Into Teachers' Perceptions of Students Who Stutter*

The current study aims to explore the relationship between teacher knowledge about stuttering and the perceptions of students who stutter. Previous research has found a strong relationship between what individuals know about stuttering and their attitudes about people who stutter (Lass, Ruscello, Pannbacker, Schmitt, Kiser, Mussa, & Lockhart, 1994). Teachers play an imperative part in a child's educational journey and research has shown that stuttering is associated with negative personality traits (Lass, Ruscello, Schmitt, Pannbacker, Orlando, Dean, Ruziska, & Bradshaw, 1992). *The Alabama Stuttering Knowledge* (Crowe & Cooper, 1977) and the *Teacher Attitudes About Stuttering* (Crowe & Walton, 1981) were administered to teachers in the Salem-Keizer School District to explore this topic. Data will be analyzed using correlational methods. Future directions, implications and limitations will be discussed.

Faculty sponsor: Deborah Brannan

10:45 to 11 a.m., WUC Calapooia Room

**Danielle Payne and Emily Denning**

*A Search for Balance and Coping: Non-Traditional Students' Alcohol and Marijuana Use*

An increasing number of older adults and students balancing multiple roles are returning to higher education. These students are not only balancing their school work, but also their work lives and family lives (Gilardi & Guglielmetti, 2011). According to the Monitoring the Future study, (2010; sponsored by NIDA & NIH) college students have higher incidences of heavy drinking and extreme binge drinking. It is also important to note that college students have an annual marijuana prevalence of 33 percent, with males using more than females. Our goal in the present study is to investigate the stressors unique to non-traditional students as they are balancing these multiple roles, specifically their consumption of alcohol and marijuana and the role that social support plays in their lives. Data will be analyzed using a mixed methods approach. Future directions, implications and limitations will be discussed.

Faculty sponsor: Deborah Brannan

11 to 11:15 a.m., WUC Calapooia Room

**Emily Fleming and Amanda Schmalz**

*The Effects of Work-Family-School Balance on Non-Traditional Student Affect*

The purpose of the current study was to gain a greater understanding of the daily demands that students experience and further examine the effects of those experiences on daily moods. Both work and educational demands were examined in terms of nervousness, loneliness, distress and fearfulness. This study was conducted using mixed methodology. Specifically, participants filled out an initial assessment along with a daily diary consisting of a brief survey for 21 days. Fifty-three non-traditional students, enrolled at least part-time, living with a significant other and at least 21 years of age, participated in the study. Results showed that as school demands increased so did distressed, scared and nervous moods. Increased work demands correlated with increased nervousness and loneliness. These results were thought to be related to role strain and a lack of feeling understood or supported at work. As this study was the first of its kind, it was groundwork for further research in the area of non-traditional student demands, stressors and the role of potential social support to alleviate some of these pressures.

Faculty sponsor: Deborah Brannan

11:15 to 11:30 a.m., WUC Calapooia Room

**Gillian Quaal and Bethany Jensen**

*The Relationships Between Grandfathers and their Young Adult Grandchildren: An Exploratory Qualitative Study*

As older adults live longer and express satisfaction with grandparenting (Hayslip & Page, 2012), evaluation of this intergenerational relationship is warranted. Past research has focused on grandmothers, with little research explicitly investigating the experiences of grandfathers in families (Mann, 2007). Utilizing a convenience sample of grandfathers and young adult grandchildren (N = 32), this study investigates how older men enact the grandfathering role. Integrating a life course perspective, our research questions included: a) How do older men define and value their role as a grandfather? b) How do grandfathers and young adult grandchildren offer support and maintain family ties over time? c) How do grandfathers express generativity with their adult grandchildren? Preliminary results suggest that both grandfathers and grandchildren express ambivalence about how to effectively provide support while respecting one another's agency and autonomy. Grandfathers also tend to underestimate their influence on their grandchildren's development and well-being. Study findings have implications for recognizing the importance of the grandfather role across generations.

Faculty sponsor: Margaret Manoogian

11:30 to 11:45 a.m., WUC Calapooia Room

**Gillian Quaal**

*The Personal Impact of Alzheimer's Association's Early Stage Programs*

The Alzheimer's Association's Oregon Chapter examined perceptions of their early stage programs as experienced by participants. Prior literature has indicated that both social engagement and artistic activities are valuable in reducing feelings of isolation, shame and stress for both caregivers and participants with dementia. Dyadic interviews were conducted with four participants with dementia and their four care partners. The purpose of these interviews was to determine the emotional outcomes of participating in early stage programs from the perspective of both parties. Transcripts were evaluated to identify recurrent themes from the data. Overarching themes included a decrease in isolation experienced by both parties, highly valuing socialization with an understanding group and a desire to decrease the stigma associated with dementia. Responses from participants and care partners echoed results of prior studies, indicating that involvement in early stage programs may increase quality of life. Results will be valuable in evaluating and developing early stage programs, validating the worth of such interventions and in addressing stigma surrounding dementia through public education.

Faculty sponsor: Margaret Manoogian

## BUSINESS & ECONOMICS

Business & Economics

Session chair: John Leadley

Werner University Center (WUC) Calapooia Room

8 to 8:30 a.m., WUC Calapooia Room

**James Ferguson and Michael Merdink**

*Portfolio Optimization*

We will use computational finance techniques to select a portfolio of stocks, bonds, real assets and index funds. Specifically, we will use Excel to minimize portfolio risk, maximize portfolio returns and maximize risk adjusted portfolio returns

Faculty sponsor: Bojan Ilievski

8:30 to 9 a.m., WUC Calapooia Room

**Rebecca Skinner, Chris Mudder and Jasbeen Kaur**

*Organizational Behavior Analysis of Airbnb*

Utilizing various concepts to Airbnb, including knowledge management, learning organization, transformational leadership and Kotter's eight steps for leading and

managing complex change.

Faculty sponsor: Paul Disney

9 to 9:15 a.m., WUC Calapooia Room

**Katie Zwicker**

*An Empirical Analysis: Does Poverty Level Affect Violent Crime?*

The purpose of this research is to determine if the poverty level of a state affects or contributes to that state's violent crime rate. To control for other factors, I include divorce rate and alcohol consumption as additional independent variables. Ordinary Least Squares regression will be used to estimate the effect of the three independent variables and the statistical significance of those relationships. I will test for possible outliers and other sources of bias, including multicollinearity and heteroskedasticity.

Faculty sponsor: John Leadley

9:15 to 9:30 a.m., WUC Calapooia Room

**Taylor Higa and Machaela Rapozo**

*The Effect of Goals Scored on Soccer Player's Salary*

Our research question is whether the salary of a center forward in the UEFA Champions League can be explained by the number of goals scored in previous seasons. To control for other factors, we will also look at minutes played and seasons with the team. The Mahalanobis Distance will test for X outliers and Casewise Diagnostics as well as Cook's distance will test for Y outliers. Tests for both statistical significance and economic significance will be conducted. The study will address omitted variables bias, multicollinearity, sample selection bias, heteroskedasticity and simultaneous equations. In conclusion, the study found that the amount of goals scored had the most effect on salary. Minutes played had a smaller effect and seasons with the team had no effect at all.

Faculty sponsor: John Leadley

9:30 to 9:45 a.m., WUC Calapooia Room

**Michael Merdink**

*Examining Changes in University Enrollment*

Using regression analysis and econometric techniques, I examined possible factors related to university enrollment rates of people between the ages of 18 and 25 across each state. The independent variables I chose are: median household income, teen pregnancy rates and state and local government spending on higher education per capita. After testing for outliers, I used Ordinary Least Squares regression to examine the statistical and economic significance of each variable. Then, I evaluated the assumptions made in the OLS regression model and the possible impacts they may have on the results.

Faculty sponsor: John Leadley

## CHEMISTRY

Chemistry Capstone Seminars

Session chair: Arlene Courtney

Natural Sciences (NS) 101

10 to 10:45 a.m., NS 101

**Marvel Davis**

*The Chemistry of Death*

Ever wonder what happens to a body when it is left to decay without the preserving effects of embalming fluid? In this seminar we will explore the effect on a body when natural burial, clandestine burial, or no burial occurs with a special emphasis on the stages of decomposition, putrefaction, adipocere formation, bog bodies and natural "dryâ" mummification their mechanisms and the environments in which they predominantly occur. Viewer beware: contains graphic content.

Faculty sponsor: Arlene Courtney

## MORNING PRESENTATIONS AND PERFORMANCES

10:45 to 11:30 a.m., NS 101

### Alex Kampstra

#### *ADHD Review: Neurobiological Characterization, Stimulant Biotransformation Processes and Neurochemical Response Mechanisms*

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder that is currently recognized to have three types of presentations (pre-dominantly hyperactive/impulsive, pre-dominantly inattentive and combined). The exact nature of the neurobiological causes that underlie ADHD is not entirely understood. This presentation serves to overview the current understanding of ADHD that has been determined via the use of animal models, gene interaction studies, neuroimaging and drug pharmacological research. Side-by-side comparisons of Adderall and the prodrug Lisdexamfetamine will be discussed in detail, focusing on metabolism and the drug-induced neurochemical response associated with each of the pharmacologically active amphetamine isomers (*l*- and *d*-amphetamine).

Faculty sponsor: Arlene Courtney

11:30 to 12:15 p.m., NS 101

### Erikson Karacheban

#### *Alzheimer's: Who Does it Really Affect?*

Alzheimer's is an irreversible, progressive brain disorder that affects every aspect of the effected individual's life. Alzheimer's acts by choking healthy nerve cells until they begin to die off, leaving the brain with empty pockets. This presentation addresses what Alzheimer's is, the causes of Alzheimer's, along with its diagnosis and treatment. It is important to discuss this disease as it not only affects those that have it, but equally affects family and friends of the diagnosed.

Faculty sponsor: Arlene Courtney

12:15 to 1 p.m., NS 101

### Sam Stageman

#### *Arsenic and No Lace*

Arsenic is sometimes referred to as "The King of Poisons" for its use in murders, as seen in a number of Agatha Christie novels. However, arsenic has a far more complex and fascinating relationship with humanity. As an element, it has a number of unique properties and can be found in a number of compounds for multiple uses. Arsenic is a versatile element and can be used for various purposes such as wood treatments, medicine and electronics. However, these uses can be hazardous, as arsenic can be toxic to both the environment and humans. A common source of extensive arsenic exposure is contaminated water in a number of countries and the consumption of rice worldwide. These exposures can cause a variety of health issues and as mentioned earlier, arsenic has been used as a murder weapon for hundreds of years for its toxicity. This element has become a major feature in forensics and has captured the public's imagination. This presentation will discuss the history, importance and impact of this intriguing element.

Faculty sponsor: Arlene Courtney

1 to 1:45 p.m., NS 101

### Marilisa Peña

#### *Swirls and Whorls: The Science of Fingerprints*

A fingerprint has been known to be part of a person's identity for centuries and is a key piece of evidence to identify a victim or suspect. This presentation will explore how fingerprints are unique to you, how forensic investigators detect fingerprints using both traditional and newer methods. Where the fingerprints are stored and where the future of fingerprinting is heading will also be discussed.

Faculty sponsor: Arlene Courtney

1:45 to 2:30 p.m., NS 101

### Andrew Leingang

#### *The Next Step in Nuclear Energy: The LFTR Design*

This presentation will introduce the potential of a Thorium Reactor. It will include a brief history of nuclear chemistry, some fundamentals of the science behind it and a description of how power is generated in a nuclear reactor. However, its main focus will be on examining the feasibility and potential of a Liquid Fluoride Thorium Reactor (LFTR), the advantages of implementing it and what problems are associated with its use.

Faculty sponsor: Arlene Courtney

2:30 to 3:15 p.m., NS 101

### David Solvedt

#### *Supercritical Carbon Dioxide Extraction and the Chemistry of Producing Cannabis Extracts*

With the ever-increasing demand for the isolation of chemical compounds from cannabis, supercritical carbon dioxide extraction serves as one of the most safe, effective and promising extraction techniques for producing high purity cannabis concentrates. In this presentation, many of the chemical principles involved in the extraction of desirable compounds from *Cannabis Sativa* will be explored. The complex mixture of the natural compounds present in marijuana and their general properties, will be detailed to set the stage for the chemistry behind their separation and isolation. The specific focus will be placed on the theory and methodology of utilizing supercritical CO<sub>2</sub> to produce high purity concentrates for medical, recreational, research and pharmaceutical purposes.

Faculty sponsor: Arlene Courtney

3:15 to 4 p.m., NS 101

### Cassie Nichols

#### *Analgesic Effects of Menthol Essential Oils*

For thousands of years people have been using essential oils for relaxation, energy, memory, mood enhancement and healing. Today, people are coming back to essential oils for these same reasons. The analgesic (pain relief) and healing properties of essential oils have made them a popular alternative medicine treatment for people with chronic pain. Though many of the chemical pathways are still unknown, scientists have discovered several ways these oils interact with the body on a cellular level to produce the analgesic and relaxing effect. This presentation will focus on these effects.

Faculty sponsor: Arlene Courtney

4 to 4:45 p.m., NS 101

### Brian Hauenstein

#### *The Physics of High-Res. HPLC-MS/MS and Its Applications in Environmental Testing*

This presentation explores the physics behind how High-Resolution High Performance Liquid Chromatography-Mass Spectrometry/Mass Spectrometry (High-Res. HPLC-MS/MS) works to separate and detect low concentrations of environmental pollutants in natural bodies of water. Pollutions such pesticides, herbicides and pharmaceutical compounds can have devastating environmental impacts and thus it is necessary a technique such as High-Res. HPLC-MS/MS is available to detect these compounds.

Faculty sponsor: Arlene Courtney

## ENGLISH, LANGUAGE & LINGUISTICS

English, Writing and Linguistics

Session chair: Henry Hughes

Werner University Center (WUC) Willamette Room

9 to 9:15 a.m., WUC Willamette Room

### Zachary Mckinster

*"Heretics or Scientists: The Martyrs of Truth"*

The quest for knowledge and understanding has been in the heart of the hominid since the beginning of our conscious mind. From the first use of tools to landing on the moon, as a species humans solve problems we never knew we had. On this search for answers we become increasingly aware. Yet, on this path to knowledge, "the seeker" has often been persecuted for questioning the status quo and in turn, labeled a heretic. A heretic is defined as "one who differs from an accepted belief of doctrine" ("Heretic"). This character in modern times is also known by another, more sinister name: the scientist. Scientists have died for their beliefs and in effect become "martyrs" for questioning a "truth." These individuals often redefine and extend the boundaries of our collective minds. Through science and the use of the scientific method, humans have solved an inconceivable number of problems they have faced, both real and perceived and have now proven we are in fact damaging the Earth, our home. Scientists' current research has shown that the burning of fossil fuels and over consumption is unsustainable and will result in global catastrophe.

Faculty sponsor: Tandy Tillinghast-Voit

### Courtney Royer

*Linguistic Approach to Analyzing Résumés*

A linguistic approach to discovering the genre-defining characteristics of résumés

Faculty sponsor: Cornelia Paraskevas

9:15 to 9:30 a.m., WUC Willamette Room

### Daniel Thom

*Speaking in Tongues: How Translators Use the Language of the People in Bible Translation*

Historically, the Bible was only available in the language of the educated, but over the centuries, there have been numerous efforts to bring the Bible into the language of the people. In recent years, there have been a number of projects to simplify the biblical text to make its language more manageable for a wider readership. The current research project compares four Bible translations – two standard versions and two simplified translations. Comparing the frequency of grammatical features such as verbs, nouns, prepositional phrases and clauses, this study reveals how translations differ in their approach to make the Bible more accessible. The findings from this project reveal not only linguistic choices in translation, but they also shed light on what makes one text easier to read than another.

Faculty sponsor: Cornelia Paraskevas

### Sydney Culpepper

*Linguistic Properties of Emojis and Punctuation in Text Messaging*

Since its development over the past 20 years, text messaging has swept the world and captured everybody's attention. It rapidly became the most common form of communication, adopted for its privacy, speed and ease of use. It also became a hotbed for orthographic innovation, which resulted in what some today call "textspeak." This "textspeak" is often looked down upon for being too informal and childish compared to standard written English, but what people don't see is the very deliberate ways that texters manipulate common features of English to fill the gap that's left when there's no face-to-face interaction. This paper focuses on the ways that emojis and punctuation are used in text messages to represent tone and attitude instead of structure.

Faculty sponsor: Cornelia Paraskevas

9:30 to 9:45 a.m., WUC Willamette Room

### Tessa Stufflebeem

*Etymology of Fact: What exactly is an Alternative Fact?*

On Jan. 22, 2017, Kellyanne Conway defended Sean Spicer's statement about the inauguration crowd size by stating it was "an alternative fact." What exactly does this phrase mean? This presentation looks at the word "fact" and the word "alternative" throughout the history of English as well as the accepted uses of the term "alternative fact."

Faculty sponsor: David Hargreaves

### Kristine Eck

*The Power of Words: An Etymological History of "Wife"*

On Jan. 21, 2017 five million people worldwide participated in the Women's March to advocate for many issues, including equal rights for women. Every individual rally had something in common: words. There were signs, speeches, protesting and chanting as people tapped into the indisputable power of words. With every social or political movement, the language of the time changes with it. This is inevitably true for the word "wife." In its most basic form, "wife" refers to a woman who is married. But to a lot of people, myself included, "wife" seems to conjure images of tacky homes, knee-length pastel skirts and a suffocating male-dominated culture that just won't go away. Where did these negative connotations come from and how are they changing in the current social and political climate? This presentation will explore the etymology of the word "wife" to seek answers to these questions, while also looking to a future where "wife" means lover, equal partner, most trusted friend and companion.

Faculty sponsor: David Hargreaves

9:45 to 10 a.m., WUC Willamette Room

### Rachel Gries

*A Grave Presentation: The History of the Word 'Grave'*

When people think of the history of the English language, many assume it came from Latin. However, English is a Germanic language, influenced over time by many others. This development and influence is reflected in the history of individual words. For this project, the English word "grave" was traced back from its earliest origins to present-day usage.

Faculty sponsor: David Hargreaves

10 to 10:15 a.m., WUC Willamette Room

### Yan Yan

*A Corpus-Based Comparison of College Argumentative Essays Written by Americans and Chinese Learners of English*

In order to gain a better understanding of the differences between argumentative essays written by native English speakers and Chinese EFL speakers of English at a college level, the author conducted this corpus-based study. Another purpose of this study was to determine the extent of the author's English language proficiency and the nature of her writing style. Influenced by Hyland's idea of corpus studies of academic writing using the techniques of frequency, keyness, concordance and annotation, the author utilized and interpreted the complex, multifaceted nature of English argumentative writing among Chinese speakers. Applying a research method of corpus-based analysis on various linguistic features of argumentative essays, the author compared 50 papers for each sub-corpus written by three groups (native English speakers, Chinese learners of English and the author). The group differences of linguistic features among three groups represent word frequency, vocabulary variations, punctuation variations, semantic analysis, grammatical analysis and multidimensional analysis.

Faculty sponsor: Robert Troyer

## MORNING PRESENTATIONS AND PERFORMANCES

10:15 to 10:30 a.m., WUC Willamette Room

**Victoria Webb**

*Heathcliff, Hareton and the Hounds*

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Emily Brontë's novel *Wuthering Heights* contains numerous references to dogs and doglike attributes. Be it bulldogs, pointers, spaniels, cropped ears, snarling or growling, the reader of the novel is continuously hounded with canines. Through an examination of these reoccurring images in *Wuthering Heights*, I realized the significant connection between the mongrels and two male characters: Heathcliff and Hareton. The dogs in the novel are used to both amplify the personal characteristics of the two men and to show the ways in which Heathcliff and Hareton are similar, yet different. Brontë's use of canine imagery shows the true animalistic nature of Heathcliff, as well as the greater humanity of Hareton.

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Faculty sponsor: Kit Andrews

### BREAK

10:45 to 11 a.m., WUC Willamette Room

**Erika Fitzpatrick**

*The Cloud-Colored Leopard*

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Following a trip to the West Coast Game Park Safari in Bandon, OR, I describe my experiences interacting with the snow leopard cub and her caretaker. Snow leopards are an endangered species and their exact numbers are unknown due their elusiveness and difficult-to-navigate habitat in the Himalayan Mountains. Despite their appearances in Nalapesse folklore and their presence in various forms of our cultural media, they still face survival challenges. However, there is hope for the snow leopards in the form of research, outreach and conservation efforts by various organizations.

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Faculty sponsor: Henry Hughes

11 to 11:15 a.m., WUC Willamette Room

**Amalia Morse**

*A selection of poetry expressing contemporary tensions related to religion, relationships and womanhood*

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Faculty sponsor: Henry Hughes

**Carlin Ables**

*Personal Poetry*

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A selection of poetry related to love, health and snails.

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Faculty sponsor: Henry Hughes

## HEALTH & EXERCISE SCIENCE

Health/Exercise Science Presentation

Session chair: Daryl Thomas and Janet Roberts

Richard Woodcock Education Center (RWECC) 101

8:30 to 8:45 a.m., RWECC 101

**Rachel Schneider**

*Self-Determination Theory: Motivating Children in Physical Education*

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When students feel competent, autonomous and related to others with regard to physical education, they enjoy participating and are therefore motivated to continue being physically active. By teaching with self-determination theory in a mastery-oriented climate, teachers motivate and empower their students.

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Faculty sponsor: Gay Timken

8:45 to 9:30 a.m., RWECC 101

**Nolan Bradley, Chrissy Redfern, Ale Marquez and Leah Nicklason**

*The Cyclical Nature of the Teaching-Learning Process*

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Western Oregon University prepares its physical educators through a process of planning, teaching, evaluating and reflecting. As part of the WOU Physical Education Teacher Education (PETE) program, students receive in-depth, hands-on experience teaching children and youth. Preparing to become a physical educator begins with an understanding of what constitutes a quality curriculum. Planning purposeful lessons involves analyzing students' needs and developing meaningful content with developmentally appropriate adaptations for individuals. Lesson objectives aligned with standards helps clarify what students will learn and what teachers will assess. Teaching lessons allows PETE majors to practice contemporary instructional methods that will carry over into their teaching careers. Evaluation provides information on student learning and teaching effectiveness. Video observations after each teaching episode allow students to evaluate themselves and devise ways to improve their teaching. Reflecting on each lesson further clarifies the importance of physical education and how quality instructional methods and curriculum design can positively impact the lives of children and youth.

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Faculty sponsor: Marita Cardinal

9:30 to 9:45 a.m., RWECC 101

**Rachel Schneider**

*A Need for Nature*

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Exposure to nature is a necessary ingredient for cognitive and mental health. However, children today are less likely to participate in unstructured outdoor play than they were 30 years ago. Incorporating outdoor education into the physical education curriculum will help reconnect children with nature and improve not only physical health, but mental and emotional health as well.

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Faculty sponsor: Gay Timken

9:45 to 10 a.m., RWECC 101

**Jennifer Sato**

*Designing a Physical Fitness Program for Children with Intellectual Disabilities*

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Children with intellectual disabilities have a greater risk for not getting the U.S. HHS recommended daily physical activity. Many schools and sport programs do not offer opportunities for them to participate in. Why is this? What modifications are necessary? How do you determine the skill level of the participant? What are any other challenges that may arise? In EXS 444, the goal was to create a training program specific to a participant in the IMPACT program. Working one on one with the participant, making observations and utilizing motivation and behavior techniques, a 10-week basketball practice program was designed. This presentation will show methods, reasoning behind and how to make an inclusive exercise program.

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Faculty sponsor: Jennifer Taylor

### BREAK

10:15 to 10:30 a.m., RWECC 101

**Emma Engell**

*Adapted Physical Activity: IMPACT Project*

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The presentation is on the Adapted Physical Activity course offered here at Western, as well as an in-depth discussion on a 10-week physical activity program that was created for a specific individual. The course covered basic information regarding some of the most common disabilities. Half of the time in this class was spent at OSU participating in a program called IMPACT. This program provided each WOU student with a one-on-one opportunity to work with a child with a disability and

encourage them to participate in physical activity. The project required for the class was centered around the student's specific individual and the process necessary to teach them the proper techniques to perform the crawl stroke in the pool. This program included models necessary to make modifications for the participant, as well as create achievable goals for the specific individual. A block plan was created to outline what each session would look like for the 10 weeks. A detailed plan of one session was also provided. The block plan should reveal progression and show that by the end of the 10 weeks the participant should have the skills necessary to perform the crawl stroke appropriately.

Faculty sponsor: Jennifer Taylor

10:30 to 10:45 a.m., RWECE 101

**Molly Viles, Gabe Heredia, Megan Baker and Joana Diaz**

*Partners for a Hunger Free Oregon: An Evaluation Plan*

This evaluation plan was developed to assess the effectiveness of the technical assistance services provided by Partners for a Hunger Free Oregon. This organization offers support to individuals and organizations developing and implementing summer lunch programs in their communities. Some of the services offered by this organization include technical trainings, outreach assistance and educational tools for site managers. Data collection methods for this project include focus groups and site interviews at different locations throughout Oregon. Findings and recommendations will be shared with PHFO and will highlight strengths and areas in need of changes to increase effectiveness.

Faculty sponsor: Doris Cancel-Tirado

10:45 to 11 a.m., RWECE 101

**Maria McCarthy and Christine Hill**

*Social Network Composition and the Connection to Overall Health in Older Adults*

The global elderly population is increasing significantly and is projected to grow 233 percent by the year 2050. Health outcomes of this growing demographic encompass the physical, psychological and emotional well-being of older adults, individuals 60 years and over. Social networks such as family, friends, religious communities and formal and informal caregiving impact the health of elderly individuals in various ways. In addition to size and composition of social networks, quality of relationships and roles within these connections can influence health, perceptions of social isolation and quality of life. Moreover, physical distance from social connections can alter perceived social isolation. The state of health in the older adult can also affect the quality of and access to social networks. This presentation highlights the global importance of social networks and their impact on quality of life and overall well-being, which affects elders of all genders, races and socioeconomic statuses.

Faculty sponsor: Emily Vala-Haynes

11 to 11:15 a.m., RWECE 101

**Kimberly Castro, Amy Watkins and Danielle Peterson**

*Methods of Treating Eating Disorders in Adolescents*

Eating disorders in adolescents have risen dramatically throughout the years, creating an epidemic among men and women. With pressure from the media, peers and family, it's not surprising that eating disorders have claimed the highest mortality rate among any mental illness (Welch, E., Ghaderi, A., & Swenne I., 2015). To combat this epidemic, researchers have strived to create a variety of treatment options for individuals seeking help. Treatment options include, but are not limited to: long-term treatment, mindfulness-based treatment and multiple and single family therapy. Each treatment is successful for its own reasons, but researchers have noted that the best type of treatment for an eating disorder requires a well-built support system (Jewell et al., 2016). Although, despite this effort, the problem among most individuals isn't the treatment itself.

Faculty sponsor: Amy Hammermeister-Jordan

11:15 to 11:30 a.m., RWECE 101

**Alyssa Stewart and Stephanie Ochoa**

*Childhood Obesity: Home-based Nutrition Among Preschool-Aged Children*

This paper explores research that has been conducted on the increase of childhood obesity. Since the 1980s childhood obesity has rose steadily from 5 percent to 13.9 percent in 2003. This is concerning because obese kids have a higher risk of developing high blood pressure and behavior problems by age 7. Preschool children are two to four times more likely to be overweight at age 12. /because of a high prevalence of childhood obesity, researchers have taken an interest in finding ways to combat the issue. Researchers have found a variety of home-based interventions, like reducing the body mass index (BMI), helping kids and families create and manage healthy lifestyles. Researchers have focused on going into kids' homes to help families create a nutrient-rich diet and change environmental influences. A 6-month behavioral intervention program for kids called LAUNCH has positive results. Results show that three of the children who participated in the program showed a decrease in their BMI. This also explores in home-based nutrition, contributing factors and treatments used to lower the BMI and weight of children.

Faculty sponsor: Amy Hammermeister-Jordan

11:30 to 11:45 a.m., RWECE 101

**Yadira Perez and Amanda Mayer**

*Zika Virus*

The Zika outbreak was first reported to health officials in Brazil during May 2015. Although the outbreak began in Brazil, it has since spread to other South American countries, as well as Central America, North America and Europe. In the continental U.S. the Zika virus has reached the southeast and Gulf Coast regions. To date, 5,354 women have been affected by Zika in the U.S. and its territories. This is concerning because Zika is linked to microcephaly, which is a birth defect that causes irreversible damage to an infant's brain. The outbreak prompted the World Health Organization and Centers for Disease Control to call a public health emergency in February 2016. This presentation goes into depth about the causes and effects of the Zika virus, as well as the various modes through which it is transmitted. The response to Zika has varied depending on the country. El Salvador has advised its female residents to not get pregnant for two years, while the U.S. has advised its citizens to take condoms, repellent and sleeping nets when traveling to South America. The lasting outcomes of the Zika virus will affect us for many years to come.

Faculty sponsor: Emily Vala-Haynes

**HONORS GENERAL SCIENCE**

Energy Sources of the Future

Session chairs: Philip Wade and Arlene Courtney

Natural Sciences (NS) 101

8 to 8:15 a.m., NS 101

**Nicole Caldwell, Kristin Bewersdorff and Austin Gehrett**

*Winds of Change*

People witness wind power every day, in every part of the globe, whether only in noticing the annoying way it musses hair or in the chaotic destruction of wind storms. However, the general populace often fails to understand how wind occurs or how they can harness the resource for energy. Wind power utilization has been in practice for centuries, though new changes are on the horizon. Researchers and engineers have made rapid advancements in the technologies to convert wind to energy and to eliminate any problems it could pose during the past few decades. In fact, wind power is becoming one of the most affordable sources of renewable energy and has very few, if any, ill effects on the environment. This presentation will address the cause of wind, its ability to be used as an energy source and the effect it has on its consumers.

Faculty sponsor: Philip Wade

## MORNING PRESENTATIONS AND PERFORMANCES

8:15 to 8:30 a.m., NS 101

**Christina Ayers, Taylor Boyer and Nicole Bolstad**

*Wind Turbines... We're Big Fans!*

The United States has over 52,000 wind turbines that contribute 5.5 percent of the nation's generated energy, powering more than 24 million homes. The United States is home to the third-largest wind farm in the world, located in California. Wind is caused by the uneven heating of the Earth's atmosphere by the sun. Wind energy is a highly sustainable resource it has been in use since 2000 BC and will be obtainable as long as solar energy is available. This presentation will be exploring the history of wind turbines as well as the science behind them. Specifically, the video will address how the energy is stored, transported and the efficiency of the process.

Faculty sponsor: Philip Wade

8:30 to 8:45 a.m., NS 101

**Morgan Williams and Katia Horsey**

*Harnessing the Power of Water*

Thousands of years ago, the ancient Greeks used water wheels to generate electricity from water. This technique became known as hydropower or hydroelectricity. The power of water has since developed throughout the decades, expanding to larger stations and newer solutions by harnessing water to produce electricity for diverse areas and sizes of population. Hydroelectricity is most commonly produced from dams across the world. While there are other applications, such as run-of-the-river stations, micro or large stations (smaller than dams) and conduit hydropower stations, that produce hydroelectricity, most are very costly or aren't capable of creating enough electricity to support larger communities. Thus, settling on a decision for the best use of hydroelectricity is controversial. While there are many forms of hydroelectricity used throughout the world, this video's primary focus will be of North America's use of them. This documentary compares the pros and cons of each form of hydroelectricity and the environmental impacts of them.

Faculty sponsor: Philip Wade

8:45 to 9 a.m., NS 101

**Preston Moore, Lauren Sundvall and Elissa Sorenson**

*Harnessing the Power of the Tides*

Tidal energy is a clean and reliable way to obtain energy from a renewable resource. While our current systems in place work to meet our needs, it is important to pursue other avenues of energy that have a less harmful impact on our environment and long-term capabilities. Tidal energy is a type of hydroelectric power that harnesses the potential or kinetic energy from the surrounding waves. Currently, the use of tidal energy is spreading rapidly across the globe as an amazing energy resource. Most notably, France and South Korea have taken steps to begin the implementation of this resource as a step into the future of renewable energy. Although more research is necessary, this resource will pose an environmental impact equal to or less than that of other renewable energy sources. Tidal energy is a powerful method of harnessing natural energy in a clean and responsible way.

Faculty sponsor: Philip Wade

9 to 9:15 a.m., NS 101

**BillyAnn Stempel, Katelyn Rule and Kaitlin Wieder**

*Past, Present and Future: Lithium Ion Batteries*

Lithium ion batteries are secondary batteries, meaning they are rechargeable. They are generally smaller and able to carry more of a charge than primary, or one-time-use batteries. This makes them the ideal choice for most modern technology in need of batteries. They are used in many common devices such as phones, computers and vehicles. This film will review the history, evolution and functionality of the lithium ion battery from its discovery in the 1970s through its most recent developments. These energy cells also have many downsides and dangers associated with their development, use and disposal. These effects are seen as they affect the environment and those who work to manufacture them. The future includes

further development of the lithium ion, as well as more environmentally conscious and efficient batteries in general.

Faculty sponsor: Philip Wade

9:15 to 9:30 a.m., NS 101

**Erin Roan, Bailey Thompson and Grace Livengood**

*Flywheel Batteries: An Underutilized, Renewable Source of Energy for Tomorrow*

As early as the Stone Age, humans have been using technology similar to flywheels for pottery, water wheels and to power trains. A flywheel battery works by accelerating a rotor, or flywheel and storing the rotational energy for use. Today, companies are experimenting with flywheel technology in ways as simple as toys to as complex as cars and spacecraft. Flywheel-powered cars save energy, are more efficient and create less pollution while presenting a safer option than typical battery-powered cars. While the batteries still produce emissions, their consequences are far less than the options currently embraced by society. As the technology improves, flywheel batteries will become an inexpensive, accessible and long-term energy option. For a world in need of greener energy, flywheel batteries are the future.

Faculty sponsor: Philip Wade

## DANCE

Academic Excellence in Dance

Session chair: Amy McDonnell

Maple Hall (MH)

## PERFORMANCES

9 to 9:15 a.m., Maple Hall

**Sarah Cotter**

*Marius Petipa's Often Overlooked and Underappreciated The Pharaoh's Daughter*

Marius Petipa is often the name most strongly associated with classical Russian ballet for his iconic works, *The Nutcracker*, *Swan Lake* and *The Sleeping Beauty*. Yet his first major success in Moscow, *The Pharaoh's Daughter* (1862) is often overlooked. This presentation places Petipa's first ballet in the context of his greater career and examines its importance in the development of his iconic choreographic style.

Faculty sponsor: Sharon Oberst

9:15 to 9:30 a.m., Maple Hall

**Faithé Maher**

*Rudolf Von Laban*

The paper covers a brief history of the life of Rudolf Von Laban and discusses both Laban Movement Analysis and Labanotation. Included in my presentation is a reflection of Laban's relevance and impact in the somatic field.

Faculty sponsor: Amy McDonnell

9:30 to 9:45 a.m., Maple Hall

**Zoe Strickland**

*Gender Throughout Jewish Culture: From hwl to the Hava Nagila*

In Jewish culture, the art of dance plays a significant role when celebrating major life events. When examining the role that gender plays in Jewish dance, most of the gendered differences that occur are deeply ingrained into the dance culture, rather than being observable from the outside. Jewish culture often separated men and women as dancers, despite many of the dances demanding the same out of both genders. Dance in Jewish culture has evolved over the years from the severity of the separation of gendered dancing, to the Hebrew words used to describe it, to eventually having mixed-gender group celebratory dances.

Faculty sponsor: Sharon Oberst

9:45 to 10 a.m., Maple Hall

### Hayleyann Evers

#### *Nasty Woman*

Nasty Woman is a multimedia dance production that addresses issues in regards to inequality between the sexes. Through a combination of poetry, choreography and cinematography, a campaign against injustice and inequality arises. The poem provides framework to the vocal presentation and choreographed dance. Visual backgrounds, filmed in urban settings, drive home the concept that social injustice happens everywhere and is everyone's problem. The concept is drawn from personal experiences, which are then compared to examples of harmful rhetoric against women from the 2016 presidential campaign. Facts illustrating other examples of inequality such as the abysmal gender-wage gap are woven into the piece. Glimmers of hope and a call for change are illustrated as well, danced and spoken, including the female presidential candidates rebuttal to criticisms of her career and social goals. The two-part presentation of Nasty Woman includes stage dance performance set to music, bringing the subject material closer to the viewer in real time. However, having been produced in part as a video the message can be expected to reach a broad audience. Thank you: Paige Scofield, director of photography; JR Gonzalez, camera and editing; Dirk Freymuth, sound engineer

Faculty sponsor: Amy McDonnell

10 to 10:15 a.m., Maple Hall

### Caitlin Rose

#### *Primordial Awakening*

"Primordial Awakening" is about Druids, a class of people believed to have lived during the Iron Age in what is currently Ireland. My piece is based on my own concept of this society and their origins, with influence from popular culture's ideals of Druids being mystics who drew their power from nature. The work is also a reflection of the harmony between opposites that exists in nature. Performers include: Leah Boysen, Kaiana Bradley, Andrew de la Paz, Elizabeth Dunn, Jay Hall-Schnurrpusch, Jesse Johnson, Alaina Meyer and Jodessa Presler

Faculty sponsor: Amy McDonnell

10:15 to 10:30 a.m., Maple Hall

### Tunya Dhevaphalin, Eva Batenhorst, Leah Boysen, Javan Davis, Andrew de La Paz, Hayleyann Evers, Mikalyn Haney, Rebekah Hill and Moises Martinez-Trejo

#### *Entanglement*

Quantum Entanglement is a physical phenomenon that occurs when pairs or groups interact in ways such that the state of each cannot be described independently of the others, even if separated. Albert Einstein called this paradox "Spooky action at a distance."

Faculty sponsor: Tim Cowart

## HISTORY

History Senior Thesis Presentations

Session chair: Elizabeth Swedo

Werner University Center (WUC) Columbia Room

8:30 to 8:45 a.m., WUC Columbia Room

### Ryan Steele

#### *Violence in Algeria: From Colonization to Independent Nation*

Starting in 1954 and lasting until 1962, the French-Algerian War was one of the bloodiest struggles of decolonization in French history. In his book *The Wretched of the Earth* (1961), Frantz Fanon presents an explanation on the violence and social injustice he witnessed while in Algeria. Fanon was a Martinique-born psychiatrist who originally was hired by the French military, but quit and joined the revolution when he saw the effects of colonization on the Algerians. Fanon demonstrates how the French placed the Algerians at the bottom of the social hierarchy, denied the native population proper rights and murdered an immense number of Algerians.

The lack of social status given to the native Algerians built up anger, which Fanon explains transformed into hatred for the French. Fanon argues that the Algerians would have to take their hatred of the French and turn it into mass amounts of violence for decolonization. The insights in Fanon's book fits the pattern of violence identified in the larger research project, which argues that complete decolonization could only be achieved through increased violence. A violent decolonization was the only way the "last could become the first."

Faculty sponsor: Patricia Goldsworthy-Bishop

8:45 to 9 a.m., WUC Columbia Room

### Tyler Larsen

#### *Proposition 187: California's Fear of Immigration*

In 1994, California's Legislature introduced Proposition 187 and called it the "Save Our State" initiative to prohibit undocumented immigrants from using health care services, public education and other social services through citizenship screening. Though the law was only in effect for three days and was never enforced, it demonstrates an entire state's willingness to target a subset of the population and separate Hispanics socially, economically and physically from the white population. Scholars recognize two theories on the popularity of the law: Either people voted in favor of it because they were, at least to a degree, racist, or that people voted for it because of nativism and racist fears of criminals. The purpose in this paper is to identify other factors that contributed to the initiative's popularity to broaden future discussions. A television re-election ad in '94 by then-governor Pete Wilson demonstrates that the motivations to approve this law did indeed have a racist element however racism was only one irrational fear among other more important factors itself such as nativism, economic difficulties and political aspirations.

Faculty sponsor: John Rector

9 to 9:15 a.m., WUC Columbia Room

### Nick Baker

#### *Eugenics and Racial Hygiene: The Connections between the United States and Germany*

During the 1910s-1930s eugenics movement, communications zipped between the German and American eugenicists this movement was directed towards better breeding in human beings to weed out the unfit who were supposedly plaguing society. Most research has predominantly focused on the eugenics movements within individual countries and not the interplay between them. Through letters, pamphlets, propaganda and research conducted by eugenics organizations, my research explores the contact between movements and focuses on the exchange itself. A pamphlet produced by the Human Betterment Foundation titled *Human Sterilization* best illustrates the exchange of ideas. It was created in 1934 and argued in favor of the advantages and benefits of sterilization of unfit individuals. The Nazi journal *NSK* viewed this survey as evidence that the more information people had about sterilization, the more likely it was that they would support it. This source supports my overall argument that the eugenics movement exchanged information on the international front and adapted information for local publics.

Faculty sponsor: David Doellinger

9:15 to 9:30 a.m., WUC Columbia Room

### Brianna Williford

#### *Oral Histories, Women and Sport in Late Twentieth Century America*

To explore women's access to institutionalized sports spaces in the mid/late 20th century, I have analyzed four oral history interviews. Oral histories exhibit directly and personally the ways in which American society has regulated women's access to public space and how some women attempted to surpass the expectations placed upon them. The hour-long interview I conducted in March 2017 with Linda Stonecipher, an athlete and coach in the late 20th century, is indicative of the difficulties female athletes have faced. Her oral history exhibits some of the ways in which women have been systematically held from athletic spaces due to their gender she assisted in starting her high school female basketball team (which previously had not existed) and her college had two separate P.E. degree programs which were gender segregated. Stonecipher's gender defined the sports to which



## MORNING PRESENTATIONS AND PERFORMANCES

she had access, the support from her communities and the limitations she faced as a coach and athlete. My unique oral histories add to the current research in adding more voices and stories to the larger discussion of women in sport and public space, both popular scholarly discussions today.

Faculty sponsor: Kimberly Jensen

9:30 to 9:45 a.m., WUC Columbia Room

### Alexa Weight

*God and Revolution: Religion and Power from Pre-revolutionary France to the Napoleonic Empire*

With the occurrence of the French Revolution in 1789, Catholicism was replaced by secularized religion. Maximilien Robespierre, a French revolutionary and politician, was a key figure in the transition into secularized religion that followed revolutionary politics. Robespierre's creation of an edict for the establishment of the "Cult of the Supreme Being," a secularized religion, created a new form of using political power through religion. This new religion took traditional Catholic structures, such as ceremonies and festivals, as a form of political propaganda and power. This presentation on Robespierre's "Decree on the Supreme Being" (1794) argues that this new form of national religion still maintained some critical aspects of traditional Catholicism.

Faculty sponsor: Patricia Goldsworthy-Bishop

9:45 to 10 a.m., WUC Columbia Room

### Spencer Welter

*Working for Walpole: Restorative Spaces in the Progressive Era*

In early 20th century America, industrialization reshaped the physical environments Americans occupied, the ways they conceived of them and the ways they believed they could use them. Historians of the Progressive Era have discussed these physical and conceptual transformations extensively but have spent much less time elaborating on how reformers utilized public spaces to initiate positive changes. City planners and community leaders, such as those in Walpole, Massachusetts, began to utilize the design and implementation of "restorative" spaces such as town forests, wider roads, planned neighborhoods and other civic improvements. In a 1916 article from *The American City*, a magazine published for municipal authorities, writer and Walpole collaborator John A. Murphy acknowledged that the constructed environments themselves could advance the social, political and economic well-being of the community. As implemented in Walpole, these carefully and pragmatically planned spaces embodied the optimism, community emphasis and the social and political anxieties of the Progressive Era reforms.

Faculty sponsor: Kimberly Jensen

10 to 10:15 a.m., WUC Columbia Room

### James Masnov

*The Power of Nine: Federalists, Antifederalists and Natural Law Synthesis in the Ninth Amendment*

In the 1780s, the framers of the U.S. Constitution imbued the United States system of government with crucial Natural Law-based safeguards. Both Federalist supporters of the Constitution and Antifederalists who opposed ratification championed such protections. Each faction expressed both misgivings over the concentration of power in unaccountable bodies and apprehension regarding majoritarian impulses. Natural Law philosophy informed both George Mason's arguments for a Bill of Rights in "Objections to the Constitution of Government Formed by the Convention" and James Wilson's arguments against a Bill of Rights in his Pennsylvania Ratification speech. The result of this Natural Law synthesis was the Ninth Amendment, which sought to address the reservations of both parties by establishing that the American people retained unenumerated rights. While scholarship concerning the Ninth Amendment exists in the realm of political science and legal theory, this work expands the historical scholarship on the amendment by addressing its Natural Law context and assessing the amendment's legacy of protecting unenumerated rights.

Faculty sponsor: Christopher Cocolthos

10:15 to 10:30 a.m., WUC Columbia Room

### Ashley Fierstadt

*Reforming the Sacred: Controlling Church Space in Laudian England (1625-1641)*

The break from the Catholic Church and the formation of the Anglican Church of England in 1547 resulted in a tumultuous 80-year period of redefining church doctrine. Recognizing in the 1620s that the Church of England still lacked cohesion and sound doctrine, King Charles I and Archbishop William Laud sought to bring the diverse ideas and sects of Christianity together under one unified church. Though historians have touched upon the concept of sacred space during this period, I argue that these attempts at unification and clarification of the church's beliefs drew upon many different factors, especially controlling sacred space. Archbishop Laud's injunction for the Chichester diocese in 1635 demonstrates the three ways sacred space was regulated through the manipulation of physical space, soundscape and theological understanding. From dogwhipping to silence unruly dogs during services, to railing altars in order to separate the holy clergy from the unholy laity as a means of creating layers of sacredness, the church sought to standardize sacred space.

Faculty sponsor: Elizabeth Swedo

BREAK

10:45 to 11 a.m., WUC Columbia Room

### Katilyn Kirkman

*The White Rose's Resistance to Nazism: The Influence of Friedrich Nietzsche*

The White Rose was a non-violent resistance organization, founded by students in Munich during the World War II. Many scholars argue that Christian morals and other Christian leaders influenced the group the most, but an analysis of their leaflets and correspondences highlights the influence the philosopher Friedrich Nietzsche had on the organization. By reading and discussing Nietzsche, members of the White Rose, particularly Hans and Sophie Scholl, derived and solidified their commitment to opposing Nazism, including their belief that Germans could no longer ignore the crimes of the Nazi State. From 1942 to 1943, the White Rose anonymously distributed leaflets in Germany in an attempt to reach out to the German people and open their eyes to Nazi atrocities. Written in 1943, the "Leaflet of Resistance" is their most important leaflet because it represents the organization's most aggressive expression of resistance toward Nazism. During the distribution of this leaflet, Hans and Sophie Scholl took additional risks that led to their arrest, trial and execution.

Faculty sponsor: David Doellinger

11 to 11:15 a.m., WUC Columbia Room

### Keegan LeBleu

*Character, Crafts and Physique: American Men and the Meaning of Masculinity in World War I*

In the immediate aftermath of World War I, many Americans were asking questions about what masculinity meant in the context of military service to the nation. American painter Herbert Andrew Paus' poster "The United States Army Builds Men. Apply Nearest Recruiting Office" (1919), published by the Niagara Lithograph Company, shows a golden-colored U.S. soldier with his eyes fixed on a globe, surrounded by three distinct figures labeled and representing character, crafts, physique. Historians have analyzed these characteristics of masculinity in World War I but have not articulated it by using these three categories. These three virtues were necessary qualifications for being a soldier and innate characteristics of American manhood. By applying these three virtues as models for American masculinity during and after World War I, I will examine their application to shell shock, venereal disease, race and eugenics and post-war reconstruction. Further, I will highlight the inconsistencies I have found among these characteristics to deconstruct this model of World War I-era American masculinity as a whole.

Faculty sponsor: Kimberly Jensen

11:15 to 11:30 a.m., WUC Columbia Room

**Dylan Vosti**

*Concerning Peasants: The Economic Causes of the English Peasants' Revolt of 1381*

The Black Death had left England in turmoil and in dire need of labor. This shortage of labor created a long trend of events beginning with Parliament passing the Statute of Laborers that ended with the Peasants' Revolts of 1381. Historians have considered many different factors that contributed to the Peasants' Revolt, arguing it could have been caused by social tensions or tensions with the church and those who believe the Revolts stemmed from economic problems focus mainly on the short-term economic issues created by the three poll taxes issued four years before the revolt. My goal in this paper is to discuss the idea that the economic issues leading to the Peasants' Revolt began with the Statute of Laborers, issued in 1351. The English Parliament issued edicts to make up for the lack of labor and a struggling economy that created discontent among the population of England, which led to the revolt. Examples of the economic struggles of the peasants can be seen throughout the *Anonimille Chronicle*, which was written at St. Mary's Abbey in York and covers the years 1333-1381. It describes the short term moment of the revolts that can be connected to long-term ideas of this paper.

Faculty sponsor: Elizabeth Swedo

11:30 to 11:45 a.m., WUC Columbia Room

**Chloe Buzzard**

*Sin, Salvation and the Medieval Physician: Religious Influences on 14th Century Medicine*

During the global outbreak of the Black Death in the 14th century, medieval medical theories were tested. With an unknown disease wiping out populations globally, physicians sought to explain and combat the plague through religion and medicine. Scholars have recognized disparities in medical responses across cultures, without exploring the cause of these differences. My research focuses on variances between Christian and Muslim physicians' theories of the disease by examining medical treatises. In his medical account of the plague, *A Very Useful Inquiry into the Horrible Sickness*, renowned Muslim physician Lisān Al-Dīn Ibn al-Khatīb asserted that the theory of contagion was wrong, stating that the disease was under God's control. However, as seen in *Consultation* by the medical faculty of the University of Paris, Christian physicians found no conflict between the idea of a creator, God and the theory of contagion. Although the basis of medical knowledge in Muslim and Christian society came from classical Greece and Rome, use of that knowledge differed, implying that it was each religion's concepts of sin and salvation that altered the medical response.

Faculty sponsor: Elizabeth Swedo

**INTERDISCIPLINARY: ART & SCIENCE**

Artistic Explorations in the Natural, Social and Behavioral Sciences

Session chairs: Karen Haberman and Shaun Huston

Instructional Technology Center (ITC) 211

10 to 10:15 a.m., ITC 211

**Sarah Cotter**

*Portal, 73 Seconds and the Theatre as a Medium for Scientific Discussion*

This presentation discusses the origins and works of Portal Theatre Company, a local devised theater group which tells the stories of science. Their past and current projects (*NoBelles*, *73 Seconds*) are used as examples to explain the process of devising and to explore the theatre's potential as a medium to creatively bring scientific concepts, discoveries, events and historical figures to a wider audience.

Faculty sponsor: Michael Phillips

10:15 to 10:30 a.m., ITC 211

**Stephanie Blair**

*Greyhounds: Racing Life and Beyond*

Though scientists and scholars dispute the origin of the greyhound because it is mentioned throughout time and across many cultures, what can be agreed upon is that these dogs have consistently been used as coursing dogs. Now, after hundreds of years, greyhounds have been bred into the ultimate sprinting dog for a different purpose: racing. This presentation provides an in-depth look at the ethics and logistics of American greyhound racing, from 1919 to current day.

Faculty sponsor: Henry Hughes

10:30 to 10:45 a.m., ITC 211

**Benjamin Kirchner**

*Landscape's Dictation: Our Mundane Performance*

This film is intended to document and share the daily, mundane, tasks that become repetitive. And how the landscape that we have sculpted plays an intricate role in how we go about doing these tasks. I chose to document my daily commute to school and the journey that emerges from this daily task. The starting point is a road near my house, the ending point is a classroom. Unknowingly this film also features the dependence of the automobile, as many people rely on the mechanics to get them from point A to point B. The film also can show how the automobile has shaped the landscape for its own benefit by using roads and bridges. The mundane daily tasks that we do, become part of the landscape even when we are unaware of our part in it.

Faculty sponsor: Shaun Huston

10:45 to 11 a.m., ITC 211

**Eric Frey and Kelsie Braatz**

*Street Puppets to Promote Environmental Science*

An exploration of using sculptural art in the form of street puppets to promote the awareness of environmental sciences and show support for the sciences in the Portland People's Climate March and the March for Science. The presenters will discuss messaging, design and art to cross the communication barriers between the scientific community and the general public. On display will be the street puppets designed and carried by student artists, two of the signs carried during the two marches, pictures and a short video from the marches and sketches from the design process. Members of the design and construction team included: June Wayne, Vanessa Rios-Castro, Bethany Coma, Sohaiba Maratita and Brittany Figueroa

Faculty sponsor: Kim Hoffman

**INTERDISCIPLINARY: STEM**

STEM Scholars Panel Discussion

Session chair: Breeann Flesch

Werner University Center (WUC) Pacific Room

8:30 to 9:30 a.m.

STEM Scholars intern: **Austin Bermoy**

STEM Scholars Peer Mentors: **Caitlin Castillo, Jose Aldo, Obed Lopez,**

**Diana Martinez**

STEM Scholars Summer Bridge participants: **Sydney Scott, D-Dré Wright**

The mission of the STEM Scholars Center at Western Oregon University is to provide resources that increase the participation and retention of underserved student populations in STEM disciplines. Increasing diversity in the STEM fields is critical to addressing some of the major challenges that we face for the future. This panel discussion includes student participants, student mentors, faculty advisors and the center director of STEM Scholars. The panel members will discuss program highlights and answer questions.

Faculty sponsor: Breeann Flesch

## INTERNATIONAL EDUCATION & SERVICES

Study Abroad: Encounters and Perspectives  
Session chairs: Misty Weitzel and Bryan Dutton  
Werner University Center (WUC) Ochoco Room

10 to 10:15 a.m., WUC Ochoco Room

### Alexander Heenan

*My Educational Experiences Studying Abroad on Board the SSV Robert C. Seamans*

Studying abroad is an opportunity many students take in order to surround themselves by another culture while also progressing towards their academic goals. Sea Semester is a unique study abroad opportunity in which I not only got to immerse myself in the cultures of the islands we visited, but also engage in nautical culture and long-term field studies through the South Pacific. This presentation will demonstrate the different kinds of educational opportunities students can find studying abroad by examining the experiences I had in culture, nautical science and field studies. For example, I observed biodiversity of coral reefs in Samoa, Tonga and Fiji and how it is being impacted by climate change. I was also able to talk to several islanders about how colonialism and industrialization has changed their everyday diet. As an education major, these experiences will forever impact the way I plan to teach biology in the future.

Faculty sponsor: Misty Weitzel and Bryan Dutton

10:15 to 10:30 a.m., WUC Ochoco Room

### Michael Hansen

*Living, Breathing History: Studying in Germany*

It's one thing to read about history in the textbooks or see pictures of monuments and breathtaking sights. Studying abroad presented me with the opportunity to see history face to face and challenge what I thought I knew and felt. I stood where the Berlin Wall once stood, explored the Berliner Dom and saw first hand where the atrocities of the Nazi regime took place. Not only did I walk where history was written, I also met people from all around the world: Italy, France, Ireland, Germany, Norway, etc. Each person I met and place that I saw had an influence on my perspective, allowing me to see this international world in a way I could never imagine.

Faculty sponsor: Misty Weitzel and Bryan Dutton

## MATHEMATICS

Mathematics Senior Project Presentations  
Session chair: Matthew Nabity  
Robert Woodcock Education Center (RWECC) 107

8:30 to 8:45 a.m., RWECC 107

### Jose Sosa-Vazquez

*Emergent Bilinguals in Math Instruction*

In Oregon, the Latino population has grown 72 percent since 2000, which means there is a greater number of emergent bilingual students in our schools and this will most likely keep growing. To investigate the issues surrounding the requirement that emergent bilinguals learn math and English concurrently, we surveyed and interviewed emergent bilingual students at a local high school. This talk discusses findings of this investigation and possible modifications to curriculum based on these findings.

Faculty sponsor: Breeann Flesch

8:45 to 9 a.m., RWECC 107

### Diana Martinez

*Quantifying Concurrency in a Network in the Spread of STDs*

Statistically, it has been shown that concurrency has a significant impact on how fast an STD will spread through a population. Thus it is necessary to define and

measure concurrency and one way to do so is by applying graph theory. This presentation will focus on looking at three different measurements that can be used to quantify concurrency within a sexual network by using graph theory and basic statistics. Even though, at first glance, the measurements may seem abstract, through the use of graph theory and statistics, they are quite easy to understand.

Faculty sponsor: Breeann Flesch

9 to 9:15 a.m., RWECC 107

### Brianna Brouwer

*Predicting the Stock Market*

Predicting the performance of stocks is a challenging problem that has been analyzed in numerous approaches. We investigate the use of Hidden Markov Models to predict short-term stock performance.

Faculty sponsor: Matthew Nabity

9:15 to 9:30 a.m., RWECC 107

### Jasmine Quang

*History Of Fermat's Last Theorem*

Fermat's Last Theorem was a conjecture that took more than three centuries to prove. It is a theorem that is rooted in number theory but quickly continues into elliptic curves and modular forms. We will be discussing the history of how this theorem came to be, who attempted to prove it through the years and what methods were used. We will also be discussing who proved it and the steps they took to do so.

Faculty sponsor: Cheryl Beaver

9:30 to 9:45 a.m., RWECC 107

### Elisabeth Edwards

*A Regression Approach to Fairer Grades*

Have you ever complained about a class grade or disagreed with an "unfair" teacher? This presentation will investigate regression techniques in response to creating a fairer system of grading. We will explore a brief history of grading and create a better understanding of educational grading systems.

Faculty sponsor: Matthew Nabity

9:45 to 10 a.m., RWECC 107

### Andrew Vohland

*An Exploration of Connections Amongst Musical Artists*

Throughout all of music, you may notice that many bands share connections with other artists. Maybe one musician was in both bands, they could have collaborated on a song together, or perhaps even one band covered a song from the other. Using these connections as the edges in a graph data structure, we'll investigate the relationships among musicians. With a variety of computer algorithms at our fingertips, we will explore and calculate meaningful numerical representations of how connected musicians are with each other.

Faculty sponsor: Matthew Nabity

## BREAK

10:15 to 10:30 a.m., RWECC 107

### Julia Pride

*From Superflip to Solved*

One of the possible applications of Group Theory is the Rubik's Cube. The Rubik's Cube is a physical structure that demonstrates and reflects some of the foundation properties of groups. We will examine this famous structure, its physical and qualitative properties and use the Superflip example to show how the Rubik's Cube can be solved using Group Theory.

Faculty sponsor: Matthew Nabity

10:30 to 10:45 a.m., RWEK 107

**Kathryn Wilson***A Polynomial in A of the Diagonalizable and Nilpotent Parts of A*

Any square matrix  $A$  can be decomposed into a sum of the diagonal ( $D$ ) and nilpotent ( $N$ ) parts as  $A = D + N$ . The components  $D$  and  $N$  commute with each other and with  $A$ . For many matrices  $A, B$ , if  $B$  commutes with  $A$ , then  $B$  is a polynomial in  $A$ —this holds for  $D$  and  $N$ . Following a Herbert A. Medina preprint, this paper shows how to construct the polynomials  $p(A) = N$  and  $q(A) = D$ . Further, the Jordan canonical form  $J$  is a conjugate  $Q^{-1}AQ$  of  $A$ ; this paper demonstrates that the conjugation relating  $J$  and  $A$  also relates  $N$  and  $D$  and  $J$  and  $D$ , respectively.

Faculty sponsor: Scott Beaver

10:45 to 11 a.m., RWEK 107

**Jose Fernandez***The Math of Sound and Temperament*

Music, though it may be a form of art, has some rather mathematical properties. This presentation seeks to demonstrate the physical properties of sound through mathematics and take a look at the differences of the two main methods of temperament in music.

Faculty sponsor: Matthew Nabity

**MODERN LANGUAGES**

Contributed Presentations in Multilingual Studies

Session chair: PURE

Werner University Center (WUC) Ochocho Room

8:30 to 9 a.m., WUC Ochocho Room

**Cassie Shouse***The Role of Codeswitching in Chicano Literature*

Codeswitching, the act of alternating between two or more languages within the same discourse, is a phenomenon that naturally occurs when languages come into contact with each other. Codeswitching occurs most frequently in the United States with Spanish and English, commonly known as Spanglish. Chicano authors, such as Rodolfo González and Gloria Anzaldúa, utilize codeswitching heavily in their written works. This essay seeks to demonstrate how the inclusion of both Spanish and English in Chicano texts facilitates the authors' efforts to manifest their identities and linguistic realities to the reader.

Faculty sponsor: Patricia Gimenez

9 to 9:30 a.m., WUC Ochocho Room

**Ivan Acosta***Bilingual Sociolinguistics: The Complexity of Education and Language*

Bilingual education programs are emerging all over the United States. This boom in programs is the result of the great number of bilingual speakers and growth of the second language Spanish learners. This presentation seeks to examine and compare dual language and bilingual education programs in regards to their effectiveness and structures.

Faculty sponsor: Patricia Gimenez

**MUSIC**

Excellence in Music Performance

Session chair: Kevin Helppie

Smith Hall (SH) 121

11 a.m. to noon

**Jessica McCutchen***Sonata in E Minor K.198 - D. Scarlatti*

Faculty sponsor: Kevin Helppie; composer: Domenico Scarlatti

**Nikita Williams***Pietà Signore*

Faculty sponsor: Kevin Helppie; accompanist: Jackie Morelli

**Trevor Fischer***Sonata #1 in E minor, Opus 38*

Faculty sponsor: Kevin Helppie; accompanist: Jackie Morelli

**Wanman Lai***The 2nd Prelude by Rachminanoff*

Faculty sponsor: Kevin Helppie; composer: Sergei Rachminanoff

**Josiah Glaser***Selections from Martin Ellerby's Tuba Concerto*

Faculty sponsor: Kevin Helppie; composer: Martin Ellerby

**Emily Dalziel***Three Fantastic Dances I. Allegretto II. Andantino III. Allegretto*

Faculty sponsor: Kevin Helppie; composer: Dmitri Shostakovich

**Yuzhou Huang***Étude in C minor, Op. 25 No. 12 by F. Chopin*

Faculty sponsor: Kevin Helppie; composer: Frédéric Chopin

**Mengyuan Chen***What I Did for Love*

Faculty sponsor: Kevin Helppie; accompanist: Jackie Morelli

**Helen Goodyear***Burn (from the musical Hamilton)*

Faculty sponsor: Kevin Helppie; accompanist: Jackie Morelli

**Emmaly Basaraba***Five Foot Two*

Faculty sponsor: Kevin Helppie; accompanist: Wyatt Basaraba (banjo)

**SERVICE LEARNING & CAREER DEVELOPMENT**

Internships: Exploring Career Paths

Session chair: Kathryn Plummer

Werner University Center (WUC) Ochocho Room

11 to 11:15 a.m., WUC Ochocho Room

**Kaylee DeBolt***Internships: The Stepping Stone to Employment*

As the 2017 Alumni Relations WOU Community Internship Program intern, I was granted the amazing opportunity to get a behind-the-scenes look into University Advancement. Through planning the WOU Spring Wine Mixer, Scholarship Dinner and Senior Send-Off, I gained invaluable experience in event planning and conflict management that I would not have gleaned from a class. My internship has resulted in a student position opening up in the same department

## MORNING PRESENTATIONS AND PERFORMANCES

being hired on past the end date of the internship is a very common thing, which is one reason internships are such a powerful teaching tool.

Staff sponsor: Emily Lafon

11:15 to 11:30 a.m., WUC Ochoco Room

**Andy McDonald and Emily Pahlke**

*Creating Q-Loop Productions*

Q-Loop Productions is a new student-led production organization that is being created in order to make engaging and high quality academic video content for the Western Oregon University College of Education. Through an internship with the WOU Community Internship Program, as well as support from the College of Education, we have been able to build this program from the ground up and are prepared to launch fall term 2017.

Faculty sponsor: Mary Bucy

11:30 to 11:45 a.m., WUC Ochoco Room

**Samantha Lindsey**

*Professional Writing: The Academics and Application*

This presentation will explore the importance of professional writing, specifically focusing on the work Lars Soderlund and Samantha Lindsey have accomplished while developing advisory boards for the Professional Writing program at WOU. By the end of this presentation, the audience will have a greater understanding and appreciation for professional writing in academics and applications.

Faculty sponsor: Lars Soderlund

11:45 to noon, WUC Ochoco Room

**Rebecca LaPorte**

*Keep It Simple: Fixing the Language Barrier for Users in Financial Aid*

Communication with the Federal Financial Aid is sometimes difficult to navigate and understand. Through analysis, market research and collaboration, new methods were developed to make the process quicker, more efficient and more convenient for new and returning users.

Staff sponsor: Plummer

Noon to 12:15 p.m., WUC Ochoco Room

**Yan Yan**

*Immersed in Linguistics as a Research Assistant*

The presenter will describe what she has worked on in her internship as a research assistant in the field of Linguistic Landscapes. She will further explain how this position influenced her while applying for graduate schools and how it may impact her future studies and help her career development.

Faculty sponsor: Robert Troyer

## SOCIOLOGY

Research and Praxis in Sociology

Session chair: Dean Braa

Richard Woodcock Education Center (RVEC) 201

8:30 to 9 a.m., RVEC 201

**Mitchel Rubalcava**

*The Study Of Christianity Within Oregon Politics*

My senior project is about the connections between religion and politics with a focus on Christianity and the Oregon Legislature. My study includes interviews with various Oregon Politicians, both Republicans and Democrats. Interviews were conducted at the Capitol and included the use of a short questionnaire. The goal of this study is to identify how religion has influenced various political decisions with a focus on the development of legislation.

Faculty sponsor: Dean Braa

9 to 9:30 a.m., RVEC 201

**Jillian Lee**

*Paper Presentation*

My research is based upon a case study of the Polk County Family and Community Outreach Family Resource Navigators. This agency and its programs work in partnership with the Oregon Department of Human Services. This agency's goal is to provide resources for clients as well as the general public. The purpose of this study is to measure client satisfaction with Family Resource Navigators. Qualitative data from participant observation, telephone surveys and interviews with clients and case workers were used to measure outcomes. One goal is to develop recommendations for the program so as to better serve clients.

Faculty sponsor: Dean Braa

9:30 to 10:00 a.m., RVEC 201

**Alexis Garcia**

*Domestic Violence Policy Implementation and Barriers to Best Practices*

This study is about domestic violence policies and barriers to implementation. My central concern is recognizing barriers that agency employees find in helping survivors remain safe. My methodology and data collection that I used for this study includes face-to-face interviews with employees at Center for Hope and Safety, Sable House, Department of Human Services, Polk County Victims Assistance and the Independence Police Department. I hope to identify and analyze possible alternatives in aiding domestic violence survivors.

Faculty sponsor: Maureen Dolan

## BREAK

10:15 to 10:45 a.m., RVEC 201

**Divine Irambona**

*Bullying on a College Campus*

Previous research on bullying on college campuses has shown that victims often suffer from anxiety, depression and a low sense of self-worth. Student bullying has been defined as being exposed repeatedly and over time, to negative actions on the part of one or more other students. This study investigates the extent of bullying on a college campus, the types of bullying and the consequences of the negative actions. Data were collected from face-to-face interviews with college students who have been bullied and students who have witnessed someone else being bullied. A questionnaire distributed to 144 students at Western Oregon University was also analyzed. The results show that women and Hispanic/Latino students are more likely to be bullied. Cyberbully was the most common form of bullying, and most students who reported being bullied did not seek help. The most common response to be bullied was depression and sadness.

Faculty sponsor: Peter Callero

10:45 to 11:15 a.m., RVEC 201

**Katie Hubbard**

*Pharmacy Gatekeeping Practices*

This study examines the gatekeeping practices of pharmacists and pharmacy technicians in retail pharmacies. The bureaucratic structure of the pharmacy creates an environment where employees follow the general morality of their organization and draw upon the social rules and the resources that are available to them to make ethical decisions. How do company guidelines, expected roles and responsibilities and personal beliefs and judgements of patients affect whether a patient is able to have their prescription filled? Analysis of participant observation and in-depth interviews of six pharmacists while seven pharmacy technicians revealed that pharmacy technicians more closely follow company regulations and pharmacists focus on the needs of the patient as a priority. Most pharmacists believe that pharmacy technicians don't make decisions without consultation, while many technicians reported doing so. The decision whether to fill a prescrip-

tion for a patient was found to be situational and depends on the motivation of the employee the patient comes in contact with.

Faculty sponsor: Peter Callero

## THEATRE

Theatre History Paper Presentations

Session chair: Michael Phillips

Werner University Center (WUC) Santiam Room

10 to 10:15 a.m., WUC Santiam Room

### Amanda Vander Hyde

*The Commentary on Gender Roles in the Servants' Subplot of The Wonder: A Woman Keeps a Secret*

This paper studies one of the subplots of Susanna Centlivre's *The Wonder: A Woman Keeps a Secret* and how that subplot applies to the gender roles at the time in the society, especially when including interactions between men and women. The servants in this text interact in ways that highlight these interactions between men and women and the goals of these interactions that are put in place by society. The most prominent structure put in place, evident in this text, is the idea that one gender is typically viewed as property that can be gained through these interactions. I examine how this text upholds the fact that this gender would typically be women and also how *The Wonder* may reverse or change that fact to make a greater statement and what that statement may be.

Faculty sponsor: Michael Phillips

10:15 to 10:30 a.m., WUC Santiam Room

### Alexander Schlientz

*Roman Mime*

Ancient Rome was filled with all sorts of popular entertainment. Mime and pantomime began to grow popular, having appeared in Rome around 212 B.C.E. Roman mime was inspired by Greek mime, which consisted of all sorts of entertainment. The Romans adopted this, creating a similar style of mime to take place at the Floralia. Mime could be performed at any time or place, allowing for freedom of mime troupes to move about. These troupes could be a collective of all sorts of performers. Generally presentations were improvised, including two or three actors playing to a common theme. Mime brought several new changes into Roman theater performance, including the addition of female actors. Another important change was the removal of masks. Government involvement helped the growth of mime's popularity far beyond that of traditional drama. However, even with all of the popular support of mime, the performers were of even lower status than dramatic actors. Mime was a prevalent form of entertainment in Rome that not only took the spotlight from traditional drama but changed several aspects of performance, with the exclusion of masks and the inclusion of women on the stage.

Faculty sponsor: Michael Phillips

10:30 to 10:45 a.m., WUC Santiam Room

### Elise Barberis

*Portrayal of Disability Within the Works of William Shakespeare*

Throughout the works of William Shakespeare, a great number of disabilities are represented. From kyphosis to epilepsy, Shakespeare's representation of disability allows modern audiences a rare and intimate view into the perception of disability in Elizabethan times. Through the careful analysis of several of Shakespeare's most famed characters, a plethora of information regarding Elizabethan disability culture may be gleaned.

Faculty sponsor: Michael Phillips

10:45 to 11 a.m., WUC Santiam Room

### Chris Wilkerson

*Charles Macklin*

Throughout the course of history, a number of individuals have had a lasting influence on the workings of the theater. A brief biography of one of these individuals, the actor Charles Macklin, recounts the life of a man who lived through nearly the entirety of the 18th century and who irrevocably changed the face of the English theatre.

Faculty sponsor: Michael Phillips

11:00 to 11:15 a.m., WUC Santiam Room

### Rebecca Gordon

*Meditation and the Origin of Zen Buddhism*

Zen Buddhism and meditation have been practiced for more than a millennia. Though originally observed in a few Asian countries, these practices have found their way into Western society. By studying the origins of Zen Buddhism, it is possible to not only better understand the culture that Japanese theater has grown in, but to better understand oneself.

Faculty sponsor: Michael Phillips

11:15 to 11:30 a.m., WUC Santiam Room

### Mykel Presler

*European Invasion of the Inca*

Before European explorers discovered South America, it was largely under the control of the Inca Empire. This brief history examines the implications of the European exploration of South America, including the introduction of Western culture, e.g. theatre.

Faculty sponsor: Michael Phillips

11:30 to 11:45 a.m., WUC Santiam Room

### Angeliki de Morgan

*Richard Wagner*

Throughout the history of mankind, the arts have always been influenced by events in their respective epochs and have responded to these events in different ways. Individual artists from a variety of art forms, such as visual art, the theatre, music, etc., have also used their artistic gifts to either support regimes or movements or speak against them. Today, artists are frequently vocal supporters of such ideas as democracy, racial and cultural equality and individual and artistic freedom. Of course, there are always those few who oppose these ideas. However, non-artists tend to automatically assume that any given artist of acclaimed fame is a liberal and opposed to dictatorial and restrictive regimes. Although this is not commonly known about him, German composer Richard Wagner, who lived in Nazi Germany, is one example of those who did not, unfortunately, fight Hitler's regime of evil.

Faculty sponsor: Michael Phillips

11:45 to noon, WUC Santiam Room

### Oliver Bergh

*Gesamkunstwerk: The Paradoxical Theory that has no Problem Whatsoever*

*Gesamkunstwerk* is an artistic theory from Richard Wagner, discussing the accumulation of all parts of a work into a "total art." Many theorists have difficulty with the concept and this paper will discuss the nature of the *Gesamkunstwerk* and the difficulties of becoming overly theoretical in approaching it furthermore, it will be discussed how to view Wagner and his theory.

Faculty sponsor: Michael Phillips

*Afternoon sessions*

**ANTHROPOLOGY**

Anthropology Symposium

Session chairs: Robin Smith, Isidore Lobnibe and Katherine Miller  
Werner University Center (WUC) Willamette Room

1 to 1:30 p.m., WUC Willamette Room

**Jeanne Kate McCaslin**

*Resisting Language Shift in Polk County, Oregon: Bilingualism among Young Mexican-Americans*

Since the 1960s, the primary model used in the United States to explain and predict language shift among immigrant populations has shown a three-generational shift from ethnic language monolingualism to English monolingualism. However, whether this model can be applied to some Latino populations, who show sustained bilingualism, has been contested in more recent studies. This ethnographic study investigated language use among young Oregonians with Mexican heritage in Polk County. Drawing on participant observation and on formal and informal interviews, I discuss the resilience of Spanish language use in this population. The results suggest that there may be decreased Spanish language use by young Mexicans compared to their parents' and grandparents' generations, but that they do communicate in both languages. Findings show personal identity and ideology, education and family and community context as some of the key contributing factors influencing language use in this population. Further, the demographic profile of the Monmouth-Independence community and the nature of the Western Oregon University campus contribute to an atmosphere that supports bilingualism.

Faculty sponsor: Isidore Lobnibe

1:30 to 2 p.m., WUC Willamette Room

**Jessica Mylan**

*Sustainable Tourism in Costa Rica: Aligning Tourists' Interests with Local Development*

Sustainable practices in small communities preserve the natural environment while benefiting community members by promoting human welfare. One quarter of Costa Rica's export income comes from tourism, with ecotourism being the most prominent form. The field research for this study was conducted in the regions of Tárcoles, Carara National Park and Jacó along the Pacific Coast in Costa Rica. Tourists who visit other local attractions often bypass Tárcoles. The study explored which services interest tourists, what activities draw tourists to Costa Rica and what sustainable services they are willing to pay for. Multiple surveys, semi-structured interviews and participant observation were the methods for data collection. My analysis of the data suggests that there are opportunities in Tárcoles for the community to attract tourists visiting nearby communities and develop sustainable services that preserve the environment and create local economic benefits.

Faculty sponsor: Isidore Lobnibe

2 to 2:30 p.m., WUC Willamette Room

**Robin Roemer**

*Knitting in 21st Century America: The Culture and Ideology of Knitting Groups in Rural Oregon*

Knitting has existed since the Middle Ages and continues to thrive well into 21st century America. Why do people continue to knit and why do knitters form themselves into social groups? This senior thesis investigates these and related questions in order to understand the culture of knitting and how knitters keep the practice alive. Drawing on participant observation and oral interviews, it further examines the identities knitters construct as members of knitting communities in rural Oregon, the differences in the craft based on the knitting practices employed, the materials and the patterns used, the gender ideologies of learning how to knit and the role of online interactions.

Faculty sponsor: Isidore Lobnibe

2:30 to 3 p.m., WUC Willamette Room

**Sandra Gonzales**

*Conflict and Tension in Bristol Bay: The Case of Social Indifference Among and Toward Seasonal Cannery Workers in Alaska*

In what ways has the American system of capitalism, gender relations and racial segregation affected and shaped the commercial fishing industry in Bristol Bay, Alaska? In the fishing industry of Alaska more generally, power historically has been distributed unequally, which often creates tension and conflict among the lower ranks of cannery workers and male domination is hardly hidden in the work place. By focusing on how the industry manages inequalities between and among individuals, this proposed ethnographic project will examine gender and racial relations among cannery workers in Bristol Bay. I will draw on participant observation, oral interviews and life histories to show how power is distributed among the lower ranks of individuals and the resulting living conditions of conflict and tension they face.

Faculty sponsor: Isidore Lobnibe

BREAK

3:15 to 3:45 p.m., WUC Willamette Room

**Rebecca Hardgrave**

*Hungry Amidst Plenty: Understanding Food Insecurity in Rural Oregon*

Why are poverty and food insecurity still problems in the United States given that powerful institutions have been working to solve them for decades? The United States is the wealthiest country in the world and it produces most of the world's agricultural products still, there are many who struggle with hunger. Oregon in particular continues to struggle with these issues. The USDA ranks Oregon as 28th in agricultural production among U.S. states. The Oregon Farm Bureau reports that the state exports 40 percent of its agricultural products. This proposed study seeks to investigate the factors behind food insecurity in Monmouth, a community in Polk County where some inhabitants struggle with food insecurity despite living in a fertile agricultural zone. Drawing on participant observation, oral interviews and life histories, it will unearth why some inhabitants of this university town, located in the heart of the rich and fertile Willamette Valley, are hungry amidst plenty. It will also examine the ways in which they respond to this growing issue of food insecurity.

Faculty sponsor: Isidore Lobnibe

3:45 to 4:15 p.m., WUC Willamette Room

**Elliot Paulson**

*Mainstreaming Halal: A Growing Niche Market in an Oregon University Town*

The observance of ritual purity as it relates to the consumption of food is widespread in many religions, including Judaism and Islam. In these two Abrahamic religions, a set of dietary restrictions, which are the Jewish concept of Kosher or the Muslim Halal, outline that which is forbidden. Halal originates from the Quran, which means it is permitted, in contrast to Haram, which is forbidden. This proposed project will explore the expanding niche economy of halal products in Corvallis, Oregon, by addressing why there is a growing market for Halal products in major grocery stores of the city. What link exists between the Muslim population at Oregon State University and this growing market? Further, is Halal consumed only by the Muslim community, or are there other demographics in play? By utilizing participant observation and oral interviews with customers and managers in major food stores, the project seeks to understand the chain of supply of this niche market and the ritual implications for the community.

Faculty sponsor: Isidore Lobnibe

4:15 to 4:45 p.m., WUC Willamette Room

### Kaylea Vandewettering

*Balancing Family Life in the New Economy: Single Mothers in West Valley Communities, Yamhill County, Oregon*

In an increasingly competitive economic climate not only is it no longer possible to earn a living wage with a high school diploma, but the job market now requires highly trained and educated individuals to meet the challenges of an equally complex and information-driven work place. Even more difficult for households subsisting on a single income is the strain of meeting basic needs as costs of living soar and wages stagnate. What challenges do female-headed households face in this new economy and what various strategies do they employ to survive and support their families? This study proposes to address these questions by exploring how single female heads of household balance financial responsibilities with their role as sole caretaker of the home and family. By utilizing surveys, oral interviews and participant observation, I will closely examine the daily life experiences and problems faced by single mothers in Yamhill County, Oregon and the strategies they utilize to meet the demands of family and finances.

Faculty sponsor: Isidore Lobnibe

## ART

Art & Visual Communication Design Portfolio Presentations

Session chairs: Jennifer Bracy and Jodie Garrison  
Campbell Hall (CH) 101

12:15 to 12:30 p.m., CH 101

### Wyatt Bauer

*Portfolio*

Faculty sponsor: Jennifer Bracy

12:30 to 12:45 p.m., CH 101

### Kristen Brown

*Portfolio*

Faculty sponsor: Jennifer Bracy



Kristen Brown

12:45 to 1:00 p.m., CH 101

### Jixu Cheng

*Portfolio*

Faculty sponsor: Jennifer Bracy

1:00 to 1:15 p.m., CH 101

### Tori Stutzman

*Portfolio*

Faculty sponsor: Jennifer Bracy

1:15 to 1:30 p.m., CH 101

### Makena Harris

*Portfolio*

Faculty sponsor: Jennifer Bracy

## BIOLOGY

The Kenneth M. Walker Biology Oral Presentation Session

Session Chair: Jeffrey Snyder and Michael Baltzley

Werner University Center (WUC) Columbia Room

3 to 3:15 p.m., WUC Columbia Room

### Rachel Mendazona and Mariah McKechnie

*Using Artificial Selection To Understand Directional Orientation Behavior In Drosophila*

Previous studies have shown that *Drosophila melanogaster* can orient using Earth-strength magnetic fields. In order to investigate the underlying mechanisms of magnetoreception, we used a sequential Y-maze to breed two groups of flies: a north-seeking population and a south-seeking population. After flies completed the maze, we collected and bred the top 20 percent of north- and south-seeking flies, then repeated the protocol for 15 generations. As a positive control, we also performed a similar set of selection experiments to breed populations of positive and negative phototaxis flies. Our results indicate that *Drosophila* show positive phototaxis and that our light-selected flies have a significantly stronger preference for light than our dark-selected flies ( $p < 0.05$ ). Our results also indicate that the north- and south-selected flies both have a slight preference for choosing north within the maze. We are currently performing trials with wild type flies in a different testing room to confirm the north preference of the flies.

Faculty sponsor: Kristin Latham-Scott and Michael Baltzley

3:15 to 3:30 p.m., WUC Columbia Room

### Kayla Baker

*Emergence Theory in the Human Immune System*

The adaptive human immune system has been a source of fascination to the human race dating back as far as 430 BC and its many intricacies and separately working systems make it an interesting challenge to researchers around the world. This presentation discusses the study of the immune system through the lens of emergence theory, a model that represents the ideas that simple interactions between the individual actants of a system can lead to patterns of macro-behavior. By focusing on how lymphocytes behave as the actants of the system, we can examine how altering either the number of actants, or their separate interactions can greatly affect the functioning of the system as a whole. The presentation will also examine autoimmune diseases and how by focusing on the emergent behavior of the immune system, we can continue research on how to best treat these disorders of the system. By the end of the presentation, audience members will be familiar with a new paradigm for how systems function, have an increased awareness of how the immune system benefits us as individuals and be ready to use the lessons of emergence to cultivate and continue discussions in their community.

Faculty sponsor: Lars Soderlund

## COMPUTER SCIENCE

Computer Science and Information Systems Capstone Group Projects

Session chairs: Scot Morse and Ted Beers

Instructional Technology Center (ITC) 211

1 to 1:15 p.m., ITC 211

### Aktham Bin Hussain, Fahad Alyusuf and Hashim Alnasser

*Note Distribution for WOU courses*

This project would involve setting up a central place for students to share notes and course materials with other students at WOU. There are a lot of free resources online to learn the material that we study in class, however, there is very little material online for "this specific class taught at WOU." We would set up a location for students to upload notes for a specific class and share them with other students. This would be useful because course materials are expensive if they need to be bought and this would let students and professors offer resources to students for free.

Faculty sponsor: Ted Beers



## AFTERNOON PRESENTATIONS AND PERFORMANCES

1:15 to 1:30 p.m., ITC 211

**Craig Saunders, Kristen Brown and Eric Miner**

*Student Course Evaluation and Review Application*

The university's course evaluations are limited and their results are not shared with students. This restricts a student's ability to determine whether course workloads or instructors' teaching styles fit their needs. Even basic course information such as the syllabus is typically only posted in Moodle, a password-locked environment only available to students who are already enrolled in that particular course. Having public evaluations would provide more transparency and honesty for the student body. Additionally, current course evaluation questions are tailored for the instructors' benefit, typically in terms of an instructor meeting prescribed learning outcomes. These questions do not necessarily cover information that students would most like to know in terms of the student experience. Our Student Course Evaluation and Review Application creates a way to help students make informed educational decisions by collecting and organizing student opinions in a meaningful way that aids in uncovering patterns and explaining course problems.

Faculty sponsor: Ted Beers

1:30 to 1:45 p.m., ITC 211

**Derek Smith, Tim Taylor and Juan Chavez Rojas**

*Computer Outfitter*

IT professionals face a challenge when deciding to invest in new computers for their organization. Knowing what computers cost and whether they will meet the needs of the users is often uneasy to achieve and pre-made computers may not be the solution. An alternative is to build custom computers. Our website addresses this problem by allowing IT professionals to upgrade or replace their user systems easily and quickly while meeting their user's needs. The website will have two sides to it. One side will allow IT management to control the choice of components they offer to employees and the other will allow employees to choose the components they want for their individual systems. The combination of the two sites enable an organization to stay within IT budgetary goals with greater ease.

Faculty sponsor: Ted Beers

1:45 to 2 p.m., ITC 211

**Baset Shagrun, Blake Martinez and Murtadha Altaweel**

*Student Connect*

Our website focuses on helping students with different resources and services during their college experience. Our goal is to make sure all students will have the resources they need in order to succeed, such as tutoring services, notes, videos, research material and book sharing. Moreover we will make sure that we will have the most academic resources and the most professional services to meet the quality of help they need with the lowest prices.

Faculty sponsor: Ted Beers

2 to 2:15 p.m., ITC 211

**Abdulaziz Aleid, Abdulrahim Aljamaan and Ahmed Alghaleb**

*Tutoring Center*

The project will make students no longer have difficulty finding a tutor that can help them with whatever subject matter they're studying because most of the tutoring options are hosted through our site. Also, because tutoring is expensive, we will provide a good project enabling students to negotiate prices with tutors, which is a major component of our solution and yet another measure of success. This project enables students to quickly and easily pick up tutoring as a side job to earn some extra money. This is entirely at the benefit of the students and the institution too, particularly at WOU because there are so few tutors available at the tutoring center and because tutoring for 300 level and higher courses isn't offered. When I think of this project, I see us using our solution to build an academic community of students helping other students, where tutors are happy because they get paid and students are happy because they get help. This project would be interesting to pursue because all activities will be under WOU supervision.

Faculty sponsor: Ted Beers

2:15 to 2:30 p.m., ITC 211

**Terence Soum, Jiaxin Wang and Jonathan Elliott**

*Pyrus*

Pyrus is a software as a service (SaaS) search engine that allows users the ability to aggregate ad listings available on the internet. We offer a better search experience by providing unrestricted search. Our main features are item searching (with ads generated from Craigslist.org) and job searching (with ads generated from Craigslist.org, Monster.com and Indeed.com). Users are able to aggregate job and item listings and apply filters, remove ads that are irrelevant or spam and save search results to a database for later use.

Faculty sponsor: Scot Morse

BREAK

2:45 to 3 p.m., ITC 211

**Nikolas Beltran, Ryan Rothweiler, Zhendong Ma and Matherin Langley**

*Each Voice Web Application*

Each Voice is a website designed to help bring together information on local and state government matters to help the public more efficiently acquire this information so they can better understand and vote in these matters. The hope is that in being able to locate this information easily, the American people will participate more in local and state matters. Each Voice will include details on proposed local bills, laws and representatives. The public will be able to discuss these proposed laws, bills and representatives with others. This combination of information aggregation and user discussion is something that does not currently exist. The goal is to provide a place where members of the public can start to become more active in and better educated about their local and state governments.

Faculty sponsor: Scot Morse

3 to 3:15 p.m., ITC 211

**Whitney Meulink, Ahmed Almutairi, Peter Wallace and Robert Balsley**

*my Wall*

myWall is a collaboration tool for working with colleagues locally or remotely where users can draw out diagrams, mind maps, brainstorming lists, flow charts, etc. and save them for later review. myWall is a web application that allows users to connect with other users, whether it is for school, business, art or software engineering projects. Individuals using myWall will be able to display their creativity with their very own virtual white board. The system will show real-time updates as others draw, either using digital white boards or tablets and areas of the white board can be protected with the option of turning on or off overlays of others' drawings or notes. It is intended to be for both individual users and for teams who need a way to work collaboratively and have an easy way to keep track of their progress. Unlike other white board web applications, our site will allow items to be posted to the community at large, like a question-and-answer site.

Faculty sponsor: Scot Morse

3:15 to 3:30 p.m., ITC 211

**Brandon Hunt, Kyle Walsh and Tyler Connors**

*Twitch Channel Guide*

The Twitch Channel Guide (TCG) is a web application that helps users better navigate Twitch, a broadcasting service specifically for video game players where users can stream their gameplay from a personal computer, video game console or handheld device. Users will be able to log into the TCG with their Twitch account. On their TCG account, users can set their own streaming schedule. A user will be able to see when a streamer is going to stream as long as the user has followed the streamer. Unlike Twitch's current navigation, the TCG will navigate Twitch using a

schedule generated for each user. The Twitch Channel Guide's purpose is to simplify and enhance each user's streaming experience.

Faculty sponsor: Scot Morse

3:30 to 3:45 p.m., ITC 211

**Sarah Alvarado, Christopher Easton, Cameron Stanavige and Wayne Rose**

*IPG Member Management Web Application*

For international certification companies who need to manage memberships, certifications and client accessibility, the International Professional Groomers web service (IPG) is a publicly available web application containing all that is necessary for the managing, certifying, informing and locating of professional groomers all over the world, providing a valuable resource for IPG admin, pet groomers and clients alike. This application will assist IPG admin in the certification of new members, as well as the creating and updating accounts and the management of already certified members. This application will also provide a variety of convenient ways for clients to search for and find all needed information about IPG members in their area or area of choice. Unlike the current lack of pet groomer websites, our product will provide an easy-to-use centralized hub for the entire spectrum of user needs regarding professional groomers.

Faculty sponsor: Scot Morse

## DEAF STUDIES & PROFESSIONAL STUDIES

Deaf Studies and Professional Studies

Session chair: Erin Trine

Richard Woodcock Education Center (RWECC) 101

1:30 to 1:45 p.m., RWECC 101

**Myliisa McGill, Abby Luedeman and Stephanie Bessinger**

*Seabeck: Service Learning Trip*

We will be discussing our personal stories from our time at Seabeck as well as why it is such an amazing opportunity and experience.

Faculty sponsor: CM Hall

1:45 to 2 p.m., RWECC 101

**Juli Gessesse**

*Women's Issues in Vocational Rehabilitation Counseling*

Women in America did not have rights equal to men until the 1800s, with the right to vote being in 1920. Today, there are many issues about which women are concerned that are barriers to their success personally, physically and vocationally. Some of the top issues that concern women and others, are: poverty, hunger and homelessness; the gender wage gap; violence; reproductive rights; health care; paid leave; and competent child care. Single mothers account for 83 percent of all single households in the country. One-third of single women with disabilities are at poverty level and an additional 26 percent living one to two times below the poverty level. It is important that vocational rehabilitation counselors are aware of these issues and are prepared with information and resources to help women become successfully employed. Women in the workforce benefit the economy and positively affect political and social change. The video during this presentation will illustrate that a wide range of people have these concerns about women's roles and treatment in society and there are more similarities than differences between everyone.

Faculty sponsor: Denise Thew

2 to 2:15 p.m., RWECC 101

**Dave Moore**

*Indigenous Peoples and Psychotherapy 'The Soul Wound'*

This project is intended to challenge us to use creativity in addressing the diversity context of the vocational rehabilitation field. Grasping the history of any oppressed person is critical for counselors to develop when working with clients who are

members of an oppressed population. This presentation will discuss the Native American population, briefly address 'The Soul Wound,' and how these historical factors may affect the counseling they receive. 'The Soul Wound' is the historical genocide of native people and the generational trauma that comes from this history. The presenter will share a perspective on how natives began to use their cultural heritage to help support those in their community with disabilities and addictions by way of drum circles, sweats and other methods. The presentation will be a combination of historical videos and spoken word to give voice to a population that is underserved and nearly invisible as citizens. The goal is to illustrate the hope that all citizens and future counselors, will learn to connect and be able to provide services with more empathy and an understanding that we cannot know what native people have or are currently going through.

Faculty sponsor: Denise Thew

2:15 to 2:30 p.m., RWECC 101

**Danielle Kenoyer, Stephanie Bessinger, Makenne Caccavo and Erin Maue**

*Nicaragua Service Learning Trip*

The Service Learning trip that occurred during Spring break of 2017 was full of adventure, fun, sweat, tears and eye opening encounters that were all wrapped into a short 10 day trip. While in Nicaragua we, as a group, were able to experience and learn about the culture as a whole of this country. We tried varieties of Nicaraguan food, learned the custom ways of their lives, acquired new language acquisitions and made new lifelong connections.

Faculty sponsor: Patrick Graham

2:30 to 2:45 p.m., RWECC 101

**JennyLynn Dietrich**

*Pro-Tactile vs. Haptics*

As counselors, it is important for us to understand specific modes of communication with our clients. If a counselor were to work with the deafblind community they would recognize that there are two different modes of communication, pro-tactile and haptics. Haptics was developed and designed by a group of DeafBlind individuals in Denmark adopted and used by the Helen Keller National Center to train new deafblind students. Pro-Tactile is a new approach in communication, researched and designed by the DeafBlind community in Seattle. Jelica Nuccio and aj Grande, founders of Tactile Communication, LLC, believe that the deafblind community has been told "Hold, we'll tell you later" for far too long by the deaf community and are now saying "No more waiting, tell us now" through pro-tactile. During the presentation, the audience will see a demonstration of both pro-tactile and haptics. The presenter will explain why most deafblind individuals living in the United States prefer pro-tactile.

Faculty sponsor: Denise Thew

2:45 to 3 p.m., RWECC 101

**Rebekah Ocker**

*Achieving Immersive Gameplay: Interpreters and Video Game Inaccessibility*

ASL/English interpreters are exploring their influence and impact on the communities they work with. Sensitive to oppression and marginalization of the needs of the deaf community, interpreters and interpreting students are looking at how they can best support greater accessibility for people with who identify as deaf or hard of hearing. Video games are one such area where accessibility is lacking. Problems include reliance on sound cues for crucial survival information with subpar visual compensation, subtitles that do not meet national standards and inaccessibility to the immersive gameplay offered to hearing players. In this presentation, I will discuss my in-progress honors thesis on video games, accessibility and the role of interpreters in this growing issue.

Faculty sponsor: Erin Trine

BREAK

## AFTERNOON PRESENTATIONS AND PERFORMANCES

3:15 to 3:30 p.m., RWECE 101

**Mario Roldán De Luna**

*Language/Tolerance/Racism*

In 1956, Jacques Lacan developed The Graph of Desire, where he explains how human nature is tied to a logical order. This system is what we called language, however this must not be misunderstood as English or others but more as a structure where the individual creates associations that allows them to find a place in the world. The language and its order is where intolerances like racism, classism and others situate, not as words belonging to the mainstream language, but to the actions that respond to the symbolic and logical order of the language. There's a need to study and reformulate the action of racism and recognize the political use of oppression in the person's constitution. As a counselor in training, there is a need to know how this logical order situates the victim and the oppressor in their own personal development. In 1977, Foucault publishes *Discipline and Punish: The Birth of the Prison* where he explains the sociological and political function of gender, race and their relationship with power. My proposition is not in those fields, but suggest keeping this in hand to understand in depth the location, challenges and complexes the client in session can have.

Faculty sponsor: Denise Thew

3:30 to 3:45 p.m., RWECE 101

**Emily Dalerio**

*Muslim Women*

Muslim women who wear the hijab in the United States are often discriminated against by others, with misperceptions such as them being terrorists, evil or even on the opposite end of the spectrum of them being oppressed as part of their culture. Since the treatment of people with different cultures, ethnicities and religions has been such a wide topic with varying opinions in the United States, the author decided to put herself in the shoes of a Muslim woman wearing the hijab and gauge how she was treated in public. Also explored was the variety of perspectives others have on Muslim women. Additionally, the author asked several Muslim women how they feel about going out in America today. The video included in this presentation will include the perceptions of how people feel about Muslim women, how Muslim women feel about going out in society, actions of the public's reactions and behaviors, along with the author's overall impression and experience.

Faculty sponsor: Denise Thew

3:45 to 4 p.m., RWECE 101

**Brenda Puhlman**

*Emotional Intelligence and Interpreter Decision-Making*

This presentation will focus on the role of emotional intelligence and decision-making in the profession of interpreting. Codier, Muneno and Matsuura (2010) explain extensive research "has demonstrated correlations between measured emotional intelligence and important workplace and workforce outcomes such as performance, leadership effectiveness, job retention, stress management, job satisfaction, burnout prevention and positive conflict styles" (p. 940). This presentation will explore the impact of self-awareness, self-regulation, motivation, empathy and social skills on how professionals make decisions during their interpreting process (Goleman, 2004). Codier, E., Muneno, L., Franey, K. and Matsuura, F. (2010). Is emotional intelligence an important concept for nursing practice?

Faculty sponsor: Erin Trine

BREAK

4:15 to 4:30 p.m., RWECE 101

**Angela O'Bleness**

*Teaching Strategies: Implementation in Classroom Interpreted Discourse, the Possibilities.*

Teaching strategies and implemented methodologies are important aspects of a child's education and growth. Sign language interpreters in the K-12 setting typically are unaware of the deliberate methods and practices utilized by the instructor unless requested by the interpreter. Understanding the types of strategies and models of teaching should have an influence on the way an interpreter addresses meaning transfer for a student. Deliberate consideration of curriculum and common core with the implementation of these strategies has the potential to be a component for change toward a child's cognitive load. It is my intent to identify areas of change in curriculum of training interpreters that improves the quality of education for students in the K-12 setting. The deliberate inclusion of strategies in an interpretation can have a positive outcome toward learning targets and thus an improvement in standardized testing results and synthesis of information.

Faculty sponsor: Erin Trine

## EARTH SCIENCE

Earth Science Senior Seminar: Understanding the Tectonic Development and Framework of western North America

Session cChair: Jeffrey Templeton

Richard Woodcock Education Center (RWECE) 201

1 to 2 p.m., RWECE 201

**Landon Glynn**

*Cenozoic Tectonic Transitions in Western North America*

The tectonic framework of western North America has undergone significant changes throughout the Cenozoic, which in turn has influenced the evolution of large-scale features in dramatic ways. Subduction zone processes have dominated the region since the Paleozoic, but the decrease in the subduction angle of the Farallon Plate in the early Cenozoic resulted in uplift and deformation across a broad swath of the western United States. Beyond driving the Laramide orogeny, flat-slab subduction also influenced the locus of magmatism and volcanism across western North America. During the late Cenozoic, the transition from subduction dominated processes to transform faulting along the West Coast was marked by the northward migration of the Mendocino triple junction and the formation of the San Andreas and Walker Lane fault systems. Understanding how prominent geologic features in the West are connected to these broad-scale changes in the tectonic setting are crucial to interpreting the geologic framework of western North America.

Faculty sponsor: Jeffrey Templeton

**Will Edwards**

*Application of Modern Analytical Techniques to Understand the Tectonic Framework of Western North America*

The advancement and application of analytical techniques has led to greater understanding of tectonic features in western North America. A timeline is used to organize the methods used to gather geologic data. A geological proposal by Tanya Atwater that she discovered through paleomagnetism data that led to the proposal of hypothesis of many geologic questions including plate tectonics created a geodetic boom which influenced the development of modern analysis accomplished with the use of computers in contemporary times. Modern analytical techniques used by geologists today assist geologists in mapping the features of Earth and infer new data from previous data. These techniques include Global Positioning Systems (GPS), Geographic Information Systems (GIS), Light Detection and Ranging (LiDAR), Interferometric Synthetic Aperture Radar (InSAR), paleomagnetism and geochronology. Individual case studies upload these data

online and are applied to further study using the tools made available through GIS programs. Understanding how geological models are developed provides a perspective for understanding how geologic research is undertaken.

Faculty sponsor: Jeffrey Templeton

### Paul Rostad

#### *Inferring Tectonic Processes, Magmatism and Emplacement Mechanisms through Petrologic Studies of the Sierra Nevada Batholith*

The Sierra Nevada, framed by the Great Valley and the Basin and Range, is a mountain range more than 950 km long and 110 km wide located in eastern California. At the core of the range is the Sierra Nevada Batholith (SNB), consisting of numerous plutons that began forming in the late Triassic. The various rock types and minerals composing the SNB provide a record of the magmatic processes that lead to its formation. The sheer size of the batholith begs the question: What is the magma source and how does this relate to the composition of the batholith? The origin of the SNB is associated with subduction of the Farallon Plate beneath North America between 210 and 80 Ma. The compositional variations across the SNB provide evidence for whether discrete plutons formed due to incremental accumulation of magma or if they formed due to bulk magma flow. The lithologic characteristics of individual plutons illustrate the relationships between tectonic environment, magmatism, emplacement mechanisms and resulting compositions of the SNB.

Faculty sponsor: Jeffrey Templeton

2 to 3 p.m., RVEC 201

### Kalei Haake

#### *The Genesis of the Rocky Mountains*

The Rocky Mountains are the cumulative result of at least three orogenic events in western North America since the Paleozoic. During the Alleghenian orogeny, far-field stress from continent-continent convergence between Laurasia and Gondwana formed the Ancestral Rocky Mountains. Subsequently, the Modern Rocky Mountains began to form about 100 million years ago during the Sevier orogeny, which is associated with the eastward subduction of the Kula plate beneath North America. Uplift continued with the Laramide orogeny, which records subduction between the Farallon and North American Plates. With the onset of Laramide tectonism about 70 m.y.a., subduction slowed and the angle of the subducting plate flattened greatly, causing the Farallon slab to scrape along the base of the North American lithosphere. This flat-slab subduction caused the focus of mountain building and magmatism to migrate much farther inland than expected compared to a normal angle subduction zone. The Rocky Mountains are the product of several distinct orogenic events and provide geologists with the opportunity to view large-scale mountain building from multiple perspectives.

Faculty sponsor: Jeffrey Templeton

### Thomas Martin

#### *Such Great Heights: Geologic History of the Nevadaplano*

The current configuration of Nevada's landscape has changed more than one could imagine. Early in the evolution of the Basin and Range, the currently extended landscape was once a massive "plano", which refers to a large flattened plateau with elevations on par with a mountain range. Since the late Cenozoic, Nevada has been known for large basins and hill sloped ranges none of which would be consider in the same realm of height and magnitude as the Nevadaplano. Through studies of modern day analogs, such as the South American Altiplano, we can draw similarities to the shape and magnitude of the Nevadaplano. These studies show that the South American Altiplano has similar shape, magnitude and underlying plate movement compared to the Nevadaplano. Sedimentary rocks provide evidence for understanding the elevation gains and the origin of the Nevadaplano in western North America during the Cenozoic. Methods comparing the rate of sedimentary deposition and erosion help to correlate the rising of the region east of the Rockies

into the Nevadaplano. Similarly, C-14 and O-18 studies of fossil plants from the region have correlated high altitude conditions of the region.

Faculty sponsor: templeJ@wou.edu

### Joshua Lucas

#### *The Ignimbrite Storm: Causes and Significance*

Between 25 and 40 million years ago, western North America was dominated by explosive volcanism, during an event referred to as the "ignimbrite flare-up." Caldera complexes in the Basin and Range erupted huge volumes of silicic magma, depositing pyroclastic debris thousands of kilometers away. The caldera-forming eruptions began in northern Nevada and migrated to the southwest over 15-20 m.y. Another sequence of calderas swept across New Mexico towards the WNW with additional calderas in Colorado. What is the significance of the "ignimbrite flare-up" and what does it imply about tectonic activity during this time? Two competing models have been proposed to explain the age-progressive trends in explosive volcanism. One model suggests that the subducted Farallon Plate buckled, allowing underlying asthenosphere to move upward through fractures formed by the compressional forces in the broken slab. The second model involves slab roll back in which buoyant asthenosphere was pushed above the Farallon Plate as the slab was bent to higher angles. Evaluating the merits of each provides a framework for understanding how tectonics can influence caldera-forming eruptions.

Faculty sponsor: Jeffrey Templeton

3 to 4 p.m., RVEC 201

### Kolby Childers

#### *The Causes of Tectonic Deformation and Extension of the Basin and Range*

The Basin and Range is characterized by a complex geologic history during the Cenozoic, which has been dominated by volcanism and normal faulting since ~12 Ma. The tectonic forces driving this deformation and uplift have played a significant role in the Cenozoic evolution of the Basin and Range. Determining what has caused the wide-spread extension of the Basin and Range has yielded a variety of postulated models. Digital elevation models (DEM) have been used to study the westward migration of extensional faulting in Nevada and in the Warner Range in California. Extension, which has produced high-angle normal faults, along with shearing, accounts for 15-25 percent of the motion between the Pacific and North American plates. This could account for the high-angle normal faulting along with the low magnitude extension and thickening of the crust in this region. These models also provide evidence for interpreting the relationship between the Basin and Range and Yellowstone hotspot volcanism.

Faculty sponsor: Jeffrey Templeton

### Alicia Hubbard

#### *Contending Models for the Origin of the Yellowstone Hotspot*

There is a long-standing controversy regarding the relationship between Yellowstone volcanism and Basin and Range extension. It is not clear which of the two events should be considered the cause and which should be considered the effect. Various models have been formulated to support the opposing perspectives, two of which are widely recognized. Arrival of the Yellowstone mantle plume as the initiation of large-scale Basin and Range extension is the "mantle-plume model." In contrast, the "plate model" suggests that extension related to the Basin and Range permitted melt to escape from the mantle and form the Yellowstone hotspot track. Evidence in support of the mantle-plume model includes seismic imagery data, the emplacement of the Nevada-Columbia Basin magmatic belt and the orientation and magnitude of regional stress. The plate model is not contingent on seismology data but rather uses surface geological observations to support it. Supporters of the plate model suggest there are logical flaws with the plume model, such as the fact that the presence of underlying melt is not a sufficient enough condition to be a catalyst for the extension of the Basin and Range.

Faculty sponsor: Jeffrey Templeton

**Lee Lindley**

*The Influence of Tectonics on the Evolution of the Cascade Volcanic Arc*

The north-south trending Cascades volcanic arc is divided into stages, which include the Western Cascades (35-7.5 Ma), Early High Cascades (7.4-4 Ma) and Late High Cascades (3.9-0 Ma). Each records changes in the tectonic framework with corresponding shifts in eruptive style. The change in subduction style from normal to oblique caused changes in arc magmatism. Along with the uplift of the Western Cascades, this change in style is interpreted as the driving force for thinning and retreat of the Cascade arc into a narrower volcanic chain. Late High Cascades volcanoes display differences in magma composition, subduction style, uplift rates, volcanic activity and magnitude of eruptions. Basin and Range impingement on the arc and related extension is a possible explanation for differences seen between volcanoes in the northern Cascades compared to those in the south. Image noise-wave tomography has been used to analyze differences seen within the subducting Juan de Fuca Plate to understand effects of subduction rates on volcanoes along the length of the Cascade arc.

Faculty sponsor: Jeffrey Templeton

**MUSIC**

Excellence in Graduate Research and Ethnomusicology

Session chair: Diane Baxter

Werner University Center (WUC) Ochocho Room

1 to 1:30 p.m., WUC Ochocho Room

**Laura Killip**

*Sarah Vaughan: Using the Voice as an Instrument*

Jazz vocalist Sarah Vaughan was known for her ability to make music like an instrumentalist. Her multi-octave range and intricate knowledge of music earned her the name "The Divine One." This presentation will compare and contrast Sarah with her contemporaries to demonstrate how she stood apart.

Faculty sponsor: Diane Baxter

1:30 to 2 p.m., WUC Ochocho Room

**Miriam Means**

*Marin Alsop: Breaking Glass Ceilings in the 21st Century*

It is hard to believe that in the 21st century there are still glass ceilings to be broken. Marin Alsop, the music director of two symphony orchestras, has proven these still exist, and she has shattered them in her field.

Faculty sponsor: Diane Baxter

2 to 3 p.m., WUC Ochocho Room

**Various students**

*Ethnomusicology Project Presentations*

**PHILOSOPHY**

Philosophy Senior Theses

Session chair: Ryan Hickerson

Werner University Center (WUC) Calapooia

1 to 1:30 p.m., WUC Calapooia

**Rebekah Ocker**

*Original Presupposition: The Inadequacies of John Rawls' Thought-Machine*

In John Rawls' *Theory of Justice*, he presents a contractarian approach to justice, suggesting his own "Original Position" as a thought machine for discovering principles of justice as fairness. However, the setup of this device stacks the deck in favor of the principles he selects and presupposes conceptions of justice that invalidate the process he discusses. In addition, his theory fails to seek principles of justice itself, instead aiming for the maximization of gain for members of society, who he assumes are inherently self-serving inasmuch as they are rational. Rawls' "Original Position" fails, then, to achieve principles of justice.

Faculty sponsor: Ryan Hickerson

1:30 to 2 p.m., WUC Calapooia

**Samantha Whitley**

*Stoicism and Psychodeterminism: Why Epictetus Can't Have His Cake and Eat it, Too*

Epictetus was amongst the Stoic Greek philosophers, believing that there are some events that are up to us, (body, reputation) and some that are not, (politics, aging). For us to live life both unharmed and content, we should abide by this notion to stop trying to change the unchangeable. This results in a contradictory argument of both determinism and free will. While acknowledging the few strengths of the stoic ideals, I will argue that it cannot be the case that everything we do is predetermined.

Faculty sponsor: Ryan Hickerson

2 to 2:30 p.m., WUC Calapooia

**Conner Meling**

*A Realist, Conceptualist and Nominalist Walk into a Bar...*

The purpose of this paper is to advance the nominalist view of universals by William of Ockham while disproving the realist claims made by John Duns Scotus and the conceptualist views of Peter Abelard. Realism is the view that there are universals that are distinguished by the objects that represent them. One objection is that everything exists and represents in and for itself. Conceptualism inserts the notion that universal categories exist but only in our minds. This turns out to be contradictory. The nominalist view is that universals are words.

Faculty sponsor: Ryan Hickerson

2:30 to 3 p.m., WUC Calapooia

**Jeff St. John**

*The Cartesian Circle: Defending Descartes*

Many have argued that Renee Descartes' reasoning is circular. Many others have also tried to defend his reasoning and there are as many solutions as there are commentators. This paper defends Descartes against charges of circularity by demonstrating that clear and distinct perceptions are merely a matter of recognition sometimes a person may think that they perceive something clearly and distinctly when they do not. To defend Descartes, I will provide a close reading of the opening of the Third Meditation. I will then give a few indications for understanding the Fourth Meditation in light of the problem of recognition.

Faculty sponsor: Ryan Hickerson

BREAK

3:15 to 3:45 p.m., WUC Calapooia

**Lucero Diaz**

*How Aristotle Makes Us Unhappy: Obstacles In the Nicomachean Ethics*

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In Aristotle's ethical work he describes Eudaimonia as the highest human good. Aristotle says money, wealth, power and good looks are necessary for a happy and virtuous life, but real life experience tell us otherwise. Aristotle's ethics cannot be achieved by the common man (elitist) and happiness's true source is living and experiencing life as opposed to contemplation and thinking, as Aristotle suggests. In this paper, I will show that Aristotle's ethics are elitist and his virtues prevent, rather than promote, happiness.

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Faculty sponsor: Ryan Hickerson

3:45 to 4:15 p.m., WUC Calapooia

**Matthew McNally**

*Free Will, Praise and Blame: A Not So Smart Reply*

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In J. J. Smart's paper *Free Will, Praise and Blame* he seeks to abolish any notion of the idea of free will through his two rules D1 and D2. He also gives an account for how we can have moral responsibility within a deterministic universe using the concept of an ordinary otherwise. I will present two accounts of why his D2 rule isn't ideal paired with D1, it is not good reasoning to exclude the possibility of Libertarianism. I will also argue against his attempt at moral responsibility from his idea of an ordinary otherwise.

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Faculty sponsor: Ryan Hickerson

## POLITICS, POLICY & ADMINISTRATION

Model United Nations Mock Session

Session chair: Mary Pettenger

Werner University Center (WUC) Santiam Room

### PANEL

1 to 2 p.m.

**Steven Bell, Sapphire Dorfman, Jacken Miller, Nathan Mireles, Haley Morris, Mohammad Naseeb, Jessica Snook and Colette Thomassians**

This Model United Nations Mock Session will showcase the work of the campus club and share with the other students the excitement of participating in a cooperative professional political atmosphere to find solutions to real world problems.

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Faculty sponsor: Mary Pettenger

## THEATRE

*This Girl Laughs, This Girl Cries, This Girl Does Nothing*

Session chair: Michael Phillips

Rice Auditorium

1 to 3 p.m.

**Natalie Doerfler (as Carmen), Lindsay Spear (as Albiene) and Chynna Shurts (as Beatrix)**

*This Girl Laughs, This Girl Cries, This Girl Does Nothing*

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The play tells a story of three sisters who are abandoned in the woods and challenged by their father to find what is important to them. Armed with only knowledge, curiosity and instinct, Albiene sets off in one direction to find purpose, Beatrice ventures the other direction to find adventure and Carmen remains with the intent to create a home. *This Girl Laughs, This Girl Cries, This Girl Does Nothing* is a moving and delightful modern-day fable that tells the story of three young girls who become women by choosing to encounter the world in their own distinct way: Albiene with cake, Beatrix with the sun and Carmen with her backpack. Each embarks on a tale of magnificent magical realism to discover what life has to offer and what they can offer back. In a story that is irresistibly playful and charming, *This Girl Laughs...* also offers a depth and complexity to the idea of the female heroine that ultimately results in an empowering, visceral experience.

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Faculty sponsor: Michael Phillips

## SERVICE LEARNING & CAREER DEVELOPMENT

Student Perspectives: Service Through Alternative Break

Session chairs: Kathryn Plummer and Laura Miranda

Werner University Center (WUC) Ochoco Room

3:30 to 4 p.m., WUC Ochoco

**Amy Watkins and Courtney Cunningham**

*Pura Vida*

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Faculty sponsor: Kathryn Plummer

4 to 4:30 p.m., WUC Ochoco Room

**Laura Miranda**

*Serving Local and Global Communities*

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Western Oregon University's student-led and service-driven Alternative Break program provides students the opportunity to immerse in hands-on community service in local and global communities. Through these immersive experiences, teams develop cultural awareness, build leadership skills and engage in the advancement of social justice.

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Staff sponsor: Kathryn Plummer

*Evening sessions*

**TEACHER EDUCATION**

Teacher Education Presentations

Session chairs: Alicia Wenzel and Xiaopeng Gong

Werner University Center (WUC) Calapooia

6 to 6:15 p.m., WUC Calapooia

**Tamara Mitchell**

*Preparing Students for Academic And Career Success: Integrating Campus and Career-Focused Explorations into Online Courses*

High-impact educational practices indicate hands-on, collaborative, and reflective learning are essential for transitioning students into campus and career roles. Additionally, interacting in complex environments causes learners to fulfill more than one role and, as a result, fosters deeper cognition (Freitas, & Neumann, 2009). Educators facilitating learning experiences online often engage with students who feel disconnected from campus and career resources. Since students with career goals and well-established peer relationships are more likely to make positive persistence decisions, a broader application of experiential learning in online courses may be linked to an improvement in student retention and completion rates. Experiential learning is more needed than ever to replicate the complexity inherent in real world environments. Building online curriculum with intentional, targeted experiential learning activities is an important part of educating students for their current campus and future career roles.

Faculty sponsor: Xiaopeng Gong

6:15 to 6:30 p.m., WUC Calapooia

**Tamara Mitchell**

*Multiple Uses of Video and Video Quizzes Within Other Courses - Innovate Use of Engaging Technologies*

Faculty sponsor: Gregory Zobel

6:30 to 6:45 p.m., WUC Calapooia

**Jenn Kepka**

*Streamlining Research Using Productivity Apps*

The demands of teaching in higher education go well beyond presence in the online or face-to-face classroom. As e-mail has become the dominant form of communication for student questions, most faculty have lost hours from their days as student contact has moved from beyond the four walls of class into every extra minute available. This session will discuss ways to integrate free or freemium applications, including Evernote, project-management software like Asana and automating software within the typical faculty or graduate student workflow to minimize distraction and maximize quality.

Faculty sponsor: Mary Bucy

6:45 to 7 p.m., WUC Calapooia

**Amy Wirth-Tradewell**

*An Exploration of Open Source Tools*

As a newcomer to all things open source, I wasn't entirely sure what the outcome of this project would be. It ended up being developed almost exclusively with OS tools: WordPress, Twine, Audacity and Moonfruit. I stumbled through the inner workings of multiple OS tools and came out on the other side unscathed and, more importantly, a little wiser. I will share with you what I created, what mistakes I made and what I will do differently next time in hopes of saving you time and energy when you utilize similar tools. While the end product is far from perfect, it represents a solid platform that I will use as a springboard for future projects. Come and see an exploration of OS tools from the perspective of an open source newbie.

Faculty sponsor: Gregory Zobel

7 to 7:15 p.m., WUC Calapooia

**Deborah Mundorff**

*Moodle Course: Working with Gimp*

I am a sports photographer but have minimal image-editing software experience. At an event, I take hundreds of images. My post processing workflow is minimal, only making slight exposure and sharpening adjustments. For my final project in CSE 617, I had to create a tutorial on an open source software tool. I chose the image editing package GIMP. As one of the most popular open source software products, there is no lack information about GIMP. I didn't want to repeat fundamental information that is easy to find online. Instead, I focused on sharing things that I had to work to find out. I didn't want to create a lesson on how to install, or, hot to use the rectangle select tool. Instead I wanted to share information I learned that gave me results I especially liked. I wanted to be able to share that professional results are available from an open source tool. You see this type of training for Adobe Photoshop, like from Scott Kelby. There is not as much for GIMP. I found it very effective to learn through creating teaching material. I used Moodle to house my technique tutorials: <http://moodle.wou.edu/course/view.php?id=3765>

Faculty sponsor: Mary Bucy

## BEHAVIORAL SCIENCES

Behavioral Sciences Poster Session

Session Chairs: Jaime Cloud and Brent King  
Werner University Center (WUC) Pacific Room

8:30 TO 10:30 A.M.

### Nolan Biberston

*How Honest are People? An Examination of the Effect of Pro-Social Behavior and an Honor Code, Upon Cheating.*

The current study attempted to examine the interaction, if any, between pro-social behavior and self concept maintenance, in relation to cheating behavior. The hypothesis predicted participants would cheat at an increased rate when someone else benefited from their cheating, but only when there was no honor code to decrease the participants' feeling of anonymity. This paper attempts to reveal the effect of pro-social behavior upon cheating by allowing participants to think they can help themselves, as well as someone else, by cheating. Participants were told a future participant would gain an additional point if they scored higher on a test than was possible. Another group of participants were given the same test, also encouraged to cheat, but were first asked to sign a hypothetical honor code. The prediction being that the honor code would decrease a participant's feeling of anonymity and thereby decrease cheating, regardless of the presence or absence of a pro-social motivator. Data will be analyzed using a two-way analysis of variance. Implications of the data collected as well as future directions will be discussed.

Faculty sponsor: Jaime Cloud

### Melissa Carpenter

*The Effects of Music on Reading Comprehension*

The current study sought to investigate a possible connection between emotionally provocative music and reading comprehension, following research supporting that music works to enhance encoding memory for words. This study predicts that (1) calming music will improve reading comprehension compared to both stressful music and silence and (2) music will have a greater effect on reading comprehension when the reading task is more difficult. Participants were assigned a hard or easy reading task to do while either in a calming music condition, a stressful music condition or silence condition. Participants were then asked to answer three multiple choice questions assessing their reading comprehension. Data will be analyzed using a 2 x 3 analysis of variance. Implications of the obtained findings and future directions will be discussed.

Faculty sponsor: Jaime Cloud

### Kaylee Chavez

*The Effect of Lipstick Color on Perceived Attractiveness*

The current study investigated the effect three different lipstick colors have on male and female participants' perception of attractiveness and how the genders' perceptions compared. It was predicted that (1) participants will perceive red lipstick as most attractive, (2) men will perceive red lipstick to be more attractive than women and (3) lipstick color will have more of an effect on men's perception of attractiveness. Participants were shown a photo of the same woman in one of three conditions, wearing nude lipstick, pink lipstick or red lipstick and asked to rate their opinion of her on six Likert-type scales describing different traits. Scores on the Very Unattractive/Very Attractive scale were recorded. Data will be analyzed using a 2 x 2 analysis of variance. Implications of the obtained findings and future directions will be discussed.

Faculty sponsor: Jaime Cloud

### Rochelle Cochrane, Tashawna Wright, Elizabeth Fields and Kyla Bredimus

*Reoccurring Themes Among WOU Psychology Graduates: Uncertainty and Relationships that Influence Decision Making*

Many psychology programs are developing approaches to facilitate student career exploration. Alumni are a valuable resource for providing information about jobs, graduate school and for countering the myth that "You can't get a job with a bachelor's degree in psychology." This presentation describes a project designed to connect current psychology undergraduates with alumni from the same program. Purposive sampling was used to recruit diverse alumni following different career paths (i.e., graduate school or straight to work). Trained undergraduate research assistants conducted semi-structured interviews with alumni. Interviews were audio-taped, transcribed, checked for reliability and then coded and analyzed using the consensual qualitative research (CQR) model (Hill, Thompson, Williams, 1997). Researchers explored the ideas that emerged when alumni reflected on their ending time as an undergraduate psychology major, specifically, how alumni chose to attend graduate school or get a job immediately following graduation. Themes included uncertainty about next steps, relationships that influenced decision making and willingness to explore different options.

Faculty sponsor: Chehalis Strapp-Johnson

### Jacob Dougherty

*The Role of Scrubs and Low-Level Healthcare Certification in White Coat Hypertension*

White coat hypertension (WCH) is a response where a patient's blood pressure is increased while in a clinical setting. WCH is usually accounted for as an anxious response to being in the presence of highly trained, white coat-wearing medical professionals who may make judgements about the patient's health. However, vital signs, including blood pressure, tend to be taken by medical paraprofessionals who wear scrubs and have significantly less medical training, such as nursing assistants and medical assistants. The purpose of this study was to determine whether scrubs and the knowledge of a paraprofessional's training can induce WCH. It was predicted that seeing an experimenter in scrubs would induce a more profound hypertensive effect in participants than seeing an experimenter in regular clothes and that learning of an experimenter's training as a nursing assistant would cause a hypertensive effect that would otherwise be absent when the participant was unaware of said training. Participants had their blood pressure measured twice by an experimenter in either scrubs or regular clothes the participants were made aware of the experimenter's training prior to the second measurement.

Faculty sponsor: Joel Alexander

### Samantha Garcia

*Mate Selection: Preferred Attributes Among Different Genders*

Mate selection is easily influenced by proximity, environment, familiarity, physical attractiveness and personality traits. Each individual has the ability to create their ideal image (e.g., personality traits, attractiveness) of the type of mate they may seek, but these ideal images have shown to vary between men and women. Three predictions involving gender and attraction levels in mate selection attributes were examined. Participants of Western Oregon University were randomly assigned to rate the level of attractiveness of a model in a vignette, whose gender corresponded to the participant's sexual orientation, on a Likert scale of 1-10. The data of this study will be analyzed using a 2 x 2 analysis of variance. Implications of the obtained findings and future directions will be discussed.

Faculty sponsor: Jaime Cloud

### Liesl Glisson

*The Effect of Scent on Memory in Men and Women*

The current study examined the potential effect of the scent peppermint on a person's memory recall such that (1) peppermint was predicted to enhance memory recall and participants exposed to the scent would perform better than those who



were not and (2) the scent peppermint would have a greater effect on women than it did on men. Male and female participants were randomly assigned to one of two conditions, scent or no scent, where they were then asked to complete a short survey and two memory tasks. Data will be analyzed by using a 2 x 2 analysis. The obtained findings and their implications and future directions will be discussed.

Faculty sponsor: Jaime Cloud

### **Peyton Hill**

#### *Background Music and the Effect on Memorization in Men and Women*

The current study looked to see if background affected a person's ability to recall information. It was predicted that those in the instrumental music condition would recall more words than those in the lyrical music condition. Also it was predicted that women would be able to recall more words than men. The scores for women would have no major difference between instrumental to the lyrical condition, however, for men there would be a major difference between the scores with those in the lyrical music condition scoring lower than those in the instrumental music condition. Men and women were given a list of words to look at while either listening to either lyrical music or instrumental music depending on if they chose an odd or even number from a bag. Data will be analyzed using a 2 x 2 analysis of variance. Implications of the obtained findings and future directions will be discussed.

Faculty sponsor: Jaime Cloud

### **Christine Horner**

#### *Disclosure of Childhood Trauma on Empathy and Sex*

This study aimed to look at levels of empathy for a defendant with a disclosure of childhood trauma. We hypothesized that female participants would be more likely to feel higher levels of empathy toward a defendant with a disclosure of childhood trauma. Participants ( $N=40$ ) were randomly assigned to read one of two scenarios and answer a hypothetical question meant to determine levels of empathy felt. Each scenario contained general information about a defendant being charged with an Assault IV for getting into a fight with another person. One scenario contained a disclosure of childhood trauma and the other did not mention any trauma. Results will be analyzed using a 2 X 2 analysis of variance. Implications and results of the findings will be discussed.

Faculty sponsor: Jaime Cloud

### **Brittaney Lacer**

#### *Effects of a Sex and Affair Type on Infidelity Jealousy Distress*

The current study sought to examine the effects of a person's sex and affair type on infidelity jealousy distress. I predicted that (1) males and females are equally distressed over an affair and that (2) Sexual affairs are equally distressful as emotional affairs. However, I hypothesized that males have higher levels of distress when their partners have a sexual affair. Whereas, females have higher levels of distress when their partner has an emotional affair. Participants were randomly selected in either group A, a sexual affair scenario, or group B, an emotional affair scenario. They were asked to imagine themselves reading this affair scenario text message from another person to their partner. They were then asked to rate, on a Likert scale 1-4, how much distress they would be under if the scenario was a real event in their life concerning their partner. Data will be analyzed using a 2 x 2 analysis of variance. Implications of the obtained findings and future directions will be discussed.

Faculty sponsor: Jaime Cloud

### **Kristine Liang**

#### *Good Looks and Health: Gender Differences in Attractiveness and Perceived Well-Being*

The hypothesis linking attractiveness and perceived well-being was tested with 40 undergraduate men and women. The attractiveness measure consisted of a photo

of either an attractive or unattractive man or woman presented to participants of the opposite sex and well-being was measured using the six dimensions of well-being from the Ryff scale of psychological well-being. Participants were asked to rate the individual on a scale of 1 (do not agree) to 4 (completely agree) on a six-item scale pertaining to well-being. It is hypothesized that the more attractive individual for both genders will be perceived to have better well-being in comparison to the unattractive individual.

Faculty sponsor: Jaime Cloud

### **Josephina Losco**

#### *The Relationship Between Concussion Frequencies And Cognitive Skills In College Students*

It is estimated annually 1.7 million TBIs occur in the United States. The present study explored moderate/traumatic brain injuries (MBI/TBI) and their relation to long-term cognitive deficits. This study is modeled after (Clarke et al., 2012). In the 2012 study, the results indicated no significant differences between the control group and the traumatic brain injury group in regards to cognitive deficits: Findings that are contradictory to other studies. This study expanded on the following hypothesis: Individuals with 0-1 MBIs will show fewer cognitive deficits in their attention, memory and information processing than participants with two or more MBIs. Results indicate patterns of cognitive performance that give rise to concern regarding even mild concussions.

Faculty sponsor: Jaime Cloud

### **Cambria MacConaugh**

#### *Sex Differentiated Preferences for Mate Characteristics in Short- and Long-Term Contexts*

The current study investigates sex differentiated mating preferences for desired characteristics in opposite sex mates with reference to short- and long-term mating contexts. An integration of evolutionary-based perspectives such as sexual selections theory, parental investment theory and sexual strategies theory are explored to predict that (1) men will prefer physical attractiveness more than women, and women will prefer good earning capacity more than men (2) men's preference for physical attractiveness will be higher in short-term contexts than long-term contexts, and women's preference for good earning capacity will be higher in long-term contexts than short-term contexts. Male and female participants were asked to imagine that they were considering engaging in either a short-term sexual or a long-term romantic relationship with a potential mate and then further rate 13 characteristics on perceived importance. The data obtained will be analyzed by using a 2 x 2 analysis of variance. The conclusions drawn from the data results and future research directions will be discussed.

Faculty sponsor: Jaime Cloud

### **Melia Mattos**

#### *Perceptions on Attractiveness and Tattoos*

The present study was conducted to examine whether individuals with tattoos were found to be more or less attractive than non-tattooed individuals. Researchers hypothesized that (1) men will give higher attractiveness ratings than women, (2) participants will give higher attractiveness ratings to tattooed targets than non-tattooed targets and (3) men will give higher attractiveness ratings to non-tattooed targets than tattooed targets, whereas women will give higher attractiveness ratings to tattooed targets than non-tattooed targets. Participants were shown a photograph of an opposite-sex individual with a sleeve tattoo present or not. They were then asked to rate the level of attractiveness of the individual shown using a 10-point Likert scale. Data will be analyzed using a 2 x 2 analysis of variance. Results and implications will later be obtained and discussed.

Faculty sponsor: Jaime Cloud

**Michelle Pagel***The Effect of Colored Paper on Mood in Women and Men*

The current study considered whether color could affect a person's feelings such that (1) people are more likely to have negative feelings when exposed to the color red than those exposed to the color blue and (2) Women would be more affected by color than men. Men and women were randomly presented with a survey using a modified Profile of Mood States questionnaire on red (negativity) or blue (positivity) paper. Data will be analyzed using a 2 x 2 analysis of variance. Implication of the obtained findings and future directions will be discussed.

Faculty sponsor: Jaime Cloud

**Kya Rasmussen***Effects of Essential Oils on Stress Levels between Genders*

The purpose of this study was to compare the effects wild orange and lavender essential oil diffusions have in relation to stress, as well as how it may differ across genders. It was predicted that lavender participants would report lower stress levels than the wild orange participants and that female participants would report lower stress in both conditions. This between-subjects study had participants attempt an impossible puzzle while remaining in a room primed with one of the two possible essential oils. At the end of two minutes, participants self-reported their stress levels. It is the hope of this study that this information can aid those in stressful work and home environments. Data analysis and its findings as well as implications and possible future directions will be discussed.

Faculty sponsor: Jaime Cloud

**Bethany Swanson***Relationships Formed Through Tinder*

This study examined negative perceptions towards a couple in a romantic relationship formed through Tinder. Previous research suggested that there was a large amount of disapproval directed at people who formed a relationship online or through Tinder. Forty-four college students, 38 females, participated in the study. Participants read a short story after which they completed a survey about their opinions towards the couple portrayed in the story who had met through Tinder. The opinions were measured on a four-point Likert-type scale. There was no significant difference in the scores of those with the relationship formed through Tinder ( $M = 2.8409$ ,  $SD = .39750$ ) than the relationship formed through a mutual friend ( $M = 2.9205$ ,  $SD = .35679$ ). The mean difference was not significant ( $t(42) = .699$ ,  $p > .05$ ,  $d = .377$ ). The hypothesis was not supported, which suggested that college students did not disapprove of couples who have met through Tinder. This study implied that college students are more accepting of people's relationships formed through a non-traditional manner.

Faculty sponsor: Ethan McMahan

**Annie Tarter***The Effects of Obesity Discrimination On Hiring Decisions*

This study investigated the effects of obesity discrimination on hiring decisions. It was predicted that overweight individuals will be less likely to be hired than individuals of average weight. Additionally, it is hypothesized that overweight women will be less likely to be hired than overweight men. Participants were recruited from Western Oregon University. Perceived weight was indicated by photographs and hiring potential was measured via five questions that assessed eligibility of employment. A two-factor analysis of variance showed no significant main effect for weight,  $F(1,10) = .016$ ,  $p > .05$ ,  $\eta^2 = .002$ , but there was a main effect found for gender,  $F(1,10) = 4.08$ ,  $p > .05$ ,  $\eta^2 = .290$ . There was no significant interaction found between the two factors,  $F(1,10) = .304$ ,  $p > .05$ ,  $\eta^2 = .03$ .

Faculty sponsor: Ethan McMahan

**Clarissa Toplar and Cody Welty***Destruction of or by Nature: Response to Human-Altered Environments*

A number of scholars from a variety of disciplines have stated that being in nature improves psychological health. To further examine this, we researched whether exposure to human-altered versus nature-altered natural environments impacted participants' concurrent emotional state and cognitive assessments regarding environmental quality and preference. It was hypothesized that participants would indicate more positive affective responses to the nature-altered environment and view this environment as more valuable than the human-altered environment. Participants were instructed to read a short vignette describing a natural area and then watch a seven minute photographic slideshow of the areas on a head-mounted display. The vignette provided to participants varied, such that half received a vignette describing a nature-altered environment and half received a vignette describing a human-altered natural environment. Participants then completed a variety of self-reported measures. Results indicated that human alteration did not have significant effects on these measures.

Faculty sponsor: Ethan McMahan

**Amelia Turvey***Helping Behavior and Femininity*

This study was an investigation of the effects of femininity on helping behavior. For the purpose of the study, "helping" was measured by the willingness of an individual to complete a survey. "Femininity" was measured by the appearance of the confederate, while also being manipulated by the confederate's dress, hairstyle and makeup. In the feminine condition, the confederate wore more makeup, had her hair down and was wearing tighter clothes, while in the modest condition she had little makeup, wore her hair up and had loose clothing. A chi-squared test was utilized to analyze the collection of "yes" and "no" responses and the gender of the participants. The participants were collected from WOU's students and staff. There was a total of 200 participants, of those 78 were male, 119 were female and three identified themselves as other. The nature of the study went as follows, the confederate stood in the WUC and as participants passed her, they were asked to complete a survey. The researcher sat nearby to record the participants' responses. The results came back not significant when the chi-squared test was ran,  $\chi^2(1, n=200) = 1.471$ ,  $p < .05$ .

Faculty sponsor: Jaime Cloud

**Veronica Villarreal***The Influence of Self-Esteem on the Fading Affect Bias in Autobiographic Memories*

Previous research suggests that the affect intensity of negative autobiographic memories fades faster than with positive autobiographic memories and self-esteem potentially influences this fading effect. The current study examined if participants' self-esteem levels influenced the rate at which the affect intensity of negative memories faded. To examine this, participants were first asked to complete a self-esteem questionnaire. Participants were then asked to recall a particular positive or a particular negative memory and then score the event based how it made them feel when it occurred and how it made them feel when thinking about the memory. The difference between the scores for affect at occurrence and affect at recall will be calculated. The scores produced will then be compared by memory type and self-esteem level. Implications of the attained findings, design limitations and future directions will be discussed.

Faculty sponsor: Jaime Cloud

**Mariah Wyatt***Analysis of Helping Behavior in College Students*

The current study investigates altruistic tendencies in humans and how positive affect in the victim effects helping behavior in those given the opportunity to aid

or leave the situation. I predicted that (1) men would be more likely to help the woman in both conditions and that (2) positive affect will have a stronger effect on eliciting helping behavior in men. Both male and female participants will be more likely to aid the woman demonstrating positive affect than negative affect. Men and woman were provided with a short dialogue with a woman in need of help while demonstrating either positive or negative affect. After reading the passage, helping behavior was measured based on how much money the participant donated to the woman out of the hypothetical \$100 in their wallet. A 2 x 2 analysis of variance will be used to analyze the data. The impact of this research on the future understanding of helping behavior will be discussed along with implications of the research.

Faculty sponsor: Jaime Cloud

## COMPUTER SCIENCE

Computer Science and Information Systems Capstone Individual Projects

Session chairs: Scot Morse and Ted Beers

Werner University Center (WUC) Pacific Room

**8:30 TO 10:30 A.M.**

### Ahmed Almutairi

*PublicEvents*

Public Events is a mobile app where visitors (without registration) can enter their public events' information, address, description and date/time. The goal is to help people find their desired events. Public Events can be used by group, organization, or individual to declare their public events that anyone can attend. It will show public events with some description about an event, such as rules, address, name of the organization. Visitors who are looking for events can search by zip code of the event then, all events around them will be shown.

Faculty sponsor: Scot Morse

### Sarah Alvarado

*MCIS - Mobile Catering Inventory System*

For the mobile caterer that wants to track both long-term and short-term inventory, MCIS is a mobile application that will allow the caterer to access their equipment and consumable inventory at the touch of a button using a smartphone or a tablet. This application will allow the user to enter new inventory, update existing inventory and search inventory for a specific item. Unlike existing software solutions on the market, this will be an easy to use, inexpensive option for small businesses that cannot afford to make a large investment in technology.

Faculty sponsor: Scot Morse

### Nikolas Beltran

*Marble Tilt iOS Application*

Marble Tilt is a mobile game designed for the iPad. The object of the game is to maneuver a ball around obstacles using the iPad's gyroscope functionality to reach the goal. There are items that can be collected to raise a player's score. This game is geared toward players who enjoy playing in small amounts but also has elements geared toward more dedicated players through a strong focus of aiming for the highest possible score in the stage.

Faculty sponsor: Scot Morse

### Tyler Connors

*CrazyPlane*

Do you like flying planes? Do you like shooting things? Do you like flying planes *and* shooting things?! Then you may enjoy CrazyPlane! CrazyPlane is a simple game where you fly a plane around and shoot at targets. There are three different types of targets that are each worth different points. Your goal is to fly around and shoot as many of them as you can in two minutes. How many balloons can you

shoot down before time runs out? \*PS crashing into balloons is not recommended.

Faculty sponsor: Scot Morse

### Christopher Easton

*Inventory Manager*

This app is for those who need to manage inventory counts, location and price. MyInventory is a publicly available mobile application on iOS devices that will contain all that is needed to update, track and manage an inventory of any size. This will be a valuable resource for the individuals who manage such inventories and the companies they represent. MyInventory will focus on inventory management for small-scale operations but will scale for use by all. MyInventory will allow the user to add new items to their inventory lists, update the quantity of those items, determine the location of those items and adjust the cost and/or price of each item. This application will assist companies in keeping their inventory clean and accessible even when in multiple locations. Unlike other inventory tracking systems on the market, this application will focus on being lightweight and easy to use so that any business owner or inventory manager can download and start using the application quickly with few learning barriers.

Faculty sponsor: Scot Morse

### Jonathan Elliott

*It's Bacon Time (Wikipedia Edition)*

*Footloose, Tremors, A Few Good Men:* Everybody loves Kevin Bacon and everybody loves bacon. Watch the sizzling action of bacon cookin' stove-top while Its Bacon Time calculates degrees of separation, also know as Kevin Bacon numbers. Input a keyword and a starting Wikipedia.org article link and a link-tree will be built and traversed breadth-first scanning the associated Wikipedia articles for the keyword entered. If a match is found, you'll hear a ding ding ding and know it's bacon time.

Faculty sponsor: Scot Morse

### Brandon Hunt

*Hanzo's Practice Range*

Hanzo's Practice Range is an Android-based arcade game where the player controls the legendary Overwatch archer, Hanzo. Immerse yourself in the world of Overwatch where our range is located. Take aim with Hanzo's bow and destroy as many targets as you can before time expires. Targets range from bullseyes to robots that shoot back. Upgrade Hanzo's bow in the Hanamura Market Place to unlock its full potential. Honor will be given to the world's greatest archer!

Faculty sponsor: Scot Morse

### Matherin Langley

*Master Your Money*

For students who lack basic financial skills, the Master Your Money desktop application is a learning tool that will help students build the fundamental skills needed for managing their finances after graduation. The system will have separate modules with different purposes. Initially it will have an expense-tracking module that will help users visualize where exactly their money is going and how to decide what to cut back on and a loan calculator that will identify the best order in which to pay off multiple loans and offer a look into the future of how much their loans will actually cost depending on the path they decide to pay them off in. Unlike every other finance suite that focuses on powerful reports and requires fundamental finance skills to use, the goal of this product is to educate the basic fundamental skills of budgeting and provide easy visualizations and breakdowns to help the user make their own decisions. While this program will focus on easy-to-read breakdowns and helpful visualizations with decision trees it will not lack power user features such as complex reports, budget planning and future predictions of expenditures and savings.

Faculty sponsor: Scot Morse

**Zhendong Ma***Betta Future*

My application, Betta Future, is designed to help bring together parents and teachers to help the teachers more efficiently input students/kids' daily activity into the system to better have parents connected with their kids. Our goal is that in being able to have parents to get their kids' daily activity in real time and easily log in the app and see the real instant of their kids daily life in school. Betta Future will include details of students daily activity, learning contents and performance. The parents will be able to learn what the kids have learned from school on daily basis, and they also could have a conversation with their kids after school. This teacher's input in real time, also include pictures of the kids' daily life is something that does not currently exist. We hope to provide an app to save tons of teachers' time and make parents feel more connected with their kids in each day.

Faculty sponsor: Scot Morse

**Whitney Meulink***Positive Health Vibes*

Addiction doesn't have to control you any longer. All addictions are driven by compulsive cravings caused by the brain's reward center acting in overdrive through a pattern of repeated operant conditioning. So no matter if you are fighting food addiction, an eating disorder, a drug addiction or any other form of addiction, the problem remains the same. You have to beat the cravings to beat the addiction! As Yoda says, "You must unlearn what you have learned." As a user of this application, you will input cravings, triggers and time of day of the craving. The system will have an easy-to-use user interface to minimize the stress associated with logging your cravings. Weekly and monthly reports can be generated to allow a person to track the frequency, craving strength and time the craving lasted to make informed decisions that can help towards the ultimate goal of controlling cravings and ultimately the addictions themselves.

Faculty sponsor: Scot Morse

**Wayne Rose***A Shopping List For Android*

For any Android user who wants to use their phone as a shopping list. This mobile shopping list is a mobile app that will allow the user to enter their items on a list stored on their phone. It will also add items captured from a picture of a list written on a white board. The user can also check off each item as they pick them up for deletion later. Unlike other shopping list apps, this one will be simple to use and feature mass deletion of items.

Faculty sponsor: Scot Morse

**Ryan Rothweiler***SandCat - A Language for Games Prototyping*

SandCat is a game-description language that aims to empower game designers by allowing them to focus on the designs instead of the software. There currently exists no tool that allows game designers to quickly iterate on their ideas. SandCat aims to be that tool by solving three main problems with current solutions. The language aims to be successful in three areas: archivable, expressive and light. Archivable - Something written in SandCat should still be playable years later. Expressive - SandCat should be flexible enough to allow designers to specify a large variety of games in a short amount of time. Finally SandCat should be light. Games prototyping requires quick iteration times. In these ways, SandCat aims to massively expedite the game-design process.

Faculty sponsor: Scot Morse

**Terence Soum***Save That Food!! Mobile App*

*Save That Food!!* is the name of mobile application. The app is for keeping track of the foods that are in the user's refrigerator or pantry and provides an alert of when the food may spoil so the user doesn't waste money. The app will allow the user to input data about the item and its expiration date. The user may also set an alert accordingly to the expiration date. Also the app may provide recipes based on what the user currently has in stock so that it may motivate the user to use the items. Unlike other similar apps, they do either or, but not both, for example one app may just allow you to select what you currently have in the fridge/pantry and gives you recipes and then there's another app that just allows you to track what's in your fridge and you can set the alert times. So the goal is that my app will do both conveniently.

Faculty sponsor: Scot Morse

**Cameron Stanavige***Idiosyncrasy Mobile App*

Idiosyncrasy is for people watching enthusiasts who want to add some additional fun to their people-watching hobby. This mobile application is a game that will allow individuals who enjoy people-watching to interactively play together from their mobile devices. The BINGO cards and decks are made up of a variety of specific people and scenarios (e.g., a dog in a purse, someone running late, someone with brightly colored hair) at optionally selected events and locations (e.g., school, wedding, public transport) where the players can put their people-watching skills to the test against their friends or simply for their own entertainment.

Faculty sponsor: Scot Morse

**Peter Wallace***ErrantDice RPG*

ErrantDice RPG is a top-down 2.5D game allowing players to explore dungeons, fight monsters and solve puzzles. Players will be able to select their character and navigate the world with minimal-to-no loading screens. Dungeons will contain a series of puzzles to be solved, rewarding the player with items, treasure and eventually a challenging boss fight incorporating skills learn through the course of the dungeon. The application itself will be able to be played on several different platforms including Android, iPhone and desktops, allowing players to experience the game however they wish.

Faculty sponsor: Scot Morse

**Kyle Walsh***Samurai Sprint Game*

Faculty sponsor: Scot Morse

**Jiaxin Wang***Sharer*

Sharer is an Android application that will provides fair sharing when the user enters the due data. To empower our users, I will provide an easy-to-use way to deal with the cost allocation. By recording the data, a team can learn how much each person should share. Users can create a team to add to the costs involved in the friends involved. For example: First, users need to confirm the identity of the account login. After entering the app, the user will create a group to include all the activities of the users to set up (in local or network), then input the data (time, price, project and so on) at the end of the activities of the end should be assessed the amount calculated by.

Faculty sponsor: Scot Morse

## Midday sessions

**BIOLOGY**

Kenneth M. Walker Biology Poster Session  
 Session chairs: Jeffrey Snyder and Michael Baltzley  
 Werner University Center (WUC) Pacific Room

11 A.M TO 1 P.M.

**Chelsea Bitner**

*The Physiological Effects of Potassium, Phosphorus and Nitrogen Deficiencies in Zea maya and Fragaria ananassa*

Understanding the physiological effects of minimized availability of essential mineral nutrients on crop plants is critical in order to discern how to best grow crops in depleted or marginal soils. For this study, corn (*Zea mays*) and strawberry (*Fragaria ananassa*) were grown in a semi-randomized blocked design in a greenhouse. There was a control group for each species and three experimental treatments, each eliminating one of three essential macronutrients: phosphorus, nitrogen or potassium. Several tests, including water potential, day- and nighttime gas exchange, stomatal size and density and total biomass were conducted to study the physiological effects of each treatment. Results from these measurement analyses will be presented.

Faculty sponsor: Ava Howard

**Caitlin Castillo**

*Variation in GABA-Immunoreactive Neurons Across Three Stylommatomorpha Gastropods*

There is typically little variation in the structure of nervous systems of closely related species, but there is often variation in the size, number and location of individual neurons. To explore the variation of nervous systems among several gastropod species, GABA-immunoreactive (GABA-IR) cells were identified in the grey field slug *Deroceras reticulatum*. GABA-IR cells were chosen in order to compare results to previously unpublished data from the garden snail *Cornu aspersum* and the scarlett-backed tailed slug *Prophysaon vanatta*. All three species are gastropods in the clade Stylommatomorpha and are found in the Pacific Northwest. We expected to find same number of GABA-IR neuron clusters across the different species but also expected to find that the number of cells within those clusters varied across species. In all three species, GABA-IR clusters were found in both the cerebral ganglia and in the fused pedal, plural, visceral and parietal ganglia. Buccal ganglia tended to have individual GABA-IR cells rather than clusters. An analysis of the number of GABA-IR neurons in the various ganglia will also be presented.

Faculty sponsor: Michael Baltzley

**Tyler Clardy**

*House-Hunting in Ecuadorian Hermit Crabs (Coenobita compressus): Factors Affecting Shell Selection*

Because Ecuadorian hermit crabs (*Coenobita compressus*) carry their shelter with them, they offer a unique perspective to evolutionary selection factors when choice is suboptimal. Many shell-selection factors have been identified previously, but few have offered a compromise-free assessment of shell selection choice. Ten *C. compressus* were given a selection of different shells from which to choose after an eviction of the crab from its original shell. We hypothesized that hermit crabs will select a shell that is similar in size to their original shell when evicted from their original shell. We observed that crab weight and eviction techniques played a significant role in shell choice and shell selection latency, respectively. Out of ten (10) crabs seven (7) choose a shell that was similar to their original shell. Two (2) out of the ten (10) crabs choose a shell that would be considered larger than their original shell, but when their shell selection and weight were compared to other crabs of the same weight, we found that they chose a shell that was more appropriate to their size given their weight. Our results are consistent with known observations on this species.

Faculty sponsor: Jeffrey Snyder

**Tori Crumrine and Maria Franco Ramos**

*Using Artificial Selection to Understand Orientation Behavior in Drosophila*

The ability of *Drosophila melanogaster* to orient using Earth-strength magnetic field is controversial. In order to explore the underlying mechanisms of magnetoreception, we subjected a wild-caught population of *Drosophila* to artificial selection. We used a sequential Y-maze to select north- and south-seeking flies over 15 generations. Using the same protocol, we also selected and bred populations of positively and negatively phototaxic flies to distinguish any bias in the Y-maze. After 15 generations, we completed 10 replicates of each line of flies. Our results show significantly stronger preference for light in our light-selected flies than in our dark-selected flies ( $p < 0.05$ ). This confirms that we could successfully select for and bred fly populations using our Y-maze. Our results did not show a significant difference between north-selected and south-selected flies, but did indicate a preference for north in both populations. It is possible that the flies' magnetoreception was due to the local environment rather than the magnetic field, so we changed the environment surrounding the maze and will complete 15 replicates using the original population of flies.

Faculty sponsor: Kristin Latham-Scott

**Faye Beth Gagnon**

*Insight Into the Immune System: Drosophila Melanogaster vs. Pseudomonas Fluorescens*

*Drosophila melanogaster*, the fruit fly, is a model organism with genetic applications and an accelerated life cycle making it an ideal subject for developmental and immune system research. There has been little research investigating the lethal and non-lethal responses of flies infected with bacteria early in development. To further the knowledge on the early developmental responses of their immune system, previous research examined larvae that were exposed to a typically encountered soil bacteria, *Pseudomonas fluorescens*. It was hypothesized that ingesting the bacteria would cause growth delays coupled with high mortality. To further study the toxic effect of bacteria on the innate immunity of *Drosophila melanogaster*, we sought to clone the gene *ChiC* from *Pseudomonas fluorescens* Pf-5. This gene encodes a chitinase enzyme in bacteria suspected to be a toxin to *Drosophila* larvae. We then will extract the protein product to feed to *Drosophila* larvae and assess the developmental effect. In further applications, this research could give insight to the innate immune response exhibited in humans to bacterial infections.

Faculty sponsor: Kristin Latham-Scott

**CRIMINAL JUSTICE**

Forensic Anthropology

Session chair: Misty Weitzel

Werner University Center (WUC) Pacific Room

11 A.M. TO 1 P.M.

**Bryce Barthuly**

*Obtainable Chemical Products and Forensic Taphonomy*

This case report examines the taphonomic effects of 10 different chemical products (lime, chlorine bleach, landscape fertilizer, burned and unburned gasoline, ammonia, dry ice, methanol, sulfuric acid, cement and insecticide) reported in law enforcement literature with the deposition of human remains. The eight-week experiment incorporates portions of defleshed cow femura placed into 10 separate one-foot-deep by one-foot-wide burial sites. In each of the sites, one chemical was introduced to a cow femur and covered with the natural soil. One separate burial site with a femur but without a chemical was utilized in the experiment for comparison purposes. To determine the taphonomic effects during the eight-weeks, each cow femur was photographed and its weight, color and morphological characteristics were recorded. The movement and observed disturbance to the soil prior to and after the eight-weeks was also recorded. The objective of this experi-

ment is to determine the taphonomic effects of various chemicals on the soil and bone in each of the burial sites.

Faculty sponsor: Misty Weitzel

### Amanda Jester

#### *Ancestral and Sex Determination by Fingerprint Analysis*

Fingerprints have been used by law enforcement and forensic experts for over a century to identify people. The goal of this presentation is to give attendees an insight into the literature surrounding several studies that look at the use of fingerprints as a method for assessing a person's sex and ancestry. These studies look at several aspects of fingerprints of several races and sexes, then compare the numbers of different patterns and details within each race and sex category, to find similarities and differences. Patterns specific to sex and ancestry can help law enforcement and forensic anthropologists in identifying victims and/or perpetrators.

Faculty sponsor: Misty Weitzel

### McKenzie Litterell, Garrett Litterell and Amanda Switzer Tupper

#### *The Morphological Effects of Varying pH Levels in Freshwater Environments on Skeletal Remains*

The effects of freshwater environments with varying pH on the decomposition process of skeletal remains can have important implications in the forensic investigation process. Little research has been done on this topic considering bodies are routinely recovered from marine environments. In this experiment, lumbar vertebrae of domestic pigs (*Sus scrofa*) were placed in solutions of varying pH (1, 4, 7, 10 and 14). The vertebrae were weighed, photographed and documented two times a week for a four-week period to determine the morphological alterations that occur to skeletal remains. We estimate the solutions on the extreme ends of the pH scale (1 and 14) will yield the greatest amount of visible morphological alterations such as grooves and pitting. The pH 7 solution will have no morphological differences due to pH 7 being neutral pH. The pH solutions 4 and 10 will yield little to no visible differences in appearance. Although these are strong acids and bases, they are not strong enough to alter the osseous material in a four-week time period.

Faculty sponsor: Misty Weitzel

### Alexis Martinez, Taylor Adams and Jimmy Khang

#### *The Effect of Household Fire Accelerants on Bone*

Fire has been used in many criminal cases as a way of body disposal. The goal of this presentation is to be able to distinguish between bones that have been exposed to fire with varying types of household accelerants (diesel, hairspray and vodka). The reason for focusing on these is that these cause flaming fires which are most destructive. In this experiment we are using the skeletal remains of a sheep split into four similar groups. Group one served as a control and was lit on fire without an accelerant. In group two, the remains were covered in diesel and lit on fire. In group three, the remains were covered in vodka then lit on fire. Group four was sprayed with hairspray and then lit on fire. The data that we will be collecting is color, distinctive fracturing and leftover accelerant residue on the bones. We are expecting to see some color changes and fracturing of the remains with group two with the diesel as an accelerant being the most distinctive. This experiment will provide the forensic community with further knowledge on the effects of different household accelerants in association with fire.

Faculty sponsor: Misty Weitzel

### Jessica Mylan

#### *Aligning Tourists' Interests with Local, Sustainable Development in Costa Rica*

Aligning tourists' interests with local, sustainable development in Costa Rica  
One quarter of Costa Rica's export income comes from ecotourism, which is the country's most prominent form of tourism. This poster showcases the local tourist attractions, landscapes, and services eco-tourists utilize during their travels to Costa Rica. It draws on pictures, participant observation, and oral interviews to highlight

the major attractions and interests of locals in Tárcoles, Carara National Park, and Jacó along the Pacific Coast. It also illustrates the ways in which tourists traveling to Costa Rica can benefit the lifestyles of the community through the promotion of its members' human welfare through a sustainable use of the natural environment. It argues that there are opportunities in Tárcoles for the community to take advantage of the tourists visiting nearby attractions and also develop sustainable services that preserve the environment and create economic benefits for locals.

Faculty sponsor: Misty Weitzel

### Matthew Tholen, Julie Huffman and Hailey Groh

#### *Effectiveness of Household Chemicals in Disposal of Human Remains*

The purpose of this experiment is to determine the effectiveness of household chemicals in disposal of human remains, using chemicals easily accessible to general public. Empirical data on the use of household chemicals could aid in forensic investigations involving this method in disposal of human remains. Chemicals being used in this experiment include bleach, acetone, vinegar, muriatic acid and drain cleaner. Single flesh and unflashed pig ribs were submerged in each chemical solution within a mason jar for four weeks. One rib, serving as a control, was placed in a mason jar filled with bottled water. Macroscopic changes were described and photographed. Through this experiment, we will be able to better understand the breakdown of flesh and bones by chemicals.

Faculty sponsor: Misty Weitzel

## GEOGRAPHICAL INFORMATION SYSTEMS

Applications of Geospatial Technology

Session chair: Melinda Shimizu

Werner University Center (WUC) Pacific Room

11 A.M. TO 1 P.M.

### Dale Aasted, Jose Aldo Cervantes, Cody DeCamp, Alexis Schuetze, Lexington Taylor, Makani Stormont and Connor Pomeroy

#### *Thematic Map of Early Explorers' Routes for use in Middle School*

Cartography is the art and science of making maps. While there is certainly room for creativity, there are well-defined standards that guide the process of creating a map. These standards direct and clarify the choices made in all aspects of map composition. Of chief concern for the map-maker is consideration of the intended map audience. Knowing this audience directs the entire process and the design choices made in executing a map. For this project, seven students in ES 340 are directed to create a thematic map of an early explorer's route for use by middle school students. Their choices in map design are to reflect the needs of their audience and the results of their work are presented as an assemblage of seven different maps designed for the same purpose, but created by seven different map authors. The variety in maps presented demonstrates both the flexibility and rigidity in map standards. Finally, these maps are presented for evaluation by attendees of that Academic Excellence Showcase. Attendees will be able to vote for which of the maps they think is best.

Faculty sponsor: Melinda Shimizu

### Emily Carlston, Kolby Childers, Walter Schoen, Derek Smith, Jesse Sutter, Steven Graves and Greg Jaquith

#### *Cartography Competition: Thematic Map of Early Explorers' routes for use in Middle School*

Cartography is the art and science of making maps. While there is certainly room for creativity, there are well-defined standards that guide the process of creating a map. These standards direct and clarify the choices made in all aspects of map composition. Of chief concern for the map-maker is consideration of the intended

map audience. Knowing this audience directs the entire process and the design choices made in executing a map. For this project, seven students in ES 340 are directed to create a thematic map of an early explorer's route for use by middle school students. Their choices in map design are to reflect the needs of their audience and the results of their work are presented as an assemblage of seven different maps designed for the same purpose, but created by seven different map authors. The variety in maps presented demonstrates both the flexibility and rigidity in map standards. Finally, these maps are presented for evaluation by attendees of that Academic Excellence Showcase. Attendees will be able to vote for which of the maps they think is best.

Faculty sponsor: Melinda Shimizu

**Tristan Damron, Marvel Davis, Jessica Donahue, Adam Dutton, Landon Glynn and Nicole Inman**

*Cartography Competition: Thematic Map of Early Explorers' routes for use in Middle School*

Cartography is the art and science of making maps. While there is certainly room for creativity, there are well-defined standards that guide the process of creating a map. These standards direct and clarify the choices made in all aspects of map composition. Of chief concern for the map-maker is consideration of the intended map audience. Knowing this audience directs the entire process and the design choices made in executing a map. For this project, six students in ES 340 are directed to create a thematic map of an early explorer's route for use by middle school students. Their choices in map design are to reflect the needs of their audience and the results of their work are presented as an assemblage of seven different maps designed for the same purpose, but created by six different map authors. The variety in maps presented demonstrates both the flexibility and rigidity in map standards. Finally, these maps are presented for evaluation by attendees of that Academic Excellence Showcase. Attendees will be able to vote for which of the maps they think is best.

Faculty sponsor: Melinda Shimizu

**Tristan Damron**

*Integrating Raspberry Pi and Drone Technology for Student-Led Primary Data Collection in an Advanced GIS Class*

The Raspberry Pi is an ultra-small kit computer designed for education. While it generally has a small amount of resources on board, the computer appeals to students, educators and hobbyists alike because of its General Purpose Input/Output (GPIO) pins. These pins can be attached to sensors (a variety of which can be found online,) and data can be read easily with only a few lines of code. Directly out of the box, the potential for innovation is immense. This poster outlines the process of using a drone, Raspberry Pi and components to collect spatial data for and advanced GIS class. The methods presented here serve as a model for other programs or classes that might similarly benefit by empowering students to collect and analyze their own primary spatial data.

Faculty sponsor: Melinda Shimizu

**NURSING**

Nursing Leadership in Population Health  
Session chairs: Angie Docherty and Patti Warkentin  
Werner University Center (WUC) Pacific Room

**11 A.M. TO 1 P.M.**

**Pesa Coslow and Sarah Wilder**

*Improving Educator Retention Through Mindfulness Practice*

Educators of a local school district have experienced high levels of stress, poor job satisfaction and significant staff turn-over in recent years. Agency leaders have identified a need for improved self-care and wellness to promote success for educators and students alike. The aim of this process improvement project was to educate

staff on the value of personal wellness practice and offer a mindfulness based program for implementation. Research has shown that mindfulness programs in schools improve job satisfaction, classroom culture and student success. A literature search and observations led to the development of an evidence-based program to support leaders in education. The materials are designed to encourage mindfulness practice independently and in the classroom environment. Administrations have adopted the plan for process improvement and begun implementation. Tools for evaluation of progress, team collaboration and problem-solving were provided for a sustainable mission toward educator retention and school wellness.

Faculty sponsor: Patti Warkentin

**Jason Elliott and Cassandra Stout**

*Improving Healthy Nutrition Habits at a Psychiatric Residential Treatment Center*

Leadership students at Oregon Health & Science School of Nursing were directed by the Health Services Director to improve client nutrition at their pediatric inpatient psychiatric facility. Based on client need, evidenced-based research and a staff survey, a plan was created to educate the facility skills trainers about healthy nutrition. Skills trainers spend more time with clients than any other member of the treatment team, therefore, they are in a unique position to impact client nutrition. The aims of this project are to educate skills trainers at the facility by increasing motivation, confidence and knowledge surrounding the ability to provide client nutrition education and embrace healthy role modeling behavior by gaining skills needed to make healthy choices. An evidence-based Healthy Nutrition Tips template was created to be read at daily skills trainer pre-brief meetings. This intervention is to be implemented and sustained by the facility nursing staff. To attain results of efficacy, the skills trainer survey is to be administered again 90 days after the project is implemented.

Faculty sponsor: Angie Docherty

**Jena Hendricks and Steve Ermer**

*Increasing Participation in a College Violence Prevention Program*

Western Oregon University implemented a nationally recognized violence prevention program: Green Dot (GD), with the strategic plan to measurably reduce power-based violence through training and continual content development (Green Dot, 2016). Integration of the violence prevention program fosters a culture of safety and non-violence through GD's prevention-minded strategies. WOU's GD program has experienced low participation rates, with unsuccessful efforts to engage first year and unaffiliated students into the program. To connect these students, the Peer Mentor (PM) program was utilized to promote GD within the dormitory system. Utilizing PM input, support materials and trainings were used to create the promotional toolkit. The purpose of the toolkit was to support the PM program to increase GD participation among unaffiliated first year students, leading to the peer influence that would support a culture of power based violence prevention. The toolkit was formally introduced winter term 2017. Results on efficacy will be reviewed at the end of the 2017 academic year with the goal to increase awareness of GD and participation in the GD program.

Faculty sponsor: Angie Docherty

**Janae Mansour and Alayna Oleksa**

*Mapping Nutrition: Increasing Access and Strengthening Community Partnerships*

Acculturation puts international university students at risk for adopting poor nutritional habits and weight gain (Almohanna, Conforti, Eigel, & Barbeau, 2015). Providing students with healthy food options is crucial to improving their well-being. This project aims to (a) assess the health needs of international students at a local university and (b) develop a resource map, enhancing access to local health food stores. A survey evaluated the needs of the international student population. Interventions were reviewed following a literature search through CINAHL. The project was refined through the Logic Model framework and strong collaboration with international affairs, health services and dining services. A project template and detailed resource list was created. Authors mapped grocery stores, global

food markets, farmers' markets and food pantries with corresponding bus routes, including shopping tips unique to each store. The university media team will create an interactive web-based map from the resources list. A technology driven resource map has the potential to enhance nutrition habits and strengthen university-community partnerships.

Faculty sponsor: Patti Warkentin

### **Stephanie Rodriguez**

*Increasing SNAP Outreach Among Older Adults Experiencing Food Insecurity in Marion and Polk Counties*

Food insecurity is an issue that directly impacts individuals and families in Oregon. Food insecurity occurs when reliable access to nutritious food is unavailable. In Oregon, the food insecurity rate is roughly 16 percent, or 644,000 people. An initiative in Oregon called Supplemental Nutritional Assistance Program (SNAP) exists to relieve hunger and reduce food insecurity for low-income earners. Older adults experience high rates of food insecurity but are less likely to utilize SNAP benefits. Agency data reflect this and illuminates the significant need for SNAP outreach targeted at older adults within Oregon. To combat older adult food insecurity, our proposal is to implement a SNAP outreach program through local food pantries in collaboration with Marion Polk Food Share. The program will offer older adults application assistance, answers to frequently asked questions, tools to overcome barriers to receiving benefits and general advice about the program. Equipping older adults with the tools to apply for food benefits will increase their access to healthy foods, decrease their food insecurity and ultimately, improve their quality of life.

Faculty sponsor: Angie Docherty

### **Vanessa Rutherford and Jacquelen Sanders**

*Applying a Health Equity Lens: Collaboration of Partnerships at the Community Level*

Community partnerships are important aspects of improving individual well-being and decreasing health disparities leading to better health outcomes and improved equity. Marion County benefits from Oregon State University Extension Service Family and Community Health (FCH) division's ability to develop these community partnerships. The aim of this project was to develop a standardized and sustainable decision guide worksheet for improving the decision making process on beneficial partnerships with an emphasis on health equity in the community setting. The guide was created based on multiple proven framework models for decision making with a health equity inclusion focus. The decision guide was tailored to meet the needs of FCH through simplification to allow for practical use. The project is in the early phase of being tested by FCH for proof of concept with the plan to extend use to other counties' FCH divisions once established.

Faculty sponsor: Angie Docherty

### **Allie Vance and Amanda Jacob**

*Increasing Human Papillomavirus Vaccination Rates.*

Human Papillomavirus (HPV) is known to cause more than 31,000 new cancer cases each year as reported by the Centers for Disease Control and Prevention (2016). It is the goal of health care workers to promote the vaccination rates against HPV using evidence-based practices to increase the protection from its harmful effects. Polk County Public Health Department set a reproductive health goal to increase the HPV vaccination rate by 10 percent. Interventions were developed to address current barriers that were assessed through collaboration with the reproductive health staff and analysis of clinic visits, staff interviews, program review and databank searches. Interventions developed to overcome barriers include therapeutic communication tools, updates to questions/conversations regarding HPV, a vaccination financial assistance program and documentation needed to expand the role of the medical assistant at the public health clinic. Implementing these interventions has potential to increase protection from HPV.

Faculty sponsor: Angie Docherty

## **POLITICS, POLICY AND ADMINISTRATION**

Peacebuilding and Public Policy

Session Chair: Eliot Dickinson

Werner University Center (WUC) Pacific Room

11 A.M. TO 1 P.M.

### **Elizabeth Aldrich and Jesse Thompson**

*The Oregon Peace Academy: The Campaign to Rename the Oregon Military Academy*

Faculty sponsor: Eliot Dickinson

### **Stacie Allen**

*Peacebuilding and Planned Parenthood*

Faculty sponsor: Eliot Dickinson

### **Maddie Dohrer**

*Peacebuilding through Foreign Aid*

Faculty sponsor: Eliot Dickinson

### **Jordan Farley**

*Peacebuilding and the Environment*

Faculty sponsor: Eliot Dickinson

### **Gabriela Hernandez and Vastine Niyomwungere**

*Peacebuilding through Education*

Faculty sponsor: Eliot Dickinson

### **David McCall**

*Peacebuilding through Good Governance*

Faculty sponsor: Eliot Dickinson

### **Moises Mendoza Medina**

*Peacebuilding and Prison Reform*

Faculty sponsor: Eliot Dickinson

### **Ryan Ripp**

*Peacebuilding and Restorative Justice*

Faculty sponsor: Eliot Dickinson

### **Mark Rutherford**

*Peacebuilding and Tax Reform*

Faculty sponsor: Eliot Dickinson



## POLITICAL SCIENCE

Political Science Research

Session chair: Mary Pettenger

Werner University Center (WUC) Pacific Room

11 A.M. TO 1 P.M.

### Connor Amundson

*Free Trade or Protectionism*

This poster explores the free-trade responses to President Trump's protectionist economic agenda proposed in his campaign. In the 2016 election President Trump criticized free trade deals such as North American Free Trade Agreement (NAFTA) and the Trans-Pacific Partnership (TPP). Much of his campaign centered around this criticism and blaming these free-trade deals for poor economic performance and job loss. Within a few days of President Trump's inauguration, he withdrew the United States from the TPP and promised to renegotiate NAFTA. The research paper examines a number of free trade responses and arguments that contradict this protectionist policy. It also includes possible costs and benefits of free-trade deals that the United States has entered into at this point, as well as the effects the TPP may have had.

Faculty sponsor: Mary Pettenger

### Richard Daughters

*Human Rights: Roma and Education in Czech Lands*

In the mid-2000s, the European Court of Human Rights ruled against the Czech Republic's discriminatory education system. The Czech Republic had disproportionately placed its Roma population into special schools, which were designed to educate students with mild mental disabilities. The Czech education system deprived Roma of their basic human rights and helped keep them as second-class citizens. This research focuses on how the modern Czech Republic dealt with its special school system after the court's ruling. The system the European Court of Human Rights had ruled against was formally abolished however, the changes amounted to little more than a name change. The Czech Republic has inadequately addressed the issue and it has allowed for the continued abuse of its Roma population's human rights through a segregated and unequal education system.

Faculty sponsor: Mary Pettenger

### Jacob Hanson and Julie Postma

*Civic Engagement: Helping the Elderly*

Our project was to determine what factors hinder college students from being engaged in the community that surrounds their university. In this study we examined factors that might influence student civic engagement including demographics, past volunteer experience, current involvement and desire to become involved in the community. Based on our study, we coordinated with the local Monmouth senior center to create a campaign for leaf raking for seniors who were unable to rake their leaves themselves and then recruited WOU students who participated in the civic engagement activity.

Faculty sponsor: Mary Pettenger

### Amy Lake and Madison Fagnani

*Frostburg Fit Case Study*

The Society of Human Resources sponsors three regional student case competitions each year, giving each team an HR scenario to be evaluated for possible solutions. The case study is sent to teams three weeks before the competition and teams are required to review the case, design a solution, create an executive summary with a Power Point presentation, within five days. The solution must include a human resources approach at its core. The completed case is then submitted to judges before the event and presented at the case competition three weeks later. The case scenario was Frostburg Fit, a gym growing rapidly, with staffing not keeping up with growth. Frostburg Fit started out as an endeavor by a passionate physical education teacher to increase local children's activity levels and teach better nutritional choices. What began as a kid's gym has now become a full-fledged fitness center and sports arena with many amenities to members of all ages. Not yet in its 25th year, it has reached its capacity for growth. With that amazing growth and popularity have come some unique challenges. We are charged with evaluating the challenges and proposing HR solutions.

Faculty sponsor: Mary Pettenger

### Jesse Thompson

*The Bosnian War: Responding to Crimes Against Humanity*

Following Bosnia's declaration of independence from the former Yugoslavia in 1992, an ethnic war ensued in which Bosnian Muslims became the victims of crimes against humanity carried out by Serb forces. The Bosnian War lasted from 1992-1995, during which 100,000 people died and millions more were displaced, the majority of whom were Bosnian Muslims. This study briefly looked at the causes of crimes against humanity and analyzed the peacekeeping efforts, the establishment of a criminal tribunal and the multilateral humanitarian intervention by the international community during the Bosnian War to determine the effectiveness of these methods in preventing future cases involving crimes against humanity.

Faculty sponsor: Mary Pettenger

**DEAF STUDIES & PROFESSIONAL STUDIES**

Deaf Studies and Professional Studies  
 Session chair: Erin Trine  
 Richard Woodcock (RWEC) Lower Lobby

4:30 TO 5:30 P.M.

**Mylisa McGill***Demands of VRS: How Technology is Changing the Language of ASL*

This research focuses on one of the many fields of ASL/English interpreting: Video Relay Service (VRS). VRS interpreting is somewhat of a mystery to anyone who is not an active VRS interpreter. What do they really do? How does it work? What is the role of an English/ASL interpreter working in VRS? The following explores the details that explain what exactly VRS is and the interpreter's role in this specific setting. This paper will focus specifically on the various ways that VRS and other new technology is impacting the language of ASL itself as well as impacting the deaf and hard-of-hearing community. It discusses the different ways in which the language is slowly changing and why it is changing. The benefits of this change for ASL and for the community that uses it as well as some of the possible short comings of this transitional period will also be discussed.

Faculty sponsor: Erin Trine

**Elaina Snow***Do You See Me Now?*

This poster will be explaining what the deaf talent movement is and where interpreters stand in this issue. I will touch on how deaf actors were portrayed in the past, along with where deaf talent is in today's society and how interpreters fall in the mix and or how interpreters can support the deaf talent movement. This poster will talk about multiple types of deaf talent ranging from movies, music, theater, etc.

Faculty sponsor: Erin Trine

**Breeanne Patrick***Deaf Students' Access to Sex Education Information: Implications for Interpreters in Education Settings*

A review of relevant literature shows that a gap exists between deaf and hard of hearing students and their hearing peers regarding sexual health information. This gap is likely influencing risky sexual behavior and violence among deaf and hard of hearing youth. Recommendations for K-12 interpreters are discussed.

Faculty sponsor: Erin Trine

**Harrison Burke***eSports Interpreting*

A need to be filled in the interpreting space is the ability to give competent access to the eSports community. Currently the lack of interpreters or the lack of requirement to have interpreters present completely cuts off deaf competitive gamers. Some of the best gamers in the world could be next door, but we wouldn't know because the deaf community currently can't compete due to lack of access. eSports interpreting requires a long list of slang, lingo and terms that aren't used in the day to day, and it will require someone in the gaming community or someone willing to do the work to learn the jargon. Allowing access to the eSports world gives equal opportunity to new careers, paid jobs and prize pools over 20 million dollars. eSports interpreting looks pretty much like any other performance interpreting setting; you will be on stages, many people looking at you, often on camera and interpreting not only for the deaf present but the deaf people watching on Twitch, TV, Youtube and other streaming services.

Faculty sponsor: Erin Trine

**TEACHER EDUCATION**

MAT Poster Session  
 Session chairs: Melanie Landon-Hays and Xiaopeng Gong  
 Werner University Center (WUC) Pacific Room

5:30 TO 6:30 P.M.

**Lincoln Aspenwood***Increasing the Participation and Engagement of Introverted Students Through Classcraft*

Introverted students often struggle in the English Language Arts classroom, which can be discussion-based and require frequent participation. Lack of participation impacts most students' educational experiences including academic achievement but especially inhibits the learning experiences of introverted students. Thus, the question exists, how can E/LA teachers better support introverted students in the E/LA classroom so they engage in class, with peers and have increased opportunities for success? To address this question and issue, a standard-based curriculum was developed integrating *Classcraft*, an interactive classroom instruction and management tool, to increase the participation and enhance learning experience of introverted students.

Faculty sponsor: Alicia Wenzel

**Stefani Atkinson***Embedding Technology into the High School Language Arts Curriculum: Increasing Student Motivation, Engagement and Academic Achievement.*

A decrease in reading stamina is a growing trend amongst 21st century adolescents. They live in a world dominated by technology that values brevity. The declining rate of reading stamina and comprehension inspires the research question: *How can embedding technology into the high school language arts curriculum increase student motivation, engagement and academic achievement?* To address this growing trend, a targeted standards-based curriculum was developed. This curriculum proposes using technological tools that students are familiar with in order to increase motivation and engagement, ultimately leading to increased comprehension rates and improved academic achievement.

Faculty sponsor: Alicia Wenzel

**Jennifer Boatwright***Embedding Study Skills In Mathematics Curriculum*

As students make the transition from middle school to high school, they encounter a new set of academic expectations and requirements. Many students lack the ability to self-regulate and struggle to succeed in their new environment without effective learning strategies and study skills. Existing programs designed to help students successfully make the transition to high school focus primarily on generic study strategies and are not content-specific. This project examines the effects of incorporating organizational and study strategies into mathematics instruction in an Algebra 1 classroom through the use of an organized notebook and systematic self-regulation.

Faculty sponsor: Xiaopeng Gong

**Conner Booster***Critical Pedagogy and the Use of Primary Sources in a History Class: An Action Research Project*

This project explored how the use of primary sources in a history class promoted a learning environment that embraces the ideals of critical pedagogy. The study examined how the combination of primary sources and critical pedagogical practices facilitate the rejection of a passive learning environment, the accommodation of diverse cultural backgrounds and the teaching of the historical process. Encouraging dialogue over the interpretation of these sources creates a space where students

are provided a comparable platform to adults a place in which students can interact with one another to legitimately address the challenges they face.

Faculty sponsor: Xiaopeng Gong

### **Emilee Boroma**

#### *Implementing Instruction Strategies to Motivate and Engage Male Students in Literacy*

This project will study how to motivate and engage male students in a literacy class. It will provide information about how to properly teach male students in ways that will allow them to succeed in reading and writing. This project will provide teachers with the knowledge they need to teach male students about literacy. The goal of this project is to help teachers see areas that their students are struggling in and to teach them ways to prevent their students from struggling. This project will be a useful tool for teachers to use when planning literacy curriculum.

Faculty sponsor: Xiaopeng Gong

### **Casey Connor**

#### *Using Video Evidence of Learning Objectives in a High School Physical Education Class to Improve Student Assessments and Feedback Practices*

Student success in physical education classes is strongly connected to feedback and assessment. Some feedback and assessment approaches in PE have not been as effective as needed to support student growth. This hinders students' achievement and experiences in PE and teachers' opportunities to cultivate and extend students' abilities in PE classes. Thus, a new high school PE curriculum was created to improve feedback and assessment practices using video evidence of learning in an effort to enhance student PE knowledge and skill, increase students' reflection abilities and help teachers have stronger evidence of students' abilities so they can better support students.

Faculty sponsor: Alicia Wenzel

### **Daniel Correa**

#### *Implementing Technology into a Social Studies Classroom: An Action Research Proposal*

This research project will focus on the integration of the Technological Pedagogical Content Knowledge (TPACK) framework into a social studies curriculum. Technology and the proper integration of technology, has become increasingly important in K-12 classrooms. The project will also examine how successful integration of the TPACK framework into a social studies curriculum can improve students' engagement in a social studies class. A series of lessons plans that demonstrate how to integrate technology into the social studies class will be presented and students outcomes will be discussed.

Faculty sponsor: Xiaopeng Gong

### **Amanda Evola**

#### *Reducing Math Anxiety by Increasing Engagement, Motivation and Autonomy*

The current study investigated how improving student engagement, motivation and autonomy through evidenced-based strategies could help decrease math anxiety in the classroom. The curriculum embedded in this project will propose teaching strategies that increase student engagement, motivation and autonomy to ultimately enhance student learning experiences. The objective is to use research findings supported by the Self-Determination Theory to build teaching strategies embedded in the mathematics curriculum that improve student engagement, motivation and autonomy. Ultimately, the current project will use teaching strategies within the curriculum to decrease math anxiety. Findings of the project and implications to teachers will be discussed.

Faculty sponsor: Xiaopeng Gong

### **David Gerkman**

#### *Improving Geographic Literacy and Student Engagement Through Technology in the High School Social Studies Classroom*

Many high school students struggle with geography-related tasks in and out of school. This can often be attributed to a lack of required geography courses in American public schools. Thus, educators wonder: How can social studies teachers incorporate geography into other social studies courses in engaging and relevant ways? This Action Research Project seeks to address this question by identifying research-based approaches, including technological resources, to improve student engagement and geographic literacy skills. Additionally presented is an overview of this problem, review of current literature and a reflection to guide future research connected to improving engagement and geographic literacy skills.

Faculty sponsor: Alicia Wenzel

### **Donald Gillham**

#### *Developing Visual Perception Skills Through Observational Drawing*

Drawing from observation and visual perception skills are valued in many fields: science, technology, engineering, art and mathematics. Contemporary practices in the arts and education in k-12 have shifted the focus away from teaching these skills, resulting in a rehashing of concepts, styles and imagery that stymie creativity and development of more advanced visual arts. To address the need for increased observation and visual perception skills in today's students, a modified approach to art and drawing education is needed. Aligned to standards, a drawing curriculum has been designed for high school art students to more effectively cultivate these skills.

Faculty sponsor: Alicia Wenzel

### **Ciana Ginochio**

#### *Effects of Pacing on Motivation in High School English Language Arts Classrooms*

Many students suffer from inappropriate pacing and differentiation strategies in high school classrooms. The effect of inappropriate pacing is decreased motivation, interest and may even be correlated to decreasing graduation rates. English teachers can combat these issues by increasing students' interest and motivation through incorporating a two-system method that uses both pacing and differentiation strategies to decrease direct instruction time. It will help students reach their full potential. The purpose of the project is to create standard-based curriculum with purposeful pacing and differentiation approaches that seek to increase motivation, engagement and achievement.

Faculty sponsor: Alicia Wenzel

### **Kyle Harrington**

#### *Increasing Students' Perception of the Value of a Music Education Through a Multidisciplinary HS Music Curriculum.*

Music education has many benefits in students' lives including increases in student engagement, motivation, cognition, test scores and academic achievement. However, cuts in creative arts funding has decreased music class offerings in some districts. As many believe music must remain in the K-12 curriculum, educators are looking for ways to effectively keep music education in the curriculum so students benefit from a well-rounded educational experience. Research shows that subject-integration can be a useful curricular approach. Therefore, a standard-based multiple-subject curriculum was designed to show how to effectively blend music and core subjects into a rich comprehensive learning experience for students.

Faculty sponsor: Alicia Wenzel

**Andrew Johanson***Using Inquiry-Based Learning and the Next Generation Science Standards to Develop Scientifically Literate Students*

For years, scientific literacy has been declining among US student due to a reduction in science education at the U.S. elementary school level. The result is middle school students with a deficit of scientific literacy that carries over into high school, inhibiting opportunities for higher level inquiry and science knowledge. Additionally, we have generations of graduates ill-prepared to compete in our highly scientific global economy. To address this conundrum, a new science curriculum was developed to incorporate the 5e Lesson Plan Model coupled with the Next Generation Science Standards with the aim of increasing levels of scientific literacy, cognition and student achievement.

Faculty sponsor: Alicia Wenzel

**Brandon Jones***Can Creating a Student-Centered Learning Environment Increase Student Motivation and Engagement in Physical Education Class?*

The purpose of this project is to see if creating a student-centered learning environment can help increase student motivation and engagement in a physical education class. Finding ways to help student increase their motivation and engagement towards physical education and physical activity is the overall main goal for this current project. Through the use of evidence-based instructional strategies and theoretical framework of the Self-Determination Theory, lesson plans were created that involve instructional strategies that can help foster a student-centered learning environment in a ninth-grade physical education class. Findings can be used to develop skills and knowledge for physical education teachers.

Faculty sponsor: Xiaopeng Gong

6:45 TO 7:45 P.M.

**Adeline Junker***Using Fiction Literature to Increase Empathy in High School Students*

Research shows that empathetic adolescents are more empathetic in adulthood, report better communications skills, better relationships and more positive social behaviors. While most high schools are unified by academic standards, developing positive social-emotional skills and empathy are also common goals. Thus, the question begs: *How can fiction texts be used in a high school English language arts class to cultivate and strengthen students' empathy?* To address this question, a standards-based E/LA curriculum was designed to help students to explore, analyze and learn effective ways to deal with different perspectives, attitudes and behaviors through the use of purposefully selected fiction.

Faculty sponsor: Alicia Wenzel

**Mackenzie Koll***Promoting Student Success Through Growth Mindset Focused Teaching*

Mathematics is a difficult subject for many students and being able to persevere after a mistake or failure is a crucial skill for student success in this discipline. Students with a growth mindset tend to be resilient and are more likely to persevere after a setback or failure in comparison to those with a fixed mindset. This project examines the relationship between a student's mindset and their academic achievement in mathematics. A series of lessons utilizing strategies to promote a growth mindset will be presented. Implications of the findings to math teachers and students will be discussed.

Faculty sponsor: Xiaopeng Gong

**Shauna Litts***The Effect of Structure on Student Performance and Engagement: Utilizing Highly Structured lesson plans and scaffolding in a High School U.S. Government Class*

Structured lessons and scaffolding have been shown to improve student engagement and performance in primary schools, but research in the context of secondary school is lacking. In addition, classroom management is an important component of building a rigorous and effective learning environment. This project examined previous research studies for effective scaffolding, structure and classroom management strategies and involved designing a curriculum for implementing the strategies in a high school U.S. Government course. Finally, the curriculum design was reviewed to determine its efficacy and areas to be improved. Findings of the project and implications to social studies teachers will be discussed.

Faculty sponsor: Xiaopeng Gong

**Carlie O'Connell***Project-Based Learning in the Middle School Math Classroom: An Action Research Proposal*

This action research project examined the benefits of Project-Based Learning (PBL) and how PBL can be implemented into a middle school math classroom in order to increase student engagement and achievement. Establishing math as a PBL class at the middle school can help students to understand the content better, create meaningful projects that have real world applications, be assessed in multiple different ways, have autonomy in their learning, perform better on summative or state assessments and shift their mindset about mathematics. Implications of the findings will be discussed and recommendations for future classroom practice will be made.

Faculty sponsor: Xiaopeng Gong

**Emily Scott***The Benefits, Challenges and Methods of Reading Workshop*

Developing and strengthening students reading comprehension skills is an essential task for teachers. Without these necessary skills, students struggle in and out of school. As not all students enjoy reading or have on-level reading skills, many teachers seek ways to engage and support English Language Arts students. However, what are the most effective approaches for helping E/LA students enjoy learning and experience academic success? This action research project aims to address this issue by developing curriculum using the reading workshop model. The crafted, purposefully selected standards-based curricula includes reads from the same genre, collaborative activities and technology.

Faculty sponsor: Alicia Wenzel

**Cassandra Swayze***How to Use Technology and Student Collaboration in Class to Promote Student Engagement, Motivation and Literacy Skills.*

This project will review literature about implementing technology in the classroom and collaborative learning models and apply these strategies into a secondary English Language Arts classroom. This project is unique in its effort to provide a unit that incorporates technology while maintaining a collaborative learning model in hopes of increasing a sense of community and togetherness. The presented curriculum is designed for sophomores in a literacy class where U.S. Seminal Documents are being examined. The purpose of the curriculum is to incorporate both technology and collaborative group work in order to increase student engagement, motivation and literacy skills.

Faculty sponsor: Xiaopeng Gong

**Natasha Trinité**

*Using Creative Writing to Develop Inquiry-Based Skills for High School English Language Arts Students*

---

Many students seem unmotivated to participate in English language arts classes even when given opportunities to do so. This is a problem because skills refined in the E/LA classroom affect student achievement across other content areas. Which raises the question: How can we increase students' motivation to participate in an E/LA classroom that benefits all students? To increase motivation, engagement and achievement, a standards-based E/LA curriculum has been designed that combines creative writing with inquiry-based teaching approaches using complex texts and a student-centered environment.

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Faculty sponsor: Alicia Wenzel

**Noah Weldon**

*Primary Sources in the Social Studies Classroom: Increasing Critical Thinking and Engagement*

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Many students struggle to engage in and find interest in the high school social studies classroom. One way to enhance the high school social studies classroom and engage students is through the implementation of primary sources. Not only will these help to engage students, but they also serve as effective tools to promote extremely valuable critical thinking skills. The question then becomes how to accomplish this in a way that enhances the material. In this project, a curriculum and framework is produced that utilizes primary sources in a way that aides each student in reaching their fullest potential.

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Faculty sponsor: Alicia Wenzel

**Erica Wiebelhaus**

*Promoting Teachers' Self-Efficacy and Retention Through Implementing Evidence-Based Instructional Strategies to Improve Classroom Management*

---

The purpose of this project is to explore how using preventive classroom management strategies can boost a teacher's sense of self-efficacy, which in turn can lead to higher rates of teacher retention. This project focuses on one student teacher at a rural high school as she employs various instructional strategies aiming to prevent classroom management issues from arising. Through structured teaching reflection conducted after each lesson, the teacher can get a measure of changes in self-teaching efficacy affected by the implementation of instructional strategies. Implications of findings to teachers will be discussed.

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Faculty sponsor: Xiaopeng Gong

**Kersey Wilcox**

*Group Work and Student Engagement in Mathematics: An Action Research Proposal*

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This project explored how different approaches to implementing group work in the mathematics classroom could affect students' learning and engagement. Through an algebra II unit on exponential functions, students were required to work with partners, in small groups and in groups with assigned roles, as they navigated their way through the curriculum. During the unit, observations were made on whether or not students were gaining several benefits of group work, increased motivation, engagement, improved 21st century skills, and displaying characteristics of higher engagement in class. Findings of the project and implications to math teachers will be discussed.

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Faculty sponsor: Xiaopeng Gong

# PURE

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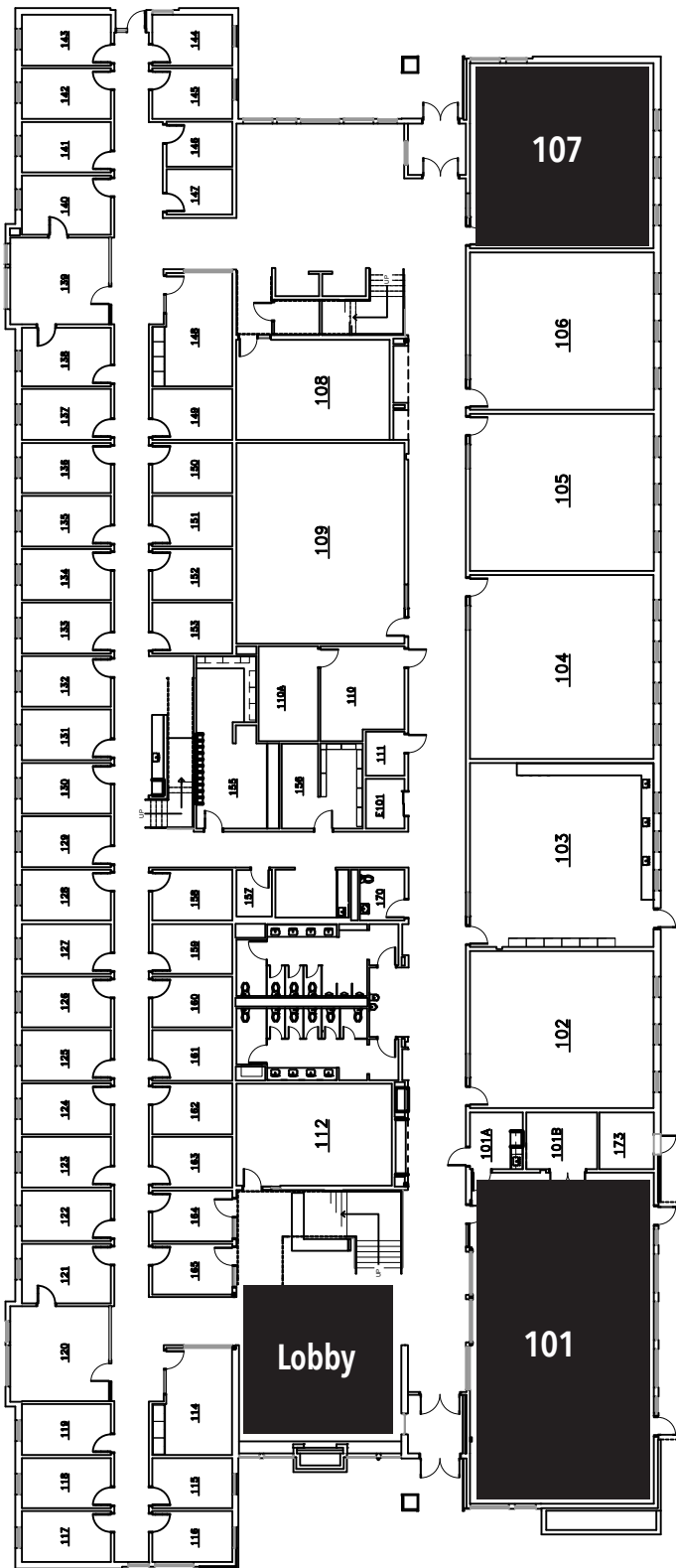
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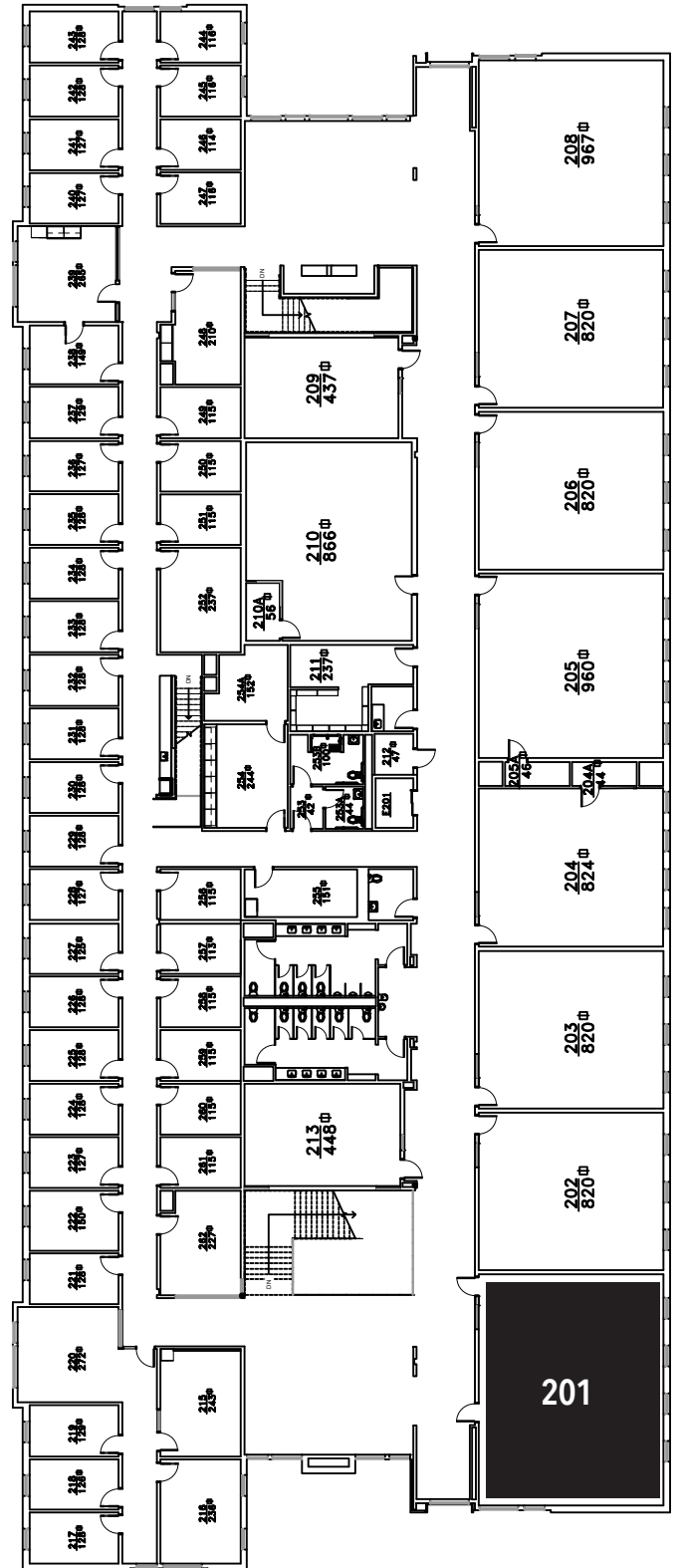
Academic Excellence Showcase is generously supported by President Rex Fuller and Provost Stephen Scheck. Thanks are extended to interim Dean Rob Winningham (College of Liberal Arts and Sciences), Dean Mark Girod (College of Education) and Dean Allen McKiel (Library and Media Services) whose support of this event has been unwavering. A special thank you is given to Camila Gabaldon for her hard work, dedication and technical talents that have successfully brought to fruition the project of moving AES session planning and presentation submission online.

We also recognize the amazing talent of our 2017 CIP intern, Kristen Brown, whose technical expertise combined with visual design skills we have been fortunate to benefit from this year. Special thanks is given to the members of the Academic Excellence Showcase Planning Committee, who's members include: Ava Howard (chair), Stewart Baker, Lisa Catto, Myron Hoeckle, Sue Kunda, Ethan McMahan, Nathan Sauer, Melanie Landon-Hays and Denise Visuano. We extend our gratitude to the staff in the print shop for providing exceptional service in producing all of the Showcase related materials. We are especially indebted to the session chairs and faculty sponsors who are crucial to the success of this event and of course, the amazing students at Western Oregon University for sharing their talents with us.

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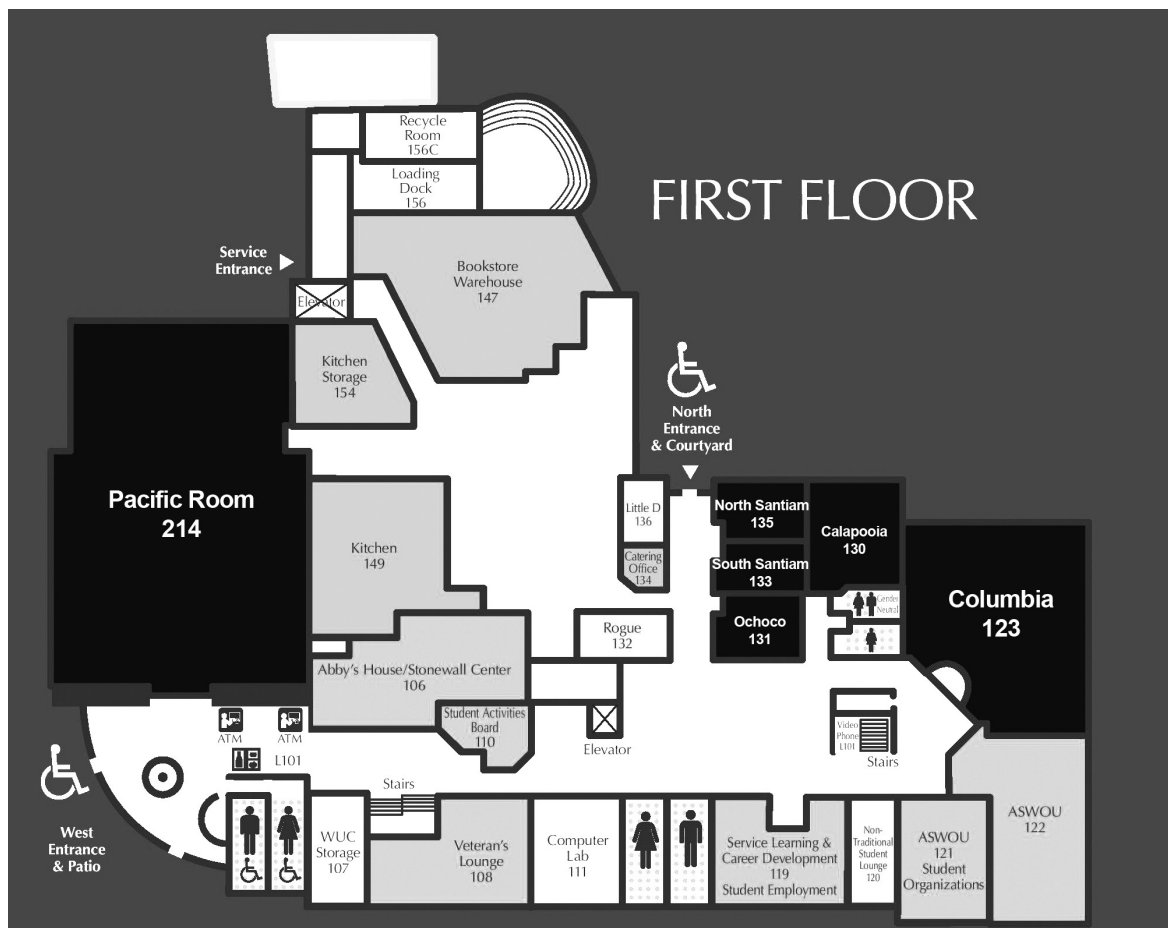


FIRST FLOOR



SECOND FLOOR

# WERNER UNIVERSITY CENTER



Time	Werner University Center										Richard Woodcock Education Center				Specialty Spaces			Other Spaces on Campus	
	Pacific	Willamette	Santiam	Ochocco	Columbia	Calapoovia	RWEC 101	RWEC lobby	RWEC 201	RWEC 107	Maple Hall	Smith Hall 121	Rice Auditorium	ITC211	NS 101	CH 101			
Amenities*	Posters																		
8 a.m.			Stem Scholar panel	Modern Language	History	Business & Economics	Health & Exercise Science	Sociology	Math	Dance				Honors Science					
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5:00	Coffee/tea				Presidential Plenary														
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Key:  Contributed presentation  Other

\*Free coffee/tea breaks provided in WUC (10:30 a.m. and 3 p.m.) and RWEC (10 a.m. and 4:30 p.m.)  
 \*Free snacks provided during Pacific Room poster sessions and during the 5 pm hour in the Presidential Plenary