

# *Undergraduate Symposium*

2015 Event Program



SCIENCES

SOCIAL SCIENCES

ARTS

HUMANITIES



UNIVERSITY OF  
OREGON

# Undergraduate Symposium

**2015 Event Program**

*Celebrating  
undergraduate  
research,  
scholarship,  
and creativity*

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May 14, 2015

## *High Impact Practices*

The experts in Higher Education studies will tell you that undergraduate research in its many forms is a “high impact practice”: it offers a dramatic opportunity for student engagement and success. We couldn’t agree more. Those of us involved in this Symposium have seen at close range those amazing “aha” moments when a student realizes that she has uncovered something on the very front lines, at the very growing edge, of human culture and knowledge. Whether these contributions take place in a lab, in the archives, with a museum installation, in a dance studio, at a drafting table, at an easel, on the stage, or even in the streets: we know that undergraduate innovation transforms undergraduate lives.

But we also know that these opportunities are crucial not only for the individuals involved, but for the very institution of Higher Ed itself. The impact of these “high impact practices” reaches us all. When we nurture and celebrate individual creativity at the baccalaureate level, we nourish the very heart of our university’s research mission, and its core principle of public service. We affirm the ways in which wisdom develops within community, and we recognize the inextricable link between teaching, with its transmission of knowledge to new generations—and research, with its creation of new knowledge among classmates and peers, teachers and students.

Congratulations to all the faculty mentors and student participants who have made this event happen! Best wishes, from your fans and supporters in Undergraduate Studies, the Robert D. Clark Honors College, University Housing, the University Libraries, the Division of Equity and Inclusion, and the Office for Research and Innovation.



LISA MYŌBUN FREINKEL  
ASSOCIATE PROFESSOR OF ENGLISH AND COMPARATIVE LITERATURE  
VICE PROVOST, UNDERGRADUATE STUDIES

# Undergraduate Symposium 2015 Agenda

**Thursday, May 14, 2015**

- 11:00 a.m.**                      **Check-in Begins** (Check-in tables located in Ballroom Lobby)
- Noon–1:30 p.m.**                **Concurrent Session 1** Oral Presentations (Maple, Oak, Gumwood)
- 1:45–3:15 p.m.**                **Concurrent Session 2** Oral Presentations (Maple, Oak, Gumwood)
- 3:30–5:15 p.m.**                **Concurrent Session 3** Oral Presentations (Maple, Oak, Gumwood)
- 5:00 p.m.**                        **Check-in Closes**
- 4:30 p.m.**                        **Completion of Installation of Posters/Creative Work** (EMU Ballroom)
- 5:00–7:00 p.m.**                **Poster Presentations/Creative Work Installations**  
(EMU Ballroom, Maple, Oak, and Gumwood)
- 5:00–7:00 p.m.**                **Catered Buffet Reception** (EMU Ballroom Lobby)
- 6:00 p.m.**                        Remarks from **Vice Provost of Undergraduate Studies Lisa Freinkel**  
(EMU Ballroom)
- 7:00 p.m.**                        **Presentation of Certificates and Group Portrait** (EMU Ballroom)
- 7:15 p.m.**                        **Symposium Concludes**

# Undergraduate Symposium 2015 Acknowledgments

**Thursday, May 14, 2015**

## **Sponsors**

Division of Undergraduate Studies  
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## **Key Collaborators**

Rebecca Mellnik (EMU Venue Planning)  
Michaela Hager (EMU Venue Planning)  
Lynette Boone (Oral Panel Filming)  
Ward Biaggne (Presenter Video Interviews)  
Leslie Larson (Still Photography)  
Amanda Garcia (Still Photography)  
Jane Irungu (Public Schools Outreach)  
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## **Panel Moderators**

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nedzer erilus  
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Dannie Helm  
Dena James  
Barbara Jenkins  
Victoria Mitchell  
Anna Schmidt-MacKenzie  
Ed Teague

# Undergraduate Symposium Oral Presentation Schedule

Thursday, May 14, 2015

## Concurrent Oral Session 1 — 12:00–1:30 p.m.

### 1. Challenges of the 21st Century: Climate Change and Post Modern Industrial Development—

#### Oak Room: Session 1a

- Chloe Talbert** An Unwelcome Legacy: Investigating the Relationship Between Colonialism and Climate Change Vulnerability
- Lindsay Rasmussen** The Stellar Apartments: Dynamic Stories from Passive Buildings
- Niria Garcia** From Favela to Community: Afro-Brazilian Women Activists Transforming Urban Space
- Miles Gordon** Unilateral Climate Change Action: A Comparison of Three South African Cities through the Lens of the Tragedy of the Commons
- Andrew Swift** Precarious Aspirations: Hopes and Dreams in an Age of Individualized Risk
- Kyungla Chae** Kaesong Industrial Complex: Hope for Economic Development and Social Change in North Korea

### 2. Science and Society: A Continuing Evolution—Maple Room: Session 1b

- Tyler Barrett** Television Viewing, Lifestyle, and Cardiovascular Health among the Yakut (Sakha) of Northeastern Siberia
- Phoebe Penix** Albert Einstein and Ralph Waldo Emerson: Inspiration for More Effective Scientific Communication Education
- Helena Klein** Heretical Childcare: Pediatric Medicine in Western Europe during Late Middle Ages
- Becca Marshall** Tree-Hugging Dirt-Worshippers? Monastic Perceptions of the Environment in the Middle Ages
- Tarik Richardson** A Different Kind of Barbarian: African Societies in the Hellenistic World
- Amanda Gonzales** Accounting in the Middle Ages: More Modern than Medieval

### 3. International and Cross-Cultural Studies—Gumwood Room: Session 1c

- Hannah Mueller** The Censorship of German Video Games: The Effects of National Sensitivity to Violence on Entertainment Content
- Naomi Wright** Experience of a Lifetime: Study Abroad, Trauma, and Institutional Betrayal
- Zachary Bigalke** From Foreign Curiosity to National Obsession: Soccer, Immigration, and Politics in Argentina from Mitre to Yrigoyen
- Namratha Somayajula** Education and Discrimination in Armed Conflict: Equitable Access and Educational Barriers for Syrian Refugee Children
- Emma Stahl** “Education in Ladakh: An Overview of the Interactions Between an Indigenous Community and Their Government
- Jacob Valleau** Jewish Civicism in Oregon: How Jews Became Successful in a Plainly Racist State

**4. Indigenous Studies–Oak Room: Session 2a**

- Eva Bertoglio** The Warm Springs Boarding School: Constructing White Femininity While Destabilizing Female Tribal Identity
- Anna Peckinpah** Savage Squaw, Shaman Seductress, or Sovereign Savior: Representing Native Female Identity in Video Games
- Samantha Elwood** The White Male Protagonist: Friend or Foe?
- Stephanie Evers** Argument Marking Morphology and Verb Stem Selection in Takelma
- Joel Ekdahl** The Love of a Man, The Love of a Community: Desire as Decolonial Critique in Alexies The Business of Fancydancing
- Ayantu Megerssa** Assimilation and Activism: An Analysis of Native Boarding School Curriculum and Native Student Activism in the 20th Century

**5. Research in STEM–Maple Room: Session 2b**

- Annika Gustafsson** Searching for the Nearest Extragalactic Binary Black Hole: A Spectroscopic Study of NGC 4736
- Kelli Kimura** Venting About Ventilation
- Megan Bruun** The Effects of Gender and Status When Talking About Science, Technology, Engineering and Math
- Kyla Martichuski** Temporal Variation in Atmospheric Fungal Community Composition and Diversity
- Nicholas Rinehart** Design and Synthesis of a Coordination Complex for Dinitrogen Rejection from Natural Gas
- Kirsten Dawes** Achieving Scalable Performance on the Intel Xeon Phi for Data Intensive Workloads

**6. Art, Aesthetics and the Human Experience–Gumwood Room: Session 2c**

- Brennan Heller** A Reflection in the Mirror: How Noir Championed the Voice of a Generation
- William Leroux** Acquisition of Articles by Chinese Learners of English
- Eve Hirschman** Putting the Human Back in the Humanities: Studying Shakespeare Inside Prison
- Vivian Kim** Incidents of the Aesthetic Experience: A Neo-Romantic World Explained by the Works of de Bolla, Wordsworth, Keats, and Shelley and Examples through the Work of Wes Anderson's *Grand Budapest Hotel*
- Alison Goodwin** Pristine Nature and "Painted Forgeries": Ecocriticism in *The Faerie Queene*
- Grace Shum** Grounding Lynda Barry's *One Hundred Demons*: Providing Her Book's Original Common People Audience

**7. Contemporary Public Health Issues–Oak Room: Session 3a**

- Brianna Nicoletto** Leading with Livability: A Framework for Building Community Consensus on Frequent Transit Networks
- Dana Glasscock** Money, Power, and Race: The U.S. State's Involvement in the Reproductive Lives of African American Women
- Lauren Ott** Men's Perception of Family Planning and the Resources Available to Them in Igoda, Tanzania
- Taylor Kay** Changes in Walking While Using a Smartphone
- Julia Barber** A Study of Wellbeing: Caretaker Subjectivities within Transnationally Divided Families
- Jason David** Prenatal Adversity and Inflammatory Outcome Early in Life
- Ashley Adelman** Unplugging and Reconnecting: the Restoring Connections Project of the Environmental Leadership Program



**8. Environmental Studies–Maple Room: Session 3b**

- Laura Buckmaster** “Students as Scientists”: The Canopy Connections Project of the Environmental Leadership Program
- Ashlynn McGraw** Environmental Leadership Program Riparian Restoration Team’s Rehabilitation of Goose Creek at Whitewater Ranch
- Jordan Pratt** Prehistoric Human Adaptations to Climate Change?: An ArcGIS Analysis of Northern Side-notched Projective Points in the Northern Great Basin
- Alex Ode** Riparian Restoration, Monitoring, and Adaptive Management at Berggren Watershed Conservation Area and Vickerey Park as conducted by the UO Environmental Leadership Program’s Stream Stewardship Team, 2015
- Doug Sam** “Nature’s Especial Repository:” Symbolic Meaning in Gerald of Wales’ Descriptions of the Environment in the British Isles
- Hannah Fuller** Examining and Identifying Effective Rhetorical Strategies, Messaging, and Themes in Climate Change Books for a General Audience
- Anthony Kollmorgan** Dam Construction and their Effects on the Traditional Foods and Cultural Practices of the Klamath Tribes

**9. Art and Intercultural Dialogue–Gumwood Room: Session 3c**

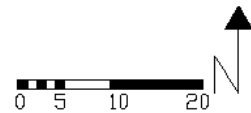
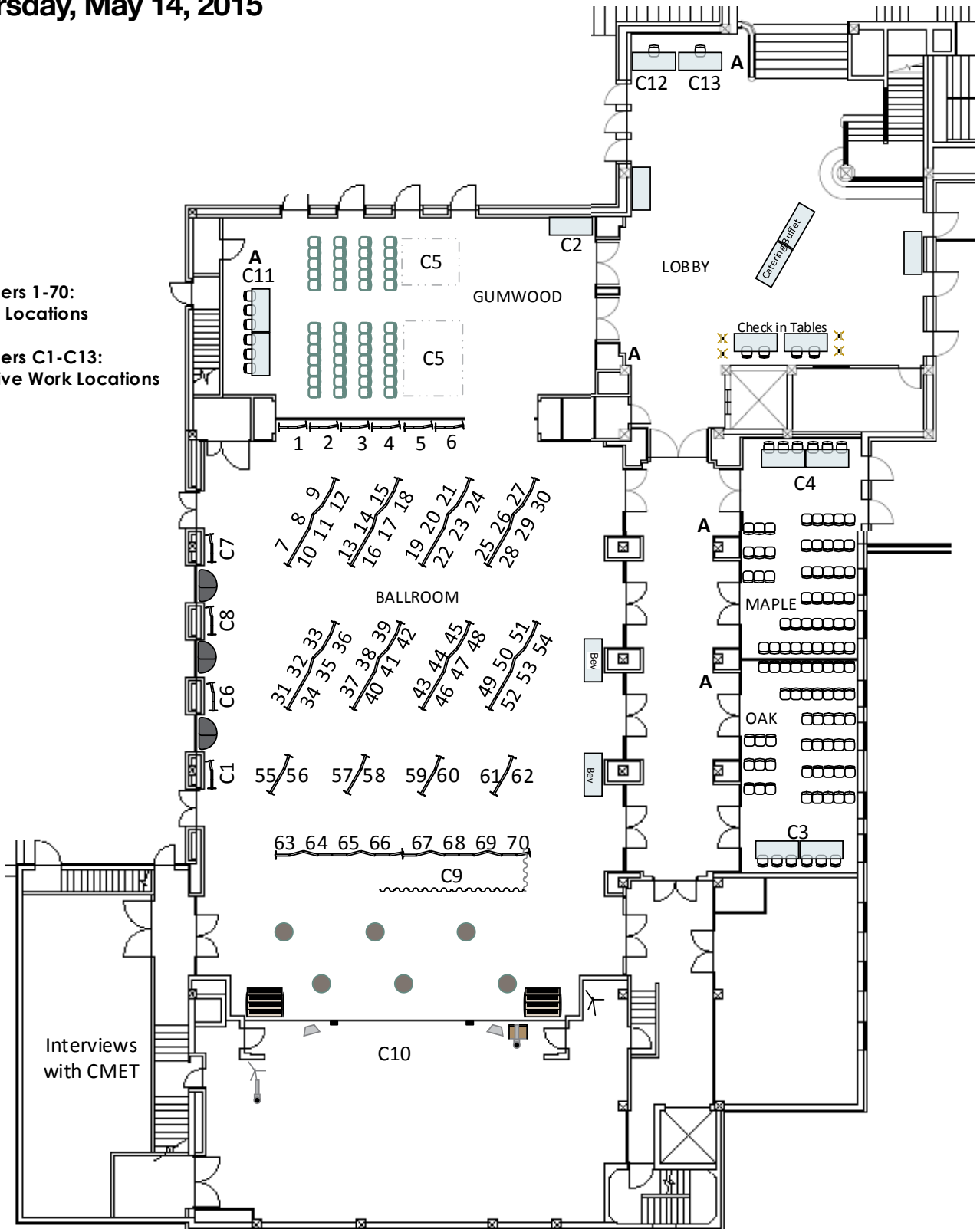
- Ariella Wolfe** The Western Genre and Gun Violence in United States Culture: Using Theatre as a Laboratory for Social Critique
- Sophia June** Gender Politics in the Formation of the Star System: Farinelli and Garrick
- Kenneth Mullins** Ice Cube’s Star Text: Rejecting the Hip-Hop “Gangsta”
- Michelle Bynum** Defying the Tyranny of Artistic Originality: 20th Century Avant Garde Strategies Rejecting Traditionalist Concepts of Art
- Emma Dorland** Creative Nonviolent Action: Leveraging the Intersections of Art, Protest, and Information and Communications Technology for Social Change
- Chloe Talbert** The Unequal States of America: Examining Why We Recognize Gender Inequality Abroad that We Fail to Recognize at Home
- Sean Pebler** Aestheticism: A Curious Crucible of Pain and Pleasure

# Undergraduate Symposium 2015 Venue Map

Thursday, May 14, 2015

Numbers 1-70:  
Poster Locations

Numbers C1-C13:  
Creative Work Locations



# Undergraduate Symposium Presentation Abstracts

**Thursday, May 14, 2015**

**Title: Unplugging and Reconnecting: The Restoring Connections Project of the Environmental Leadership Program**

**Oral Presentation**

**Presenter: Ashley Adelman**

**Co-Presenters: Roslyn Braun, Kerry Sheehan, Kristen Kruse, Luke Holladay, Zoie Wesenberg**

**Mentors: Kathryn Lynch and Alicia Kristen, Environmental Studies**

**Major: Environmental Studies**

## **Abstract:**

Today children are more plugged in and less connected to the natural world than ever before, and thus may not develop the awareness, concern, or motivation to protect our natural heritage. As the environmental leaders of tomorrow, children deserve experiences in nature in order to foster lasting connections with the places they inhabit. This year the Environmental Leadership Program at UO launched a new five-year partnership with Mt. Pisgah Arboretum (MPA) and Adams Elementary School called "Restoring Connections." The purpose of the project is to develop a place-based, experiential environmental education project for elementary school children as they move from kindergarten to fifth grade. This year's team focused on an in-class lesson and an all-day field trip at MPA for over 200 elementary students in grades K-2. Journaling, sit spots, species identification, singing, drawing, and restoration projects inspire and encourage children to become explorers and gain a sense of personal responsibility for the stewardship of the natural world. Based on the methods of Coyote Mentoring, a motivation-driven educational approach, the facilitators and children create an active learning environment using inquiry to expand their knowledge of place. As budding environmental educators, we are gaining professional experience in place-based education through curriculum development and implementation, while making a difference in the lives of local children.

**Title: Bergmann's Rule in Skull Size and Clinical Variation in Skull Shape of Wild Versus Captive *fascicularis* Group Macaques**

**Poster: 1**

**Presenter: Julia Arenson**

**Mentors: Frances White and Stephen Frost, Anthropology**

**Major: Anthropology**

## **Abstract:**

Bergmann's rule predicts that body size increases with distance from the equator. This pattern has been noted in wild macaque populations, but relocated captive populations have not been examined for this cline. Captive populations provide an opportunity to analyze whether Bergmann's rule is influenced more by natural selection or phenotypic plasticity. Forty-five 3D cranial landmarks were collected using a Microscribe-3DX on a sample of 251 adult crania of wild *Macaca fascicularis*, *M. cyclopis*, *M. fuscata* and *M. mulatta* with known provenience, as well as 18 captive *M. mulatta* from Beaverton, OR (lat=45.5) and 40 from Cayo Santiago, Puerto Rico (lat=18.2). Cranial centroid size was calculated for each specimen as a proxy measure of body size. The covariation between shape and geography was assessed with a 2-Block Partial Least Squares (2B-PLS) analysis. Regression analyses were used to predict the expected latitudes for the captive samples based on size and shape. For wild macaques, distance from the equator was significantly correlated with both size (males  $R^2=0.370$ ;  $p=0.00$ ; females  $R^2=0.475$ ;  $p=0.00$ ) and shape (pooled sex  $R^2=0.51$ ,  $p=0.00$ ). Predicted latitudes based on cranial sizes (Beaverton=38.0; Cayo Santiago=44.9) were higher than the current captive locations but were lower when based on shape (Cayo Santiago=13.3; Beaverton=8.5). These results suggest the latitudinal pattern of skull shape and size in wild *fascicularis* group macaques is more influenced by phenotypic plasticity than natural selection.

**Title: Achieving Zero-Net Energy in Doha, Qatar**  
**Poster: 2**  
**Presenter: Jericho Bankston**  
**Co-Presenters: Joey Moser, Abdulhadi Almumen, Brad Phillips**  
**Mentors: Alison Kwok and Tom Collins, Architecture**  
**Major: Architecture**

**Abstract:**

Working with American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) standards we were tasked to design building components and systems to effectively meet zero-net energy standards for a Junior College in Doha, Qatar. The building site needs to be determined as well as systems to implement to meet zero-net energy, reduce site and building water use as well as maintain comfortable interior spaces relative to natural day lighting, humidity and air temperature. It is crucially important to implement RES in a manner that takes into consideration the life expectancy of the building and the maintenance that goes into the systems needed to attain zero-net energy. Through minimizing solar heat gain and using passive house standards the cooling load can be reduced. This allows the use of PV arrays to reduce heat island effect and offset the on-site energy that is used. Upon preliminary solar gain calculations it is believed that more energy than necessary can be produced for the Junior College allowing excess renewable energy to be sold back to the city of Qatar.

**Title: Grandmothers Raising Grandchildren: Subjective Well-being within Transnationally Divided Nicaraguan Families**  
**Oral Presentation**  
**Presenter: Julia Barber**  
**Mentor: Kristin Yarris, International Studies**  
**Major: Anthropology**

**Abstract:**

This presentation examines the effects of transnational family separation on the subjective wellbeing of Nicaraguan grandmothers who have taken the role of guardian after their children have migrated for reasons of economic advancement. While the World Health Organization defines health as encompassing overall social and emotional wellbeing, identifying and measuring 'wellbeing' has been challenging. In our analysis, wellbeing is associated with family structure, the state, and transnational migration as well as the responsibilities of inter-generational caregiving. We argue that the state of economic and political systems in Nicaragua, the politicization of national borders, and the constant "micro-worries" (Boehnke, 1998:748) felt by the grandmothers in our study are the greatest actors in determining how the grandmothers define 'being well'. This work speaks to the anthropology of wellbeing, that both accounts for cultural difference while being useful in international, comparative contexts (Izquierdo, 2009:67). Drawing largely on ethnographic interviews conducted with twenty-four women, this presentation examines the effects of shifting global economic migration patterns from a unique perspective—one that is based on the lived experiences of Nicaraguan grandmothers as they age and take on the guardianship of their grandchildren.

**Title: Television Viewing, Lifestyle, and Cardiovascular Health among the Yakut (Sakha) of Northeastern Siberia**  
**Oral Presentation**  
**Presenter: Tyler Barrett**  
**Mentors: Josh Snodgrass, Anthropology; Chris Chávez, Journalism**  
**Majors: Anthropology/Media Studies**

**Abstract:**

Culture change has been linked to heightened psychosocial stress among indigenous populations undergoing political-economic transitions, which increases cardiovascular disease risk. However, little is known about how specific aspects of culture change contribute to this relationship. While shifts in media content and exposure have been implicated as a contributing factor to chronic stress in transitioning populations, the relationship between media and cardiovascular health has not been fully examined in this context. The present study investigates links between a style of life (SOL) scale and blood pressure, as well as associations between television viewing hours and myocardial infarction and stroke among 306 Yakut (Sakha) adults (153 men, 153 women) from Berdygestiakh, Sakha Republic, Russia. After controlling for body composition, smoking, and alcohol consumption, SOL was positively correlated with diastolic blood pressure (DBP) among younger (18-49 years) men ( $P=0.009$ ) and older ( $\geq 50$  years) women ( $P=0.028$ )

and showed a negative trend with DBP among older men ( $P=0.054$ ). Further, greater television viewing hours was associated with an increased likelihood of previously experiencing stroke among older adults ( $P=0.010$ ) and an increased likelihood of previously experiencing myocardial infarction among older men ( $P=0.047$ ). The rapid change in television content that occurred alongside post-Soviet privatization makes media a particularly salient aspect of culture change among indigenous Siberians, and the present study suggests it may play a role in cardiovascular risk among the Yakut.

**Title: On the Nature of Space and Breath**  
**Creative Work Presentation: C3 (Oak Room)**  
**Presenter: Alexander Bean**  
**Mentor: Robert Kyr, School of Music**  
**Major: Music Composition and Organ Performance**

**Abstract:**

Traditional Western vocal music, especially in the art song music of the 19th century, text is of primary importance to the meaning of the work. This approach to vocal music obscures the physical generation of speech sounds, as well as their interaction with the acoustics of the space in which they are being produced. In my song for solo voice, *space and breath*, I take the opposite approach, composing physical speech sounds that have no semantic meaning. I accomplish this objective by composing pure sound without text, and instead, I transcribe exact phonemes using the International Phonetic Alphabet (IPA). The performer is given a particular set of resonant frequencies (those pitches which sound the clearest in a particular room) in order to control the interactions between the phonemes and the performance space. In my presentation, I will discuss the International Phonetic Alphabet as a means of notating the range of speech sounds that humans can produce. Moreover, I will explain how I organize these sounds, which I use to shape the dramatic arc of the piece. Finally, I will perform my work, and make some final comments about the structure of the piece.

**Title: Mother TereSlut**  
**Creative Work Project: C9 (Ballroom)**  
**Presenter: Alexa Beck**  
**Mentor: Alex Krajkowski, Art Psychology**  
**Major: Psychology**

**Abstract:**

Our present culture consists of the sexually liberated man and the only-when-appropriate sexually liberated woman. Men can be both wholesome and sexual while women have to choose between the two and if she is both she has to hide her sexual side. Through a compilation of large photographs, I will expose a hidden side of female sexuality that many choose to believe doesn't exist: women's sexual desires and female orgasms. In a lecture called *Coming to Understand: Orgasm and the Epistemology of Ignorance*, Nancy Tuana revealed that 30% of women engaged in sexual activities are preorgasmic meaning that they have never achieved an orgasm. Therefore, she recommends that women masturbate because, compared to 75% of men, only 1/3 of women regularly achieve an orgasm from partnered sex. This current body of work was meant to be a distant relative of Hannah Altman's "And Everything Nice." In Altman's piece, she captures the glorification of all women's constant need to be beautiful, in every context. The social stigma of this continuous beauty inspired the social stigma within women's sexuality and its limitations. This work intersects with Altman's work in that they both are meant to make the audience question the way they view women, in various circumstances. The base of this creative work and representation of these ideas are showcased through the virgin-whore dichotomy. The two opposing concepts come together over the same main point about women's sexuality and masturbation. Women are just becoming known for their own sexuality and they need to own it. Women and men are supposed to be equal so women should be enjoying sex as much as men, right?

**Title: The Phylogenetic Utility of Exon Primed Intron Crossing DNA Sequences in the Tribe Cecropieae**

**Poster: 3**

**Presenter: Liam Beckman**

**Mentors: George Weiblen and Erin Treiber, College of Biological Sciences, University of Minnesota**

**Major: Biology**

**Abstract:**

Mutualisms, interactions between species that are beneficial to both partners, are useful systems for investigating how interactions may affect the evolution and diversification of lineages. Interactions between ants and plant species of the genus *Cecropia* are a classic example of mutualism but the origin and evolution of the mutualism is poorly understood. We examined whether the inclusion of an exon-primed intron-crossing (EPIC) marker could improve our understanding of Cecropieae phylogeny. We performed a Bayesian phylogenetic analysis of 15 species from which EPIC sequences were obtained. By comparing clade support from analyses with and without EPIC, we concluded that the addition of a third gene region strongly supports the hypothesis that the Afrotropical and antless genus *Musanga* was derived from a *Cecropia* ancestor and is most closely related to the antless neotropical species *C. sciadophylla*. Future research will work to add increased resolution to the Cecropieae phylogeny in order to achieve a greater understanding of this dynamic biological interaction—pointing the way to predicting how environmental factors such as climate change may shape mutualistic relationships between multivariate forms of life.

**Title: Characterizing Genetic Relationships Underlying Adaptive Flower Color Divergence in *Mimulus aurantiacus***

**Poster: 4**

**Presenter: Connor Benson**

**Mentors: Matt Streisfeld and Sean Stankowski, Biology**

**Major: Biology**

**Abstract:**

Understanding the genetic basis of adaptive traits lends insight into the mechanisms that generate biodiversity. Flower color has been implicated as an adaptive trait in numerous studies, and is thought to be a primary driver of speciation in angiosperms due to selection by differential pollinator preference. Here I used molecular genetic techniques to examine the relationship between two regulatory genes involved in the production of red floral pigment, a trait thought to underlie the evolution of two new subspecies in *Mimulus aurantiacus*. I used genotype-phenotype comparisons in lab bred plants to characterize how *MaMyb1*, the less studied of these two genes, impacts the production of red floral pigment. I also utilized virus-induced gene silencing in an attempt to understand the functional role of *MaMyb1* in producing red flowers. My results thus far suggest that *MaMyb1* does not play a significant role in producing red flower pigment. This work aims to better our understanding of the genetic relationships underlying flower color divergence in an important model system for the study of speciation.

**Title: The Warm Springs Boarding School: Constructing White Femininity While Destabilizing Female Tribal Identity**

**Oral Presentation**

**Presenter: Eva Bertoglio**

**Mentors: Kevin Hatfield, History; Jennifer O'Neal, Special Collections**

**Major: Humanities**

**Abstract:**

My paper will examine the construction of white femininity amongst Indian boarding school pupils from the 1870s to the 1920s. This paper argues that female boarding school pupils at Warm Springs were subject not only to general forces of assimilation but also to specifically gendered constructions of white femininity in a Victorian context by their teachers and school culture. I will demonstrate this through the gender-segregated instruction, school rules about dress and attire, oral histories of former boarding school pupils and Warm Springs tribal members, and photographs which highlight how white femininity was performed and idealized to the pupils. Oral histories show how many women left the boarding schools with the ambitions of housewifery and domesticity rather than community leadership or traditional lives, which I argue is due to the cultural reprogramming the boarding schools were founded on. The reclaiming of the boarding school as a space for cultural education by the tribal community will be examined as a

mechanism to destabilize some of the gendered forces which were instilled upon school-age women for sixty years. This research will show how female students at Warm Springs had their culture and traditional roles destabilized and replaced with a white feminine ideal which had long-term consequences for tribal reintegration.

**Title: From Foreign Curiosity to National Obsession: Soccer, Immigration, and Politics in Argentina from Mitre to Yrigoyen**

**Oral Presentation**

**Presenter: Zachary Bigalke**

**Mentors: Robert Haskett and Carlos Aguirre, History**

**Major: History**

**Abstract:**

Bartolomé Mitre's election as president in 1862 commenced a series of political, economic, and demographic developments that radically altered Argentine culture. Immigration fueled exponential population growth and rapid urbanization, and British capital drove a pattern of railroad construction that concretized Buenos Aires' primacy as the political and financial capital of Argentina. The British also imported soccer, a sport that gradually gained purchase among the various immigrant groups as well as the extant population. Politics created the conditions by which the sport proliferated through the capital and the nation; in turn, soccer became an anchor in the political process after the 1912 enactment of universal, compulsory suffrage for all adult male citizens. Soccer clubs, already expanding in number throughout the country, became focal points for the construction of power bases for aspiring politicians. The dynamic processes that contributed to the development of modern Argentinian national identity molded and were molded by soccer's evolution from a wholly British enterprise into a multiethnic national pastime. Through an evaluation of newspapers from the period as well as official publications from the various soccer federations of the sport's early years, this paper builds upon previous studies that have evaluated facets of this subject to illuminate the inextricable push-pull factors linking soccer, immigration, and politics as essential elements in the formation of patriotic sociocultural identity through the presidency of Hipólito Yrigoyen.

**Title: Diet as a Mediator of Life-History in *Ceanorhabditis elegans***

**Poster: 5**

**Presenter: Benjamin Blue**

**Mentors: Patrick Phillips and Stephen Banse, Biology**

**Major: Biochemistry**

**Abstract:**

The understanding of how diet and health interact is often informed by conventional wisdom that reduces this complex system to the idea of some foods being "bad" while others are "good." Advances in medicine and biology have shown that health and aging are mediated by the partition of resources to these different goals. The patterning of this process is still unknown and how diets of different quality could affect such partitioning remains to be investigated. Our goal is to break down the internal calculus that informs the mediation between these different life-history outcomes using the bacteria consuming nematode *C. elegans* as a model. The initial experiment was a series of choice assays to determine the relative preferences *C. elegans* has for different types of bacterial food. Following this we performed a series of assays to measure the effects of different food sources on *C. elegans* life-history. The longevity of *C. elegans* on each food is determined using LifeSpan machines. In order to understand how *C. elegans* partitions its resources on different foods we compare longevity to the reproductive patterning as measured by a microfluidic egg counter. These observations will provide greater insight into the mechanisms of resource allocation and life history developments.

**Title: Correlations between Static and Dynamic Asymmetry in Runners**

**Poster: 6**

**Presenter: Varneet Brar**

**Mentors: Li-Shan Chou and JJ Hannigan, Human Physiology**

**Major: Human Physiology**

**Abstract:**

Asymmetry between limbs can be assessed statically, as measured by passive flexibility and range of motion (ROM), and dynamically, as measured by joint angle ROM during gait. Both types of asymmetry have been suggested as

possible factors in developing a lower limb injury. The purpose of this study was to identify if there is a correlation between static and dynamic asymmetry. Sixty healthy subjects running at least 20 miles per week participated in the study. Dynamic joint angle ROM for the hip and knee was collected as subjects ran continuous laps in the UO Motion Analysis Laboratory using a 10 camera motion capture system. Static flexibility and ROM were measured by a trained clinician using a goniometer. Static and dynamic asymmetry between limbs was then calculated using an established method: the symmetry index (SI). Pearson correlation coefficients were used to test the strength of the relationships between static and dynamic SI. A moderate, significant correlation was found between static hip internal rotation ROM and dynamic hip internal rotation ROM ( $r = 0.296, p = 0.035$ ). No additional significant correlations were found. As internal hip rotation has been linked to lower limb injury, future studies should investigate whether clinical correction for static asymmetry, especially for hip internal rotation, alters asymmetry during running gait. Correcting these asymmetries may help prevent injury setbacks for both recreational and competitive runners.

**Title: The Effects of Gender and Status When Talking About Science, Technology, Engineering, and Math  
Oral Presentation**

**Presenter: Megan Bruun**

**Mentor: Sara Hodges, Psychology**

**Major: Psychology**

**Abstract:**

The amount that an individual talks in a conversation is influenced by gender and status. Within STEM fields, gender and status may be confounded because of women's underrepresentation. The analysis of talkativeness in STEM fields allows for a better understanding and discussion of this male-dominated environment. In this study, dyads ( $n = 77$ ) made up of undergraduates and graduate students in the same STEM discipline talked about the undergraduates' prospects for graduate school. The conversations were videotaped and later coded for percentage of time that the undergraduate and graduate student spent talking during the conversation. It is predicted that females in these dyads will talk less because of their minority status in STEM fields. However, in same sex dyads, because of their higher status, graduate student will talk more than undergraduates.

**"Nurturing Naturalists": The Canopy Connections Project of the Environmental Leadership Program.**

**Oral Presentation**

**Presenter: Laura Buckmaster**

**Co-Presenters: Samantha Bates, Micaela Hyams, Forrest Hirsh, Nicole Hendrix, Elie Lewis, Amelia Remington, Nick Sloss**

**Mentor: Kathryn Lynch, Environmental Studies**

**Majors: Environmental Studies and Psychology**

**Abstract:**

Children today are often lacking direct contact with the natural world. The Canopy Connections team of the Environmental Leadership Program seeks to address symptoms of what is colloquially called "nature deficit disorder." Working in collaboration with H.J. Andrews Experimental Forest (HJA) and the Pacific Tree Climbing Institute, our team took 300 middle school students into the canopy of an old-growth forest to learn firsthand the importance of these fragile ecosystems. The project includes an in-class lesson and an all-day field trip where students engage in scientific investigation – setting up biodiversity plots, learning how to use compasses and maps, honing field observation skills through the use of field notebooks, and ascending 90 feet into a Douglas-fir to learn about microhabitats. This unparalleled experience creates an opportunity for them to form personal connections with the awe-inspiring ecosystems of the Pacific Northwest. Our goal is to provide a space where students and facilitators can investigate, learn, and create in partnership. Canopy Connections fosters environmental awareness, and provides the necessary knowledge and skills to create active stewards of Oregon's forests.



**Title: “Defying the Tyranny of Artistic Originality”: 20th Century Avante Garde Strategies Rejecting Traditionalist Concepts of Art**

**Oral Presentation**

**Presenter: Michelle Bynum**

**Mentor: Keith Eggener, Undergraduate Studies for Art History**

**Major: Art History**

**Abstract:**

Art, before the 20th century, was subjected to the oppression of traditional concepts that prevailed in centuries of art movements prior to the revolutionizing Avante Garde movements. Through the Avante Garde movements occurring in the beginning of the 20th century, art was liberated. Art was now allowed to take form of individual realities in reaction to the current societal conditions of its time. Artists developed the profound desire to utilize new artistic methods, in order to create new and contemporary ways of intellectual thinking. World War I left Europe in a period of mass destruction, and had profound psychological effects on the European nation, specifically on the German, Swiss and Dutch people. Zurich Dada, an art movement of the European avant-garde in the early 20th century in Zurich spreading to Berlin shortly thereafter, refuted all logic in art, and believed that the route to salvation was through abandoning what is rational. Concurrently, Berlin Dada stemmed from more political criticism, using corrosive manifestos and propaganda through assemblage techniques. Artists countered political and social corruption through methods of abstraction, imposing universal utilitarian purposes in art, and reducing matter and subject in art. In turn, all of these methods produced extraordinary effects which subsequently painted the pathway for the individualism and originality that triumphs in our world today.

**Title: The Next Chapter in Life: Ethnic Diversity and Its Impact on Students**

**Poster: 7**

**Presenter: Jessica Cantu**

**Mentors: Lamia Karim and Rupa Pillai, Anthropology**

**Major: General Social Science**

**Abstract:**

How does ethnic diversity on campus influence students when deciding on schools? Ethnic diversity is the difference among groups of people based on their race, language, religion, and culture; it is an important factor to study since it influences how individuals chose college communities. This study is a single term project, aimed to investigate what types of students consider ethnic diversity as an important factor when applying to college. In order to answer this question, I interviewed two students studying at College X (urban, more ethnically diverse) and College Y (European, less ethnically diverse). I also conducted a survey on campus with 30 students, 15 who were Caucasian and 15 Non-Caucasian to find out how relevant diversity was in their college decision. My research shows the importance of demographics and the affect it has on diversity among college applicants. It was determined that Non-Caucasians strive to attend campuses with a greater amount of ethnic diversity, whereas Caucasians are less likely to consider the level of ethnic diversity a campus has to offer. These results indicate the need to bring awareness about ethnic diversity, and the benefits that can come from attending a diverse campus.

**Title: The Darker Side of the Dark Room: Ventilation and Volatile Organic Compounds in the Craft Center's Dark Room**

**Poster: 8**

**Presenter: Davis Carlisle**

**Co-Presenter: Laurel Sleeper**

**Mentors: Alison Kwok and Mathieu Deraspe, Architecture**

**Major: Architecture**

**Abstract:**

The Craft Center at the University of Oregon was rapidly built during the renovation process of the new Erb Memorial Union (EMU). Due to the quick construction of this space, there have been issues with the ventilation in the Craft Center. Some components of this ventilation system either are not completely finished or aren't functioning yet including the dark room. Chemicals and open flames are often used in the studio spaces of the Craft Center, so it's important that the ventilation is operating properly. One room that poses a possible health concern is the dark room where photo chemicals are often used. Although the ventilation system appeared to be working in the Photo Studio, the effectiveness of the system is questionable because of the reoccurring problems with the Craft Center's

mechanical systems, according to Craft Center employees. The following study determines if the dark room's ventilation system is working properly. A CO<sub>2</sub>/VOC data logger was placed in the dark room in order to monitor the air quality during a three day period. When looking at the VOC results from the three day period were inconclusive however, it is reasonable to assume that the VOC levels are safe and below ASHRAE Standard 62.1 because of the CO<sub>2</sub> levels in the Dark Room which stayed well below the 5000 ppm of CO<sub>2</sub> set by the ASHRAE standard (ASHRAE standard 2007, 5).

**Title: From Household to Empire: the Zooarchaeology of Diouboye**

**Poster: 9**

**Presenter: Auschere Caufield**

**Mentors: Stephen Dueppen and Daphne Gallagher, Anthropology**

**Major: Anthropology**

**Abstract:**

The purpose of this research is to understand the economic and cultural processes that created the unique assemblage of animal remains at the archaeological site of Diouboye in the Upper Senegal region of West Africa. Diouboye is a late Iron Age site occupied from AD 1000 to 1300. The faunal record from this site shows a focus on wild resources from the riverine environment. Overall, Diouboye produced a large faunal assemblage with particularly high frequencies of medium bovids and reptiles. In addition, pottery decoration indicates the inhabitants were closely related to the Mande society to the south. Long distance trade was a major part of the economy of the Mande state. This included trade in secondary animal products such as leathers and skins. Oral histories and ethnographies also document the spiritual importance hunting held in Mande society. Through an analysis of taxa distribution, element representation, burning, and cut marks conclusions were drawn from the archaeological record. It appears as though the inhabitants of ancient Diouboye were actively involved in trading secondary animal products with the large trading empires of the region. This research adds an entirely new dimension to the role that small, decentralized villages, such as Diouboye, may have had in the dynamic economic system of Medieval West Africa.

**Title: Project Bamboo**

**Creative Work Presentation: 10**

**Presenter: Alex Caves**

**Mentors: Jessica Swanson and Trygve Faste, Product Design**

**Major: Product Design**

**Abstract:**

What is a natural material that has a comparable tensile strength to steel, can be used as a primary structure for a multi-story building, has antimicrobial properties, and is the most sustainable material to harvest? Bamboo. Most of us know bamboo as a privacy hedge for your garden, but bamboo can be used for so much more. In Asia, Bamboo is used for construction for buildings furniture, and can even replace rebar in concrete; it is used to make toys, cooking or eating utensils, things that need to be sanitary; it can be made into baskets; it can be processed into wool to make amazingly soft clothes; and in Japan the shoots are served as a delicacy. I have researched some companies who are now experimenting with bamboo and its fibers to create composites that has the potential to replace harmful materials like fiberglass, and plastics. My goal with Project Bamboo is to change the perception of bamboo as just a gardening plant, and to show everyone the potential of bamboo as a natural alternative to plastics. I have two types of wall mounted hangers made from bamboo so far with several material study samples, and will present these and others at the Symposium.

**Title: Kaesong Industrial Complex: Hope for Economic Development and Social Change in North Korea**

**Oral Presentation**

**Presenter: Kyungla Chae**

**Mentor: Shankha Charkaborty, Economics**

**Majors: Economics and International Studies**

North Korea has been characterized by the mass media as a dormant country, one that stopped developing since the 60s, and where no economic freedom is guaranteed. This thesis questions such a notion and examines the economic development and social change in North Korea through the Kaesong Industrial Complex (KIC), a Special Economic Zone (SEZ) between the two Koreas. During the great famine in the mid-1990s, millions reportedly died

of starvation and the state could no longer provide for its people. Amidst great despair and desperation grew an informal market called *jang ma dang*. This informal economy brought in a sense of individualism and reprioritization of personal needs over loyalty to the regime. The capitalist mindset of the people in how they perceived of themselves and the country corresponds to changes within KIC. North Korea's future prosperity depends on the efforts by the complex in putting economic pragmatism over politics, presenting favorable conditions for foreign investments, improving technology and infrastructure, and training its workers for international business. Most importantly, it is argued that the KIC has the potential to be integrated into North Korean ideology over time. The regime can use KIC as an example to achieve both political stability and economic prosperity.

**Title: Designing and Implementing Drip-Irrigation System to Improve Water Use Efficiency at Berggren Demonstration Farm**

**Poster: 11**

**Presenter: Madison Cheek**

**Co-Presenters: Emma Porricolo, Rena Nenot, Ashleigh Angel, Zoe Lavier, Will Dickerson, Brady Chiongbian, Wilson Hui, and Alex Burgdorfer**

**Mentors: Peg Boulay and Deion Jones, Environmental Science**

**Major: Environmental Science**

**Abstract:**

Our Environmental Leadership Program team is investigating the implementation of a drip irrigation system at Berggren Demonstration Farm. Through the installation of drip irrigation line from the main pump in the natural water source, a side channel off of the McKenzie River, we will work to improve the efficiencies of the electric and water usage currently employed at Berggren. Water will be saved by releasing small amounts through drip tape on the ground, which will prevent damage to crops from over-watering due to elevated sprinklers. We are analyzing the current methods used on this farm by collecting power and water usage data on-site. We will contrast past energy usage data with data collected from our improved system. Our results will be recorded and shared through Berggren and the University of Oregon in order to serve as a potential reference for other farms wishing to implement more efficient irrigation methods. We are creating a grant template that small farms could use to apply for funds to obtain a similar irrigation system. This will serve to further the goals of the Healthy Farms Clean Water Program, which aims to showcase the ability for small farms to coexist and even enhance the ecosystem it operates within. By providing insight into more efficient watering methods we hope our design will serve as a model to local farms wishing to minimize their negative impacts on our municipal water supply, which may prove useful in the coming years if we continue to experience drought conditions.

**Title: Morphological Signals and Mating Systems: Comparing Measures of Cranial Fluctuating Asymmetry and Second-to-Fourth Digit Ratio in Primates**

**Poster: 12**

**Presenter: Kelsey Clarke**

**Mentors: Stephen Frost and Frances White, Anthropology**

**Major: Anthropology**

**Abstract:**

Fluctuating Asymmetry (FA) has been hypothesized to be related to testosterone levels and mating strategies; typically males are more asymmetrical than females. Second-to-fourth digit ratio (2D:4D) is correlated with developmental testosterone levels. Using 2D:4D and cranial FA from 19 primates, we compare the relationship between these variables to their respective mating systems. Forty-five landmarks were digitized using a Microscribe-3DX© for 345 male and 307 female crania. Cranial FA was measured by calculating the Procrustes' distance between each individual and its mirror-image. Mating systems, classified by intensity and frequency of male aggression, and sex-specific 2D:4D were taken from published studies. Cranial FA and 2D:4D were compared using parametric correlation. Two-way ANOVA of sex and species with *a priori* multiple comparisons between mating systems was used to examine variation in individual FA. Cranial FA and 2D:4D were correlated ( $r=-0.460, P<0.05$ ). Cranial FA significantly differed among species ( $F=64.84, N=19, P<0.05$ ), but there was no difference between sexes ( $F=1.08, ns$ ) and no sex-species interaction ( $F=1.24, ns$ ). Multiple comparisons grouping species by mating systems within this ANOVA showed significant differences between pair-bonded and non-pair bonded ( $F=30.79, P<0.05$ ), between low intensity and high intensity ( $F=136.76, P<0.05$ ) within non-pair bonded, and between low frequency and high frequency ( $F=154.62, P<0.05$ ) within high intensity and non-pair bonded. These results support the hypothesis that cranial FA is correlated with testosterone and the variance in male aggression among mating systems.

**Title: Optimization of DNA Extraction from Dried Blood Spot Samples for Use in a Telomere Length Assay**

**Poster: 13**

**Presenter: Devan Compton**

**Mentors: Kirstin Sterner and Josh Snodgrass, Anthropology**

**Majors: Anthropology and Psychology**

**Abstract:**

Telomere length (TL) is a marker of senescence, yet little is known about the specific factors that influence the performance of the TL assay. The World Health Organization's study on global AGEing and adult health (SAGE) is investigating patterns of aging. As part of this study, dried blood spots (DBS) are being collected from adults in six countries in regions of different economic development. Before measuring TL, it is necessary to assess DNA quality obtained from DBS under various conditions. We tested if storing DBS at -20°C allows for recovery of optimal amounts of high-quality genomic DNA compared to -80°C. As DBS collected from finger pricks vary in size, we also considered the size of DBS (25uL vs. 50uL) to determine whether size affects the quality and quantity of the DNA extracted. Preliminary results indicate that 3.2mm (1/8") punches from 50uL DBS yield nearly twice the amount of extractable DNA as 3.2mm punches from 25uL DBS. Additionally, DBS stored in a -80°C freezer yield approximately 47% more double-stranded DNA than DBS stored in a -20°C freezer. Lastly, we plan to determine the minimum quantity of DNA (three, four or six 3.2mm DBS punches) necessary to perform a successful TL assay. Methodological issues are key considerations in epidemiological research. This study will allow for optimal collection of DBS for DNA extraction as well as downstream use of the DNA in assays such as the TL assay.

**Title: In Vitro Angiogenesis Increases with Chronic Passive Heat Therapy: Likely Mechanism for Improved Cardiovascular Health**

**Poster: 14**

**Presenter: Lindan Comrada**

**Mentors: Christopher Minson and Vienna Brunt, Human Physiology**

**Major: Biochemistry**

**Abstract:**

Chronic passive heat therapy (CHT) shows exciting potential for improving cardiovascular health and overall quality of life. Angiogenesis occurs naturally when endothelial cells lining the inside of blood vessels proliferate and reorganize into new vasculature. Heat stress induces expression of many factors that promote angiogenesis which can decrease blood pressure. CHT may therefore be an effective means of increasing vascularization and improving vascular health. Angiogenesis can be assessed easily and non-invasively by using an *in vitro* endothelial tubule formation bioassay. **PURPOSE:** To determine if acute heating and/or chronic passive heating has a positive effect on *in vitro* endothelial tubule formation. **METHODS:** Six sedentary, healthy individuals (aged 22±1 yrs) were subjected to 8 weeks of heating via hot tub (40.5°C) 4-5 times per week for 36 sessions. During each session, rectal temperature was increased and maintained at ≥38.5°C for 60 minutes. Blood samples were collected into serum separating vacutainers before and after each heating session at weeks 0 and 8. Two *in vitro* angiogenesis bioassays were performed for each sample by plating cultured human umbilical vein endothelial cells (HUVECs) onto Matrigel and treating with serum from subjects. After 10 hours of incubation, tubule formation per frame was determined using phase-contrast microscopy at 2.5X magnification by two blinded experimenters using ImageJ software and results were averaged. **RESULTS:** Total tubule length increased after 8 weeks of CHT from 71.7±1.4 to 75.5±1.6 mm/frame (p=0.02), and tended to increase with acute heating to 74.2±1.5 mm/frame (p=0.19). **CONCLUSION:** Heat therapy increases the capacity for angiogenesis both acutely (single heat exposure) and chronically, suggesting CHT improves vascular health. CHT is simple enough to be used by many patient populations with little or no supervision and may be an effective means of improving cardiovascular health and therefore quality of life.

**Silver Tip Preparation for Scanning Tunneling Microscopy**

**Poster: 15**

**Presenter: William Crowley**

**Mentors: Ben Taber and George Nazin, Chemistry**

**Major: Chemistry**

Scanning tunneling microscopy (STM) can be utilized to image, manipulate, and spectroscopically characterize individual atoms and molecules. The scanning probe used in STM is often described as a tip. Tips are conically shaped pieces of metal that are, ideally, atomically defined at one end. Creating well defined tips is essential to obtaining quality STM images. Due to its spectroscopic enhancing plasmonic properties silver is an interesting

material for STM. Specifically, enhancements to the factor of 106 to 107 have been reported. The Nazin group has developed a novel method of electroetching silver to produce well defined STM tips. In our process we utilize a previously unused electrolyte; 1:8 glacial acetic acid to deionized water. Our two-step process first involves an automated primary electrochemical etch in which a 0.5 mm 9.9985% silver wire is etched to form a rough conical shaped. Second, the roughly shaped silver wire is manually etched to produce a well-defined apex. My research has focused on optimizing and parametrizing variables in this two-step process such as voltage bias and rate of etching. Finished tips are then characterized by scanning electron microscopy and energy dispersive x-ray spectroscopy. This process has yielded tips with an apex of approximately 200 nm.

**Title: Relationship between Early Life Adversity and Inflammation**

**Oral Presentation**

**Presenter: Jason David**

**Mentors: Jeffrey Measelle and Jennifer Ablow, Psychology**

**Major: Psychology**

**Abstract:**

Early life adversity is associated with adult elevations of inflammatory markers like circulating levels of C-reactive protein (CRP). Few studies have examined whether exposure to adversity prenatally is associated with inflammation during childhood. Exposure to adversity before birth may engender disease vulnerability via alterations in inflammatory biomarkers (i.e. fetal programming of disease hypothesis). This study examines the association between exposure to prenatal vs. postnatal adversity and CRP concentrations when infants were 18 months old. We followed 105 low-SES (socio-economic stress) infant-mother dyads across the perinatal transition. Our measures of psychosocial and contextual measured prenatally and at 5- and 18-months postnatally. When infants were 18 months old, resting state saliva samples were collected to assess CRP (mg/L) levels via enzyme immunoassay. Hierarchical regression analyses reveals a composite measure of prenatal maternal adversity, that uniquely predicts variability in infants' log transformed CRP levels,  $B = 1.15$  ( $SE = .05$ ),  $p < .05$ . Maternal adversity at 5 months is not predictive of infant CRP, but maternal adversity at 18 months is marginally associated. These results raise questions about timing of exposure to adverse events as well as the potentially lasting effects on inflammatory processes when such exposure occurs very early in development.

**Title: Moral Decision Makers: Being Watched and our Judgments of Others**

**Poster: 16**

**Presenter: Benjamin Davies**

**Mentors: Azim Shariff and Bret Mercier, Psychology**

**Major: Psychology**

**Abstract:**

Past research has found that some individuals make moral decisions based on rules (deontologists) while others make moral decisions based a deliberative cost benefit analysis of outcomes (utilitarian). Deontologists tend to perceive moral decisions, which break a societal rule (i.e. killing a person), as immoral even when that prevents the most harm. In this study, we tested whether people will make more deontological moral decisions when they know their responses will be visible to others (compared to when responses are anonymous). Undergraduate participants ( $n=75$ ) completed a worksheet assessing their perceptions of different utilitarian moral decisions. We informed participants that their answers would either be read by another participant (visible condition) or anonymous (anonymous condition). Contrary to our predictions, participants in the visible condition did not make different moral decisions than those in the anonymous condition. In the second part of the study, participants were given the same moral decision questions, ostensibly completed by another participant, and asked to judge the other participant's personality. Participants perceived those who made deontological decisions as more moral, trustworthy, warm, and caring, but also as less efficient.

**Title: Procedural Justice of Court Appointed Experts: Procedural Justice and Power Differentials**

**Poster: 17**

**Presenter: Benjamin Davies**

**Mentors: Robert Mauro and Robert Rocklin, Psychology**

**Major: Psychology**

**Abstract:**

Studying procedural justice has ramifications for legitimacy, and ultimately, legal system success. Jurists are concerned that any departure from the adversary system would call the legitimacy of the system into question. The use of court appointed experts is one such departure. We aim to examine the perceptions of procedural justice in court-appointed experts and the moderating effect of power on this relationship. Participants will be presented with 4 vignette scenarios describing a civil negligence trial in which the plaintiff always loses. The subjective power (Individual, Corporation or Government Agency) of the plaintiff, and whether the 3rd testifying expert is court appointed/adversarial will be varied and participants will report their perceptions of procedural justice in addition to individual difference measures. We have two predictions; (1) Across conditions, court-appointed experts will be perceived as less procedurally just than adversarial experts and (2) There will be an interaction between court-appointed expert and plaintiff status, such that if there is a high status plaintiff and a court appointed expert, perceptions of procedural justice will be lowest. While results have not been collected, we believe these findings will add a new dimension to current understanding of the justice of legal processes, and pave the way towards a more in depth study of court-appointed experts.

**Title: Achieving Scalable Performance on the Intel Xeon Phi for Data-Intensive Workloads**

**Oral Presentation**

**Presenter: Kirsten Dawes**

**Co-Presenter: Elliott Ewing**

**Mentor: Hank Childs, Computer Science**

**Majors: Mathematics and Computer Science**

**Abstract:**

As new computer architectures are developed, various concerns are created. Understanding scalability of performance is an important concern for many legacy programs on Intel's Xeon Phi, a many integrated core architecture. These legacy programs use a significant amount of computational resources, which poses the issues of time, power, and memory consumption as the problem sizes increase. We will be looking at the scalability for the execution time of a program as the number of processors increase. Given this constraint, we should expect to see a decrease in the time of execution of a program using more processors. Exploring data-intensive workloads will allow us to be able to track how certain legacy programs mitigate the issue of scalability on this new architecture. We explored this new architecture by creating two competing mini applications, where each mini application replicated a variation on a legacy program called "VisIt", which works on data intensive workloads. The two mini applications explored thread affinity and work affinity by implementing image processing filters with a data flow pipeline. We conducted experiments creating different size output and input images; number of image processing filters; type of image processing filters; and number of threads running. The experiments produced timing data based on CPU time as well as time per thread. With the quantitative data, we produced, we were able to conclude that data-intensive workloads like "VisIt" should produce excellent scalability on this new architecture.

**Title: Role of Endothelin Pathway in Enteric Nervous System Development and Hirschsprung Disease**

**Poster: 18**

**Presenter: Parham Diba**

**Mentors: Julia Ganz and Judith Eisen, Biology**

**Major: Human Physiology**

**Abstract:**

The enteric nervous system (ENS) is the largest part of the peripheral nervous system, containing about 400–600 million neurons in humans. It comprises a complex network of neurons and glia and controls intestinal functions, such as motility. Hirschsprung disease (HSCR) is a multifactorial congenital disease in which distal intestine is uninnervated and immotile. A variety of signaling pathways, including the endothelin signaling pathway, regulate ENS development during embryonic stages. In mouse, Endothelin3 and endothelin receptor type B regulate ENS development and mutations in these genes are found in some HSCR patients. However, there are still open questions about how

the endothelin pathway is involved in ENS development, such as how it affects progenitor migration and neuronal subtype differentiation. To test the role of the endothelin pathway in ENS development, we are generating zebrafish mutants in components of the endothelin pathway using CRISPR/Cas9 genome editing technology. We are currently creating zebrafish mutants in several different endothelin ligands and endothelin converting enzyme 1 and we have generated a mutant in the endothelin receptor gene *ednrb1b*. We will then analyze the phenotypes of these mutants to learn how ENS progenitor migration and differentiation are affected. Our strategy will enable us to explore the role of endothelin signaling pathway genes in ENS development and to determine if mutations in these genes lead to an HSCR-like phenotype.

**Title: Determining Ancestral Affiliation of Unprovenienced Human Remains from the Island of Mustique, Grenadine Islands, Caribbean**

**Poster: 19**

**Presenter: Taylor Dodrill**

**Mentors: Scott Fitzpatrick and Greg Nelson, Anthropology**

**Majors: Biology and Anthropology**

**Abstract:**

The dearth of laws protecting cultural heritage in many Caribbean small island nations, or the lack of resources to enforce such laws, has led to destruction of numerous sites due to the removal of remains that would otherwise provide important archaeological information to help establish cultural context and affinity. We present an analysis of unprovenienced human remains that were in storage on the private island of Mustique in the Grenadines, southern Caribbean, but that were reportedly taken by a local resident from the smaller nearby island of Petite Mustique for personal use and display. With permission from the Mustique Company, archaeologists brought the remains to the University of Oregon's Island & Coastal Archaeology Laboratory for analysis. The goal was to determine the number of individuals present, their probable age, sex, pathologies, and possible ancestry, in order to assist in repatriation. Preliminary results suggest that the collection consists of 341 bones or bone fragments, representing four adult individuals. Initial age and sex estimates for the three more complete individuals indicate that two are middle-aged males and one an older female. Robust muscle insertions of one adult male may indicate strenuous activity in life. Intermingling of cattle bone with the remains, dental wear patterns, and other skeletal indicators suggest that these individuals probably date to the historic period. Further analysis that is now underway, including 3D geometric morphometrics of the skulls, will attempt to identify ancestry in more detail so the remains can be properly repatriated.

**Title: Creative Nonviolent Action: Leveraging the Intersections of Art, Protest and Information and Communications Technology for Social Change**

**Poster: 20**

**Presenter: Emma Dorland**

**Mentors: Analisa Taylor, Romance Languages; Kiersten Muenchinger, Product Design**

**Majors: Spanish, Product Design and Nonprofit Administration**

**Abstract:**

This thesis investigates the relationship between creative works and nonviolent protest. It studies the impact of visual and performative art on movement building and it examines the features of nonviolent protest that make the process a viable method for cultivating a culture of peace. This thesis addresses artistic mediums from three social movements of the United States civil rights era, the massive anti-globalization protests that occurred in Seattle at the turn of the millennium, and the recent demonstrations against police brutality that began in Ferguson, Missouri. It uses these exemplary models of creative nonviolent protest as the basis for an analysis of the dynamic and evolving intersections between creative cultural production, nonviolent protest, and information and communications technology. This thesis draws the conclusions that combining creative mediums, nonviolent direct action, and new technologies in social movements has the power to sustain broader public participation in the project of establishing social justice and peace today.

**Title: The Love of a Man, The Love of a Community: Desire as Decolonial Critique in Alexie's *The Business of Fancydancing***

**Oral Presentation**

**Presenter: Joel Ekdahl**

**Mentor: Kirby Brown, English and Native Studies**

**Major: English**

**Abstract:**

Queer Indigenous critics Lisa Tatonetti and Gabriel Estrada criticize Sherman Alexie's *The Business of Fancydancing* for upholding the rural-urban binary, and for defining the Spokane reservation as "a landscape emptied of gay people" (Tatonetti 173). They argue that this binary panders to a white-washed form of multicultural theory whose focus on the fragmented, alienated, urban subject erases the particular circumstances of indigenous decolonization. This divide, they argue, forecloses the recovery "of dynamic Two-Spirit traditions and communities" and thus fails to establish a critique that is both queer and indigenous (Estrada). However, by reading Alexie's Spokane Reservation as an absolute cultural domain, Tatonetti and Estrada's criticism occludes Alexie's engagement with the continuing process of colonization. Alexie utilizes the unique relationship between Seymour Polatkin, Aristole Joseph, and Mouse to explore the diverse issues of reservation poverty, alcoholism, white voyeurism, and internalized Native heteronormativity. Alexie, instead of focusing on Two-spirit revitalization, resists the temptation to essentialize indigenous queer theory by locating critique at the level of personal desire. Focalizing my analysis around Seymour Polatkin, I will argue that his poetry bridges his personal desire to obtain positive recognition while also critiquing colonialism through the stories of his reservation.

**Title: The White Male Protagonist: Friend or Foe?**

**Oral Presentation**

**Presenter: Samantha Elwood**

**Mentor: Kirby Brown, English and Native Studies**

**Majors: English and Spanish**

**Abstract:**

Even though *The Last of the Mohicans* and *Avatar* occur hundreds of years apart, both try to heal culpability felt by white settler-colonial audiences surrounding the United States' foundational history of colonialism. *The Last of the Mohicans* directed by Michael Mann and based off of the novel by James Fenimore Cooper, follows Nathaniel Poe, a frontier man, and his adoptive Native American family, Chingachgook and Uncas, as they walk the line between indifference and concern during the events of the French and Indian war in the mid-18th century. James Cameron's film *Avatar* explores the newly discovered world of Pandora and its indigenous people, the Na'vi, through the eyes of Jake Sully, the narrator of the film and the narrative anchor for both species. Both films explore the usually contentious relations between white and Native American society in a more positive and mutual way. *The Last of the Mohicans* and *Avatar* attempt to console the colonial anxieties through their depictions of Native Americans as sympathetic, but by mediating these characters through white male protagonists, they naturalize the history of white dominance of Native Americans because whiteness becomes vital to the futurity of the Native American culture.

**Title: Argument Marking Morphology and Verb Stem Selection in Takelma**

**Oral Presentation**

**Presenter: Stephanie Evers**

**Mentors: Scott DeLancey, Linguistics; Joana Janen, Northwest Indian Language Institute**

**Major: Linguistics**

**Abstract:**

Takelma, a silent (not currently spoken but undergoing revitalization) indigenous language of southwest Oregon, employs a verb system that features a close relationship between a verb's stem and its argument markers. This system includes the choice between two stems for each verb, traditionally referred to as 'aorist' and 'general,' but described in this paper as 'realis' and 'irrealis.' The 'realis' stem indicates events that occurred in the past, are occurring presently, or are about to immediately occur (see Example 1), while the irrealis indicates events that could happen, that will happen in the future, or that are only known at secondhand—as well as imperative constructions (see Example 2).



Ex. 1

*t'omo-x-imi-t<sup>h</sup>*

kill.1-SAP-1PLOBJ-2PLSUBJ.II

'You killed us.'

Ex. 2

*honò' tóowm-x-pi-n*

again kill.2-SAP-2SG.OBJ-1SG

'again I will kill yours'

The verb system also includes subject markers that indicate transitivity as well as tense and mood, and versatile object markers that can interact with a subject to indicate shifts in valence (changes to number of arguments, such as subject and objects, directly controlled by the verb) or unusual placement of an object noun within a clause. This presentation explores Takelma verb construction, describing basic morphological ordering of a verb's stem, argument markers, and valence-shifting affixes (prefixes and suffixes), as well as analyzing stem choices and the use and interaction of subject and object markers on the verb. It is intended to clarify and update portions of the work done by Edward Sapir (1912) by describing the use and formation of Sapir's tense-moods using modern terminology, reanalyzing morphological markers such as the Speech Act Participant Marker (which are not addressed in the original grammar), and providing a morphological position class diagram. This research contributes to the framework for future syntactic and morphological research in Takelma, particularly to the formation of realis and irrealis verb stems, and also adds to the knowledge necessary for creating pedagogical materials, which will be an invaluable tool in the process of revitalization. All examples provided in this paper are taken from Edward Sapir's 1912 grammar "The Takelma Language of Southwest Oregon," his 1909 "Takelma Texts" and his 1907 "Medicine Formulas." Glosses are this author's original work.

**Title: Chronic Passive Heat Therapy Improves Microvascular Nitric Oxide-Dependent Dilation during Skin Local Heating**

**Poster: 21**

**Presenter: Taylor Eymann**

**Mentors: Christopher Minson and Vienna Brunt, Human Physiology**

**Major: Human Physiology**

**Abstract:**

Vascular dysfunction, often caused by deficient nitric oxide (NO) production, is present in the majority of cardiovascular disease and is first detectible in the microcirculation. Heat stress can increase NO production via heat shock protein expression. Therefore chronic passive heat therapy (CHT) may improve microvascular health and lower cardiovascular risk. The cutaneous circulation is easily accessible and represents overall microvascular health. **PURPOSE:** To observe the effects of 8wks of CHT on cutaneous NO-dependent dilation. **METHODS:** Seven healthy, sedentary subjects were immersed in either 40.5°C (N=5; CHT) or 36.5°C (N=2; sham group) water for 90min 4-5 times per week for 8 weeks. Before and after the 8wks, two intradermal microdialysis fibers were inserted into the forearm and infused with lactated Ringer's solution (control) and a nitric oxide synthase competitive inhibitor (L-NNA), to inhibit NO synthase. Increased skin blood flow responding to local skin heating to 39°C, which is a test of microvascular health, was measured at each site using laser-Doppler flowmetry. NO-dependent dilation, calculated as the difference between control and L-NNA sites, was expressed as percent maximal cutaneous vascular conductance (%CVCmax; flow/mean arterial pressure). **RESULTS:** CHT increased NO-dependent dilation from 27±4 to 36±5%CVCmax ( $p<0.05$ ). No improvement was observed in sham subjects. **CONCLUSION:** Our findings suggest heat therapy increases NO production and vasodilation in the human microcirculation. Continued exposure to passive heat may lower cardiovascular risk.

**Title: Characterization of Inputs to Active Basolateral Amygdala Neurons after Different Behavioral Treatments**

**Poster: 22**

**Presenter: Harrison Fontaine**

**Mentors: Leah Deblande and Clifford Kentros, Institute of Neuroscience**

**Major: Biology and Human Physiology**

**Abstract:**

The amygdala is a brain structure that is required for the acquisition and storage of fearful memories. In humans, abnormal amygdalar activity has been associated with post-traumatic stress disorder, anxiety, and depression. One component of simple fear memory formation is the association of a fearful stimulus and an otherwise neutral predictive stimulus. This association occurs in the basolateral amygdala (BLA). While the main inputs to the BLA are well characterized, the specific coding strategies these inputs use to convey information has not been detailed. We used transgenic mice in conjunction with a modified viral tracer to determine how the inputs to recently active BLA neurons varied after exposure to fear-inducing and non-fear-inducing situations, with the reasoning that if different inputs were labeled after different treatments, inputs must be employing a neuron-specific coding strategy. In addition, we examined the differential activity of neurons in the BLA that may be gating the formation of fear memories. We reasoned that if these neurons were differentially active between fear-inducing and non-fear-inducing situations, these neurons might indeed be gating fear memory formation. Our results supported the use of a neuron-specific coding strategy in BLA input regions, as well as the model of a subset of BLA neurons gating fear memory formation. These results elucidate aspects of fear memory circuitry, and thus have implications in treating fear circuit pathologies.

**Title: Examining and Identifying Effective Rhetorical Strategies, Messaging, and Themes in Climate Change Books for a General Audience**

**Oral Presentation**

**Presenter: Hannah Fuller**

**Mentors: Stephanie LeMenager, English; Shane Hall, Environmental Studies**

**Major: Environmental Studies**

**Abstract:**

Of all the messages we receive about climate change, the most common is perhaps “10 simple things YOU can do to save the Earth.” While these lifestyle tips can be useful to individuals, the contributions to climate change mitigation are often negligible. More pressing, though, is the fact that none of these ideas target the larger underlying problems that contribute on a larger scale to greenhouse gas emissions. Since global warming came to the international stage in the 1980s, mass media, scientists, and politicians have been scared to advocate for fear of losing credibility. Instead, notable authors like Bill McKibben, Thomas Friedman, and Naomi Klein have taken it to task to identify and offer targeted solutions for global climate change as more than just a problem of atmospheric chemistry. These authors seek to interpret climate science and inspire lay readers by offering their solutions, which focus more changing institutions, worldviews, and norms than individual behavior. By reading and comparing these popular science books I have identified their most salient arguments and strategies in order to create a rubric for more effective climate change communication. These books and others like them are an archive for “best ideas” that should be popularized and carried out in activist contexts. By synthesizing a short op-ed using the best and most effective ideas, I hope to provide a context that will empower individuals and communities to take action and to demand action from higher levels of government.

**Title: From Favela to Community: Afro-Brazilian Women Activists Transforming Urban Space**

**Oral Presentation**

**Presenter: Niria Garcia**

**Mentors: Lynn Stephens and Ana Lara, Anthropology**

**Majors: Environmental Studies and Latin American Studies**

**Abstract:**

There’s much work that goes into the formation, maintenance, and continuance of a movement. Many narratives of those involved in the movements however, don’t appear in the pages of history and remain dormant waiting to be uncovered. This is a brief ethnographic account that explores the crucial role Afro-Brazilian women have played in the struggle for permanence and improvement of the historically marginalized community of Calabar in Salvador, Bahia,

Brazil[L1] . I focus specifically on the ways in which the social resources women control such as kin networks and the urban material resources such as land and markets women dominate have been crucial in their ability to hold their ground, organize others, and create improvements in their community. In addition, I explore how the specific gender roles women occupy in relation to kin networks, land, and markets have been leveraged by women strategically in their organizing efforts. My analysis will be based on a series of interviews I conducted with six women and secondary sources. After I analyze their ability to organize successfully and why, I will discuss the ways in which the coming of the World Cup competition to Brazil has influenced/impacted their continuing struggle for land titles, internal social and urban improvements. Along with my findings it is made clear that a significant dimension of their organizing success, personal transformation and empowerment has been through dignifying and making visible the history and contemporary contributions of Afro-Brazilians.

**Title: Money, Power, and Race: The US State's Involvement in the Reproductive Lives of African American Women**

**Oral Presentation**

**Presenter: Dana Glasscock**

**Mentors: Jamie Bufalino, History; Corbett Upton, English**

**Majors: History and English**

**Abstract:**

Within the United States, the relationship between the state and African American women's reproductive roles has been complicated and contentious. In the brutal control of reproduction for profit within slavery the role of the state was to justify slave owners' use of black women's bodies without regard for the women's choice. Contrasting this systemized reproduction for economic gain is the condemning attitude of the state toward African American women's reproduction past reconstruction and into the 20th century through financially punitive and manipulative means including Welfare reforms, Social Services policies, and sterilization policies that disproportionately affected African American women as a result of lingering biases. In the context of the second half of the 20th century this role of the state was still economically motivated as an effort to avoid spending on mothers or children deemed less deserving. Legal and social historians including Linda Kerber and Dorothy Roberts have noted how the paternal and pejorative elements of state legislation and public efforts resemble the methods of manipulation found under slavery. Though the specifics of the state's actions differ, examining the similarity in root justifications and their connections to legal and economic motivations of the state allows for clearer understanding of the tense relationship between the state and African American women's reproduction. My work seeks to explore specific legal and political tactics, motivations, and implications of the role of the state in the lives and reproductive experiences of African American women, focusing on two periods of the US: slavery and the second half of the 20th century.

**Title: Comparing Morphometric Methods in *Macaca mulatta* crania**

**Poster: 23**

**Presenter: Rachel Glenzer**

**Mentors: Stephen Frost and Frances White, Anthropology**

**Major: Biological Anthropology**

**Abstract:**

We compared the precision of a relatively new method for collecting three-dimensional landmarks, 3D photogrammetry with Agisoft Photoscan, to that of two other well-known methods: Microscribe 3DX and Nextengine Laser Scanner. Landmark editor was used to place landmarks on laser and photoscans. Two crania (one male, one female) of *Macaca mulatta* from the University of Oregon Comparative Primate Collection were digitized by two users, (RG) and (KC), who each collected 10 replications with all three methods using a well-established 45 landmark protocol. The 120 replications were then analyzed with generalized Procrustes analysis (GPA) in Morphue with scale restored. An external scale factor was applied to the photoscans to make them consistent. To assess the overall magnitude and patterning of the three different methods, the Principle Component Analysis (PCA) and scores were compared. PC 1 (46 % variance) separated the two specimens. PC 2 (16 % variance) separated the two specimens by user. PC 3 (6 % variance) sorted the Microscribe from the other methods. There is some significant separation within user based on method ( $P < .0001$ ), but this was much smaller in magnitude than the other factors. Among the three methods, the laser scans had the best precision (0.42 mm), followed by photoscans (0.67 mm), and least precise was microscribe (0.62 mm). Our results indicate that photoscan is as precise as well-known methods.

**We're Not Just a Team; We're Also a Community: UO Poetry Slam Team**  
**Creative Work Presentation: C4 (Maple Room)**  
**Presenter: Hannah Golden**  
**Co-presenters: Alex Dang, Sarah Hovet, Sarah Menard, Dante Douglas**  
**Mentor: Corbett Upton, English**  
**Majors: Journalism and Spanish**

**Abstract:**

The UO Poetry Slam (UOPS) was founded by Hannah Golden and Alexander Dang to build a community and audience for poetry on campus that embodies the inclusiveness and excitement of slam poetry. Poetry and language belong to all of us, not just a select few, and by foregrounding the form's communal aspects, slam challenges hierarchical notions of what forms and experiences constitute art, specifically when it comes to poetry, and seeks to make poetry accessible to, and inclusive of, all voices, experiences, subjectivities. In this presentation, we will explain the origins of slam poetry and show how the form is distinguished from traditional poetry readings in both its ethics and its format, most obviously by the fact that poets' work is limited to a 3-minute original poem scored on a 10-point scale by five judges randomly selected from the audience, and will conclude with performances by each slam team member. Additionally, we will detail the team's journey to competing at the College Unions Poetry Slam Invitational (CUPS), the top competition for college slam poets. In fall 2014, we held auditions, attracting a wide range of students, who competed in six bouts. After the dust settled, we had our team. Some of us had never performed or even written poetry before these tryouts. Throughout the process of recruiting and building a team that can be competitive anywhere in the state, we have held to our ideal of an inclusive, democratic community with an insistence on high-quality work and an atmosphere of mutual encouragement. We began the slam community here at UO to create a forum where all can express themselves – anyone can be a poet, and anyone can appreciate poetry. We are excited to show you our work now.

**Title: Accounting in the Middle Ages: More Modern than Medieval**

**Oral Presentation**

**Presenter: Amanda Gonzales**

**Mentors: Michael Peixoto, Honors College History; Monique Balbuena, Honors College Literature**

**Major: Business**

**Abstract:**

Common accounting practices have evolved greatly over time, beginning with simple inventory records and progressing to complex forms of standardized accounting methods. The practice of managerial accounting, which entails analyzing financial data to assist internal decision-making, became standardized during the industrial revolution. As new corporate-style businesses expanded, owners began to maximize profits and increase their wealth by using new methods that allowed them to standardize costs and quantify human capital. Human labor became a cost that needed to be cut in order to maximize profits, which in turn exacerbated the stratification of wealth in society. The origins of this dehumanization of the working class and increase in wealth disparity between owners and workers are identifiable in pre-modern history. My research analyzes medieval methods of administering the production of peasant labor. I examine sources including the Domesday Book, notarial registers, and landed charters, to provide insight into the management techniques used by landowners from the perspective of managerial accounting methods. Although such methods were not standardized during the Middle Ages, the techniques that landowners used in the management of peasant labor show that the evolution of managerial accounting began long before the industrial revolution. The economy in the Middle Ages is often viewed as a compilation of rural agricultural work, however the studied management techniques utilized by lords over peasant labor reveals characteristics of a capitalistic society in a time that capitalism is not believed to have existed.

**Title: Captive Female Bonobos (*Pan paniscus*) Tend to Be More Social during Tool Use than Males**

**Poster: 24**

**Presenter: Daniel Goodkin-Gold**

**Mentors: Stephen Frost and Frances White, Anthropology**

**Major: Anthropology**

**Abstract:**

Tool use occurs in several non-human species. Within the genus *Pan*, chimpanzees (*P. troglodytes*) exhibit tool use in both the wild and captivity. Tool use in bonobos (*P. paniscus*) has been documented in captivity and suggested

to occur in the wild. Recent comparative studies of chimpanzees and gorillas propose that social tolerance may facilitate the acquisition of tool use behavior. We previously reported that captive bonobos use tools in smaller social groups than gorillas and chimpanzees, which suggests that the number of neighbors does not play an integral role in tool use acquisition in bonobos. Here we investigate sex and age differences in these small social groups. Data were collected between June and August 2011. Subjects were 16 bonobos housed at the Columbus Zoo and Aquarium, where an artificial termite mound was placed in their outdoor exhibit and baited daily. All occurrences of tool use at the mound and of the individuals present were videotaped and coded. Party size and composition were later determined for each fishing bout. Females fished in larger groups (avg.=1.8 individuals) than males (avg.=1.3 individuals) ( $n=9$ ,  $F=4.38$ ,  $p<0.05$ ). While there was no difference between adult and subadult males, adult females fished in significantly larger groups than subadult females ( $n=5$ ,  $F=26.03$ ,  $p < 0.0001$ ). These results support previous knowledge of bonobo sociality in that females are more socially cohesive and males tend to be more solitary.

**Title: Pristine Nature and “Painted Forgeries”: Ecocriticism in *The Faerie Queene***

**Oral Presentation**

**Presenter: Alison Goodwin**

**Mentors: Jessie Nance and Corbett Upton, English**

**Majors: English and Political Science**

**Abstract:**

Under Elizabethan rule, Edmund Spenser wrote literature that both praised the queen and reflected the colonization of the New World (he himself took part in the colonization of Ireland in the 1580s and onward). Initially published in 1590, Spenser's *The Faerie Queene* constructs unexplored, fantastical, and often dangerous lands. As a sprawling moral allegory, *The Faerie Queene: Book Two* depicts the overcoming of intemperance and idleness, particularly through the vehicle of nature. Scholars Amy Tigner and Arlene Okerlund have explored the function of nature and horticulture in early Renaissance writings. As Tigner detailed the constructedness of horticulture, Okerlund complicated this botanical purpose and additionally has argued that Spenser's audience consumes both the art of the Bower and the art of Spenser's language. Viewing Spenser's poem through an ecocritical lens, I follow this scholarly tradition by reading representation of gardens and of the Bower of Bliss as commentaries on the distinct separation between the corruption of man and the authenticity of natural landscapes. While these scholars agree that the ecocritical approach illuminates the Bower's dangerous veneer, I additionally argue that, by including a colonial perspective, my analysis carries with it an English fear of idleness and lack of labor that percolates from Spenser's experience with colonialization. In *The Faerie Queene: Book Two*, the pristine essence of the natural, uninhibited land serves as both aesthetically pleasing as well as wild and tempting. Spenser juxtaposes pristine nature with constructed landscapes to distinguish the purity of the land from the danger of man-made contamination and idleness. Thus he illustrates English anxieties of idleness that stem from a built environment and stresses the necessity of utility over empty aesthetics in colonial expansion.

**Title: Unilateral Climate Change Action: A Comparison of Three South African Cities through the Lens of the Tragedy of the Commons**

**Oral Presentation**

**Presenter: Miles Gordon**

**Mentor: Ronald Mitchell, Political Science**

**Majors: Political Science and Philosophy**

**Abstract:**

This paper seeks to examine unilateral action taken by individual cities on climate change. I do this through the lens of the Tragedy of the Commons, which is an excellent description of the problem of climate change. I test the following hypotheses as to the cause of this action: local and formalized knowledge of the problem, a strong civil society that can apply pressure, transmunicipal network ties that help disseminate effective ideas, and the realization of co-benefits to action on the part of the local government. The cities I compare are in South Africa, a nation in the Global South that has relatively meager resources and is hence subject to the economic logic of a developing country. I compare Durban (a city that has taken substantive action) to Khara Hais and George (two cities that have not taken substantive action). Information on these cities and their respective actions was culled from case studies, policy briefs from the respective municipalities, and reports of NGOs on the ground. Using this information, I find that motivation for climate change action is based in part on all four of these, but that ultimately the most effective motivator is the realization of co-benefits. This is because when confronted with issues of incapacity, environmental protection alone is often not strong enough a factor to provoke action. These results, while not wholly generalizable due to the fact

that they were obtained within a single nation, are significant to the issue of climate change action because they provide a rough blueprint for how best to pressure local governments (particularly those in the third world) to take their own action, thus creating an opening for a movement on climate change that is truly “from the ground up”.

**Title: Comparison of Measures of Inter-individual Affiliation among Ring-Tailed Lemurs (*Lemur catta*)**

**Poster: 25**

**Presenter: Leslie Gotuaco**

**Mentors: Stephen Frost and Frances White, Anthropology**

**Major: Environmental Science**

**Abstract:**

Primatologists use a number of behavioral measures to assess patterns of affiliation and aggressions in groups of primates. These patterns can, however, vary greatly within a species with behavioral context. Lemurs, for example, are well known for the importance of context in the variation of aggression in feeding and non-feeding contexts as seen in both female dominance and female feeding priority. This study examined whether there are also variations in affiliation between feeding and non-feeding contexts. One of these measures, grooming, is widely accepted as a mechanism for social bonding, but it is not an appropriate measure for affiliation during feeding. We therefore used co-feeding as a measure of affiliation during feeding. We then used a non-parametric multivariate statistical comparison to see if the patterns of affiliation are consistent between these two contexts. We studied a group of semi-free-ranging ring-tailed lemurs on St. Catherine’s Island, Georgia and collected 188 hours of behavioral data. Observations used focal animal sampling and all occurrence sampling of social behavior. We calculated indices for grooming and co-feeding for all possible pairs of individuals. A Mantel test was used to determine the correlation between the two affiliative measures. We found a significant correlation between our measures ( $r = 0.7509$ ,  $t = 8.635$ ,  $p < 0.0001$ ). These results demonstrate that affiliation patterns seen in non-feeding contexts are consistent with affiliation during feeding.

**Title: Finding the Lesser Evil: A Comparison of the Environmental Impacts of the Iceland Deep Drilling Project and Conventional Geothermal Wells**

**Poster: 26**

**Presenter: Hannah Greenberg**

**Mentor: Peg Boulay, Environmental Science**

**Major: Environmental Science**

**Abstract:**

The Iceland Deep Drilling Project (IDDP) intends to harness geothermal power in a way that power companies hope will increase the efficiency of geothermal energy generation. The goal of the project is to drill deep for supercritical fluids with a high energy yield potential. Conventional geothermal wells are drilled to an average depth of 2 km and produce fluids up to 275 °C. The IDDP plans to drill 3.5-5 km deep for supercritical fluids at 450-600 °C. Geothermal energy is a renewable resource but that doesn’t necessarily mean that it is sustainable: geothermal plants can affect the environment in different ways and it is important to study the potential impacts of this new approach. This study aims to compare conventional geothermal with deep drill wells in order to determine if it is a responsible advancement for the future in Iceland and around the world. After conducting this study, it has been determined that the potential benefits of the IDDP are worth investing in. Deep drill wells have the potential to produce more energy than a conventional geothermal well; meaning less land would be disrupted per unit of energy produced by a geothermal well. Further development of deep drilling for supercritical fluids is a step in the right direction for decreasing the impact and increasing the economic viability of geothermal energy.

**Title: Rotational Properties of the Extraordinary Multi-tailed Asteroid P/2013 P5**

**Poster: 27**

**Annika Gustafsson**

**Mentor: Scott Fisher, Physics**

**Majors: Physics and Mathematics**

**Abstract:**

Observations made with the Hubble Space Telescope in September 2013 revealed that the asteroid known as P/2013 P5 appeared to have six comet-like tails. Jewitt et al. (2013) concluded that this extraordinary structure and

activity cannot be explained by traditional near-surface ice sublimation or collision events ejecting particles from the asteroid's surface. Instead, the most likely explanation is that this unusual object has been spun-up by solar radiation forces to a critical limit that resulted in the rotational disruption of the asteroid causing the unique six-tail structure. This interpretation predicts that the nucleus of this comet-like asteroid should be in rapid rotation as a result of spin-up caused by the solar radiation forces. In November 2013, Dr. Stephen Levine obtained broadband photometry of P/2013 P5 for a duration of 4 hours using Lowell Observatory's 4.3-meter Discovery Channel Telescope with the Large Monolithic Imager to investigate the possibility of rapid rotation. After performing differential photometry on P/2013 P5, the resulting light curves were analyzed to search for periodicity of 2.2 hours, an easy indicator of rapid rotation. While the variation in the rotational light curve from these data was too small to be justifiable, morphological changes in the nucleus-coma system were observed.

**Title: Searching for the Nearest Extragalactic Binary Black Hole: A Spectroscopic Study of NGC 4736**

**Oral Presentation**

**Presenter: Annika Gustafsson**

**Mentors: Scott Fisher and Elsa Johnson, Physics**

**Majors: Physics and Mathematics**

**Abstract:**

Maoz et al. (1995, 1996) concluded that the nearby galaxy NGC 4736 is in the late stages of a merger event. After further investigation, in 2005, Maoz et al. observed ultraviolet variability in the nuclear region, implying the presence of a second unknown source. Since merging systems are an ideal location to search for binary black holes (BBHs), we hypothesize that the second unknown source here is a black hole, making this a BBH system. While the existence of BBHs are necessary for many theoretical predictions and play an important role in astrophysics, evidence for their existence remains sparse. To date, only NGC 6240 (Komossa et al., 2003) and Arp 299 (Ballo et al., 2004) have been discovered as merging galaxies with two active galactic nuclei (AGN). In 2008, NGC 4736 was observed with the Gemini Multi-Object Spectrograph on the Gemini North telescope. Optical spectra of the nuclear region were obtained with spatial resolution of 0.5". The two nuclear sources, at a projected separation of 2.5" are therefore spatially resolved (Maoz et al., 2005). As a result, we will attempt to classify the second source by analyzing optical line ratios following Ho et al., 1997. The line ratio value will allow us to definitely categorize the unknown source as a black hole if it falls correctly on the Baldwin, Phillips & Terlevich (BPT) diagram. At a distance of 4.9 Mpc, NGC 4736 would be the nearest BBH system, enabling high-spectral and spatial resolution observations. The distance and character of this possible BBH galaxy would be a significant step in allowing astrophysicists to validate models of galaxy mergers.

**Title: Who Was Chief Paulina? Restoration History and the Reconstruction of Paulina's Identity in Popular Memory**

**Poster: 28**

**Presenter: Sarianne Harris**

**Mentors: Kevin Hatfield, History; Jennifer O'Neal, Special Collections**

**Major: Human Physiology**

**Abstract:**

This paper examines the life of Chief Paulina, a Northern Paiute of the *Hunipuitoka* band, beginning at the time of major conflicts caused by the creation of the Warm Springs Reservation within Central Oregon in 1855 and ending around the time of his death in 1867. Chief Paulina, throughout his life and in popular memory, has been demonized and distorted into a bullet-proof, blood-thirsty, violent war leader who cared for little but the thrill of raiding. I argue that Chief Paulina was, instead, a skilled leader who cared for his people and fought bitterly to protect his homeland. He made necessary decisions, based on the information and resources he had at his disposal, to care for his people and keep their land. I utilize secondary, but focus on primary, resources as I examine the Northern Paiute view of the Warm Springs Reservation, interactions between Chief Paulina and Captain Kelly of Fort Klamath, and Chief Paulina's behavior regarding the capture of his people. These areas of focus reveal a more complete view of the person behind the legend than the portrayals of Chief Paulina found in history books, Oregon museums, and local histories.

**Title: A Reflection in the Mirror: How Noir Championed the Voice of a Generation**

**Oral Presentation**

**Presenter: Brennan Heller**

**Mentors: Ulrick Casimir, English; Kelly Sutherland, Biology**

**Majors: Business and Psychology**

**Abstract:**

Dark lighting. Risky women. Hard liquor paid in cold cash within the corrupt cities of noir. During its apotheosis, noir fully critiqued the social, cultural, and political changes in American ideology through powerful aesthetics. Analyzing how the economic restrictions of World War II on the United States influenced noir's developed use of novel lighting, characterization, and fatalistic narrative, I will demonstrate how the aesthetics of this genre captured the anxious zeitgeist of American society distraught by the war and its aftermath. By examining noir's stylized cinematography, I show how noir was the aesthetic response from an apprehensive America faced with ideological upheaval in the wake of World War II.

**Title: Responding to Disclosure of Mistreatment: The Long-Term Impact of Listening Skills Education**

**Poster: 29**

**Presenter: Alexandra Henry**

**Mentors: Kristen Reinhardt and Jennifer Freyd, Psychology**

**Major: Psychology**

**Abstract:**

Negative reactions to a disclosure of mistreatment can be more emotionally detrimental to the discloser than not disclosing the event at all, while positive reactions to disclosures can yield significant benefits, such as desensitization towards negative feelings and thoughts (Radcliffe, Lumley, Kendall, Stevenson, & Beltran, 2010). Previous research from Foyne and Freyd (2011) has shown that providing educational material on supportive listening significantly lowered the unsupportive behavior of listeners. This present study hopes to extend the work of Foyne and Freyd (2011) by examining the impact that a supportive listening skills tip-sheet has on a sample of 32 dyads after the disclosure of a mistreatment and at a 6-month follow-up time period. Our sample has a mean age of 19.22 and is 66% women. We hypothesize that the listening tips will have a long term, positive impact on the listeners' and disclosers' self-rated ability to listen to disclosures of mistreatment, improve both participants' satisfaction in the relationship, and enhance participants' self-reported listening skills through the listening tips learned during the study.

**Putting the Human Back in the Humanities: Studying Shakespeare Inside Prison**

**Oral Presentation**

**Presenter: Eve Hirschman**

**Mentors: Corbett Upton and Steven Shankman, English**

**Major: English**

**Abstract:**

*Hamlet: Denmark's a prison.*

*Rosencrantz: Then is the world one.*

*Hamlet: A goodly one, in which there are many confines, wards, and dungeons...for there is nothing either good or bad but thinking makes it so. To me, it is a prison.*

-Hamlet, II.ii.261-70

Elizabethan England and Oregon State Correctional Institution, two places separated by substantial amounts of time and space, come together to provide new insight into the human condition in today's world. After studying Shakespeare in a classroom environment consisting of equal parts UO students and Adults in Custody, it is clear that the benefits of a humanities education reach far beyond the world of Academia. Incorporating the ethical and moral implications that arise from engaging in literature and theory should be a cornerstone in how modern society approaches correctional institutions. Whether outside or inside prison, close proximity to the study of the humanities, especially works as psychologically and emotionally complex as Shakespeare's, provides an important and unique opportunity to understand one's relationship with society. A humanities education enhances one's conception of their own humanity while unavoidably acknowledging that of the other. Not only do we need the human element in academic studies of the humanities, but also the incorporation of the humanities into institutions which play a part in defining what it is to be human.



**Title: The Colossal Hats (*pukao*) of Monumental Statues: An Analysis of Shape Variability among the *pukao* of Rapa Nui**

**Poster: 30**

**Presenter: Sean Hixon**

**Mentors: Terry Hunt, Honors College Anthropology; Carl Lipo, CA State Anthropology**

**Major: Geology and Anthropology**

**Abstract:**

As part of monumental statue (*moai*) construction during the prehistory of Rapa Nui, islanders quarried bodies of red scoria, carved them into hats (*pukao*), and placed them atop statues measuring up to 10 meters tall. Despite overall great interest in *moai* and the improbable magnitude of *pukao* that were raised to reach their positions on the heads of statues, few studies have investigated *pukao* production and transport. This study seeks to analyze three-dimensional variability of *pukao* using 15,000 photos of 50 *pukao* found near statues and 13 red scoria cylinders located in quarries. Three-dimensional computer models based on these photos are used to evaluate which surface features are stylistic with associated temporal and spatial variability and which are functional and relate to construction and transport of these multi-ton objects. The functional detail has the potential to shed light on how prehistoric islanders designed *pukao* to be placed atop *moai*. To this end, additional three-dimensional models of statue platforms (*ahu*) and *moai* are combined with the models of *pukao* to test the feasibility of the conventional hypothesis that the *pukao* were placed atop *moai* using stone ramps.

**Title: The Effect of Chronic Passive Heat Therapy on Forearm Reactive Hyperemia**

**Poster: 31**

**Presenter: Andrew Jeckell**

**Mentors: Christopher Minson and Vienna Brunt, Human Physiology**

**Major: Post-baccalaureate**

**Abstract:**

Reactive hyperemia is a transient increase in blood flow that occurs following a period of ischemia (e.g. arterial occlusion) and is indicative of microvascular health. Regular exercise is a critical preventive measure in maintaining reactive hyperemia; however, consistent exercise is difficult or impossible for some people. Recent evidence suggests chronic passive heat therapy (CHT) may result in improvements to cardiovascular health similar to exercise. To examine the effects of 8 weeks of CHT on forearm post-occlusive reactive hyperemia, six healthy university students ( $21 \pm 1$  years) underwent hot water immersion 4-5 times per week to maintain rectal temperature of  $38.5^{\circ}\text{C}$  for 1 hour per session. Before and after 8 weeks of CHT, brachial artery blood flow was measured via Doppler ultrasonography for 3 minutes following a 5-minute forearm arterial occlusion. Data presented as mean  $\pm$  SE vascular conductance (VC, blood flow divided by mean arterial pressure). In preliminary subjects, change in peak VC from baseline, indicating structural microvascular changes, increased following CHT from  $1.77 \pm 0.24$  to  $2.26 \pm 0.20$  ml/min/mmHg ( $p = 0.09$ ). Area-under-the-curve of the hyperemic response, indicating functional changes, increased from  $59.7 \pm 9.0$  to  $111.9 \pm 13.0$  sec.ml/min/mmHg ( $p = 0.11$ ). CHT appears to produce structural and functional microvasculature changes comparable to that of exercise, and could potentially serve as an alternative method for improving cardiovascular health.

**Title: Consumer Behavior of Generation Y in the Performing Arts**

**Poster: 32**

**Presenter: Taylor Jones**

**Mentor: Patricia Lambert, Arts and Administration**

**Major: Public Relations and Art Management**

**Abstract:**

This research seeks to understand how arts managers have adapted to changes in consumer behavior in order to maintain youth audiences. Both quantitative and qualitative research provide insight on the demographic and psychographic backgrounds of Generation Y, which is categorized as people born between 1980-2000 and are popularly known as Millennials. Through citing multiple case studies, this paper evaluates positive and negative trends in modern consumer behavior and its impact on the performing arts industry. Key findings of this research were the social and technological trends that influence Generation Y, the impact of arts education on consumers, and how performing arts organizations have responded to changes in consumer behavior. These topics all relate to

arts administrators' effective use of marketing tools to better define and engage audiences. To understand consumer behavior of Generation Y is to understand the trends of performing arts attendees for decades to come.

**Title: Identity and the Virtual Home: Security, Privacy, and Citizen Rights**

**Poster: 33**

**Presenter: Noelle Jones**

**Mentor: Naomi Zack, Philosophy**

**Major: History and Humanities**

**Abstract:**

The purpose of this research is to propose the idea of a "virtual home" and how personal identity, privacy, law, technology and the traditional home have helped shape it. The "virtual home" is, in short, a collection of our identities and personal information on the internet, often accessed and updated via computer, smartphone, tablets, or other internet-capable devices. In an attempt to explain the social and legal complexities of technology's effect on privacy and the home, this paper touches on many topics, including the physical home, symbolic homes, homelessness, personal identity, privacy, the public-private split, the virtual home, and modern technology. My hope is that this interdisciplinary research will inform academics across a range of fields on the importance of these issues, and incite them to tangible action in their virtual and geographic communities, using their current expertise and research interests.

**Title: Hidden Hunters: The Little-Known Native Soldiers that Changed Warfare in the West**

**Poster: 34**

**Presenter: Tyler Jorgensen**

**Mentors: Kevin Hatfield, History and Jennifer O'Neal, Special Collections**

**Major: Mathematics**

**Abstract:**

My research concerns the Native scouts involved in the Snake War who were hired by the United States Army to hunt Northern Paiutes. Why would these native scouts want to hunt down other native people? Why would they join sides with the government which, at the time, was surging into native lands and seizing territory? This paper asserts that the answers to these questions can be grouped into three categories: money, power, and hatred, my essay will argue that these three factors are what drew the scouts to the American side. One example of a significant primary source I will use is William McKay's journal. William McKay was the commanding officer over a force of Warm Springs scouts hired to hunt down Northern Paiutes. In addition to primary sources, I will attain information from secondary sources to provide background information for my essay, as well as display evidence to explain why these scouts fought. For instance, I had the opportunity to ask tribal elders Wilson Wewa and Myra Johnson what they believe made the native scouts want to side with the U.S. government. They provided me with vital information and several avenues of research for my topic. My research will conclude that the incentives I identified for scouts to work with the U.S. Military far outweighed any of the complications. It is my hope that my research can fulfill a gap of knowledge on the subject and allow other scholars to see a new perspective of the conflict.

**Title: Best Practices in University Crisis and Mental Health Services**

**Poster: 35**

**Presenter: Kylie Juggert**

**Mentor: Kristin Yarris, International Studies**

**Major: International Studies**

**Abstract:**

Within the last decade there has been an increase in the number of students seeking university campus mental health and crisis intervention services, leading to long waitlists, delays in assistance, and redirected student searches for mental health aid away from trained providers to faculty and staff. Through thematic content analysis of counseling center websites and interviews with counseling center administrators from the University of Oregon and nineteen other UO similar institutions - public, large, coed, urban universities - we collate best practices for Counseling and Psychological Services (CAPS) programs that address these issues. Our findings reveal common problems, including: increased severity and complexity of student needs, limited resources, and minimal faculty training around handling student mental health situations. A negative association between the number of CAPS service issues reported in

the administrator interviews and the administrator's overall level of satisfaction with the current services was also found. Content analysis of CAPS websites by three coders determined that functionality and accessibility was the most important feature for perceived successfulness of the center's website, followed by provision of resources for "concerned others" and prevention services and programs. The latter finding provides significant insight to potential best practice intervention methods, where improving the web content and accessibility of CAPS online sites and expanding resources for "concerned others" and prevention programs could mitigate some of the initial CAPS' issues presented.

**Title: Gender Politics in the Formation of the Star System: Farinelli and Garrick**

**Oral Presentation**

**Presenter: Sophia June**

**Mentors: Tricia Rodley, Theatre Arts; Sally Garner, Journalism**

**Major: Journalism**

**Abstract:**

Today, it is a common practice for the film and theater industries to advertise films or plays based on the celebrity status of its actors. This is an example of the star system, the commodification and creation of celebrities. This star system is usually credited with beginning in the early 1800s with English theater actor David Garrick, who was known for his natural manliness. However, one hundred years prior, opera singers called castrati -- male performers who had their testicles cut off between age eight and twelve in order to preserve a high-pitched voice -- were taking the opera world by storm, particularly Farinelli, one of the most famous castrati of all time. Garrick is widely considered the first celebrity and start of the theatrical star system. However, I will argue that Farinelli was actually the first star, but not recognized as such by scholars or history because castrati were seen as feminized males who represent the "unnatural," and did not possess traditional manliness. In his study, Joncus has found that Farinelli and other castrati bear similar qualities to modern celebrities, but were also subjects of homoeroticism by wealthy men.

**Title: Changes in Walking While Using a Smartphone**

**Oral Presentation**

**Presenter: Taylor Kay**

**Mentor: Li-Shan Chou, Human Physiology**

**Major: Human Physiology**

**Abstract:**

It is common to see people using a phone while walking on campus. Our research analyzed gait in walking and crossing an obstacle while performing a visual cognitive test on a smartphone. Ten young healthy adults (5 males and 5 females, age:  $21.5 \pm 2.07$  years) randomly accomplished the following five tasks: 1) Gait only: walking at self-selected speed, 2) Gait + Stroop: walking while answering a Stroop test app (EncephalApp) on an iPod touch, 3) OBS only: walking over an obstacle set at a 10% of the subject's height, 4) OBS + Stroop: crossing an obstacle while answering a Stroop test app, 5) Stroop only: sitting while answering a Stroop test app. A 10-camera motion capture system (Motion Analysis Corp., Santa Rosa, CA) was used for data collection and Cortex software (Motion Analysis Corp., Santa Rosa, CA) was used for processing the data. Our data suggested that individuals walked slower, swayed more, and raised their legs higher while using a smartphone during walking or obstacle crossing. These altered gait behaviors can lead to higher risks to pedestrian safety.

**Title: A Ceramic Exploration of Simplistic Forms that Blend into Daily Life**

**Creative Work Presentation: C2 (Gumwood Room)**

**Presenter: Amanda Kibbel**

**Mentor: Jessica Swanson, AAA Ceramics**

**Major: Product Design**

**Abstract:**

This ceramic exploration started with the parameters of tableware and developed from one of three unique form tests. The intention for the final set was to create tableware whose form and glaze was unobtrusive in the kitchen and could be used for most dining experiences. The work was inspired by Dieter Rams's "10 Principles of 'Good Design'" and an urge to create minimalistic pieces that did not lose their ability to relate to the user because of an unapproachable aesthetic. Each piece was created using of an electric potter's wheel, with the handles of the pitchers and lidded

forms shaped by hand. The resulting product was a thick layer of white matte glaze to add to the roundness of each object along with rounded approachable forms and thin bare-clay handles that were sanded down to be soft to the touch. Possible future improvements include: a redesign of handles to be wider for more surface area between hand and handle; a taller foot on each piece of the set to give it a “floating” appearance to add to its harmony in the living space; and making the bowls and cups easier to stack on top of each other. The future of design lies in designing products that work in conjunction with our lives and stepping away from products that consume our attention.

**Title: Venting About Ventilation**

**Poster: 36**

**Presenter: Kelli Kimura**

**Co-presenters: Yang Lv, Hanzhao Huang**

**Mentors: Thomas Collins and Alison Kwok, Architecture**

**Major: Architecture**

**Abstract:**

The focus of this study was to better understand the effectiveness of natural ventilation in dormitories. We questioned if natural ventilation through two dorm room windows provided adequate ventilation. Mechanical ventilation systems and the combination of different “leak factors” that were potentially bringing in and taking out air were sealed since the focus was solely on the performance of natural ventilation. We predicted that the windows of a dorm room would be sufficient in naturally ventilating a room to exceed ASHRAE Standard 62.1-2013, which would mean achieving a ventilation rate greater than 5 cfm/person. CO<sub>2</sub> was used as a proxy for ventilation rate per person. Indoor and outdoor CO<sub>2</sub> levels were measured so that a CO<sub>2</sub> differential could be found. Comparing the CO<sub>2</sub> differential to a corresponding ventilation rate per person value allowed us to see if the standard was met. Another part of the study involved mapping bubbles to understand a dorm room’s air movement. Unexpectedly, it was found that not only does naturally ventilating a room greatly exceed the standard, but the standard was also met when no windows were open and all known mechanical systems and air leak factors were blocked. The unpleasant environment in rooms when the latter condition was tested certainly did not meet our subjective comfort standards, which led to questions about whether the ASHRAE 62.1-2013 standard needs reevaluation.

**Title: The Salmon Connection: Alaska and Oregon**

**Poster: 37**

**Presenter: Madison Kirby**

**Co-Presenter: Melanie Burke**

**Mentor: Mark Blaine, Journalism**

**Major: Journalism**

**Abstract:**

This poster draws parallels between Oregon and Alaska found in the reporting of Science and Memory, a climate change reporting project from the School of Journalism and Communication at the University of Oregon. Parallels such as the dusky geese migration, braided river systems, and salmon runs help localize the thinking and science behind climate change. Our line of inquiry followed questions about climate change in Cordova, Alaska, and their implications for our home base in Oregon. As journalists, our job is to report, but also to draw light to issues that the general public seems to know little about. With the ever-growing list of “climate-deniers” in the media and political world we found ourselves with a greater task at hand than we anticipated. Using a broad range of multimedia and multi-platform storytelling techniques and tools, we began a multiyear process of documenting attitudes and values in communities facing climate change.

**Title: Differences in Functional Recovery Following Concussion between Males and Females**

**Poster: 38**

**Presenter: Rachel Klas**

**Mentors: Li-Shan Chou and Quinn Peterson, Human Physiology**

**Major: Human Physiology**

**Abstract:**

Concussion, a brain trauma resulted from linear or rotational acceleration to the head, represents a majority of the traumatic brain injuries (TBI) sustained each year. To understand if there are recovery differences between males

and females post-concussion, this research examined males and females with matched controls for two months following the injury. In this study, a 3-dimensional motion analysis system was used to observe the trajectory of 29 anatomical locations in order to determine the peak anterior velocity of each subject's center of mass (COM, the point where the mass is equally distributed) and the medial-lateral COM sway. Symptom severity was assessed based on a 22-symptom inventory and a scale similar to the Likert scale for each symptom (ranking each symptom from 0-6). A three-way analysis of variance, or ANOVA, was performed to analyze the data in order to determine the effect of concussion, sex (male and female), time (72 hour, one week, two week, one month, and two month post-injury), and the interactions between these independent variables. It was revealed that males and females do not objectively differ in terms of the peak anterior COM velocity or COM medial-lateral displacement across the 2-month study, but that females reported more severe symptoms than males. The findings suggest that subjects of both sexes follow the same general gait balance recovery trends and that both sexes report heightened symptoms for at least two months after experiencing a concussion. Across all time points, females reported more symptoms than males, so either males are underreporting their symptoms or females are experiencing more symptoms than males.

**Title: Heretical Childcare: Pediatric Medicine in Western Europe during the Late Middle Ages**

**Oral Presentation**

**Presenter: Helena Klein**

**Mentor: Michael Peixoto, Honors College History**

**Major: Biology**

**Abstract:**

Parents will go to amazing lengths to protect their child, from avoiding anything potentially toxic during pregnancy to refusing vaccines to prevent even a slight risk of complications. Even today, modern pediatrics mixes with traditional and superstitious views, many of which are constructed from a psychology of fear and hope. In the Middle Ages, parents treated their children using not only the latest techniques recommended by the Church and based on Galen's philosophy of balancing humors, they also resorted to traditional, pre- or quasi-Christian medicines. Much of the study of medieval medical practices has assumed that medieval parents and doctors believed the balance of humors was constant throughout one's lifetime, which would lead to children receiving the same treatments as adults. Furthermore, there is little scholarship on the place of children in medieval families more generally. My research examines the social history of medical and quasi-medical practices in the case of young people. Through an examination of medical and culinary treatises, inquisitorial and confessor records, and archeological accounts from Western Europe in the High and late Middle Ages, I provide new insights and raise new questions regarding the balance of humors in children. By extension, my work seeks to understand medicine not as an anomaly, but as a total social practice that can reshape our views on the role of the child in medieval society.

**Title: Social and Environmental Impacts of River Linking in Tamil Nadu, India**

**Poster: 39**

**Presenter: Irene Klock**

**Mentors: Leslie McLees, Geography**

**Major: Geography and Japanese**

**Abstract:**

River linking, the connecting of water canals to divert water to regions that wouldn't usually receive it, is an important solution to the water crisis in India. The agricultural sector benefits from river linkage through increases in both job and food security on local and national scales. In south India, the water deprived state of Tamil Nadu is planning to create a flood carrier channel by interlinking the Tamiraparani, Karumeniyar, and Nambiar rivers. My research focuses on the potential social and environmental impacts of this flood carrier channel on surrounding villages. I gathered data through a series of surveys, interviews, and focus group discussions with the local communities. I then analyzed how the current water system drives local farming practices and compared it to how the new system could change them through alterations in geography, population, and long term traditions.

**Title: Dam Construction and Its Effects on the Traditional Foods and Cultural Practices of the Klamath Tribes  
Oral Presentation**

**Presenter: Anthony Kollmorgan**

**Mentor: Kathy Lynn, Environmental Studies**

**Major: Sociology**

**Abstract:**

According to the Klamath EIS/EIR the Klamath people have been without salmon for over 95 years as of 2010. Historically, the Klamath tribes had depended on the salmon in the Klamath River for subsistence and for cultural practices linked to their ancestral fishing sites. As a result of the installation of dams on the Klamath River, water quality was drastically altered resulting in the loss of salmon in the rivers and the loss of ceremonial practices for the Klamath people. In this paper I examine the ecological effects that dam installations have had on the waterways in and surrounding the Klamath Basin and how this has impacted salmon and other native fish species. In doing so, I also analyze the impacts that dams have had on Klamath peoples' traditional practices and how the absence of salmon in the Klamath River severely threatens the cultural survival and continuance of the Klamath tribes. This paper also provides a brief description of the way in which the Dawes allotment act of 1887 and termination in 1954 impacted the tribes in order to contextualize their current struggle for cultural survival and the right to subsist off their land.

**Title: A True Northern Paiute Hero: An Analysis of Chief Egan and his Leadership in the Bannock-Paiute War of 1878**

**Poster: 40**

**Presenter: Kevin Lai**

**Mentors: Kevin Hatfield, History; Jennifer O'Neal, Special Collections**

**Major: Biology**

**Abstract:**

This research paper examines the circumstances surrounding Northern Paiute Chief Egan's rise to prominence and his heroic depiction leading up to the Bannock-Paiute War of 1878. I argue that despite his Cayuse ancestry, Chief Egan's wisdom, loyalty, and bravery made him the prime choice to act as leader over the course of the rebellion against Agent William Rinehart and the U.S. government at the Malheur Reservation. Additionally, this paper demonstrates that although Egan knew such a battle against the Americans would surely end in defeat, he decided to take such a gamble solely to give his people another chance at survival--proof of his devotion to the Northern Paiute culture. The paper is based on examination of a wide range of primary sources including letters, hearings, governmental reports, and oral history from community members, to evaluate both tribal and non-tribal perceptions of Chief Egan not only as a member of the Paiutes but as an individual. Battle records were examined to assess Chief Egan's prowess as a capable war leader. This research helps to redefine what it means to truly be part of a Native American tribe, by blood or acculturation, in addition to contributing original research concerning Northern Paiute cultural identity, loyalty, and responsibility.

**Title: Finding Home in Human Rights: A Correlation between Conflicting Identities of "Home" in the Palestinian-American Immigration Experience and the Global Citizenship Identity**

**Poster: 41**

**Presenter: Dan Le**

**Mentors: Diane Baxter, Anthropology; David Frank, Honors College**

**Major: Anthropology**

**Abstract:**

For immigrants and refugees, the concept of "home" is seldom a concrete definition, as the question of where "home" is - either in the country of origin or the new country, activates a tension in self-identity. For the Palestinian immigration and refugee experience, the longstanding Israeli-Palestinian Conflict produces an even more complex tension. The purpose of this study is to explore this tension in a Palestinian-American context. To do so, the research project focuses on an oral history project about Ibrahim Hamide, a restaurateur and human rights activist in Eugene for the past 30 years. The project involved taking participant observation notes prior to the series of interviews, conducting the interviews themselves, coding the interviews for common themes, and then analyzing the information with other works about the Palestinian/Arab American experience. The primary findings of this study indicate that Orientalism, a term by Edward Said that means the representation of the Middle East in a stereotyped

and colonialist manner, has a major influence on the tension of self-identity. For Hamide, this tension leads him to find solace in human rights activism and embrace a more globalized sense of identity, rather than choosing between his two “homes.” The significances of this research are that it serves as documented piece of history for the Eugene community and contributes to the importance of the human rights philosophy.

**Title: Using Zebrafish Models of Usher Syndrome Type 2A to Investigate Retinal Cell Function and Survival**  
**Poster: 42**

**Presenter: Kimberly Lerner**

**Mentors: Monte Westerfield and Jennifer Phillips, Biology**

**Major: Biology**

**Abstract:**

Usher syndrome is a hereditary disorder and the main cause of deaf-blindness. Patients diagnosed with Usher syndrome experience hearing loss and progressive blindness due to photoreceptor degeneration. The most common form of Usher syndrome is type 2A, which is caused by mutations in the *USH2A* gene. Although gene therapies for some forms of Usher syndrome are being actively researched, current gene replacement methods are not feasible for *USH2A* patients due to the large size of the *USH2A* gene. Zebrafish orthologues of Usher genes can be used as models of human Usher syndrome, and our research will contribute to the use of zebrafish as a model of *USH2A*. Three different mutations targeting different regions of the gene will be characterized in this study, with a specific focus on the *ush2asa*<sup>1881</sup> mutant. Usherin forms a complex with other Usher type 2 proteins at the base of the connecting cilium in order to load ciliary cargo on this transport system between the inner and outer segments of the photoreceptor cells. We studied the co-localization of other known Usher proteins in the *ush2asa*<sup>1881</sup> mutant background, to see if a mutant form of Usherin disrupted the normal localization of these other proteins. The accumulation of photoreceptor cell death in the retina over time leads to progressive vision loss in human *USH2A* patients. It may be difficult to see progressive retinal degeneration occur over the much shorter life span of the zebrafish, and mouse models of Usher syndrome have a mild retinal phenotype compared to the degree of vision loss that human patients experience. We devised a system that would challenge the retina to see if we could accelerate the damage that is normally accumulated over a longer period of time. Our findings will be useful in that we have created a functional zebrafish model of *USH2A*, and our results provide the foundation for a potential treatment through the protection of the retina.

**Title: Acquisition of Articles by Chinese Learners of English**

**Oral Presentation**

**Presenter: William Leroux**

**Mentor: Tyler Kendall, Linguistics**

**Major: Linguistics**

**Abstract:**

The English article system presents one of the most challenging obstacles to learners of English hoping to obtain native-like fluency. This difficulty is in spite of its pervasiveness; the, a, and an are some of the most used words in English. However, ungrammatical phrases such as “I went to store,” and “I like the English” show up in all levels of learner speech. In order to better understand the acquisition of articles, our research examined interviews with high proficiency Chinese learners of English. We transcribed all cases where articles could possibly occur and examined the environments in which speakers produced native-like uses of articles and when they do not. We compared this to data from the ICNALE (International Corpus Network of Asian Learners of English), which has a more stratified sample of learners at various levels of English ability. This allowed us to better understand the language acquisition process of a complex variable so that we can better help English learners to attain native-like fluency and improve their communication with native-speakers.

**Title: *Neuro***  
**Creative Work Presentation: 43**  
**Presenter: Ana Lind**  
**Mentor: Alison Ho, Digital Arts**  
**Major: Digital Arts**

**Abstract:**

Animation is visual art in motion; it is a unique medium that can bring the most fantastical stories to life. I am an animator who is endlessly inspired by the beautiful inner workings of the brain, and I love to tell stories that celebrate human consciousness and connection. My film is about a young man who is desperate for validation. His desperation takes him on a surreal journey into the mind of the woman that he loves, where he comes face-to-face with the unrealistic expectations that he imposed on both her and himself. With my film I hope to challenge my fellow students to imagine each other more complexly.

**Title: Effects of Chronic Passive Heating on Resting Heart Rate, Blood Pressure, and Body Core Temperature**  
**Poster: 44**  
**Presenter: Kaitlin Livingston**  
**Mentors: Christopher Minson and Vienna Brunt, Human Physiology**  
**Major: Human Physiology**

**Abstract:**

Repeated bouts of exercise in the heat are known to decrease resting body core temperature ( $T_c$ ), mean arterial pressure (MAP) and resting heart rate (HR). Although exercise in the heat produces these cardiovascular changes, it is currently unknown whether passive chronic heating provides the same benefits. Our research sought to examine the effects of passive chronic heating on resting  $T_c$ , MAP, and HR. Five sedentary, college-aged subjects (4 females, 1 male) were assigned to an 8-week hot water immersion program (4-5 sessions/week). Subjects were submerged to the clavicle in 40.5°C water until a rectal temperature ( $T_{re}$ ) of 38.5°C was reached. Subjects maintained a  $T_{re}$  between 38.5-39.0°C during an hour of partial immersion. HR and  $T_{re}$  were measured with a HR monitor and rectal thermistor both at rest and at 5-minute intervals during the heat stress. MAP was measured on another day with brachial auscultation after  $\geq 20$  minutes of supine rest. Both resting MAP ( $81 \pm 1$  vs.  $76 \pm 2$  mmHg,  $p=0.02$ ) and resting  $T_{re}$  ( $37.4 \pm 0.5$  vs.  $36.8 \pm 0.4$ °C,  $p=0.03$ ) decreased after 8 weeks of passive heat stress with no change in resting HR ( $63 \pm 5$  vs.  $63 \pm 6$  beats/min,  $p=0.26$ ). Chronic passive heat stress reduces resting MAP and  $T_{re}$  similarly to what is observed with exercise heat in the heat. This suggests that chronic passive heat stress could be used to benefit cardiovascular health similarly to exercise in the heat.

**Title: Early Medieval Perceptions of the Environment: A Wondrous, Weird, Supernatural Land**  
**Oral Presentation**  
**Presenter: Becca Marshall**  
**Mentors: Michael Peixoto, Honors College History; Helen Southworth, Literature**  
**Major: Environmental Studies**

**Abstract:**

In the past religious concepts of creation mediated a relationship between humans and their surrounding environment. During the early Middle Ages literature and the presence of the Church in the landscape worked in conversation with biblical and metaphorical interpretations of nature to shape humans' perception of their place in the environment. The central role of religion and its influence on environmental depictions emerges in chiliastic sources, such as Bede's *Ecclesiastical History of the English People*. Within these texts lands and specific sites are imbued with religious/divine qualities and values. Additionally, a large amount of environmental mentions in monastic annals depict wondrous and fantastical events. Which provides insight into the significance of these happenings for the people of the medieval period. Along with this, the work of Ellen F. Arnold on monastic culture in the Ardennes forest suggests a diverse understanding of monks connection to nature including their views of the natural world as a wilderness, a source of human salvation, and even as a pastoral heaven. Other important depictions of the land and its association to the supernatural exist in poetry, medieval folklore, and popular stories such as Beowulf. All of these literary mediums frequently contain religious undertones and illustrate ways in which people are connecting to the land. Medieval cosmological views framed a world that moved ever closer toward the last judgment and the ultimate end of the world. This teleological focus, particularly prevalent in millenarian and quasi-historical writing, situated/



informed man's encounters with nature as fundamentally ephemeral while also imbuing them with deep symbolic significance. By analyzing chiliastic and literary sources from the early middle ages my research presents the way in which the literature and religion in the early Middle Ages worked in tandem to inform the peoples' perception of the environment. Hence, a greater sense of humans' tenor of life at this time can be unearthed by examining the multi-dimensional role of nature-as their physical abode, and as a symbol of the divine and the harsh, unforgiving reality of existence.

**Title: Temporal Variation in Atmospheric Fungal Community Composition and Diversity**

**Oral Presentation**

**Presenter: Kyla Martichuski**

**Mentors: Jessica Green and Ann Womack, Biology**

**Majors: Biology and Human Physiology**

**Abstract:**

Characterizing the different types of fungi in the atmosphere and their abundance is of great importance when considering atmospheric processes and dispersal of organisms. Current research suggests that fungi can alter precipitation patterns by promoting the formation of ice crystals at warmer temperatures than the freezing point of pure water. Studying the flow of microbes from one place to another is particularly important because agricultural and human fungal pathogens are transported in the atmosphere. The purpose of my research is to measure the composition, diversity, and temporal patterns of fungal communities in the atmosphere in order to provide a better understanding about the dispersal patterns of fungal types. I am using advanced culture-independent, high-throughput DNA sequencing techniques to analyze fungal community composition in air samples collected at the Mt. Bachelor Observatory, a high-elevation research station. Previous research suggests that bacterial community composition on the summit of Mt. Bachelor varies diurnally and community diversity changes significantly across days, and these patterns could be similar in fungal communities. Diurnal variation is likely due to the influence of local sources on community assembly whereas variation across many days could be due to the influence of long distance sources. Understanding the dispersal patterns of fungi from source environments could provide insight about the importance of dispersal related to agricultural and human pathogens.

**Title: Environmental Leadership Program Riparian Restoration Team's Rehabilitation of Goose Creek at Whitewater Ranch**

**Oral Presentation**

**Presenter: Ashlynn McGraw**

**Co-presenters: Samuel Huck, Anthony Kollmorgan, Katie Ortiz, Shannon Keener, Kenny Quillan, Fred Hutchison**

**Mentors: Peg Boulay and Davita Flowers-Shanklin, Environmental Studies**

**Major: Environmental Studies**

**Abstract:**

Agriculture practices have greatly altered the stream morphology and riparian ecosystems of the Willamette Valley. The use of dams and other river modifications have reduced overall stream complexity while practices such as overgrazing have left streams stripped of vegetation and prone to the spread of invasive species. Nowhere is this truer than in Goose Creek which cuts through Whitewater Ranch in Leaburg, Oregon. Previously a cattle ranch, Whitewater Ranch is now a commercial Christmas tree and organic blueberry farm. Overgrazing along Goose Creek has removed most of the native riparian vegetation and has since been replaced by Reed Canarygrass, a highly invasive species that outcompetes native vegetation. The 2015 Environmental Leadership Program Riparian Restoration Team will be responsible for the implementation and monitoring of a restoration plan. The plan seeks to replace the invasive Reed Canarygrass with native riparian trees and shrubs which will shade the creek and reduce water temperatures to allow for more suitable fish habitat. In addition, a pollinator hedgerow will be planted in order to attract pollinators to the farms blueberries. We will present our preliminary findings and current restoration work.

**Title: Assimilation and Activism: An Analysis of Native Boarding School Curriculum and Native Student Activism in the 20th Century**

**Oral Presentation**

**Presenter: Ayantu Megerssa**

**Mentors: Kevin Hatfield, History; Barbara Mossberg, Honors College**

**Major: International Studies**

**Abstract:**

This paper will examine Native American student retaliation and activism in the face of assimilationist educational policies and curriculum at both the Warm Springs Boarding School on the Warm Springs Reservation, and at Chemawa Boarding School in Salem Oregon, from the 1930s to the 1970s. I will argue that through the use of vocational education, Christian ethics and citizenship training, and cultural “safety zones” (Ruhl), Oregon Native American boarding schools attempted to assimilate their Native American students by instilling belief in the ideals of American citizenship, Christian morality, and work ethic. I will demonstrate that over the course of the 20th century, student and community activism against these assimilationist policies took the forms of retaliation against school authorities, community legal activism on behalf of the Native American students, creative student activism through literary publications such as *The Chemewa American*, and finally through student legal activism in the form of the Indian Student Bill of Rights in 1972. I utilized an extensive array of resources, both archival and oral in nature, throughout my research process. I spent a great deal of time working with historic periodicals, the Bureau of Indian Affairs archive collection from the National Archives and Records Administration, digitized Historic Oregon newspapers, UO theses and dissertations, microfilm, and oral histories from Northern Paiute Tribal Elders from the Confederated Tribes of Warm Springs, Wilson Wewa and Myra Johnson-Orange.

**Why Cordova? Exploring the Connection between Science, Policy and People**

**Poster: 45**

**Presenter: Miró Merrill**

**Co-presenter: Taylor Richmond**

**Mentor: Mark Blaine, Journalism**

**Major: Journalism**

**Abstract:**

In 1964, the second most powerful earthquake ever recorded uplifted the Copper River Delta. This created a shift from saltwater to freshwater marsh over a broad area, and started a new line of succession for plant and animal species. The quake, combined with a variety of hydrologic features and a tremendous bio-abundance yet lack of biodiversity, made the region a somewhat controlled environment for scientific study. It's also a place with significant natural resources that are deeply connected to the Cordova community. Within this environment, we saw an opportunity to explore the connection between scientists, policy makers and constituents, and look at communicating climate science through the network that connects those three groups of people on the Copper River Delta. Using a broad range of multimedia and multi-platform storytelling techniques and tools, we began a multiyear process of documenting attitudes and values communities facing climate change.

**Title: Siem Reap Province of Cambodia**

**Creative Work Presentation: 46**

**Presenter: Hannah Miller**

**Mentors: Peg Boulay, Environmental Studies; Marquis Blaine, Journalism**

**Major: Journalism**

**Abstract:**

During the fall of 2014, I spent three months interning with The Trailblazer Foundation, located in the Siem Reap province of Cambodia. The Trailblazer Foundation works to address sustainable living, create self-sustaining programs, foster community based development, provide opportunities for self-employment and economic independence, reduce dependency on international aid, and find additional solutions to alleviating poverty. The Trailblazer Foundation integrates local communities in their projects while facilitating conservation related practices, as well as outreaches to the global conservation community. While working with and living among the people of Cambodia, a country that impacted my life profoundly, I was able to photograph much of the Cambodian culture and ways of living.

**Title: The No Outsiders Classroom Project**  
**Creative Work Presentation: C5 (Gumwood Room)**  
**Presenter: Jessica Miller**  
**Co-presenters: Kalynn Jaramillo, Rhue Buddendeck, Ana Osorio, Antonina Pevzner**  
**Mentors: Julia Heffernan, Education Studies; Maure Smith-Benanti, LGBTESSP**  
**Major: Psychology**

**Abstract:**

Queering the Teacher's Desk: Education Studies 111 focuses on issues and problems in education. As a culminating critical pedagogy activity in the fall of 2014 every discussion section for this course decorated an old school desk to represent themes in public education. A single section of EDST 111 was filled entirely with LGBTQ students living in the UO Gender Inclusive Student Housing. This group maintained an academic focus on gender and sexuality studies in education. The LGBTQ cohort professor was the director of the master's degrees and licensure program in teacher education. The cohort itself was designed as a disruption of heteronormativity in teacher education. Along with critical pedagogy readings the LGBTQ cohort was assigned the concept of reimagining the teacher desk. At the end of the term these students were given the actual "Teacher's Desk" to paint in an act of reclaiming the classroom. Of particular importance to the project are the following statistics:

- 74% of queer students are verbally harassed at school
- 61% of queer students report school based harassment get no relief
- Queer students are three times as likely to miss school on a monthly basis
- Queer students have lower grade point averages than their peers
- Queer students are twice as likely to not plan to pursue post-secondary education

This work has been displayed at the College of Education.

**Title: An Interspecific Comparison of Variance in Sex-Based Developmental Markers**  
**Poster: 47**  
**Presenter: Kyle Morley**  
**Mentors: Andrea Eller and Frances White, Anthropology**  
**Major: Anthropology**

**Abstract:**

Sexual dimorphism varies with the degree of male-male competition among primates. Changes in body size of both sexes are well known during ontogeny, but less is known about how osteological developmental markers vary under differing levels of sexual selection. Male-male competition is reflected in a species' body size sex ratio: humans are reported to have a 1.2 ratio, while rhesus macaques have a 1.6 ratio. We predict greater results for larger bodies and canines in macaque males compared to macaque females and humans as well as greater growth marker variation among macaque males than in these other groups. We documented dental eruption and epiphyseal fusion in 292 macaque skeletal specimens and compared the data to over 25,000 individuals using published human population data. Two-way ANOVAs without replication were used to test whether species had similar variation in dental eruption and fusion time. The two species had significantly different eruption variation (males  $F=33.71$ ,  $df=15,1$ ,  $p < 0.0001$ ; females  $F=119.06$ ,  $df=15,1$ ,  $p < 0.0001$ ) with macaques more variable than humans. Both species also had different ranges in fusion time ( $F=7.28$ ,  $df=13,1$ ,  $p < 0.05$ ) with macaque males more variable than human males. The results support our prediction that macaque males show the greatest variation in these growth markers. Interspecies comparisons of developmental plasticity, such as this study, allow for inferences on how growth variation is affected by sexual selection.

**Title: Vôla Manganika Vôla: An Ethnographic Study of Vanilla Exportation in the SAVA Region of Madagascar**  
**Oral Presentation**  
**Presenter: Caellagh Morrissey**  
**Mentors: Kathie Carpenter, International Studies; Lindsay Braun, History**  
**Major: History**

**Abstract:**

From ice cream to body lotion, everyone knows the taste and scent of vanilla, but where does it come from and what are its impacts? This study aims to determine the negative impacts of vanilla production and exportation in

Madagascar by exploring the sources of these negative impacts and identifying ongoing or potential solutions. Data was collected through interviews with growers, collectors, exporters, and community members. People involved with each stage experienced exportation differently and held distinct views concerning what they saw as specific issues within the industry. However, there was a general consensus that the boom-bust cycle was detrimental to poverty-stricken growers, and that quality has declined as international competition has increased. Previous solutions to these issues included farmer cooperatives, governmental and regional legislation, regional associations, and international fair-trade practices. From interviews it was discovered that vanilla exportation leaves Malagasy farmers vulnerable, while shielding both producers and exporters from many of the negative impacts of poverty and dependency. This case study reveals the modern impacts of colonial extraction and how discourse can diffuse blame when each level of production considers others to be culpable for faults in the system. It also reveals a complex system of active negotiation, which brings vanilla to the world market, and ultimately allows us to enjoy that distinct flavor.

**Title: The Censorship of German Video Games: The Effects of National Sensitivity to Violence on Entertainment Content**

**Oral Presentation**

**Presenter: Hannah Mueller**

**Mentors: Rick Silva, Digital Arts; Louise Bishop, Honors College**

**Major: Digital Arts**

**Abstract:**

Germany is one of the strictest censors of violence among the world's video game consumers. Due to its history and a cohesive national opinion, the legislature limits content severely, much more severely than the surrounding European nations. This results in international developers choosing not to market to Germany, creating censored titles specifically for the German market, or finding themselves on a list of banned titles. With the proliferation of online shopping and availability of international products, the banning of violent content is somewhat ineffective. The anti-violence measures tailored to video games become demonstrative, essentially a stance of the German government to not endorse graphic gore in gaming without taking preventative action that may violate personal rights. This research provides a survey of the German video game community as well as an examination of games imported to and exported from Germany in order to demonstrate the current state of the industry and to illustrate how national sensitivity to violence effects entertainment content. This thesis research is not intended to be a critique of the German system, but an objective study of legal legislature, systematic censorship, and the German market through the lenses of interviews, impartial research, and case studies of specific game titles.

**Title: Ice Cube's Star Text: Rejecting the Hip-Hop "Gangsta"**

**Oral Presentation**

**Presenter: Kenneth Mullins**

**Mentors: Priscilla Ovalle, Cinema Studies; Peter Alilunas, Journalism**

**Majors: Cinema Studies and Journalism**

**Abstract:**

For many rappers, hip-hop gives them an outlet to express their masculinity, using a combination of braggadocio, misogyny, and violence to demonstrate their "hardness." For others, hip-hop is an outlet for teaching, a way for them to speak out against the culture of violence that they have chosen to reject. The goal of this project is to explore how black masculinity is defined and depicted by hip-hop music, particularly in the creation and rejection of the "gangsta" stereotype; in a time when racial politics are at the forefront of the national discussion, understanding how these stereotypes are created and how they operate is more important than ever. By analyzing the film and music career of rapper Ice Cube, we can see how he has simultaneously contributed to and criticized this stereotypical depiction of black masculinity. As both a film and music star, Ice Cube provides a rich body of work to analyze this form of black racial identity. Through a close reading of his film appearances in *Boyz n the Hood* (1991) and *Friday* (1995), as well as his 1993 solo album *The Predator*, we can see how Ice Cube negotiated the "gangsta" stereotype, subverting it in a way that made his transition from hardcore gangster rapper to children's film star seem natural.

**Title: Just Stories: Telling Stories with Communities**

**Creative Work Presentation: C11 (Gumwood Room)**

**Presenter: Laura Nausieda**

**Co-Presenters: Alex Deck, Arica Sears, Lauren Rapp, Rowan Hardenbrook, Arielle Shamash, Emma Sloan, Hope Tejedas, and Marla Waters**

**Mentors: Kathryn Lynch and Aylie Baker, Environmental Studies**

**Majors: Environmental Studies and Anthropology**

**Abstract:**

Using video, audio and photography, the goal of the Environmental Leadership Program's Just Stories Team is to collaborate with local partners to document communities responding to environmental injustice. Winter term we worked with community members in Cedar Valley, Oregon to create the film *Drift: A Community Seeking Justice*. In October 2013, a helicopter spraying herbicides over recent clearcuts dripped chemicals over local residents, several tributaries of the Rogue River and lands abutting the local school. Residents immediately began reporting negative health effects. The 20-minute film documents the aftermath of the aerial spray incident as well as the community's efforts to organize locally and call for statewide community health protections. *Drift* was screened at the State Capitol in March as well as the Public Interest Environmental Law Conference at the University of Oregon. It aims to spread awareness about Senate Bill 613, which would require the Oregon Department of Agriculture and the Department of Forestry to create spray buffer zones for homes, schools, drinking water and fish-bearing streams. Spring term, we are working with women who are leaders in their communities in responding to pesticide drift to learn about their visions of change. In addition to sharing some of these stories, we will talk about our process of community-centered media-making as a catalyst for meaningful change on environmental justice issues.

**Title: Leading with Livability: A Framework for Building Community Consensus on Frequent Transit Networks**  
**Oral Presentation**

**Presenter: Brianna Nicoello**

**Mentors: Robert Zako, Sustainable Cities Initiative; Marc Schlossberg, Planning, Policy and Public Management**

**Major: Planning, Policy and Public Management**

**Abstract:**

Looking ahead, the cities of Eugene, Oregon and Springfield, Oregon are preparing for an influx of 50,000 new residents over the next 20 years – yet, there are no large-scale plans to build or widen infrastructure. Thus, existing corridors must be retrofitted to accommodate both vehicular and alternative modes of travel, particularly frequent transit that runs at least every fifteen minutes. This research examines values surrounding public transit in Eugene and Springfield and if there is potential for agencies to engage the community around these values to create greater consensus on frequent transit projects. Drawing on interviews with several hundred residents and key stakeholders, I found that residents largely value transit as an interdependent and societally necessary public good, although their views diverge in regards to funding transit networks. These conclusions produced a framework that focuses on building community consensus through emphasizing shared values that can be applied to inter-agency efforts in mid-sized cities to envision and expand frequent transit networks.

**Title: Fossil Eulipotyphla from Oregon's Middle Miocene: New Occurrences and Biogeographic Patterns**

**Poster: 48**

**Presenter: Danielle Oberg**

**Mentors: Samantha Hopkins and Edward Davis, Geology**

**Major: Geology**

**Abstract:**

Insectivores (eulipotyphlans) are not well understood in the Miocene of Oregon. Recent discoveries from a new locality, Cave Basin, in the John Day Formation suggest a greater diversity of insectivores than was previously known. Early Miocene records are extremely poor and lack small mammals entirely. However, the Middle and Late Miocene explode with new families never seen before in southern Oregon. The Middle Miocene has the greatest insectivore diversity with occurrences of ancient shrews (heterosoricidae), red-toothed shrews (soricidae), true moles (talpidae), and hedgehogs (erinaceidae) clustering around the Oregon-California border in southeastern Oregon. Fourteen Middle Miocene localities have red-toothed shrews and true moles, while hedgehogs and ancient shrews are found

in two localities. Diversity rapidly decreases for ancient shrews and hedgehogs throughout the Late Miocene and into the Clarendonian, but remains relatively constant for true moles and red-toothed shrews. Red-toothed shrew Late Miocene localities are further south and less clustered than Middle Miocene ones. True mole localities have a greater spread across eastern Oregon, ranging from the Oregon-Washington state line to the southern corner of Oregon. These new discoveries in the Oregon Miocene are a significant addition to the understanding of the Oregon fossil record. Furthermore, these insectivores reveal new insight into the paleoecology of the Miocene, changes in diversity over time, and evolution of insectivores that are still found in Oregon today.

**Title: Riparian Restoration, Monitoring, and Adaptive Management at Berggren Watershed Conservation Area and Vickerey Park as conducted by the UO Environmental Leadership Program's Stream Stewardship Team, 2015**

**Oral Presentation**

**Presenter: Alex Ode**

**Co-presenters: Jon Bergan, Norman Trevor, Autumn Gardner, Ryan Nord**

**Mentors: Peg Boulay and Maya Rommwatt, Environmental Studies**

**Majors: Environmental Studies and International Studies**

**Abstract:**

As part of the Environmental Leadership Program and in conjunction with the McKenzie Watershed Council, we are continuing the restoration and monitoring of riparian zones in the Berggren Watershed Conservation Area. The overall goals of our project are to restore and maintain function habitats in the Berggren Watershed Conservation Area and its neighbor, Vickerey Park. Degraded habitats and loss of native riparian vegetation within the McKenzie Watershed area are resulting in adverse conditions for key fish species and lowered water flow and quality. Riparian planting projects and other restoration techniques have been implemented and it is essential now that these be monitored. The proposed technical assistance activity is to monitor these projects in addition to monitoring water quality through various protocols in order to ensure that the goals of the McKenzie Watershed Council are being met. OWEB funds will be used to support these monitoring efforts. The 2015 installment of these monitoring efforts will conclude in the spring and be published in a report for use by the McKenzie Watershed Council, Lane County Parks, and others. We hope to add to the growing literature surrounding ecological restoration, as well as provide useful documentation for our partners working at Berggren Watershed Conservation Area and Vickerey Park.

**Title: Asymmetrical Heteroatom Substitution in the Indenofluorene Framework**

**Poster: 49**

**Presenter: Nathaniel O'Neal**

**Mentors: Michael Haley and Jonathan Marshall, Chemistry**

**Major: Biochemistry**

**Abstract:**

Semiconductors are a key component in electronics because they allow for the control of electron flow throughout a device. Research has shown that organic molecules can act as semiconductors and could prove superior to current semiconductors in use. To further this field of study the Haley lab has developed and experimented on the indenofluorene, an n-type organic semiconductor. However, most of the work done on the framework has been on symmetrical heteroatom substitutions. This has left me with the task of using synthetic chemistry techniques in order to produce asymmetrical heteroatom substituted indenofluorene molecules known as benzo-indaceno-thiophenes. Theoretically, this asymmetry will allow for superior stacking of the molecules in a crystal structure and allow for more efficient electron transfer than its symmetrical predecessors. To date, the substitutions have not made a significant enough change to the overall motif of the structure to produce a notable difference but the knowledge garnered from such experimentation is valuable to the field as a whole.

**Title: Men's Perception of Family Planning and the Resources Available to Them in Igoda, Tanzania**

**Oral Presentation**

**Presenter: Lauren Ott**

**Mentor: Kristin Yarris, International Studies**

**Major: International Studies**

**Abstract:**

In rural Tanzania, accessing resources and educating citizens about family planning (FP) options is often a challenge, especially for men. Therefore, the aim of this research is to examine men's perceptions of FP and the resources available to them. To further examine this issue, 25 surveys were disseminated and 25 men took part in 4 focus group discussions in the Igoda village in the Mufindi region of Tanzania during October 2014. Findings reveal that in rural Igoda the majority of men feel FP is not a women's issue alone but a shared responsibility. Still, men need to be included further in the conversation to better meet community needs. One in four men surveyed demonstrated an unmet need for FP, stating that they wanted to delay pregnancy but were not currently using any FP. Access to government clinics and hospitals is still significantly limited; thus the lack of availability has limited FP practices in the community. Recommendations based on these findings include that the government do more to better educate men and reduce barriers to access to FP so they can participate to the same extent as their wives. Tanzania has a fertility rate of 5.4 children per woman, significantly higher than the global 2.6 child average. Therefore, understanding FP practices provides powerful insight into the health and development of Tanzania and similar nations.

**Title: Normal as Found: Opportunities and Challenges in Developing a Necropsy Protocol for Evolutionary Veterinary Medicine**

**Poster: 50**

**Presenter: Carly Pate**

**Co-Presenters: Andrea Eller and Ulirike Streicher**

**Mentors: Frances White and Lawrence Ulibarri, Anthropology**

**Major: Anthropology and General Science**

**Abstract:**

Evolutionary veterinary medicine is a burgeoning field, applying evolutionary perspectives to comparative and veterinary data. Because evolutionary research focuses on natural variation across species, veterinary medicine is an obvious partner for understanding nonhuman anatomy. To meet this goal, cross-disciplinary work is required, but we need to be able to compare and exchange data. Utilizing the comparative collections in the University of Oregon Primate Osteology Lab, and in collaboration with both an evolutionary biologist and a wildlife veterinarian, we present a protocol that is designed for many vertebrate species and includes procedures for collecting normal and pathological variation. Published necropsies are surprising rare. Veterinary necropsies tend to be pathology-based, whereas anthropologists' are focused on normal variation within and between species. The protocols cited and described in veterinary medicine tend to be particular to a single species and do not document repeatable procedures. Anthropological research tends to focus solely on the anatomical area of interest. We are developing a protocol using a uniform and explicit technique, so that the data can be analyzed and compared across disciplines. We pay particular attention to tissues that have evolutionary significance in their degree of variance like fat, skeletal muscle, brain weight, gastro-intestinal tract and bone. We include placental mammals, marsupials, and reptiles in our initial phase of data collection. This protocol will be utilized for ongoing comparative research.

**Title: Aestheticism: A Curious Crucible of Pain and Pleasure**

**Oral Presentation**

**Presenter: Sean Pebler**

**Mentors: Forrest Pyle and Corbett Upton, English**

**Major: English**

**Abstract:**

Walter Pater's "The School of Giorgione" appealed to me because it addressed a concern I had with aesthetic texts. Most texts largely ignore the sensory training it requires to behold an aesthetic experience. I refuse to believe that art can attack just the senses alone. This theory would necessarily mean that each person is as capable of experiencing extraordinary aesthetics as the next. While this idea- utilitarian in concept- is appealing, I believe it takes some previous ability to apprehend notions of Beauty. I was struck by this realization while walking away from class a few days ago. It came after we had discussed Pater's essay, specifically the notion that all art aspires towards musical

qualities. While walking and listening to *Beethoven: Piano Concerto #1*, I began to view objects as if music were emanating from them. Not only did I view plants and buildings this way, but human interaction as well. It was this synesthesia, this mixing of the aural and visual that prompted goose bumps in me. What could possibly be wrong with such unexpected, tingling joy?

**Title: Savage Squaw, Shaman Seductress, or Sovereign Savior: Representing Native Female Identity in Videogames**

**Oral Presentation**

**Presenter: Anna Peckinpah**

**Mentor: Kirby Brown, English and Native Studies**

**Major: English**

**Abstract:**

In the United States alone, currently more than 183 million people play videogames. When it comes to producing cultural ideology that leads to consequential discourse and stereotypes in video games, one of the most problematic depictions of minority characters occurs with the depiction of First Nation people. Due to the closely tied correlations of cinematic film tropes to videogames, westerns and other films featuring indigenous identity inaccurately illustrate Native women and negatively impact how games depict aboriginality. Often, the harmful game portrayals follow the cinematic precedents of either the explicitly racist caricature of the ignoble savage “squaw” and/or the hyper-sexualized and fetishized “Indian princess”. With non-natives depicting Native female identity with the ideological approach of the ignoble versus noble, videogames continue the legacy of so many films and television series that bastardize the accuracy and nuanced uniqueness of each First Nation woman’s identity and history by conglomerating common tropes of westernized perceptions of “Indianness”. The only way to counteract the harm caused by such misrepresentation requires Native videogame makers to reassert their sovereignty and control over telling their history and experiences without catering to colonial desires or tropes. A careful examination will emerge on how certain cinematic narrative techniques and tropes in games affect the progression from explicitly racist and violently sexist portrayals of Native women in videogames, to a sympathetic but still sexually objectifying and inaccurate rendering of indigeneity that still relies on distorted versions of history to alleviate colonial guilt. A final critical move illustrates how Native-produced games challenge such conventions via the creation of nuanced, humanized, and thoroughly researched and authentically historic depictions of First Nation female identity and uniqueness.

**Title: Albert Einstein and Ralph Waldo Emerson: Inspiration for Effective Scientific Communication and Education**

**Oral Presentation**

**Presenter: Phoebe Penix**

**Mentor: Barbara Mossberg, Honors College**

**Major: General Science**

**Abstract:**

Ralph Waldo Emerson and Albert Einstein were extraordinarily famous in their respective times. Their revolutionary ideas have potential to inform today’s scientific culture and communication such that the result is a more informed and scientifically literate public. Albert Einstein wrote: “The greatest scientists are artists as well.” Einstein expresses this idea in various contexts and forms throughout his writing. In his address, “The American Scholar,” Ralph Waldo Emerson criticizes the state of academia, and offers suggestions as to how scholars might improve their effect on society. He emphasizes being inspired to action rather than cramming one’s mind with facts. Emerson’s work reflects deep wonder and awe at nature. Einstein shares the same attitude of wonderment, and shows how such an attitude can shape scientific discovery. Einstein and Emerson each expressed revolutionary conceptions of good scholarship, science, and world citizenship. Their ideas remain innovative and informative even today. Both believed in education as an invaluable catalyst of world change; both emphasized that valuing creative and individual thought is key to societal progress. They saw that empowering thinkers to personal growth and freedom would spur them to seek improvement within their spheres of influence. When considered together, their unique, yet similar approaches toward science lend profound insight to attitudinal changes with potentially far-reaching effects in today’s scientific community and broader world.



**Title: Investigation of the Effectiveness of Offensive Computer Security Techniques through Group Self-Study**  
**Poster: 52**  
**Presenter: Adam Pond**  
**Mentors: Jun Li and Kathleen Freeman, Computer Science**  
**Major: Computer Science**

**Abstract:**

Computer security, otherwise known as cyber security, is a broad and dynamic subfield of computer science. It is concerned with protecting computing systems, embedded devices, networks, and data from unintended or unauthorized access. While computer security was not one of the fundamental ideas at the beginning of computing, it's now one of the most interesting fields of computer science, especially the arms race between computer security defense personnel and hackers. One of the most important ways we can learn to defend against adversaries such as hackers is by learning how to think like them. An effective way of thinking like your adversary is by performing penetration tests against the computing system you're trying to protect. These penetration tests require a unique skill set that is best acquired through trials and tribulations (commonly called capture the flag events). During a capture-the-flag event, you simulate an adversary trying to gain access, or change data on a computing system that you should not be able to. Since this type of studying was not an option through standard academic courses, I set out to create a group environment in which to study and apply offensive security techniques. I will present the curriculum that I created and used during our weekly meetings of UO Security Club and the results and suggested changes from this experience.

**Title: Prehistoric Human Adaptations to Climate Change?: An ArcGIS Analysis of Northern Side-notched Projectile Points in the Northern Great Basin**  
**Poster: 53**  
**Presenter: Jordan Pratt**  
**Mentor: Patrick O'Grady, Museum of Natural and Cultural History**  
**Major: Anthropology**

**Abstract:**

Climate change dramatically transforms the ecological zones that humans call home. Historically there have been many global warming periods, including the Pleistocene-Holocene transition, during which humans were forced to adapt to a loss of water and biotic diversity. The northern Great Basin region of eastern Oregon, provides an ideal case in which to study human adaptation to climate change. In this region, the Pleistocene-Holocene transition was followed by multiple smaller shifts in climate. The early middle Holocene of around 8,000 calendar years before present provided one of these warming periods, in which the local environment became much drier and more arid. Northern Side-notched points, a type of dart point, date to ca 7,000-4,000 cal. BP, and are one of the few pieces of material culture that have reliably been dated to the early middle Holocene in the northern Great Basin. Analysis of Northern Side-notched points collected by the Burn's Bureau of Land Management District and UO Museum of Natural and Cultural History's Archaeological Field School will be used to establish a more concrete means of classification for these projectile points, especially those being found in eastern Oregon. Then ArcGIS will be used to geospatially analyze the distribution of the projectile points throughout the Burn's BLM District compared to known obsidian sources. By analyzing the distribution of projectile points and movement of materials across the landscape, insights can be made into prehistoric trade mobility and settlement patterns which may indicate human adaptations to environmental change.

**Title: The Body Talks**  
**Creative Work Presentation: C10 (EMU Ballroom Main Stage)**  
**Presenter: Alyssa Puleo**  
**Co-Presenter: Stephanie Ennes, Eleanor Christenson, Ferena Kagata**  
**Mentors: Walter Kennedy and Brad Garner, Dance Department**  
**Major: Dance**

**Abstract:**

In my experience as a dance major at the University of Oregon, I have noticed that dancers are completely integrated from daily dance classes, and have a wide range of movement vocabulary to support their audible statements in a conversation. A dancer's body recognizes the feelings behind the statements being made, and adds to their point of view, by visually displaying their emotional reaction to the moment. I believe dance could be considered its own

expressive language, because every formal language has a defined and limited vocabulary, but personal movement expressions do not. I hosted an improvisational dance therapy session over the span of two days. My dancers, Eleanor Christenson, Stephanie Ennes, and Ferena Kagata, were asked to remember a time and feeling in their life that they did not know how to directly put into words. The movement was rich and lived, with a lot of happenstance parallels between all three dancers. Their feedback was most interesting. They felt relieved after the process had come to a conclusion, almost as if they had released the emotional response out of their expression system, but didn't have to use a codified language. I was thrilled with this, because I believe those who are terrified of talking to people about their anxiety or depression, can engage in an activity like this, and perhaps gain some comfort and relief from the pressure to keep it bottled up. Often times, people allow this to happen because they don't feel comfortable allowing their bodies to live loose. Children are animated beyond belief in their movement, because it is socially acceptable to be expressive as a child. The older people become, the more rigid they are in their ability to express themselves through movement. I understand also that everyone is different, and not everyone expresses feelings through body animation. My goal in this study was to host a safe space for these people to observe new ways of moving by tapping into a different sensations and intentions to dance. In diving into the experience, they received feedback from their body about areas of tension and held traumatic experiences. Memories were revisited after years of neglect, and a cognitive shift occurred after the emotions were released from the subjects' bodies. We created choreographed two group phrases but will be improvising in two other sections to save the sense of wonder and surprise that comes with tuning in to the human body.

**Title: Mickey Mouse and the Creation of an Animated Star**

**Poster: 54**

**Brandon Rains**

**Mentor: Priscilla Ovalle, English**

**Digital Arts and Cinema Studies**

**Abstract:**

Mickey Mouse is one of the most well-known and influential animated cartoon characters in modern society. All of his mannerisms, voice, personality and characteristics have been created by a team at the Walt Disney Animation Studio in order to achieve success and major stardom. Mickey's large eyes, rounded shape, inviting smile, energetic and exaggerated actions, versatility and simplicity are all important factors decided by his creators. Other possible influences on his success include technological innovations: synchronized sound, storyboard techniques, and multi-plane cameras. He is a completely fabricated character. I am interested in establishing my own animation and character design techniques based off of the work done with Mickey Mouse. Much of my research will be gathered from extensive analysis of the design, personality and actions of Mickey Mouse in short films from the 1930s. I plan to take all the research I have gathered on Mickey Mouse and alter different processes and techniques in order to fulfill my own goals as an animator. I will also become fully engaged in the creative process and deconstruct drawings and clips by physically drawing Mickey Mouse. My goal is to successfully create an animation that is capable of reaching and influencing a mass audience. As I begin to create my own animated works and star characters it will be crucial for me to understand the sacrifices I am willing to make in order to succeed.

**Title: The Stellar Apartments: Dynamic Stories from Passive Buildings**

**Oral Presentation**

**Presenter: Lindsay Rasmussen**

**Co-Presenter: Erik Schmidt, Ashley Tuffo, Annie Chiang**

**Mentor: Alison Kwok, Architecture**

**Major: Architecture**

**Abstract:**

In August of 2013, the first affordable, multifamily housing project in the United States to reach Passive House (PHIUS) certification was completed in the outskirts of Eugene, Oregon. The 54-unit Stellar Apartment complex was funded by the Saint Vincent de Paul Society of Lane County (SVdP) as part of their community development and outreach in the Eugene-Springfield region. Each of the complex's 12 buildings complies with Oregon State's Earth Advantage (EA) standards, except one, which reaches further and meets Passive House (PH) certification. It was hypothesized that the PH units would perform 60% better than the EA units. The Stellar Research Team consists of a group of undergraduate and graduate researchers who have been monitoring and evaluating the energy use and indoor environmental quality of two buildings in the complex over a two year period. This project offers an analysis of the first year-and-a-half of energy and heating performance outcomes for the PH and EA buildings. Early findings

show that occupants of the PH units are using approximately 50% less space heating energy than occupants in the EA units. There was a lag time of about one week before PH occupants turned on their space heater as compared to their EA neighbors in the colder season. Additionally, the overall energy use averages are of similar proportion, with PH units using 35% less energy in total. Throughout the research process data were reported back by the student research team to SVdP and the architects to better inform their future projects.

**Title: Analysis of Dynamic Balance Control in Below-Knee Amputees with Use of Powered Prosthetic Foot**  
**Poster: 55**

**Presenter: Shaun Resseguie**

**Mentors: Michael Hahn and Jake Hinkel-Lipsker, Human Physiology**

**Major: Human Physiology**

**Abstract:**

The powered prosthetic foot (PPF) is designed to provide below-knee amputees (BKA) with active propulsion and plantar flexion similar to that of the biological limb. Previous studies have demonstrated the PPF's ability to increase BKA walking speeds, while reducing the energetic costs, however, little is known about its effects on dynamic balance control. The purpose of this study was to assess dynamic balance control in a sample of BKA subjects during level-ground walking and obstacle crossing tasks. Control subjects (n=5) and BKA subjects (n=4) were instructed to complete a series of functional walking tasks during each lab visit. The BKA subjects completed the walking protocol twice, first in their traditional passive prosthetic foot and again in the prescribed PPF after two weeks of acclimation. Motion data were collected via a 10-camera system with a 53-marker and 15-segment body model. Center of mass (CoM) motion and peak velocity within the frontal plane were analyzed and used as functional indicators of dynamic balance control. Preliminary findings from the study indicate that BKA subjects wearing the PPF generally experienced a greater mediolateral CoM motion and peak velocity, thus signifying a reduced ability to maintain dynamic balance control. Our findings may be of particular interest to clinicians and PPF designers working to improve the amputee population's quality of life. Further data analysis is needed to support these initial findings.

**Title: A Different Kind of Barbarian: African Societies in the Hellenistic World**

**Oral Presentation**

**Presenter: Tarik Richardson**

**Mentors: Eric Richardson, President NAACP Lane County Chapter; Nathanael Andrade, History**

**Majors: History and African Studies**

**Abstract:**

History is scarcely written by radical thinking in the current day; more often history is a tradition that is taught, passed down from teacher to student. In this transmission of knowledge biases from past times tint what is being learned. One such bias that has plagued history is that of White Supremacy which was rampant in the Colonial era. This supremacist ideology poisoned and corrupted history, with its effects lasting to this very day. White supremacist and colonist would state that Africa had no important history or noteworthy contributions to civilization until they were fortunate enough to be conquered by the powers of Europe. My research challenges this notion to the core; not only did African societies play an active role in history, but they were also key players in the development of society and civilization. This research titled, "A Different Kind of Barbarian," examines the relationships between the Hellenistic societies of the time and foreigners or barbarians who surrounded them. In this examination of history, through Hellenistic era sources, we begin to see that the relationship that African societies and people--namely the populace and priestly class of Egypt and the Nubian states of Meroe and the later Axum--is inherently different with the Greeks than the rest of the barbarians. We then look at the legacy of this relationship through critical analysis of classical sources.

**Title: Design and Synthesis of a Coordination Complex for Dinitrogen Rejection from Natural Gas**

**Oral Presentation**

**Presenter: Nicholas Rinehart**

**Mentor: Dave Tyler, Chemistry**

**Major: Biochemistry**

**Abstract:**

Natural gas provided 28% of total energy consumption during 2014 in the United States. Nearly 20% of current natural gas wells are too contaminated with nitrogen gas, making them unsuitable for use in natural gas burning equipment. Current methods of decontaminating natural gas are too expensive for small gas fields. A method for more cost-effective decontamination of natural gas is needed. The Tyler Lab has demonstrated that a coordination complex can be used to decontaminate natural gas by selectively removing nitrogen gas from the mixture. For true economic feasibility, a new coordination complex has been designed. The newly designed coordination complex will be discussed in terms of both the design and synthesis of the complex.

**Title: Paleocology of the Enigmatic Rhinoceros *Chilotherium* in Central Asia**

**Poster: 56**

**Presenter: Selina Robson**

**Mentors: Samantha Hopkins and Edward Davis, Geology**

**Majors: Geology and Psychology**

**Abstract:**

We report a new occurrence of the rhinocerotid *Chilotherium* in the Kochkor basin in Kyrgyzstan. While some geologic reports refer to *Chilotherium* in Kyrgyzstan, no described material exists from the country and all published material has gone missing. Therefore, our new material is important for not only recognizing the occurrence of the genus, but also understanding the evolution, ecology, and dispersion of various fossil taxa including *Chilotherium*. Few studies have examined the global distribution of *Chilotherium*. While the taxon is not uncommon, we found that 84% of *Chilotherium* specimens were found in China. Thus, the Kyrgyz specimens represent an important geographic extension of the taxon, and may clarify the relationship between ecology and species diversity. Our database of *Chilotherium* occurrences only reports localities above 2,000m elevation. While paleoaltitudes may be different than modern altitudes, recent studies support the construction of both the Himalayan and Tien Shan ranges prior to the late Mio/Pliocene. This indicates that *Chilotherium* occupied an ecological niche that is different from other rhinos. Of the collected fossils from Kyrgyzstan, *Chilotherium* is the most abundant taxon. A species level diagnosis of *Chilotherium* is difficult because the taxonomy is poorly constrained. There are three valid species but close to 20 published species. By mapping occurrences globally, we hope to clarify taxonomic relationships as well as to assign the new Kyrgyz material to a species level.

**Title: Mapping the Trends: Assessing Paid and Organic Search Behavior**

**Poster: 57**

**Presenter: Kelly Rodgers**

**Mentor: Kim Sheehan, Journalism (Advertising)**

**Major: Journalism (Public Relations)**

**Abstract:**

Last December, Google Inc. reported a whopping \$66 billion in total revenue for 2014 alone. Surprisingly, just one branch of the Google money tree accounted for approximately 90% of that revenue: online advertising. In 2014, Google AdWords generated over \$59 billion in advertising sales—income that backs every innovative project, invention, acquisition, and investment Google undertakes. However, to someone using a search engine, the process of how the results on the page appear after the search is conducted is somewhat opaque: some ads are ‘organic’ and appear based on a Google algorithm, and others are paid, or ‘sponsored’ advertisements. Therefore, the search results presented on a page contain certain signals that may affect how users perceive the credibility of the results. Additionally, the manner in which results are presented: through text ads and through map placements, may also affect credibility. Through investigation of search query results presented in a graphic/visual way, we can measure potential impact on user actions, while contributing to existing studies on credibility and user bias.

**Title: “Nature’s Especial Repository:” Symbolic Meaning in Gerald of Wales’ Descriptions of the Environment in the British Isles**

**Oral Presentation**

**Presenter: Doug Sam**

**Mentor: Michael Peixoto, Honors College History**

**Majors: Environmental Studies and Geography**

**Abstract:**

Following the twelfth-century Anglo-Norman invasion of Ireland, King Henry II of England sent Gerald of Wales to tour the newly conquered territory. Throughout his travels in Ireland, Gerald describes the land and geography he encountered. His inclusions of environmental detail hint at the spiritual and imperial aspirations of the Norman conquerors. Using depictions of the environment from Gerald’s *Topographia Hibernica* (1187), with other twelfth-century narrative accounts of the natural features of the British Isles, my research explores medieval perceptions of human-environmental interactions. Focusing on the spiritual, economic, and political meanings attached to the characterization of natural objects, I show how concepts of both the real and imagined environment took on a symbolic function in depicting the worth of Ireland’s conquest. For example, Gerald writes of the “fruitful and fertile” land, yet describes that “only the granaries are without their wealth.” The Irish therefore weren’t using the land to their advantage thus, in the Anglo-Norman perspective, were primitive—conquerable. Long before the rise of the British Empire as a global power, European writers such as Gerald were already experimenting with the idea of the primitive and natural as justification to civilize and convert. This dichotomy frequently builds upon a discourse of development centered on the human and physical geography of the subaltern, thus creating a language of environmental prejudice, one that persists to the present day.

**Title: Grounding Lynda Barry’s *One Hundred Demons*: Proving Her Book’s Original Common People Audience**

**Oral Presentation**

**Presenter: Grace Shum**

**Mentors: Ben Saunders and Corbett Upton, English**

**Majors: English, Digital Arts and Advertising**

**Abstract:**

Lynda Barry’s graphic novel, *One Hundred Demons*, has been touted as high art by critics – a major feat for a graphic novel; yet, critics applaud the book as an art book and not a graphic novel. In my research, I try to show that while Barry’s work may be considered “high art” her original intention for the graphic novel, like for all comics, is for the general populace’s enjoyment; it is not an elaborate collage, it is a scrapbook. Research was conducted through a primary analysis of the book as well as some analyses of critical essays concerning Barry’s book and work. Through a careful analysis of her book and her use of what she terms “Autobiofictionalography”, my essay proves the low-art or the common art quality of her book. I argue that comics do not need to be relabeled as high art or an artist book in order to have critical acclaim be acceptable. Instead, comics should be lauded in the literary world for what they are even if their genesis comes from the cheap five-cent paperbacks.

**Title: The Cellular Basis of Dermal Bone Evolution and Development in Threespine Stickleback Fish**

**Poster: 58**

**Presenter: Sophie Sichel**

**Mentor: William Cresko and Kristin Alligood, Biology**

**Major: Biology**

**Abstract:**

In vertebrates the development of the cranial skeleton is imperative because it provides structure and support for a number of critical organs. Cranial structures vary immensely across vertebrates, but how did these different mechanisms of morphogenesis evolve at the developmental and cellular level? To elucidate the molecular mechanisms controlling variation in morphogenesis, I used the opercle bone of threespine stickleback fish as a model. Threespine stickleback are used as a model to investigate vertebrate evolution because of rapid changes between ancestral oceanic and derived freshwater forms of this fish. The opercle bone is a neural crest-derived dermal bone that is critical for respiration, foraging and communication in stickleback, undergoes morphogenesis during development, and varies among populations. Neural crest cells form the facial skeleton of vertebrates through intramembranous ossification. After the initial condensation, bone shaping is hypothesized to be dependent on the

recruitment of new osteoblasts in a space and time dependent manner, and variation in bone morphogenesis would therefore be linked to differences in osteoblast recruitment. To test this hypothesis, I conducted in situ hybridizations using a probe to *col10a1*, which is a gene present in the cartilaginous precursor of mature dermal bone, on stickleback embryos at various times during embryonic development. This probe allowed me to visualize the developing opercle and a proliferation assay to visualize proliferating cells thought to be contributing to the developing bone. I quantified the number of proliferating cells and determined their distribution near the developing edge of the opercle in two different populations of stickleback: a population that exhibits an ancestral phenotype and a population representing the derived phenotype. I will present results describing how the number of cells recruited varies among populations. Determining the molecular and genetic factors that underlie opercle development and how they differ between ancestral and derived populations could provide evidence for how development and evolution interact on a larger scale.

**Title: The Effect of Different Light Wavelengths on the Dust Microbiome**

**Poster: 59**

**Presenter: Andy Siemens**

**Mentors: Jessica Green and Erica Hartmann, Biology**

**Major: Biology**

**Abstract:**

Different light treatments affect the growth of certain bacterial strains in the built environment, however little is known about the effect of light on an entire bacterial community. The goal of this study is to investigate the impact of UV vs. visible light on the viability of the dust microbiome. We developed a method to quantify viable dust by treating samples with the DNA-binding agent propidium monoazide (PMA), which prevents the amplification of DNA from non-viable cells during polymerase chain reaction (PCR). This technique was used to determine the amount of DNA from live vs. dead cells by comparing amplified 16S gene copy numbers with and without PMA treatment using quantitative PCR (qPCR). As a pilot study, dust samples were treated with broad-spectrum light to determine the appropriate dosage for killing dust microbes. The built environment was simulated using light boxes designed by the Energy Studies in Buildings Laboratory. Experiments were performed in triplicate using identical box setups for each trial. In future experiments, the relationship between different wavelengths of light and bacterial viability will be tested by subjecting dust samples to sunlight with UV wavelengths removed, sunlight with visible and infrared wavelengths removed, and dark conditions. The results from these studies will influence the choice of light filtering in windows for buildings such as hospitals where the elimination of pathogens is extremely important.

**Title: Age-Related Differences in Healthy Male Runners**

**Poster: 60**

**Presenter: Justine Silberberg**

**Mentors: JJ Hannigan and Li-Shan Chou, Human Physiology**

**Major: Human Physiology**

**Abstract:**

Previous research suggests that older males display less ankle plantar flexion and greater hip flexion during gait compared to younger individuals. Differences in running gait between younger and older individuals, however, are largely unknown. This study investigated differences in strength, flexibility, and range of motion between younger runners ( $n = 15$ ; age range = 18-21) and older runners ( $n = 10$ ; age range = 40-51). All subjects were males who ran at least 20 miles per week. For testing, subjects ran continuous laps of approximately 40-meters in the Motion Analysis Laboratory. Running kinematics were collected using a 10-camera motion capture system, strength was measured using a Biodex System 3 dynamometer, and flexibility was measured statically by a trained clinician. Independent sample t-tests were used to examine group differences. Older individuals were found to have increased hamstring flexibility, increased first metatarsal-phalangeal joint range of motion, decreased quadriceps flexibility, and decreased trunk flexion compared to younger runners ( $p < 0.01$ ). Limitations include the relatively small sample size and cross-sectional nature of this study. Understanding age-related differences in running gait may help clinicians better treat injuries in older runners. Future studies exploring age-related differences in running should recruit a wider age range and follow these individuals over time.

**Title: Education and Discrimination in Armed Conflict: Equitable Access and Educational Barriers for Syrian Refugee Children**

**Oral Presentation**

**Presenter: Namratha Somayajula**

**Mentor: Professor Diane Baxter, Anthropology**

**Major: International Studies**

**Abstract:**

The birth of a new Lost Generation—As it enters its fifth year, the civil war in Syria has caused unimaginable destruction across a dynamic and colorful society, and has reduced it to a landscape of violence and fear. Through a review of existing literature, a study of relevant provisions of international law, and interviews with experienced individuals in the field, this paper will focus on the educational barriers that refugee children of the Syrian civil war face. The conflict in Syria has resulted in the loss of well over 215,000 lives, an exodus of thousands of refugees every day, the rapid proliferation of viruses and disease, and the shattering of vital infrastructure. An overwhelming number of schools in the country are now either destroyed, or used as shelters for displaced Syrians. In the midst of the crisis, international funds have flowed into the region to provide for food, shelter, and other basic necessities. However, various barriers have restricted the effective funneling of these funds, and have also not allowed funds to be properly allocated towards educational infrastructure in host communities, a lack of which will severely hinder the re-empowerment of refugee communities in the future. In further analyzing the conflict and resulting educational circumstances, I will emphasize, in my paper, the need to re-distribute international efforts, and implement systems of accountability, in similar circumstances of armed conflict to prevent the re-birth of yet another Lost Generation.

**Title: “Education in Ladakh: An Overview of the Interactions between an Indigenous Community and Their Government.”**

**Oral Presentation**

**Presenter: Emma Stahl**

**Majors: Ethnic Studies and Sociology**

**Abstract:**

This paper observes the manners in which Indigenous education has been impacted by state mandated requirements in the most Northern region of India, Ladakh. After the amalgamation of Ladakh into the Indian National state in 1947, the Indigenous peoples began seeing drastic changes emerge in their high, trans-Himalayan home. Cars became a frequented sight, as well as foreigners, after the area was opened to tourists in the 1970s; Ladakhis now fell under the jurisdiction and governing of the Jammu and Kashmir state. This paper focuses on the development of education provided for Ladakhi youth after coming under Indian rule. The research acquired for this paper was conducted through interviews at several educational facilities in Leh, the capital of Ladakh, as well as at government offices involved in decision making for education within the region and at The Students Educational and Cultural Movement of Ladakh (SECMOL), a school intended to provide culturally responsive education for Ladakhi youth who were unable to pass one of their state mandated standardized tests. This paper concludes that while the educational environments within government schools have improved, the Ladakhi people have created their own institutions to fill the gaps that the government created within their youth's education.

**Title: Variability Selection Hypothesis, Weed Macaques, and Body Size Variance**

**Poster: 61**

**Presenter: Harry Sullivan**

**Mentors: Andrea Eller and Frances White, Biology**

**Major: Biology**

**Abstract:**

Variability Selection Hypothesis (VSH) proposes that early Homo gained adaptive benefit from being flexible in novel or unpredictable climates. Increased intra-taxon variation in body size and the expansion of geographic ranges in early Homo populations suggests greater phenotypic and developmental plasticity. Similar levels of ecological flexibility have been documented in some species of macaques, earning them the moniker of “weed species”. We compare body size variance between weed and non-weed macaques to determine whether intrataxon variation in body size

positively correlates with ecological flexibility, as proposed by the VSH. We used two sources of body size data for all available taxa: original data on postcranial osteological body size estimators (seven species, n=49), and published body masses for nineteen species. Fourteen osteometric body size estimators on the humerus, radius, ulna, femur, and tibia were included. All estimators show a tight correlation with body mass: R<sup>2</sup> values range from 0.79 to 0.95 with a mean of 0.9. Variance per estimator per species was calculated, as proxies for body mass variance. Averaged estimator variances in non-weed species range from 1.71-11.34, but only 2.26-4.36 within weed species. This data analysis indicates that weed macaques do not exhibit more intrataxon body size variance than non-weeds. Macaques are under-utilized ecological referents for human evolution, and this genus' diversity is informative for understanding the role of adaptive flexibility in primate evolution generally.

**Title: Precarious Aspirations: Hopes and Dreams in an Age of Individualized Risk**

**Oral Presentation**

**Presenter: Andrew Swift**

**Mentors: Jill Harrison and CJ Pascoe, Sociology**

**Majors: Sociology and Psychology**

**Abstract:**

Over the past several decades, neoliberal political-economic shifts have significantly expanded the extent of economic insecurity in the United States. Today's young adults making the transition from college to the labor force face unique challenges stemming from these changes. In this project I investigate these new forms of insecurity from the viewpoint of those who experience them. In particular, I examine how class background shapes the individual responses to insecurity. Previous research has demonstrated how the aspirations and expectations of the working class becomes "leveled", preparing them to accept their lower position in the class hierarchy. However, the neoliberal transformations of risk, uncertainty, and precarity increasingly threaten the previously safe aspirations of the middle class as well. How do the aspirations and expectations of middle and working class college students fare in this era of widespread insecurity? To answer this question, I conducted 20 semi-structured qualitative interviews with college seniors and graduates from different class backgrounds. My findings indicate that class-based individual aspirations and expectations play a key role in shaping the individual emotional and symbolic responses to insecurity, speaking to the enormous importance of class in organizing private, interior experiences.

**Title: An Unwelcome Legacy: Investigating the Relationship between Colonialism and Climate Change**

**Vulnerability**

**Oral Presentation**

**Presenter: Chloe Talbert**

**Mentor: Ronald Mitchell, Political Science**

**Majors: Computer Science and Political Science**

**Abstract:**

This research examines the relationship between climate change vulnerability and colonialism, in an attempt to identify and explain any correlation between a country's colonial history, and its level of risk to climate change. Adaptation to climate change is becoming a more essential part of climate change policy. To determine adaption policies, we must first determine what climate changes we will have to adapt to. This means determining how vulnerable we are to climate change, and in what areas. Using the DARA Vulnerability Monitor, I have identified a pattern, by which countries with colonial histories have the highest vulnerabilities to climate change, where non-colonial countries have the lowest. This relationship is investigated in two different case studies, China and Mongolia, and Japan and Indonesia. This research compares these countries' socio-economic indicators of vulnerability, and consults the literature surrounding said indicators to determine how they affect a country's vulnerability. These same factors are then examined in relation to colonialism, using literature surrounding colonialism and its affects, to determine how colonialism influences these factors. Combined, these findings suggest that having a colonial history increases a country's vulnerability to climate change. However, this research focuses on a single aspect of vulnerability, economic loss, and the next step in research would be to assess the same issue with different kinds of vulnerability, to see if these results are consistent.



**Title: The Unequal States of America: Examining Why we Recognize Gender Inequality Abroad that We Fail to Recognize at Home**

**Oral Presentation**

**Presenter: Chloe Talbert**

**Mentors: Anita Chari and Erin Beck, Political Science**

**Majors: Computer Science and Political Science**

**Abstract:**

Prompted by several contradicting activist efforts in the United States, this research examines the discrepancy between the level of gender inequality we identify in the United States, and the level of gender inequality we identify elsewhere. Using three case studies to present this discrepancy, Rape Culture in India, Female Genital Surgeries in MENA countries, and Veiling, I examine these as examples of hypocrisy in how we recognize inequality. This research identifies two part process by which this hypocrisy occurs, the first of which is our failure to recognize gender inequality in the United States, and the second of which is our focus on gender inequality elsewhere. Each step is examined as a result of two uniquely American applications of both Liberalism and Feminism. Using existing literature and my own research, I investigate the consequences that these two two schools of thought have on our understanding and experiencing of inequality. These findings suggests that they work to obfuscate the gender inequality that exists here, and further work to divert our focus abroad, creating a focus and effort that further obscures inequality in the United States. This research could explain the relative strength of patriarchy and gender inequality in the United States, as well as offer a method by which to examine the permanence of other social systems and institutions.

**Title: Do Progenitor Subpopulations Contribute to Zebrafish Enteric Nervous System Development?**

**Poster: 62**

**Presenter: Charlotte Taylor**

**Mentors: Judith Eisen and Julia Ganz, Biology**

**Major: Biochemistry**

**Abstract:**

The enteric nervous system (ENS) provides intrinsic intestinal innervation and modulates intestinal function. The ENS forms a complex network of neuronal and glial subtypes. ENS progenitors that give rise to this network express different marker genes, e.g. *phox2b*, *sox10*, and *ret*. Using the zebrafish model, we investigated whether expression of these markers defines distinct ENS progenitor subpopulations. Gene expression revealed subpopulations, the most prominent of which are characterized by the following combinations: *phox2b*; *phox2b/ret*; *phox2b/sox10*; *phox2b/ret/sox10*. We will now determine whether these distinct progenitors have functional significance for ENS development. We will use the Cre/loxP lineage tracing system to track progeny of distinct progenitor subpopulations and determine if they give rise to different ENS cell types. Using BAC-recombineering, we will generate BAC-constructs that drive Cre recombinase expression under enteric progenitor specific promoters (e.g. *ret*). To test if BAC enteric progenitor promoter sequences drive expression faithfully, we are generating BAC-constructs that drive expression of green fluorescent proteins (GFP). We are currently analyzing ENS GFP expression of a modified *ret* BAC. After generating Cre-constructs, we will inject them into a reporter line and identify progeny of labeled progenitors at different times during ENS development. Our results will provide a comprehensive lineage analysis of ENS precursors *in vivo* and thus offer new insights into ENS development and the potential of individual ENS precursors.

**Title: Recycled Insulation for Resource Scarce Regions**

**Poster: C7**

**Presenter: Katrina Tran**

**Co-Presenters: Kyle Plata and Alex Weaver**

**Mentors: Alison Kwok and Mathieu Deraspe, Architecture**

**Major: Architecture**

**Abstract:**

This experiment sought to assess the efficacy of using excess trash as a solution to resource scarcity in the developing world by testing the thermal efficiency of glass bottles as an insulating material. The glass bottles were packed densely with shredded paper and then laid on their sides into a rough wall assembly. The general thermal efficiency of this recycled insulation was tested inside a thermal hotbox using HOBO data loggers, which measured

the temperatures inside the “hot” and “cold” sides of the hotbox for twelve hours. The hypothesis was that the recycled insulation could sustain a temperature difference greater than 5°F for at least three hours after applying heat to the “hot” side of the hotbox. The data collected showed a temperature difference greater than 5°F for four hours after the heating period. Once the original hypothesis held true, further testing was conducted using a heat flux transducer in order to calculate an exact R-value for the recycled insulation. The transducer data showed that the recycled insulation has an R-value of 15 hrft<sup>2</sup>°F/Btu. The results of this experiment indicate that this insulation may be suitable for mild to moderate climates.

**Title: The Correlation of Prehistoric Wells, Groundwater Resources, and Statues on Easter Island Imply Greater Understanding of Natural Landscape by Prehistoric Rapanui People**

**Poster: C6**

**Presenter: Sadie Trush**

**Mentors: Terry Hunt, Honors College Anthropology; Nick Dreher, Environmental Studies**

**Major: Environmental Science**

**Abstract:**

Commonly overlooked in the numerous narratives of Easter Island's mystery, is the most critical resource to human beings: freshwater. Recent field research on the Island has focused on *puna* (archaeological well features) that may have allowed the prehistoric Rapanui people to obtain this essential element. An RC quadcopter, high resolution camera, and trimble unit were used on this research project to create 3-dimensional reconstructions of the *puna*, while the coastline was manually surveyed to find traces of freshwater at the marine interface. These two data sets were geographically compared with previously mapped locations of *moai* and *ahu* (great stone statues and platforms), since *puna* are always found within 50 meters of an *ahu* presentation. Additionally, in these areas notable amounts of fresh, potable, groundwater seeps into the sea. This correlation of *puna*, potable water, and *ahu* with *moai* suggests a connection between resource use and *moai* placement, and challenges previous beliefs that *moai* were merely 70-ton manifestations of ancestor worship. In fact, the correlation may reflect the Rapanui's connection to the natural landscape and understanding of limited resources. Given current freshwater shortages, these findings not only lend themselves to further knowledge of water resources on Easter Island in the context of Rapanui prehistory, but may also assist modern Rapanui people to utilize local water resources instead of shipping it thousands of kilometers from Chile.

**Title: Jewish Civicism in Oregon: How Jews Became Successful in a Plainly Racist State**

**Oral Presentation**

**Presenter: Jacob Valleau**

**Mentors: William Toll, History; Daniel Tichenor, Political Science**

**Major: Political Science**

**Abstract:**

Oregon Jews flourished economically and politically despite living in a state with many pro-hegemony laws, including severe measures such as a constitutional amendment barring blacks from entering the state. The purpose of this thesis is to answer the following questions using theories of historical regionalism coupled with demographic data, laws, and primary writings of the founders of Oregon from the mid-19th century through 1930. Why is there a general lack of anti-Semitism in a society that was (and some have argued, still is) determined to be racially hegemonic? Jews from Germany, a group favored by the immigration board of Oregon, created a lasting impact both economically and socially in Oregon. As Eastern European and Sephardic communities moved to Oregon and developed their own synagogues, larger systems of social control such as the various benevolent societies and the B'nai B'rith consolidated the ethnic variation of Oregon Jews, succeeding at reducing the ability for divisive groups like the Ku Klux Klan to blame Jews for any strife. The economic successes of the Oregonian Jewish merchant class made the Jewish ethnicity pronounced in the public eye. The integration of Jews into the majority ruling class in the West helps explain the strength of the Oregon Jewish ethnic group both civically and economically. This research helps answer the question: what defines “otherness” in the state of Oregon?

**Title: Influences on U.S. Mammal Diversity over the 20th Century: Implications for Future Response to Climate Change**

**Poster: 63**

**Presenter: Kendra Walters**

**Mentor: Edward Davis, Geology**

**Majors: Geology and Biology**

**Abstract:** Biodiversity loss is recognized as a global crisis. Current research strives to quantify and predict the change in biodiversity throughout the world, focusing on a wide range of taxa. However, current predictive models of mammal diversity in the United States suffer from low precision. They are not scaled with adequate spatial or temporal resolution because richness has not been evaluated at a broad spatiotemporal scale. Our research is a high-resolution analysis of the changes in mammal diversity in the continental United States through the last 110 years. We collected mammal occurrence data from the online database VertNet and individual museum collections, divided it into ten year increments, and used scripts in ArcGIS 10.2 to produce sampling-standardized patterns of mammal diversity in each decade. We then analyzed the geographic distribution of diversity change over the 20th century. Mammal diversity in the last century increased in two regions: one northern horizontal strip between 43° and 47° latitude and one southeast strip from Texas to North Carolina. Diversity decreased throughout the rest of the United States. Our study describes regions in the United States that are experiencing the most severe biodiversity changes which suggests that those regions should be focal areas for conservation efforts. Further directions include testing hypotheses about the role of climate and human population change to influence these patterns of mammal diversity shifts.

**Title: How Smartphone Use during Walking Affects Ability to React to an Unexpected Event in Young Adults**

**Poster: C8**

**Presenter: Deborah Wang**

**Mentors: Li-Shan Chou and On-Yee Lo, Human Physiology**

**Major: Human Physiology**

**Abstract:**

College students often engage in risky mobile phone behaviors. Though texting while driving has been an extensively studied, the issue of texting or other smartphone usage while walking has only been recently examined as a daily hazard. This project focused on how smartphone usage affected a person's response to an unexpected event when the subject was looking intently at the screen. This study examined the failure rate as the subject stopped in front of a projected line, and associated gait characteristics including stride length, center of mass (COM) velocity and COM medial-lateral sway. In this experiment, whole body motion was collected with 29 reflective bony landmark markers and a 10-camera system. Subjects first stopped in front of a projected line at the same location, and with the same timing for 5 trials (expected condition, EX). Subjects were then asked to stop in front of the line projected at different times or locations for 10 trials (unexpected condition, UN), and then simultaneously completing a Stroop test on an iPod touch under the same unexpected condition for another 10 trials (UN\_Stroop). A Stroop test has subjects pick the ink color a word of a color (IE green, blue or red) is written in (IE green, blue or red). This made the UN\_Stroop condition the most challenging. UN and UN\_Stroop had a higher failure rate than the 0% of EX (33% and 17% respectively). Furthermore, with smartphone usage, gait velocity and stride length decreased while medial-lateral sway increased, which could negatively impact pedestrian safety.

**Title: Where the Wild Things Grow: A Case Study of Ventilation in Bathrooms**

**Poster: 64**

**Presenter: Hannah Ward**

**Co-presenters: Alex Collins and Julia Frost**

**Mentors: Alison Kwok and Tom Collins, Architecture**

**Major: Architecture**

**Abstract:**

According to the City of Eugene's website, newly constructed bathrooms must either have an operable window or "a venting system capable of 50 cubic feet per minute" controlled by "a dehumidistat, timer, or similar means of automatic control."<sup>1</sup> Spaces that do not provide enough ventilation can often be susceptible to damage such as mold growth and dry rot if humidity levels reach a certain point and stay there consistently. As Eugene is a mild and humid climate, many buildings have issues with mold growth because of high humidity levels. This study will

assess which ventilation strategies are supportive in reducing humidity levels and ultimately preventing mold growth in a damp climate, such as Eugene. Specifically, this study will test the hypothesis that apartments with continuous bathroom ventilation systems are more capable of maintaining 50% RH [relative humidity] than apartments with non-continuous bathroom ventilation systems. To test the hypothesis, the study used a two-phase approach, which included four HOBO data loggers<sup>2</sup> to record the relative humidity of three different apartment bathrooms using three different styles of ventilation, before testing the capacity of airflow from the two bath fans. Our results show that active ventilation techniques are not the only effective way to ventilate a space and, in fact, one of the bathrooms using an active fan actually performed worse than a comparable, passively ventilated bathroom.

**Title: The Western Genre and Gun Violence in United States Culture: Using Theatre as a Laboratory for Social Critique**

**Oral Presentation**

**Presenter: Ariella Wolfe**

**Mentors: Michael Najjar, Theatre Arts; Mark Carey, Honors College**

**Major: Theatre Arts**

**Abstract:**

The contemporary theatre director has the opportunity to encourage socially critical thought during the production process and in theatergoing audiences. This study seeks to demonstrate how the Western genre, which has mythicized the way of life on the United States frontier during westward expansion, can be used as a framework to understand the prevalence of gun violence in the contemporary United States. Moreover, the project endeavors to explore the theatre as a forum to address this issue. My methodology incorporates an application of my synthesis of Bertolt Brecht's *dialectical* theatre to my direction of *Afterlife*, a Western genre play by Nicholas J. Maurer. The play suggests parallels between the issues of gun violence in the Western genre and present concerns regarding gun violence in our contemporary society. Following each performance I conducted post-show discussions with audience members to qualitatively assess how they critically engage with the cultural norms of gun use and gun violence. This study presents an interdisciplinary approach, drawing on theatre directing theory, performance studies, history and sociology. The central argument of this thesis is that a socially conscious approach to theatre directing—taking into account the cultural, economic and social forces shaping the characters' actions—will encourage audiences to engage cultural questions and recognize their ability to transform society. This research hopes to contribute to ongoing investigations that articulate the significance of theatre as a tool for social critique and social change.

**Title: The Study on Global AGEing and Adult Health (SAGE): Body Composition Measurements among Aging Populations**

**Poster: 65**

**Presenter: Austin Wong**

**Mentors: Josh Snodgrass and Melissa Liebert, Anthropology**

**Major: Biology**

**Abstract:**

Frequently used as a predictor of obesity-related health risks, body mass index (BMI) estimates general adiposity instead of abdominal obesity, and does not distinguish between fat and lean mass. Further, previous research has found it is possible for adults to maintain a normal BMI, yet increase their waist circumference (WC) over time. This makes BMI a less accurate predictor of cardiometabolic risk in older adults (>50 years old). While measures of central obesity have been found to be better indicators of cardiovascular disease than BMI, debate continues over the optimal measure of central adiposity. The current study uses data from the World Health Organization Study on global AGEing and adult health (SAGE), a longitudinal study of nationally representative samples from older adults in six middle income countries (China, Ghana, Mexico, India, Russian Federation, and South Africa). We examine associations among body composition measures (BMI, WC, waist-to-stature ratio, and body adiposity index) across age groups, sex, and country. Furthermore, this study investigates associations between body composition measures and hypertension. We hypothesize that: 1) abdominal obesity measures will increase with age groups but decrease in those over 80 years old, 2) stronger associations will be found between abdominal adiposity measurements and blood pressure, and 3) diverse associations will be found in the populations examined due to a variety of factors including diet, urbanization, and health care access.

**Title: Experience of a Lifetime: Study Abroad, Trauma, and Institutional Betrayal**

**Oral Presentation**

**Presenter: Naomi Wright**

**Mentors: Jennifer Freyd and Carly Smith, Psychology**

**Major: Psychology**

**Abstract:**

While the number of U.S. undergraduates studying abroad during college continues to increase, emerging research suggests these students are at risk for experiencing trauma (Kimble, Flack, & Burbridge, 2013). The current study is the first to expand the investigation of study abroad risks to include a range of possible traumas, and to examine the unique effects of institutional betrayal (i.e., an institution's failure to effectively prevent trauma or adequately support victims) in the study abroad setting. Many respondents (45.44%, n = 79) reported personally experiencing or witnessing at least one potentially traumatic experience (e.g., transportation accident, sexual assault, etc.) while studying abroad. Of these students, more than a third (35.44%, n = 28) also reported experiencing at least one form of institutional betrayal. As hypothesized, when controlling for previous trauma history, the experience of institutional betrayal uniquely predicted posttraumatic outcomes for witnessing and experiencing several types of study abroad trauma. This study revealed that students are experiencing a broader range of traumatic events during study abroad than previous research has indicated. It also illuminates possible patterns of trauma based on characteristics of study abroad experiences. Additionally, this study extends prior research by underscoring the importance of understanding institutional impact before, during, and after a student studies abroad.

# Undergraduate Symposium 2015 Presenters

Ashley Adelman	Dante Douglas	Taylor Kay	Kyle Plata
Abdulhad Almumen	Joel Ek Dahl	Shannon Keener	Adam Pond
Ashleigh Angel	Andrea Eller	Amanda Kibbel	Emma Porricolo
Julia Arensen	Samantha Elwood	Vivian Kim	Jordan Pratt
Jericho Bankston	Stephanie Ennes	Kelli Kimura	Alyssa Puleo
Julia Barber	Stephanie Evers	Madison Kirby	Kenny Quillan
Tyler Barrett	Elliott Ewing	Rachel Klas	Brandon Rains
Samantha Bates	Taylor Eymann	Helena Klein	Lauren Rapp
Alexander Bean	Harrison Fontaine	Irene Klock	Lindsay Rasmussen
Alexa Beck	Julia Frost	Anthony Kollmorgan	Shaun Resseguie
Liam Beckman	Hannah Fuller	Kristen Kruse	Tarik Richardson
Connor Benson	Niria Garcia	Kevin Lai	Taylor Richmond
Jon Bergan	Autumn Gardner	Zoe Lavier	Nicholas Rinehart
Eva Bertoglio	Dana Glasscock	Dan Le	Selina Robson
Zachary Bigalke	Rachel Glenzer	Kimberly Lerner	Kelly Rodgers
Benjamin Blue	Hannah Golden	William Leroux	Doug Sam
Varneet Brar	Amanda Gonzales	Anna Lind	Erik Schmidt
Roslyn Braun	Daniel Goodkin-Gold	Kaitlin Livingston	Arica Sears
Megan Bruun	Alison Goodwin	Yang Lv	Arielle Shamash
Laura Buckmaster	Miles Gordon	Becca Marshall	Kerry Sheehan
Rhue Buddendeck	Leslie Gotuaco	Kyla Martichuski	Grace Shum
Alex Burgdorfer	Hannah Greenberg	Ashlynn McGraw	Sophie Sichel
Melanie Burke	Annika Gustafsson	Ayantu Megerssa	Andy Siemens
Michelle Bynum	Ella Hansen	Sarah Menard	Justine Silberberg
Jessica Cantu	Rowan Hardenbrook	Miro Merrill	Laurel Sleeper
Davis Carlisle	Sarianne Harris	Hannah Miller	Emma Sloan
Auschere Caufield	Brennan Heller	Jessica Miller	Namratha Somayajula
Alex Caves	Nicole Hendrix	Kyle Morley	Emma Stahl
Kyungla Chae	Alexandra Henry	Caellagh Morrissey	Ulirike Streicher
Maddie Cheek	Eve Hirschman	Joey Moser	Harry Sullivan
Annie Chiang	Forrest Hirsh	Hannah Mueller	Andrew Swift
Brady Chiongbian	Sean Hixon	Kenneth Mullins	Chloe Talbert
Eleanor Christenson	Luke Holladay	Laura Nausieda	Chloe Talbert
Kelsey Clarke	Sophia Hoover	Irene Nenot	Charlotte Taylor
Alex Collins	Sarah Hovet	Brianna Nicoello	Hope Tejedas
Devan Compton	Hanzhao Huang	Ryan Nord	Katrina Tran
Lindan Comrada	Samuel Huck	Danielle Oberg	Norman Trevor
William Crowley	Wilson Hui	Alex Ode	Sadie Trush
Alex Dang	Fred Hutchison	Nathaniel O'Neal	Ashley Tuffo
Jason David	Micaela Hyams	Kate Ortiz	Jacob Valleau
Maxine David	Kalynn Jaramillo	Ana Osorio	Kendra Walters
Benjamin Davies	Andrew Jeckell	Lauren Ott	Deborah Wang
Kirsten Dawes	Noelle Jones	Carly Pate	Hannah Ward
Alex Deck	Taylor Jones	Sean Pebler	Marla Waters
Parham Diba	Tyler Jorgensen	Anna Peckinpah	Alex Weaver
Will Dickerson	Kylie Juggert	Phoebe Penix	Ariella Wolfe
Taylor Dodrill	Sophia June	Antonina Pevzner	Austin Wong
Emma Dorland	Ferena Kagata	Brad Phillips	Naomi Wright

# Undergraduate Symposium 2015 Faculty Mentors

Jennifer Ablow	Scott Fisher	Alicia Kirsten	Kristen Reinhardt
Carlos Aguirre	Scott Fitzpatrick	Alex Krajkowski	Eric Richardson
Peter Alilunas	Davita Flowers-Shanklin	Alison Kwok	Robert Rocklin
Nathanael Andrade	David Frank	Robert Kyr	Tricia Rodley
Aylie Baker	Kathleen Freeman	Patricia Lambert	Maya Rommwatt
Monique Balbuena	Jennifer Freyd	Ana Lara	Benjamin Saunders
Stephen Banse	Stephen Frost	Stephanie LeMenager	Marc Schlossberg
Diane Baxter	Daphne Gallagher	Jun Li	Steven Shankman
Louise Bishop	Julia Ganz	Melissa Liebert	Azim Shariff
Mark Blaine	Sally Garner	Carl Lipo	Kim Sheehan
Peg Boulay	Brad Garner	On-Yee Lo	Rick Silva
Lindsay Braun	Alison Gash	Kathryn Lynch	Carly Smith
Kirby Brown	Weiblen George	Kathy Lynn	Maure Smith-Benanti
Vienna Brunt	Jessica Green	Jonathan Marshall	Josh Snodgrass
Jamie Bufalino	Michael Hahn	Robert Mauro	Helen Southworth
Mark Carey	Michael Haley	Leslie McLees	Sean Stankowski
Kathie Carpenter	Shane Hall	Jeffery Measelle	Lynn Stephens
Anna Carroll	J J Hannigan	Bret Mercier	Kirstin Sterner
Ulrick Casimir	Jill Harrison	Christopher Minson	Matt Streisfeld
Shankha Chakraborty	Erica Hartmann	Ronald Mitchell	Kelly Sutherland
Anita Chari	Robert Haskett	Barbara Mossberg	Jessica Swanson
Chris Chávez	Kevin Hatfield	Kiersten Muenchinger	Ben Taber
Hank Childs	Julia Heffernan	Michael Najjar	Analisa Taylor
Li-Shan Chou	Jake Hinkel-Lipsker	Jessie Nance	Daniel Tichenor
Thomas Collins	Alison Ho	George Nazin	William Toll
William Cresko	Sara Hodges	Greg Nelson	Erin Treiber
Edward Davis	Samantha Hopkins	Patrick O'Grady	Dave Tyler
Leah Deblander	Terry Hunt	Jennifer O'Neal	Lawrence Ulibarri
Scott DeLancey	Joana Jansen	Priscilla Ovalle	Corbett Upton
Mathieu Deraspe	Elsa Johnson	C J Pascoe	Anita Weiss
Nick Dreher	Deion Jones	Michael Peixoto	Monte Westerfield
Stephen Dueppen	Angela Joya	Quinn Peterson	Frances White
Keith Eggener	Lamia Karim	Patrick Phillips	Ann Womack
Judith Eisen	Tyler Kendall	Jennifer Phillips	Kristin Yarris
Andrea Eller	Walter Kennedy	Rupa Pillai	Naomi Zack
Trygve Faste	Clifford Kentros	Forest Pyle	Robert Zako

# Undergraduate Symposium 2015 Presenter Statistics

**Total presentations:** 129

**Total presenters and co-presenters:** 195  
(129 presenters and 66 co-presenters)

**Total faculty mentors:** 143

**Total majors:** 46

**Multi-term projects:** 74 (57%)

**Single-term projects:** 41 (31%)

**Study abroad/international research projects:** 9 (7%)

**Service learning projects:** 5 (4%)

**Poster presentations:** 64 (50%)

**Oral presentations:** 56 (43%)

**Creative work projects:** 9 (6%)

**Science projects:** (43%)

**Social science projects:** 45 (34%)

**Humanities projects:** 19 (15%)

**Fine Arts projects:** 10 (7%)

## **Majors Represented**

(including double majors for interdisciplinary projects):

### **College of Arts and Sciences: (136)**

Anthropology: 15

Biology: 13

Human Physiology: 13

Psychology: 13

Environmental Studies: 10

English: 8

International Studies: 6

Biochemistry: 5

Computer and Information Science: 5

History: 5

Political Science: 5

Geology: 4

Math: 4

Environmental Science: 3

Sociology: 3

Spanish: 3

Cinema Studies: 2

General Science: 2

Geography: 2

Humanities: 2

Linguistics: 2

Physics: 2

African Studies Minor: 1

Chemistry: 1

Economics: 1

Ethnic Studies: 1

General Social Science: 1

Japanese: 1

Latin American Studies: 1

Philosophy: 1

Theater Arts: 1

### **College of Education (1)**

Educational Foundations: 1

### **Lundquist College of Business: (2)**

Business Administration: 2

### **School of Architecture and Allied Arts: (17)**

Architecture: 6

Digital Arts: 4

Product Design: 3

Art History: 1

Art Management Minor: 1

Nonprofit Administration Minor: 1

Planning, Public Policy and Management: 1

### **School of Journalism and Communication: (11)**

Journalism: 7

Journalism-Public Relations: 2

Journalism-Advertising: 1

Journalism-Media Studies: 1

### **School of Music and Dance: (2)**

Dance: 1

Music Composition-Organ Performance: 1

### **Clark Honors College: (45)**

- 33% of all primary presenters are CHC students
- Natural Science majors: 24
- Social Science majors: 16
- Humanities majors: 7
- Architecture and Allied Arts: 2
- SOJC, MUS, and LCB: 1 in each school or college
- Undeclared: 2



