The mission of the EWU Student Research and Creative Works Symposium is to promote student research, scholarship, and creative activity done in partnership with faculty as a vital component of higher education. Students, faculty, and administrators are invited to attend to hear and discuss undergraduate and graduate creative and scholarly work.

“We are not what we know but what we are willing to learn.”

Mary Catherine Bateson (1939 - )
American writer and cultural anthropologist
Eastern Washington University
16th Annual Student Research & Creative Works Symposium

Day One
Tuesday, May 14, 2013
4:30 p.m. – 9:00 p.m.

Fine Arts Complex

4:30 p.m.  Welcome from President Rodolfo Arévalo and Dr. Lynn Briggs, dean of the College of Arts, Letters & Education

Presenter Check-In Begins
Art Building, Lobby and Entrance

4:30 - 8:00 p.m.  Appetizers and Refreshments
Art Building, Lobby

4:30 - 9:00 p.m.  Art Exhibits
Art Building, Gallery and Lobby

5:15 - 7:00 p.m.  Music Composition Presentations
Art Building, Gallery

6:30 – 8:55 p.m.  Film Presentations
Radio-Television (RTV) Building, Room 123

6:30 – 9:00 p.m.  Creative Writing Presentations
Art Building, Auditorium Room 116

6:30 – 8:00 p.m.  Theatre Presentations
University Theatre, 2nd Floor Studio
Eastern Washington University
16th Annual Student Research & Creative Works Symposium

Day Two
Wednesday, May 15, 2013
8:00 a.m. – 5:00 p.m.

Senior Hall and Hargreaves Hall

7:30 a.m.  Presenter Check-In Begins
           Senior Hall Entrance

8:00 a.m. - 3:00 p.m.  Information Tables: EWU Library, Graduate Studies, McNair Scholar
                       Program, NCUR, Service Learning, The Easterner
                       Senior Hall Lobby

8:00 a.m. - 12:10 p.m. Morning Oral and Interactive Presentations
                       Senior Hall, Rooms 101, 124, 201, 203, 204, 221, 243, 302, 304, 306,
                       2nd Floor Lounge

8:00 a.m. - 12:00 p.m. Morning Poster Presentations
                       Hargreaves Hall Reading Room

Luncheon, Pence Union Building (PUB), MPR

12:00 - 1:30 p.m.  Opening Remarks from Dr. Ron Dalla, Vice Provost, Graduate Education,
                   Research, Academic Planning & Evaluation
                   Introduction by Dr. Vickie Shields, dean of the College of Social &
                   Behavioral Sciences and Social Work
                   Keynote Address, “What Happens When Research and Servant
                   Leadership Cross Paths?” by Dr. Scott Finnie from the Africana
                   Education Program and the Department of History

Senior Hall and Hargreaves Hall

1:30 - 5:00 p.m.  Afternoon Oral and Interactive Presentations
                   Senior Hall, Rooms 101, 124, 201, 203, 204, 221, 243, 302, 304, 306,
                   2nd Floor Lounge

1:30 - 3:00 p.m.  Afternoon Poster Presentations
                   Hargreaves Hall Reading Room
2013 Inspirational Quote

“We are not what we know but what we are willing to learn.”

~ Mary Catherine Bateson
American writer and cultural anthropologist, (1939- )

The mission of EWU Student Research and Creative Works Symposium is to promote student research, scholarship, and creative activity done in partnership with faculty as a vital component of higher education. This year the Symposium Planning Committee chose the above-mentioned quote by Mary Catherine Bateson to exemplify this mission.

Mary Catherine Bateson was born on December 8, 1939 in New York City, New York. Bateson was born to two famed anthropologists, Margaret Mead and Gregory Bateson, is married to Barkev Kassarjian, Professor of Management at Babson College, and is the mother of actress Sevanne Martin. Bateson is a graduate of the Brearley School and received her B.A. from Radcliffe in 1960 and her Ph.D. from Harvard in 1963.

Bateson has taught at nearly a dozen universities globally, including Harvard, Amherst College, Northeastern University, and University of Northern Iran, among others. Bateson retired in 2004 from her position as Clearance J. Robinson Professor in Anthropology and English at George Mason University, and is now Professor Emerita. She is also the president of the Institute for Intercultural Studies in New York City and, since late 2006, Bateson has been a Visiting Scholar at Boston College.

She is a distinguished author in her field, writing many successful books and journals including: Composing a Life, Our Own Metaphor, and Peripheral Visions, as well as a memoir, With a Daughter's Eye: A Memoir of Margaret Mead and Gregory Bateson. Bateson is also currently compiling a series of lectures titled “Love across Difference,” presented at Boston College, into a book.
Symposium Sponsors

EWU Office of the Provost  Spokane Teachers Credit Union
Graduate Studies  Grants & Research Development
McNair Scholars Program  

Special thanks to

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Dr. Scott Finnie  Dean Lynn Briggs  Dean Vickie Shields  Leslie Swannack

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Printing Services, Sound Production, Paint Shop

Spokane Teachers Credit Union
for their generous donation and continued support

And to all students, mentors, faculty and volunteers
who have continually worked to make the symposium a success

****

If you would like to contribute to the Symposium Foundation, envelopes
are available at the Symposium Office, located in 207 Showalter Hall.

Please make checks payable to: EWU Foundation for Student Research
& Creative Works Symposium
Symposium Committee

The mission of the EWU Student Research and Creative Works Symposium is to promote student research, scholarship, and creative activity done in partnership with faculty as a vital component of higher education. Students, faculty, and administrators are invited to hear and discuss undergraduate and graduate creative and scholarly work.

2013 Symposium Committee Members

Molly Ayers, Director, Office of Community Engagement
Helen Bergland, Faculty Support & Student Learning Assessment Coordinator, Undergraduate Studies
Larry Briggs, Associate Vice President, Enrollment Services
Kylie Chapman, Undergraduate Student, ASEWU
Kelley Cullen, Assistant Professor, Economics
Ron Dalla, Vice Provost, Graduate Education, Research, Academic Planning & Evaluation
David Early, Director of Recreation Facilities
Cynthia Dukich, Counselor/Academic Coordinator, McNair Scholars Program
Greg duMonthier, Assistant Professor, Art
Ruth Galm, Executive Director, Office of Grant & Research Development
Christina Torres García, Director, McNair Scholars Program
Nikki Graham-Brown, Symposium Coordinator, Symposium Office
N.M. Awlad Hossain, Assistant Professor, Engineering & Design
Sarah Keller, Professor, Anthropology
Julie Marr, Advisor/Recruiter, Graduate Studies
Jonathan Middleton, Professor, Music
Lindsey Porter, Assistant Coordinator, Symposium Office
Julia Smith, Assistant Professor, Anthropology
Rayette Sterling, Librarian II, EWU Libraries
Leslie Swannack, Administrative Assistant, Graduate Education, Research, Planning & Evaluation
The TRiO Ronald E. McNair
Post-baccalaureate Achievement Programs

As one of eight federally-funded TRiO outreach and student services programs, the goal of the TRiO Ronald E. McNair Post-baccalaureate Program is to increase the attainment of PhD degrees by students from underrepresented segments of society.

Funded by Congress through a grant from the U.S. Department of Education, TRiO McNair programs prepare eligible participants for successful doctoral studies by providing opportunities for research or other scholarly activities; summer internships; seminars and other educational activities designed for doctoral preparation; tutoring; academic counseling; and activities designed to assist participants in securing admission to and financial assistance for doctoral enrollment. Since 1995, fourteen EWU McNair Scholars have earned doctorates, ninety-three have earned master’s degrees and eighty-eight are currently enrolled in graduate school.

Eastern’s TRiO McNair program first received funding in 1995, with the program’s faculty-mentored research internship a key component to its ongoing success. Each year up to fifteen selected McNair research interns conduct eight-week summer research projects under the guidance of faculty in their disciplines.

Research interns must produce a scholarly research paper and present their findings at a conference. This expectation has created an ongoing partnership between McNair and EWU’s Symposium, which was first organized in 1997 by EWU chemistry professor Dr. Jeanne Small (currently working with the National Science Foundation).

McNair prepares low-income, first-generation and/or underrepresented minority undergraduates for success in doctoral programs by providing scholarly activities and community engagement that empower participants to become agents of positive change in a culturally diverse world.
The 1997 Undergraduate Research and Creative Works Symposium consisted of 16 total oral presentations (9 were McNair scholars); 12 poster presentations (4 were McNair Scholars) and two musical performances. In 2001, McNair Director Dr. Karen McKinney (now retired) took over coordination with the support of Dr. Ron Dalla and the help of a graduate assistant. Dr. McKinney coordinated the event through 2005 in Monroe Hall, by which time the Symposium had grown to 145 presenters.

The Symposium was moved to Senior Hall in 2006, and since then the event has grown to become a marquee event on campus. This year the 16th Annual Student Research & Creative Works Symposium will be the largest symposium to date. Coordinated by graduate assistant Nikki Graham-Brown under Dr. Ron Dalla in Graduate Education, Research, Academic Planning and Evaluation, the event will include 500 presenters, among them the following McNair Scholars, listed with their dedicated faculty research mentors:

<table>
<thead>
<tr>
<th>McNair Scholars</th>
<th>McNair Mentors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthony Austin-Walker</td>
<td>Garrett Kenney, Associate Professor of English/Religious Studies</td>
</tr>
<tr>
<td>Quinton Baker</td>
<td>Chris Greer, Pharmacy Manager, St. Luke’s Rehabilitation Institute</td>
</tr>
<tr>
<td>Grace Cooper</td>
<td>Julia Smith, Professor of Anthropology</td>
</tr>
<tr>
<td>Elizabeth Davila</td>
<td>Mahlon Dalley, Professor of Psychology</td>
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<tr>
<td>Kyle Faltin</td>
<td>Thomas Hawley, Associate Professor of Government</td>
</tr>
<tr>
<td>Michelle Keller</td>
<td>Robin O’Quinn, Assistant Professor of Biology</td>
</tr>
<tr>
<td>Tabria Lee-Noonan</td>
<td>Michael Zukosky, Professor of Anthropology</td>
</tr>
<tr>
<td>Lateasha Lewis</td>
<td>Sue Wright, Professor of Sociology and Justice Studies</td>
</tr>
<tr>
<td>Jose Mendez</td>
<td>Kerryn Bell, Assistant Professor of Sociology</td>
</tr>
<tr>
<td>Nancy Muñoz</td>
<td>Jessica Willis, Visiting Assistant Professor of Women’s and Gender Studies</td>
</tr>
<tr>
<td>Andrew Pereira</td>
<td>Jane Simoni, Professor of Psychology, University of Washington</td>
</tr>
<tr>
<td>Aleksandr Pikalov</td>
<td>Wes Steiner, Assistant Professor of Chemistry and Biochemistry</td>
</tr>
<tr>
<td>Melissa Rhodehouse</td>
<td>Yao Houndonougbo, Assistant Professor of Chemistry and Biochemistry</td>
</tr>
<tr>
<td>Martee Shafer</td>
<td>Carmen Nezat, Assistant Professor of Geology</td>
</tr>
<tr>
<td>Bina Walker</td>
<td>Kelley Cullen, Assistant Professor of Economics</td>
</tr>
</tbody>
</table>

We would also like to welcome the new McNair Scholars!
Samantha De Abreu, Chemistry/Biochemistry
Chris Durall, Psychology
Jennifer Graham, Biology
SimHayKin Jack, Race and Culture Studies
Virginia Morales, Political Science
Ashley Nienhuis, Experimental Psychology
Amy Nuñez, Elementary Education
Leah Ruiz, Psychology and Criminal Justice
**Information Tables**

**EWU Libraries**
Come and learn how to optimize your research time. Library student employees will be available to discuss the types of services and resources the library has to offer students. Learn how to get research assistance from a librarian (in-person, via email or chat). Find out how you can use RefWorks to help manage citations when writing a paper. There will also be information on upcoming library events such as Books2Eat, Eagles Who Read to Lead and other EWU Libraries-sponsored events.

**Graduate Studies**
Students considering advanced study beyond the bachelor’s degree will find information about more than 50 graduate programs offered at EWU, the application process, tuition and financial aid, contacts and deadlines, along with applications for admission. The friendly, professional staff members in the Graduate Studies Office are available to answer questions on the day of the symposium and every weekday from 8 a.m. to 5 p.m. in 206 Showalter Hall, or by phone at 359-6297.

**National Conference on Undergraduate Research (NCUR)**
NCUR, established in 1987, is the nation’s largest conference dedicated to undergraduate research and creative activity. This year, 33 EWU students representing various disciplines participated in the 27th annual conference at University of Wisconsin–La Crosse. An NCUR volunteer will be available to discuss this year’s conference and provide information about NCUR 2014 to be held at the University of Kentucky. Preparations are also underway for NCUR 2015 at Eastern!

**Office of Community Engagement**
EWU’s Office of Community Engagement (OCE) connects the university to the wider community through meaningful partnerships in order to enrich student learning, address critical community needs, and foster a culture of civic responsibility and community. Learn more about community engagement and service-learning at EWU and the ways in which the OCE supports students and faculty in this work.

**The Easterner**
The Easterner, the student news organization at Eastern Washington University, has existed in one form or another since 1916. Not only is it a source of student-oriented content, but it is also a platform for free speech, where students and the surrounding community can debate topics and share in the marketplace of ideas. This student-led organization presently has about 30 people on staff, excluding contributing writers. At The Easterner’s table, participants will find recent issues, information about advertising, and staff that can take your story ideas and answer questions.
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Keynote Speaker

Pence Union Building (PUB), MPR ❖ 12:00 p.m. – 1:30 p.m.

Scott Finnie, PhD
Africana Education Program and History Department

What Happens When Research and Servant Leadership Cross Paths?

As individuals dedicated to the field of research, it seems that one of the most fundamental questions held in common by members of such a distinctive group would be that of purpose: what is the overall purpose of education? In light of our global community that seems to be, more and more, a part of our daily life—whether intended so or not—we, the active members of higher education, ought to be able to answer this question in the context of the ever-changing demographics that envelope us. With this imperative in mind, the principles of servant leadership hold a newfound importance. After reviewing the key dynamics of what constitutes a genuine servant leader, a brief discussion about the need for critical race theory will hopefully shed light on the vital role of the fruits of research upon contemporary society and the validation of those who have been persistently marginalized, both historically and systematically.

Biography

Dr. Scott Finnie, raised in the Bay Area, came to Spokane in 1975 on a basketball scholarship at Gonzaga University. He earned a B.A. in English and a Minor in Criminal Justice in 1979, a Master’s degree in American History from Eastern Washington University in 1992, and a Ph.D. in Leadership Studies from Gonzaga University in 2000. His dissertation was entitled “The Impact of the Removal of Affirmative Action Upon the Freshmen Class at the University of Washington – Implications of a Ten Year Quantitative Study.”

Dr. Finnie has been a faculty member of EWU’s Africana Education Program and History Department since 1992. As a recipient of over 20 awards for excellence in teaching, leadership, civil rights and mentoring – Dr. Finnie has made over 40 presentations in the past ten years at Oxford-England, Mexico City, Atlanta, Baton Rouge, San Francisco, San Diego, Seattle as well as the Inland Northwest on such themes as civil rights, affirmative action, servant leadership, diversity and cross-cultural communication, the American criminal justice system and faculty hiring in higher education.


Finally, Dr. Finnie owns a diversity consultant business, “Engaging Team Concepts,” serving employers and institutions throughout the Inland Northwest for the past ten years.
Creative Works Presentation Schedule

Tuesday, May 14, 2013
4:30 p.m. – 9:15 p.m.
Arts Complex

4:30 – 9:00 p.m.  Session 1: Art Exhibits*
                 Art Building: Gallery and Lobby

5:15 – 7:00 p.m.  Session 2: Music Composition
                 Art Building: Gallery

6:30 – 8:55 p.m.  Session 3: Film
                 Radio-Television (RTV) Building: Room 123

6:30 – 9:00 p.m.  Session 4: Creative Writing
                 Art Building: Auditorium Room 116

6:30 – 8:00 p.m.  Session 5: Theatre
                 University Theatre: 2nd Floor Studio

*Symposium Art Exhibits will remain on display in the Art Building Gallery and Lobby throughout the day on Wednesday, May 15, 2013.
Creative Works Session 1: Art  
Art Building Gallery and Lobby, 4:30 p.m. – 9:00 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Artist</th>
<th>Title</th>
<th>Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:30</td>
<td>Teresa Asbury</td>
<td>Mama Done Flown the Coop</td>
<td>Greg duMonthier</td>
</tr>
<tr>
<td>to</td>
<td>Melissa Carpenter</td>
<td>Untitled</td>
<td>Lisa Nappa</td>
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<tr>
<td></td>
<td>Kiyomi Chadwel</td>
<td>Untitled</td>
<td>Greg duMonthier</td>
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<tr>
<td></td>
<td>Karie Cooper</td>
<td>Tree Cipher, Painting</td>
<td>Tom Askman</td>
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<tr>
<td></td>
<td>Jonathan Cote</td>
<td>Group Initiative</td>
<td>Lisa Nappa</td>
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<td></td>
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<td></td>
<td>Greg duMonthier</td>
</tr>
<tr>
<td></td>
<td>Jonathan Cote</td>
<td>Conceptual Drawing</td>
<td>Lisa Nappa</td>
</tr>
<tr>
<td></td>
<td>Elyce Cutshall</td>
<td>Flow</td>
<td>Lisa Nappa</td>
</tr>
<tr>
<td>9:00</td>
<td>Michelle Ferraro</td>
<td>Vicissitudes of Reality</td>
<td>Greg duMonthier</td>
</tr>
<tr>
<td></td>
<td>Erin Mielcarek</td>
<td>Untitled I</td>
<td>Lisa Nappa</td>
</tr>
<tr>
<td></td>
<td>Christina Montgomery</td>
<td>After Hours</td>
<td>Tom Askman</td>
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<tr>
<td></td>
<td>Lauren Phillips</td>
<td>Otherworlds</td>
<td>Tom Askman</td>
</tr>
<tr>
<td></td>
<td>Joseph Snodgrass</td>
<td>Biome 1: What Happens after They Are Built?</td>
<td>Greg duMonthier</td>
</tr>
<tr>
<td></td>
<td>Nicole Wallace</td>
<td>Experimental Rug</td>
<td>Lisa Nappa</td>
</tr>
<tr>
<td></td>
<td>James Barrett</td>
<td>Walking around in Circles until You See Something New (on display outside of the Art Building)</td>
<td>Greg duMonthier</td>
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<td></td>
<td></td>
<td></td>
<td>Lisa Nappa</td>
</tr>
<tr>
<td></td>
<td>Celeste Crosby</td>
<td>Symposium Poster</td>
<td>Greg duMonthier</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(on display in Art Building Lobby)</td>
<td>Travis Masingale</td>
</tr>
</tbody>
</table>
## Creative Works Session 2: Music Composition
Art Building Gallery, 5:15 p.m. – 7:00 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Composer/Performer</th>
<th>Title</th>
<th>Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:15</td>
<td>Nathan Westlund, Derek Westlund</td>
<td><em>I Like Your UFO</em></td>
<td>Benjamin Luca Robertson</td>
</tr>
<tr>
<td>5:30</td>
<td>Davis Hill</td>
<td><em>The Caves of Steel</em></td>
<td>Benjamin Luca Robertson</td>
</tr>
<tr>
<td>5:45</td>
<td>Margaret Francik</td>
<td><em>One Day</em></td>
<td>Benjamin Luca Robertson</td>
</tr>
<tr>
<td>6:00</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6:30</td>
<td>Michael Gerety</td>
<td><em>The Sweet Time Suite: Part I</em></td>
<td>Benjamin Luca Robertson</td>
</tr>
<tr>
<td>6:45</td>
<td>Scot Hebert</td>
<td>“Formula #1 for Chance Conversations” from <em>My Book of Indeterminate Events</em></td>
<td>Benjamin Luca Robertson</td>
</tr>
</tbody>
</table>

## Creative Works Session 3: Film
RTV Building, Room 123, 6:30 p.m. – 8:55 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Filmmaker</th>
<th>Title</th>
<th>Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30</td>
<td>Kendra Sherrill</td>
<td><em>Daniel Saint Daniel</em></td>
<td>Tom Mullin</td>
</tr>
<tr>
<td>6:45</td>
<td>Bryce Thomson</td>
<td><em>Daniel Saint Daniel</em></td>
<td>Tom Mullin</td>
</tr>
<tr>
<td>7:00</td>
<td>Jake Sanders</td>
<td><em>Daniel Saint Daniel</em></td>
<td>Tom Mullin</td>
</tr>
<tr>
<td>7:15</td>
<td>Nicole Richerson</td>
<td><em>Daniel Saint Daniel</em></td>
<td>Tom Mullin</td>
</tr>
<tr>
<td>7:30</td>
<td>Claire Fritze</td>
<td><em>Daniel Saint Daniel</em></td>
<td>Tom Mullin</td>
</tr>
<tr>
<td>7:45</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:00</td>
<td>Logan Stoodley</td>
<td>“Watch This Show”</td>
<td>Tom Mullin</td>
</tr>
<tr>
<td>8:10</td>
<td>Logan Stoodley</td>
<td><em>The Chorus</em></td>
<td>Tom Mullin</td>
</tr>
<tr>
<td>8:25</td>
<td>Jacob Moe</td>
<td><em>Floating</em></td>
<td>Tom Mullin</td>
</tr>
<tr>
<td>8:40</td>
<td>James Olson</td>
<td><em>Human/Being</em></td>
<td>Tom Mullin</td>
</tr>
</tbody>
</table>
Creative Works Session 4: Creative Writing
Art Building Gallery, 6:30 p.m. – 9:00 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Author</th>
<th>Title</th>
<th>Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30</td>
<td>Carmen Swannack</td>
<td>“Jealousy’s Revenge”</td>
<td>Joanna King-Yost</td>
</tr>
<tr>
<td>6:40</td>
<td>Jason Ludlow</td>
<td>“My Lola”</td>
<td>Rachel Toor</td>
</tr>
<tr>
<td>6:50</td>
<td>Andrew Vanden Bossche</td>
<td>“The Invention of Memory”</td>
<td>Rachel Toor</td>
</tr>
<tr>
<td>7:00</td>
<td>Diana Emmons</td>
<td>“Big Girl Shoes”</td>
<td>Rachel Toor</td>
</tr>
<tr>
<td>7:10</td>
<td></td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>7:20</td>
<td>Cynthia Schoch</td>
<td>“Real Friends Help You Vomit”</td>
<td>Rachel Toor</td>
</tr>
<tr>
<td>7:30</td>
<td>Joe Slocum</td>
<td>“How Do I Know What I Think?”</td>
<td>Rachel Toor</td>
</tr>
<tr>
<td>7:40</td>
<td>Jaime Baird</td>
<td>“All Along the Puget Sound”</td>
<td>Natalie Kusz</td>
</tr>
<tr>
<td>7:50</td>
<td>Fira Ballew</td>
<td>“A Poem to the Third and Trans”</td>
<td>Mimi Marinucci</td>
</tr>
<tr>
<td>8:00</td>
<td></td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>8:10</td>
<td>Laura Humphreys</td>
<td>“The Oceanographer I &amp; III” and “Zashiki Warashi”</td>
<td>Aileen Keown Vaux</td>
</tr>
<tr>
<td>8:20</td>
<td>Briana Lummus</td>
<td>“I Hate To Love You”</td>
<td>Aileen Keown Vaux</td>
</tr>
<tr>
<td>8:30</td>
<td>Rebecca Williams</td>
<td>“Quinn and the Very Long Fall”</td>
<td>Aileen Keown Vaux</td>
</tr>
<tr>
<td>8:40</td>
<td>Derek Annis</td>
<td>4 Poems</td>
<td>Aileen Keown Vaux</td>
</tr>
<tr>
<td>8:50</td>
<td>Margo Pecha</td>
<td>“Thrift Store”</td>
<td>Aileen Keown Vaux</td>
</tr>
</tbody>
</table>

NORTHWEST BOULEVARD JOURNAL SHOWCASE:

<table>
<thead>
<tr>
<th>Time</th>
<th>Author</th>
<th>Title</th>
<th>Mentor</th>
</tr>
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<tbody>
<tr>
<td>8:10</td>
<td>Laura Humphreys</td>
<td>“The Oceanographer I &amp; III” and “Zashiki Warashi”</td>
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</tr>
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<td>Aileen Keown Vaux</td>
</tr>
<tr>
<td>8:30</td>
<td>Rebecca Williams</td>
<td>“Quinn and the Very Long Fall”</td>
<td>Aileen Keown Vaux</td>
</tr>
<tr>
<td>8:40</td>
<td>Derek Annis</td>
<td>4 Poems</td>
<td>Aileen Keown Vaux</td>
</tr>
<tr>
<td>8:50</td>
<td>Margo Pecha</td>
<td>“Thrift Store”</td>
<td>Aileen Keown Vaux</td>
</tr>
</tbody>
</table>

Creative Works Session 5: Theatre
University Theatre, 2nd Floor Studio, 6:30 p.m. – 8:00 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Actor/ Designer/Author</th>
<th>Title</th>
<th>Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30</td>
<td>Marlee Andrews</td>
<td>Scenic Painting</td>
<td>Shana Joslyn</td>
</tr>
<tr>
<td>to</td>
<td>Brianna Williamson</td>
<td>Cherry Blossoms</td>
<td>Sara Goff, Shana Joslyn</td>
</tr>
<tr>
<td>to</td>
<td>Bryce Henderson</td>
<td>Studio Solitary</td>
<td>Sara Goff</td>
</tr>
<tr>
<td></td>
<td>Lexie Hoffpauir, Milton Harper</td>
<td>Scene from Macbeth</td>
<td>Jeffrey Sanders</td>
</tr>
<tr>
<td></td>
<td>Kyle Kahklen, Milton Harper</td>
<td>The Winter’s Tale Act I, Scene 2</td>
<td>Jeffrey Sanders</td>
</tr>
<tr>
<td>8:00</td>
<td>Milton Harper</td>
<td>10 Minutes of Me</td>
<td>Sara Goff</td>
</tr>
<tr>
<td></td>
<td>Paden Vance</td>
<td>Two Audition Pieces</td>
<td>Jeffrey Sanders</td>
</tr>
<tr>
<td></td>
<td>Teko Dumoulin, Nicki Meyer</td>
<td>Irene Ryan Scholarship Audition Package</td>
<td>Jeffrey Sanders</td>
</tr>
</tbody>
</table>
Oral, Interactive, & Poster Research Presentation
Schedule

Wednesday, May 15, 2013
8:00 a.m. – 5:00 p.m.
Senior Hall and Hargreaves Hall

8:00 a.m. – 12:10 p.m.  Morning Oral Sessions: 1-12
SENIOR HALL: Rooms 101, 124, 201, 203, 204, 221, 243, 302, 304, 306, 2nd Floor Lounge

8:00 a.m. – 9:45 a.m.  Morning Poster Session: 1
HARGREAVES HALL: Reading Room

10:15 a.m. – 12:00 p.m.  Morning Poster Session: 2
HARGREAVES HALL: Reading Room

1:30 – 5:00 p.m.  Afternoon Oral Sessions: 13-25
SENIOR HALL: Rooms 101, 124, 201, 203, 204, 221, 243, 302, 304, 306, 2nd Floor Lounge

1:30 – 3:00 p.m.  Afternoon Poster Session: 3
HARGREAVES HALL: Reading Room
### Oral and Interactive Sessions

**Senior Hall**

#### Oral Session 1: Psychology I

Room 101, 8:00 a.m. – 12:00 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Author</th>
<th>Title</th>
<th>Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Sarah Barfuss, Bryce Hobson, Sandra Avy, Stefan McNamara</td>
<td>The Relationship between Physical Activity and Academic Performance amongst College Population</td>
<td>Theresa Martin</td>
</tr>
<tr>
<td>8:20</td>
<td>Quinton Baker, Magaly Guzman, Taylor Hansen, Alyson Morgan</td>
<td>Drinking Patterns and Student Performance</td>
<td>Theresa Martin</td>
</tr>
<tr>
<td>8:40</td>
<td>Amanda DeBleeker, Cameron Seikawitch, Eileen Mabini</td>
<td>Caffeine and Academic Performance</td>
<td>Theresa Martin</td>
</tr>
<tr>
<td>9:00</td>
<td>Molly Fitzpatrick, Holly Keller, Christina Nagel</td>
<td>Strategies for Initiating Relationships</td>
<td>Theresa Martin</td>
</tr>
<tr>
<td>9:20</td>
<td>Christopher Durall, Michael Jones, Lauretta Burton</td>
<td>Socializing and Self</td>
<td>Theresa Martin</td>
</tr>
<tr>
<td>9:40</td>
<td>Darian Andrew, Juline Girts, Molly Fitzpatrick, Chante Curran</td>
<td>I’m Not All That</td>
<td>Theresa Martin</td>
</tr>
<tr>
<td>10:00</td>
<td><strong>Break</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:20</td>
<td>Kjersti Schmere, Rebecca Erb, Brett Scott</td>
<td>Personality and Embarrassment</td>
<td>Theresa Martin</td>
</tr>
<tr>
<td>10:40</td>
<td>Shannon Sheills, Alicia Schimanski, Erika Vela</td>
<td>Personality and Helping Behaviors</td>
<td>Theresa Martin</td>
</tr>
<tr>
<td>11:00</td>
<td>Leah Ruiz, Brittannie Davis, Brittany Espinoza</td>
<td>Personal and Social Lives of College Students</td>
<td>Theresa Martin</td>
</tr>
<tr>
<td>11:20</td>
<td>Adriana Sanchez, Kristina Omeli, Stephanie Stephens</td>
<td>Perceptions of Interracial Dating in College Students</td>
<td>Theresa Martin</td>
</tr>
<tr>
<td>11:40</td>
<td>Molly Fitzpatrick, Stefan McNamara, Darian Andrew, Alicia Schimanski, Holly Keller, Amanda DeBleeker</td>
<td>Friends with Benefits: Studies 4 through 6</td>
<td>Theresa Martin</td>
</tr>
</tbody>
</table>
**Oral Session 2: Conservation Genetics**  
*Institute of Science and Technology at North Central High School*  
Room 124, 8:00 a.m. – 11:20 a.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Author</th>
<th>Title</th>
<th>Mentor</th>
</tr>
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<tbody>
<tr>
<td>8:00</td>
<td>KellyAnn Cameron</td>
<td>Study of Public Attitudes toward Wolves in North Central Community</td>
<td>Randall James</td>
</tr>
<tr>
<td>8:20</td>
<td>Ceaira Nichols</td>
<td>Metabolic Disorders in <em>Thymallus arcticus</em></td>
<td>Randall James</td>
</tr>
<tr>
<td>8:40</td>
<td>Jacob Mallery, Courtney Wanke</td>
<td>An Annotated Mitochondrial Genome of Arctic Grayling</td>
<td>Randall James</td>
</tr>
<tr>
<td>9:00</td>
<td>Kylena Kerr</td>
<td>Analysis of Gene Flow in Arctic Grayling (<em>Thymallus arcticus</em>) in</td>
<td>Randall James</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Big Hole Valley, Montana</td>
<td></td>
</tr>
<tr>
<td>9:20</td>
<td>Sabrina Judson</td>
<td>Genetic Variation in Arctic Grayling (<em>Thymallus arcticus</em>) from</td>
<td>Randall James</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Southwestern Montana</td>
<td></td>
</tr>
<tr>
<td>9:40</td>
<td>Joseph Bell</td>
<td>Metabolic Disorders in Gray Wolves and Grizzly Bears</td>
<td>Randall James</td>
</tr>
<tr>
<td>10:00</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:20</td>
<td>Corey Horn, Dylan Smith, Deauntae Floyd</td>
<td>Genetic Analysis of D-loop Diversity in <em>Canis lupus</em> and <em>Ursus arctos horribilis</em></td>
<td>Randall James</td>
</tr>
<tr>
<td>10:40</td>
<td>Candace Ireland, Nicole Ecklund, Elijah Hiler</td>
<td>Analysis of ATP 6 and Cytochrome b Sequence for Adaptive SNPs in <em>Ancient Bison bison</em> from Multiple Locations</td>
<td>Randall James</td>
</tr>
<tr>
<td>11:00</td>
<td>Cherish Flores, Duncan Mize</td>
<td>Complete Mitochondrial Genome of Ancient Bighorn Sheep</td>
<td>Randall James</td>
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</table>
# Oral Session 3: English

Room 201, 8:00 a.m. – 12:00 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Author</th>
<th>Title</th>
<th>Mentor</th>
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<tbody>
<tr>
<td>8:00</td>
<td>Kirsten Dresker</td>
<td>Imagining ‘The Lady of Shalott”</td>
<td>Logan Greene</td>
</tr>
<tr>
<td>8:20</td>
<td>Mindi Vetter</td>
<td>Her Blue Eyes Wet with Victory: May Welland Archer’s Calculating Perceptiveness in Wharton’s The Age of Innocence</td>
<td>Judith Logan</td>
</tr>
<tr>
<td>8:40</td>
<td>Christopher Stuck</td>
<td>Belonging Among and Belonging To: The Destructive Power of Possession in Toni Morrison’s Beloved”</td>
<td>Judith Logan</td>
</tr>
<tr>
<td>9:00</td>
<td>Cynthia Schoch</td>
<td>Critical Voice: Utilizing Voice to Foster Intrinsic Motivation beyond Expressionism</td>
<td>Justin Young</td>
</tr>
<tr>
<td>9:20</td>
<td>Danielle Curson</td>
<td>The Nightingale in the Nest</td>
<td>John Mason</td>
</tr>
<tr>
<td>9:40</td>
<td>Megan Hewins</td>
<td>Native American Cherokee Resistance and Removal</td>
<td>Judith Logan</td>
</tr>
<tr>
<td>10:00</td>
<td></td>
<td><strong>Break</strong></td>
<td></td>
</tr>
<tr>
<td>10:20</td>
<td>Courtney Harler</td>
<td>The Ogbanje in Little Bee by Chris Cleave</td>
<td>Beth Torgerson</td>
</tr>
<tr>
<td>10:40</td>
<td>Shannon Mauldin</td>
<td>Commercially Ever After: Folklore in a Capitalist Economy</td>
<td>Henry-York Steiner</td>
</tr>
<tr>
<td>11:00</td>
<td>Connor Griffin</td>
<td>The Shortcomings of the Environmental Policy of the Hanford Site</td>
<td>Paul Lindholdt</td>
</tr>
<tr>
<td>11:20</td>
<td>Siyao Song</td>
<td>The Mother-Son Dyad and Filial Piety in Tang Dynasty Poetry by Meng Jiao</td>
<td>LaVona Reeves</td>
</tr>
<tr>
<td>11:40</td>
<td>Diane Thames</td>
<td>Reflections on Teaching English in an Intensive, Short-Term Language Program for Chinese</td>
<td>LaVona Reeves</td>
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</tbody>
</table>
Oral Session 4: Education (interactive)
Room 202 (2nd Floor Lounge), 8:00 a.m. – 9:45 a.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Author</th>
<th>Title</th>
<th>Mentor</th>
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</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Eric Beisley, Andrew Fleming, Kelly Zimmer</td>
<td>The More, the Better?</td>
<td>Rodger Hauge</td>
</tr>
<tr>
<td>8:20</td>
<td>San Juana Carrizales, Chelsea Marker,</td>
<td>Solar Energy Boats</td>
<td>Rodger Hauge</td>
</tr>
<tr>
<td></td>
<td>Jacqueline Thornton, Heather Davis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:20</td>
<td>Ashley Dickerson, Aimee Smith, Haley Tank</td>
<td>Vampire Energy</td>
<td>Rodger Hauge</td>
</tr>
<tr>
<td></td>
<td>Gwen Gossler, Tara Reisenauer, Rachel</td>
<td>Windmill Blade Design</td>
<td>Rodger Hauge</td>
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<tr>
<td></td>
<td>Rasmussen</td>
<td></td>
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<tr>
<td>12:00</td>
<td>Savannah Larson, Shelby Wolfe, Ashley Cook,</td>
<td>Solar Cars</td>
<td>Rodger Hauge</td>
</tr>
<tr>
<td></td>
<td>Erin Bartlett</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Holly McClanahan, Hilary Davis, Mike Hurley</td>
<td>Hydro Cars</td>
<td>Rodger Hauge</td>
</tr>
<tr>
<td></td>
<td>Jenni Whelchel, Joshua Murray</td>
<td>The Solar Cookoff</td>
<td>Rodger Hauge</td>
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</table>

Oral Session 5: Film
Room 203, 8:00 a.m. – 12:00 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Author</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Sean Hill</td>
<td>A Gender Analysis of the Film 28 Days Later</td>
<td>Pete Porter</td>
</tr>
<tr>
<td>8:20</td>
<td>Logan Stoodley</td>
<td>Gender Play: The Gender Ideologies Presented in 28 Days Later</td>
<td>Pete Porter</td>
</tr>
<tr>
<td>8:40</td>
<td>Jathan Greathouse</td>
<td>Feminist Theory in 28 Days Later</td>
<td>Pete Porter</td>
</tr>
<tr>
<td>9:00</td>
<td>Krystal Alexander</td>
<td>28 Days Later: A Progressive Feminist Film</td>
<td>Pete Porter</td>
</tr>
<tr>
<td>9:20</td>
<td>Kaylee Hardin</td>
<td>Formalist Theory and The Tree of Life</td>
<td>Pete Porter</td>
</tr>
<tr>
<td>9:40</td>
<td>Heather Ashford</td>
<td>Film as Art: Why Terrence Malick’s The Tree of Life Is Art According toRudolf Arnheim</td>
<td>Pete Porter</td>
</tr>
<tr>
<td>10:00</td>
<td></td>
<td>Break</td>
<td>Pete Porter</td>
</tr>
<tr>
<td>10:20</td>
<td>Alexander Quam</td>
<td>The Lasting Stability of Martin Scorsese’s Taxi Driver</td>
<td>Pete Porter</td>
</tr>
<tr>
<td>10:40</td>
<td>James Olson</td>
<td>Isn’t Life Disappointing?</td>
<td>Pete Porter</td>
</tr>
<tr>
<td>11:00</td>
<td>Colin Boley</td>
<td>The Continued Relevance of John Ford’s The Searchers</td>
<td>Pete Porter</td>
</tr>
<tr>
<td>11:20</td>
<td>Peter Hanson</td>
<td>Film as Art and In the Mood for Love</td>
<td>Pete Porter</td>
</tr>
<tr>
<td>11:40</td>
<td>Hannah Heilman</td>
<td>Media Translation: Why the Book Is (Usually) Better</td>
<td>Pete Porter</td>
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</table>
# Oral Session 6: Biology and Geology
Room 204, 8:00 a.m. – 12:00 p.m.

<table>
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<tr>
<th>Time</th>
<th>Author</th>
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</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Abdulgader Turkistani</td>
<td>Global Water Pollution and Conservation</td>
<td>LaVona Reeves, Mary Parker</td>
</tr>
<tr>
<td>8:20</td>
<td>Martee Shafer</td>
<td>The Effects of Fertilizer and Calcium Carbonate on the Mobilization of Arsenic in Groundwater</td>
<td>Carmen Nezat</td>
</tr>
<tr>
<td>8:40</td>
<td>Conor Giorgi</td>
<td>Impacts of Spawning Sockeye Salmon (Oncorhynchus nerka) on Benthic Macroinvertebrate Production in the White River, WA</td>
<td>Camille McNeely</td>
</tr>
<tr>
<td>9:00</td>
<td>Michelle Keller</td>
<td>Initial Investigation into the Effects of Root-Fungi Mutualism on the Trichome Density of Tomato Plants</td>
<td>Robin O’Quinn</td>
</tr>
<tr>
<td>9:20</td>
<td>Kristin Anicito</td>
<td>Ventenata dubia Invasion within a Mima Mound Prairie in Eastern Washington</td>
<td>Rebecca Brown</td>
</tr>
<tr>
<td>9:40</td>
<td>Adam Gebauer</td>
<td>Invasive Reed Canary Grass’ (<em>Phalaris arundinacea</em>) Effects on Stream Flow</td>
<td>Rebecca Brown</td>
</tr>
<tr>
<td>10:00</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:20</td>
<td>Cristine Schucker</td>
<td>Stream Microbial Communities along an Agricultural Gradient</td>
<td>Camille McNeely, Robin O’Quinn</td>
</tr>
<tr>
<td>10:40</td>
<td>Cody Schoonover</td>
<td>Heavy Metals Decrease the Locomotor Activities of Freshwater Clams (<em>Musculium</em> spp.)</td>
<td>Joanna Joyner-Matos</td>
</tr>
<tr>
<td>11:00</td>
<td>Heather Frady</td>
<td><em>Naegleria fowleri</em> in Spirit Lake, Mt. Saint Helens: A Supporting Case for the Fagellate-Empty Habitat Hypothesis</td>
<td>Camille McNeely</td>
</tr>
<tr>
<td>11:20</td>
<td>Amy Gray</td>
<td>Evolution of Virulence Following a Host Shift in the <em>Drosophila</em> Model</td>
<td>Luis Matos</td>
</tr>
<tr>
<td>11:40</td>
<td>Amelia Bothwell</td>
<td>A Genetic Screen in <em>Saccharomyces cerevisiae</em> (Yeast) to Identify Novel <em>Helicobacter pylori</em> Virulence Factors</td>
<td>Andrea Castillo</td>
</tr>
</tbody>
</table>
Oral Session 7: Anthropology  
Room 221, 8:00 a.m. – 12:00 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Author</th>
<th>Title</th>
<th>Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Cory Winters</td>
<td>Creating the Past: A Popular Exposure to Reconstruction in Archaeology</td>
<td>John Dorwin</td>
</tr>
<tr>
<td>8:20</td>
<td>Adam Calkins</td>
<td>Confederate Privateers and Commerce Raiders during the American Civil War</td>
<td>John Dorwin</td>
</tr>
<tr>
<td>8:40</td>
<td>Kelly Mathews</td>
<td>How Performance Poets Build Community: Reclaiming Shared Experiences of Emotional Intimacy</td>
<td>Julia Smith</td>
</tr>
<tr>
<td>9:00</td>
<td>Tabria Lee-Noonan</td>
<td>The Role of Culture in Substance Abuse Treatment</td>
<td>Michael Zukosky</td>
</tr>
<tr>
<td>9:20</td>
<td>Shawnee BearCub</td>
<td>Longhouse Memories—An Ethnographic Field Study</td>
<td>Sarah Keller</td>
</tr>
<tr>
<td>9:40</td>
<td>Reika Horio</td>
<td>Identity Transformation: An Auto-Ethnography of Study Abroad</td>
<td>LaVona Reeves</td>
</tr>
<tr>
<td>10:00</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:20</td>
<td>Saki Ichii</td>
<td>Girls’ Day in Japan: Historical and Sociocultural Perspectives</td>
<td>LaVona Reeves</td>
</tr>
<tr>
<td>10:40</td>
<td>Grace Cooper</td>
<td>Exploring Intentions and Perceptions of Code-Switching among Spanish-English Bilinguals</td>
<td>Julia Smith</td>
</tr>
<tr>
<td>11:00</td>
<td>Sultan Albalawi</td>
<td>Particular Problems Faced by Arabic Speakers in Learning English in the U.S.</td>
<td>LaVona Reeves</td>
</tr>
<tr>
<td>11:40</td>
<td>Miyuki Murotani</td>
<td>Japanese Women’s Language Used by Okama in Japanese Educational Institutions</td>
<td>Michael Zukosky</td>
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</tbody>
</table>

Oral Session 8: Women’s and Gender Studies  
Room 243, 8:00 a.m. – 9:40 a.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Author</th>
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<th>Mentor</th>
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</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Bailee Nebecker</td>
<td>Call for Change in United States Department of Housing and Urban Development Funding Practices</td>
<td>Mimi Marinucci</td>
</tr>
<tr>
<td>8:20</td>
<td>William Stotts</td>
<td>My Choice as Queer and Feminist: Activism or Conformity?</td>
<td>Mimi Marinucci</td>
</tr>
<tr>
<td>8:40</td>
<td>William Stotts</td>
<td>Assuming Gender: Breaking Away from Sexism</td>
<td>Elizabeth Kissling</td>
</tr>
<tr>
<td>9:00</td>
<td>Karima Abdulrahim</td>
<td>Misunderstandings about Saudi Women: An Auto-Ethnography</td>
<td>LaVona Reeves</td>
</tr>
<tr>
<td>9:20</td>
<td>Nancy Muñoz</td>
<td>The Psychological Impact of the Dutiful Daughter Role within the Mexican American Community from a Feminist Perspective</td>
<td>Jessica Willis</td>
</tr>
</tbody>
</table>
**Oral Session 9: Fine Arts**  
Room 243, 10:00 a.m. – 12:00 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Author</th>
<th>Title</th>
<th>Mentor</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00</td>
<td>Teresa Asbury</td>
<td>John Calvin Was a Feminist: The Liberating Effects of a New Doctrine in Seventeenth-Century Dutch Republic</td>
<td>Barbara Miller</td>
</tr>
<tr>
<td>10:20</td>
<td>Katrina Knizek</td>
<td>The Rubenesque Figure and Concepts of Beauty in the Baroque</td>
<td>Barbara Miller</td>
</tr>
<tr>
<td>10:40</td>
<td>Stefanie Pendleton</td>
<td>Velázquez and Goya: Seeking Connections within Centuries of Spanish Painting</td>
<td>Barbara Miller</td>
</tr>
<tr>
<td>11:00</td>
<td>Inga Ilich</td>
<td>The Ecological Architecture of Paolo Soleri</td>
<td>Barbara Miller</td>
</tr>
<tr>
<td>11:20</td>
<td>Davis Hill</td>
<td>What Is Music?</td>
<td>Benjamin Luca Robertson</td>
</tr>
<tr>
<td>11:40</td>
<td>Naoko Oka</td>
<td>Aesthetic Forms &amp; Zen Arts in Japan: Ikebana (Flower Arranging)</td>
<td>LaVona Reeves</td>
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</tbody>
</table>

**Oral Session 10: Philosophy**  
Room 302, 9:00 a.m. – 12:00 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Author</th>
<th>Title</th>
<th>Mentor</th>
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</thead>
<tbody>
<tr>
<td>9:00</td>
<td>Brolin Graham</td>
<td>A Philosophical Investigation of Play</td>
<td>Chris Kirby</td>
</tr>
<tr>
<td>9:20</td>
<td>Lily Yapuncich</td>
<td>William James: The Tricky Problem of Truth</td>
<td>Kevin Decker</td>
</tr>
<tr>
<td>9:40</td>
<td>Alex Torres</td>
<td>A Philosophical Inquiry into the Omniscient Properties of God</td>
<td>Kevin Decker</td>
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<tr>
<td>10:00</td>
<td>Break</td>
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<tr>
<td>10:20</td>
<td>Samuel Phelps</td>
<td>Theodicy through Kant</td>
<td>Kevin Decker</td>
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<tr>
<td>10:40</td>
<td>Samuel Phelps, Sean Scoggin</td>
<td>Morality and Religion? An Atheist and a Theist Debate the Bearing Religion Has on Morality</td>
<td>Kevin Decker</td>
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<tr>
<td>11:00</td>
<td>Sean Scoggin</td>
<td>From Theology to Atheism: The Ethics of Our Beliefs</td>
<td>Kevin Decker</td>
</tr>
<tr>
<td>11:20</td>
<td>Nicholas Ettel</td>
<td>Free Will Is an Illusion; and Why We Don’t Need It to Be Moral</td>
<td>Kevin Decker</td>
</tr>
<tr>
<td>11:40</td>
<td>David Collins</td>
<td>What Is Postanarchism, and Why Should I Care?</td>
<td>Mimi Marinucci</td>
</tr>
<tr>
<td>Time</td>
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<td>Title</td>
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<tr>
<td>8:00</td>
<td>Ahmad Al-Hawasli</td>
<td>Shrinking DC-DC Converters with Gallium Nitride</td>
<td>Jabulani Nyathi</td>
</tr>
<tr>
<td>8:20</td>
<td>Justin Kellum, Dan Howard,</td>
<td>Summer 2012 Senior Project “The Mowerator”</td>
<td>Jason Durfee</td>
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<td></td>
<td>Arturo Martinez</td>
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<tr>
<td>8:40</td>
<td>Seungmin Kim, Peter Barry</td>
<td>Smart Cruise Control</td>
<td>Jabulani Nyathi</td>
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<td>Arindam Das</td>
</tr>
<tr>
<td>9:00</td>
<td>Bryan Woodbury, Nick Messing</td>
<td>Tango Rear Seat Frame Analysis</td>
<td>Awlad Hossain</td>
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<tr>
<td>9:20</td>
<td>Yodit Turan</td>
<td>Building Small Wood Boat Using Plywood</td>
<td>Martin Weiser</td>
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<td>Awlad Hossain</td>
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<td>9:40</td>
<td>Ken Prothero, Lucas Warren</td>
<td>Testing and Comparing Rocket Motor Chemistry</td>
<td>Martin Weiser</td>
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<td>10:20</td>
<td>Daniel Schilter</td>
<td>Non-Linear Beam Bending Bow Limb Design</td>
<td>Awlad Hossain</td>
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<td>10:40</td>
<td>Megan Frederick</td>
<td>Finite Element Analysis Investigating the Effect of Bell Features on Acoustic Performance</td>
<td>Awlad Hossain</td>
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<td>11:00</td>
<td>Jared Schiff</td>
<td>Climbing Cam Lobe Structural Analysis</td>
<td>Awlad Hossain</td>
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<td>11:20</td>
<td>Cody Engelke</td>
<td>Structural Analysis of an Ice Hockey Skate Tower</td>
<td>Awlad Hossain</td>
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<tr>
<td>11:40</td>
<td>Adam Harris, Keith Hadley</td>
<td>Structural Analysis of Seattle Great Wheel</td>
<td>Awlad Hossain</td>
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</table>
Oral Session 12: Government  
Room 306, 8:00 a.m. – 12:00 p.m.

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>8:00</td>
<td>Michael Carpenter</td>
<td>Online Learning: Is Critical Thinking a Part of the Discourse?</td>
<td>Majid Sharifi</td>
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<tr>
<td>8:20</td>
<td>Seth Eisele</td>
<td>Nietzsche: The Monsters and Abyss</td>
<td>Thomas Hawley</td>
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<tr>
<td>8:40</td>
<td>Vladimir Titkov</td>
<td>Nietzsche's <em>Beyond Good and Evil</em> Aphorism 146: An Analytical Interpretation</td>
<td>Thomas Hawley</td>
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<tr>
<td>9:00</td>
<td>Betsy White</td>
<td>Nietzsche: The Abuse and Misuse of His Philosophy in Second and Third Reich Germany</td>
<td>Thomas Hawley</td>
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<tr>
<td>9:20</td>
<td>Brian Holt</td>
<td>American Primacy and the Evolution of Terror</td>
<td>Dorothy Zeisler-Vralsted</td>
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<tr>
<td>9:40</td>
<td>Michael Hanson</td>
<td>Causes of Insurgency</td>
<td>Majid Sharifi</td>
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<td>10:00</td>
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<tr>
<td>10:20</td>
<td>Seth Eisele</td>
<td>Water Conflict in Southern Asia</td>
<td>Vandana Asthana</td>
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<td>10:40</td>
<td>Kyle Faltin</td>
<td>Corporate Influence on American Democracy</td>
<td>Thomas Hawley</td>
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<tr>
<td>11:00</td>
<td>Betty Craipo</td>
<td>Punitive Populism and the Social Capital It Depletes—Causes, Complications and the Cure: Restructuring the Criminal Justice System</td>
<td>David May</td>
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<tr>
<td>11:20</td>
<td>Betsy White</td>
<td>Same Sex Marriage</td>
<td>Thomas Hawley</td>
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<tr>
<td>11:40</td>
<td>Ethan Vodde</td>
<td>Where’d My Tuition Dollars Go? An Examination of Public Funding of Higher Education</td>
<td>Kevin Pirch</td>
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## Oral Session 13: Psychology II
Room 101, 1:30 p.m. – 5:00 p.m.

<table>
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<th>Time</th>
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<tbody>
<tr>
<td>1:30</td>
<td>Gail James, Amber Erickson, Megan Watkins</td>
<td>Children and Families: Second-Generation Incarceration</td>
<td>Theresa Martin</td>
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<tr>
<td>1:50</td>
<td>Michelle Elder, Darian Andrew, Brendan McKinney</td>
<td>Personal Use and Perceptions of Substance Use among College Students</td>
<td>Theresa Martin</td>
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<tr>
<td>2:10</td>
<td>Brooke Flodin, Adriana Sanchez, Anna Klingensmith, Curtis Bennett, Marissa Bronowski</td>
<td>Debugging the Future: Quality of Life, Academic Success and Student Acceptability of Assistive Technology</td>
<td>Susan Ruby</td>
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<tr>
<td>2:30</td>
<td>Chelsea Joynes</td>
<td>Gratitude and Grateful Coping Strategies on Student Success in College</td>
<td>Amani El-Alayli</td>
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<tr>
<td>2:50</td>
<td>Trevor Fry, Dana Case</td>
<td>Self-Awareness and Self-Monitoring of Time Estimation</td>
<td>Jonathan Anderson</td>
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<td>3:10</td>
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<tr>
<td>3:20</td>
<td>Kourtney Lechner, Taryn Brannon</td>
<td>The Effects of Emotion Regulation on Time Estimation</td>
<td>Jonathan Anderson</td>
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<tr>
<td>3:40</td>
<td>Holly-Ann Musgrave, Timothy Weber, Jessica Kauffman</td>
<td>Increasing Correct Condom Use in University Students</td>
<td>Charalambos Cleanthous</td>
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<tr>
<td>4:00</td>
<td>Ashley Brown</td>
<td>Individual Differences in Anti-Atheist Prejudice</td>
<td>Amani El-Alayli</td>
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<td>4:20</td>
<td>Nicole Sestrap</td>
<td>Do Morning People Have It Easier in Life?</td>
<td>Amani El-Alayli</td>
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<td>4:40</td>
<td>Dana Case</td>
<td>Bipolar Disorder and Working Memory</td>
<td>Jonathan Anderson</td>
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<td>Ashley Brown</td>
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### Oral Session 14: Psychology III
Room 124, 1:30 p.m. – 3:10 p.m.

<table>
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<th>Time</th>
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<tbody>
<tr>
<td>1:30</td>
<td>Megan Korst, Brittany Haugen, Brittany Myers, Michelle Whitlow, Abby Erickson</td>
<td>Contextual Priming of Emotion Ratings to Graphic Images</td>
<td>William Williams Kurt Stellwagen</td>
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<tr>
<td>1:50</td>
<td>Brittany Myers, Jay Chui, Abby Erickson, Trevor Fry, Ashley Nienhuis</td>
<td>Effectiveness and Credibility of Emotion Primers for Graphic Scenes</td>
<td>Kurt Stellwagen William Williams</td>
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<tr>
<td>2:10</td>
<td>Trevor Fry, Abby Erickson, Ashley Nienhuis, Michelle Whitlow</td>
<td>Moral Reasoning Distinguishes between Primary Psychopathy and Machiavellianism</td>
<td>Kurt Stellwagen William Williams</td>
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<tr>
<td>2:30</td>
<td>Michelle Whitlow, Megan Korst, Brittany Myers</td>
<td>Psychopathy and Moral Reasoning: Is There a Distinction between Primary and Secondary Psychopathic Traits?</td>
<td>William Williams Kurt Stellwagen</td>
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<tr>
<td>2:50</td>
<td>Elaine Appleby, Melissa Camden, Nicole Huntziker, Robyn Nishimura</td>
<td>Parental Warmth and Psychopathy</td>
<td>Kurt Stellwagen William Williams</td>
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### Oral Session 15: Mathematics
Room 124, 3:20 p.m. – 5:00 p.m.

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<tbody>
<tr>
<td>3:20</td>
<td>Tiffany Anderson</td>
<td>Time Series Modeling of Consumer Gasoline Prices</td>
<td>Christian Hansen</td>
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<tr>
<td>3:40</td>
<td>Jarod Gunning</td>
<td>Predicting the Success of Teams in the National Basketball Association Using Time Series Analysis</td>
<td>Christian Hansen</td>
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<tr>
<td>4:00</td>
<td>Charles Zahara, Karl Johnson, Ryne Rohla</td>
<td>Used Car Pricing: The Application of Linear Regressions to Predict Price</td>
<td>Christian Hansen</td>
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</table>
# Oral Session 16: Education and Chicano Education

Room 201, 1:30 p.m. – 4:40 p.m.

<table>
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<tr>
<th>Time</th>
<th>Author</th>
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<tbody>
<tr>
<td>1:30</td>
<td>Adrienne Kilbourne</td>
<td>Tiered Testing, Standards-Based Grading, and Next Steps</td>
<td>Sean Agriss</td>
</tr>
<tr>
<td>1:50</td>
<td>Melinda Fisk</td>
<td>Top Commercial Crops of Washington State: An Educational Text for Grades 4-8</td>
<td>Rodger Hauge</td>
</tr>
<tr>
<td>2:10</td>
<td>Amy Nunez</td>
<td>The Cuban Education System</td>
<td>Martin Meraz-Garcia</td>
</tr>
<tr>
<td>2:30</td>
<td>Lucia Vazquez</td>
<td>Social Services and the Aging Population in Cuba</td>
<td>Martin Meraz-Garcia</td>
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<tr>
<td>2:50</td>
<td>Bethany Mies</td>
<td>Chicana Feminism</td>
<td>Martin Meraz-Garcia</td>
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<tr>
<td>3:10</td>
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<tr>
<td>3:20</td>
<td>Amy Nunez</td>
<td>The Depiction of Latinos on KIMA Action News</td>
<td>Martin Meraz-Garcia</td>
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<tr>
<td>3:40</td>
<td>Fernando Ayala</td>
<td>Latinos in Print Media: <em>TIME</em> Magazine</td>
<td>Martin Meraz-Garcia</td>
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<tr>
<td>4:00</td>
<td>Andrew Pereira</td>
<td>U.S. Mexican Deportation and HIV/AIDS</td>
<td>Martin Meraz-Garcia</td>
</tr>
<tr>
<td>4:20</td>
<td>Emma Murillo</td>
<td>Power of Television and Media on Latino Stereotypes</td>
<td>Martin Meraz-Garcia</td>
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### Oral Session 17: Music, Computer Science, Engineering & Design (interactive)
Room 202 (2nd Floor Lounge), 1:30 p.m. – 3:00 p.m.

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<thead>
<tr>
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<tbody>
<tr>
<td>1:30</td>
<td>Yasas Amarasinghe</td>
<td>An Algorithmic Model for Music Composition and Performance</td>
<td>Benjamin Luca Robertson</td>
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<td></td>
<td>Davis Hill</td>
<td>A Modern Kithara</td>
<td>Jane Ellsworth</td>
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<td></td>
<td>Victor Colton</td>
<td>Parallel Implementation of Emergent Schooling Behavior Modeling and Simulation Using a KNN Topological Distance Model</td>
<td>Paul Schimpf</td>
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<tr>
<td>3:00</td>
<td>Andrew Sheridan, Nick Hillstrom, Jessica Ferry, Chris Colegrove</td>
<td>3D Campus Tour</td>
<td>Brian Kamp</td>
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<td>Ken Prothero, Paz Hakim</td>
<td>Designing and Building a Cardboard Vehicle</td>
<td>Awlad Hossain</td>
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<td>Lucas Warren, Thomas VandeVanter, Nicholas King, Yodit Turan</td>
<td>Human Powered Paper Vehicle Team Re-Cycle 2013</td>
<td>Awlad Hossain</td>
</tr>
<tr>
<td>Oral</td>
<td>Victor Colton</td>
<td>COTS SSVEP-Based BCI Control Using the Emotiv EPOC</td>
<td>Paul Schimpf</td>
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</table>

### Oral Session 18: Academic Success Center
Room 203, 1:30 p.m. – 3:10 p.m.

<table>
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<th>Time</th>
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<tbody>
<tr>
<td>1:30</td>
<td>Olivia Bentley, Caleb Watson</td>
<td>Classroom without Limits</td>
<td>Kevin Klim</td>
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<tr>
<td>1:50</td>
<td>Micah Fechner, Joseph Cronrath</td>
<td>Our Experience with Leadership</td>
<td>Molly Orheim</td>
</tr>
<tr>
<td>2:10</td>
<td>Conner Linscott, Makinsie Morgan, Jessica Hernandez</td>
<td>We Went to Moab, Now What?</td>
<td>Summer Hess</td>
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<td>Summer Hess</td>
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<tr>
<td>2:50</td>
<td>Shelby Wilkerson, Nathan Huff</td>
<td>Improved Awareness through Leadership and Service</td>
<td>Molly Orheim</td>
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### Oral Session 19: History  
Room 204, 1:30 p.m. – 4:00 p.m.

<table>
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<tbody>
<tr>
<td>1:30</td>
<td>Fira Ballew</td>
<td>Attitudes toward Homo-Gendered Relationships in Ancient Egypt</td>
<td>Mimi Marinucci</td>
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<tr>
<td>1:50</td>
<td>Meredith Bezold</td>
<td>Socrates and Aristophanes’ <em>Clouds</em>: A Deadly Combination</td>
<td>Ann LeBar</td>
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<tr>
<td>2:10</td>
<td>Rebeka Smithson</td>
<td>Olympias and Alexander III of Macedonia Alleged Involvement in the Assassination of Phillip II of Macedonia</td>
<td>Georgia Bazemore</td>
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<tr>
<td>2:30</td>
<td>Anthony Austin-Walker</td>
<td>The Invocative Use of the Name of Jesus in Exorcism in Christian Antiquity and Modern Pentecostalism</td>
<td>Laura Phillips</td>
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<td>2:50</td>
<td>Break</td>
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<tr>
<td>3:00</td>
<td>Cheyenne Dunham</td>
<td>How a Woman Bewitched a Town: Tituba and the Salem Witch Trials</td>
<td>Ann LeBar</td>
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<tr>
<td>3:20</td>
<td>David Collins</td>
<td>Home Colony: A Twentieth-Century Example of Resistance to Capitalism and a Practical Elucidation of Voluntary Association and Mutual Aid</td>
<td>Joseph Lenti</td>
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<tr>
<td>3:40</td>
<td>Laura Glasgow, Anna Greiner-Shelton</td>
<td>Connecting the Past and Present through Your Smartphone!</td>
<td>Larry Cebula</td>
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Oral Session 20: Physical Education, Health, and Recreation  
Room 221, 1:30 p.m. – 2:30 p.m.

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<tbody>
<tr>
<td>1:30</td>
<td>Jordan Apfelbaum</td>
<td>First-Generation College Student Course Design</td>
<td>Jon Hammermeister</td>
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<tr>
<td>1:50</td>
<td>Caitlyn Jordan</td>
<td>The Trail Map: A Goal Organizational Tool for First-Generation College Students</td>
<td>Jon Hammermeister, Emily Messina</td>
</tr>
<tr>
<td>2:10</td>
<td>Megan Jeffris, Jamie Nikander, Quinn Marianno, Kent Wilcox</td>
<td>Effect of Kinesiotape on Edema Reduction after an Acute Lateral Ankle Sprain</td>
<td>Garth Babcock</td>
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Oral Session 21: Economics and Business  
Room 221, 2:40 p.m. – 4:40 p.m.

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<tbody>
<tr>
<td>2:40</td>
<td>Eric Dunaway</td>
<td>The Impact of Virtual Currencies on Real Markets</td>
<td>David Bunting</td>
</tr>
<tr>
<td>3:00</td>
<td>Samuel Wolkenhauer</td>
<td>NGDP Targeting and Monetary Policy at the Zero Lower Bound</td>
<td>Kelley Cullen</td>
</tr>
<tr>
<td>3:20</td>
<td>Greta Olson</td>
<td>The Impact of Corporate Governance on Monetary Variables</td>
<td>Arsen Djatej, Elizabeth Tipton</td>
</tr>
<tr>
<td>3:40</td>
<td>Miu Teramoto</td>
<td>The Job Search in Japan: Customs and Techniques</td>
<td>LaVona Reeves</td>
</tr>
<tr>
<td>4:00</td>
<td>Aiko Sato</td>
<td>Immigrant Workers in Japan: Benefits and Challenges</td>
<td>LaVona Reeves</td>
</tr>
<tr>
<td>4:20</td>
<td>Hannah Morgan, Erin Curtis</td>
<td>Battle of Professors</td>
<td>Kirk Aiken</td>
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</table>
### Oral Session 22: Journalism and Technical Communication
Room 243, 1:30 p.m. – 3:40 p.m.

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<tbody>
<tr>
<td>1:30</td>
<td>Joshua Friesen</td>
<td>Using Newspaper Design to Increase Readership</td>
<td>Jamie Neely</td>
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<tr>
<td>1:50</td>
<td>Jane Martin</td>
<td>Using Public Records in Crime Reporting</td>
<td>Jamie Neely</td>
</tr>
<tr>
<td>2:10</td>
<td>Amy Meyer</td>
<td>Eagles and Phoenixes: How the EWU Student Newspaper Produced an Award-Winning Website out of the Ashes of a Catastrophic Website Crash</td>
<td>Jamie Neely</td>
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<tr>
<td>2:30</td>
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<td>Break</td>
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<tr>
<td>2:40</td>
<td>Al Stover</td>
<td>Crafting a Special Section in a Newspaper</td>
<td>Jamie Neely</td>
</tr>
<tr>
<td>3:00</td>
<td>Rhiannon Thompson</td>
<td>Leadership Communication Strategies Applied to the Field of Technical Communication</td>
<td>Teena Carnegie</td>
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<tr>
<td>3:20</td>
<td>Brandy Bippes</td>
<td>Technical Communication in Cuba</td>
<td>Julia Smith</td>
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### Oral Session 23: Sociology, Social Work, Children’s Studies and Communication Studies
Room 302, 1:30 p.m. – 4:00 p.m.

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<tr>
<td>1:30</td>
<td>Jose Mendez</td>
<td>Juvenile Delinquency: A Macro Perspective</td>
<td>Kerryn Bell</td>
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<tr>
<td>1:50</td>
<td>Carina Silva</td>
<td>Migrant Seasonal Head Start</td>
<td>Martin Meraz-Garcia</td>
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<tr>
<td>2:10</td>
<td>James Faulkner</td>
<td>Trauma Sensitive Interventions in Life: The Part YOU Can Play</td>
<td>Amanda Reedy</td>
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<td>2:30</td>
<td>Lateasha Lewis</td>
<td>“This Kind of Thing Happens Every Day”: The Emotions Bullying Produces</td>
<td>Sue Wright</td>
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<td>2:50</td>
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<td>Break</td>
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<tr>
<td>3:00</td>
<td>Kayla Miller</td>
<td>Stimulant Medications to Treat ADHD: Effective or a Side Effect</td>
<td>Matthew Hodgson</td>
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<tr>
<td>3:20</td>
<td>Eric Dean</td>
<td>An Ethical, Ideological and Moral Approach to LGBTQ Advocacy</td>
<td>Elizabeth Kissling</td>
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<td>3:40</td>
<td>Heather Liddicoat</td>
<td>The Sexualization of Women: Strip Clubs and the Females Who Patronize Them</td>
<td>Galina Sinekopova</td>
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### Oral Session 24: Occupational Therapy and Physical Therapy
Room 304, 1:30 p.m. – 4:00 p.m.

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<tr>
<td>1:30</td>
<td>Philip Aldridge, Julie Daniels, Juanita Villa, Elissa Bell, Amanda Chacon</td>
<td>The Effects of an iPad Application on Letter-Writing Skills for Preschool Children: A Single Subject Design</td>
<td>Roberta Russell</td>
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<td>1:50</td>
<td>Andrew Peaker, Kim Brewer, Bethany Mason, Meghan Sanborn, Jess Ullman</td>
<td>The Role of an Occupational Therapy Fieldwork II Student in a Program for Assertive Community Treatment</td>
<td>Diane Norell Greg Wintz</td>
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<td>2:30</td>
<td>Laura Hall, Julianne Keenan, Brian Coleman</td>
<td>VIPER: Ergonomic Applications in the Grocery Industry for Prevention of Musculoskeletal Injuries</td>
<td>Dan Anton</td>
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<td>2:50</td>
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<tr>
<td>3:00</td>
<td>Julianne Keenan, Laura Hall, Brian Coleman</td>
<td>Use of the iPhone’s Accelerometer to Help Physical Therapy Students Improve Skill Acquisition of Spinal Manipulation</td>
<td>Dan Anton</td>
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<td>3:20</td>
<td>Kathryn Irish</td>
<td>Urinary Incontinence and Balance in an Elderly Population</td>
<td>Patricia Nelson</td>
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<tr>
<td>3:40</td>
<td>Ashley Wilkens</td>
<td>Exercise Dosage and Urinary Incontinence Status in Young, Nulliparous Women</td>
<td>Patricia Nelson</td>
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### Oral Session 25: Public Administration and International Affairs
Room 306, 1:30 p.m. – 2:30 p.m.

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<tr>
<td>1:30</td>
<td>Anna Vamvakias</td>
<td>Governance and Global Warming: How Should They Be Connected?</td>
<td>Carmen Apaza</td>
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<td>1:50</td>
<td>Ahmed Hafizallah</td>
<td>Advancement in Health Care in Saudi Arabia</td>
<td>LaVona Reeves</td>
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<td>2:10</td>
<td>Alyssa FitzGerald</td>
<td>The Transformation of Sovereignty: How Globalization Has Affected the Nation-State, Authority, and Contemporary Border Control</td>
<td>Majid Sharifi</td>
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### Poster Sessions

**Hargreaves Hall, 2nd Floor Reading Room**  
Session 1: 8:00 a.m. - 9:45 a.m.; Session 2: 10:15 a.m. - 12:00 p.m.  
Session 3: 1:30 p.m. - 3:00 p.m.

Presenters will be available to discuss their posters during each session

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<td>Carissa Senkler, Melissa Riddle, Allison Paparella</td>
<td>Validation of the Attribution-Optimism Scale with High School Students</td>
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<td>Trevor Fry, Dana Case, Chelsea Joynes, Andrew McCall, Christin Quinn</td>
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<td>Leah Ruiz, Patrice Frazier</td>
<td>Effects of Procrastination on Self-Esteem</td>
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<td>Andrew McCall, Ty Finkas</td>
<td>Housing Discrimination against Prospective Muslim Renters in a Non-Fair-Housing Market</td>
<td>Amani El-Alayli</td>
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<td>7. Psychology</td>
<td>Heather Hanson, Silver Lewis</td>
<td>Characteristics of Your Ideal Partners</td>
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<td>Wylie Rhoads, Marlena Kennedy, Leah Ruiz, Lauren Thomas</td>
<td>Good Lovin’: The Effects of Stressors on Sexual Satisfaction among Non-Cohabitating, Cohabitating, and Married Couples</td>
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<td>The Role of Narcissistic Subtypes in Body Perception</td>
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<td>Casey Picha</td>
<td>The Impacts of Eastern Washington University’s Climbing Wall on Student Grades</td>
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<td>Matthew Birch</td>
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<td>Monique Fisher, Kelley Devoe, Heather Gianola, Jennifer McManus, Ashley Richardson, Robin Serquenia</td>
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<td>Bradley Goff, Tyler Christensen</td>
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<td>Ashley Flynn, Megan Apple, Jaelyn Johnson</td>
<td>Fast Acting Topical Anesthetic</td>
<td>Jamie Woods</td>
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<td>29. Dental Hygiene</td>
<td>Lindsay Doerschuk, Jolynn Jernigan, Salysia Lopez, Taylor Rogers</td>
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<td>Rebecca Tranmer</td>
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<td>Forensic DNA Typing: Comparison and Selection of the Best Performing Commercial Kit</td>
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<td>Alec Wynd</td>
<td>The Search for Biodegradable, Nitrogen-Releasing Hydrogels. Crosslinking of Poly(4-alkyl-4-azaheptamethylene-D-aldaramides.</td>
<td>Travis Denton</td>
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<td>33. Chemistry &amp; Biochemistry</td>
<td>Grant Caudill</td>
<td>Molecular Dynamic Simulation of ITPA and ITPA-P32T</td>
<td>Yao Houndonougbo</td>
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<td>Melissa Rhodehouse</td>
<td>Molecular Simulations of Adsorption Separation of CH₄/CO₂ in Zeolitic Imidazolate Frameworks</td>
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<td>35. Chemistry &amp; Biochemistry</td>
<td>Anh Le</td>
<td>Preparation of Mono- and Dialkylacetylphosphonate: Synthesis, Isolation and Purification</td>
<td>Travis Denton</td>
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<td>36. Chemistry &amp; Biochemistry</td>
<td>Phuong Nguyen</td>
<td>Electrogravimetric Analysis: Copper</td>
<td>Wes Steiner</td>
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<td>38. Physical Education Health and Recreation</td>
<td>Virginia Roth, Quinn Marianno, Maria Aparicio, Alex Klota</td>
<td>Treatment of a 21-Year-Old Male Track Athlete with an Osteochondral Lesion of the Talus Using a Microfracture Surgery</td>
<td>Garth Babcock</td>
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<td>39. Physical Education Health and Recreation</td>
<td>Abigail Waldo, Medea Berstein, Elishia Andрада, Jessalyn Colemen</td>
<td>22-Year-Old Female Collegiate Volleyball Player with a Left Hallux Fracture</td>
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<td>40. Physical Education Health and Recreation</td>
<td>Amanda Humphrey, Kaiti Bolles, Rachel Weiss</td>
<td>Management of a Male Football Athlete with Sickle Cell Trait</td>
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<td>Jake Howell, Whitney Champlin, Marissa Cox, Farrah French</td>
<td>Case Study of a 19-Year-Old Male Collegiate Basketball Player following Arthroscopic Patellar Chondrectomy</td>
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<td>Liz Gelhaus, Megan Jeffris, Kent Wilcox, Emily Flannery</td>
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<td>Asiya Akhgar, Whitney Kath, Alexis Gholston</td>
<td>Non-Surgical Approach to the Treatment of Hallux Valgus in a Division I Women’s Basketball Player</td>
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<td>45. Physical Education Health and Recreation</td>
<td>Jennifer Ach, Patrick Meisenheimer, Casie McGuinness</td>
<td>21-Year-Old Male Collegiate Football Player with Pectoralis Major Rupture</td>
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<td>46. Physical Education Health and Recreation</td>
<td>Jessica Vigil, Victoria Borgman, Halla Daoui, Lalida Gentry, Tonya Jones, Marlina Mazyck</td>
<td>Promotion, Implementation, and Evaluation of the ECHO Taste Test</td>
<td>Robin Pickering</td>
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<td>Nick Kelly, Efraim Sanchez</td>
<td>Effects of a Running-Based High-Intensity Interval Training Protocol on Aerobic Adaptations: A Pilot Study</td>
<td>Wendy Repovich</td>
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<td>Lance Beisley</td>
<td>How Depth Jumps Effect Maximal Strength</td>
<td>Nate Lawton</td>
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<td>Jennifer Kumanchik, Anastacia Lee</td>
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<td>Leslie Martin, Breann Booher, Joe Cordes</td>
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<td>Mallory Burgess</td>
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<td>56. Geology</td>
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<td>Simon Doi, John Thurston</td>
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<td>Michael Landkammer, Amy Thompson</td>
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<td>Karen Carlberg, Joanna Joyner-Matos</td>
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<td>Thomas Vanderholm, Eric Marr, Britt Yazel, Dana Case</td>
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Misunderstandings about Saudi Women: An Auto-Ethnography
Karima Abdulrahim
LaVona Reeves, English

Myths about Islamic women prevail around the world. In Saudi Arabia, it is true that “[i]ntegration of the sexes, at least in public” remains non-existent. There are even separate sections in Starbucks for single men to sit apart from families and women. “Veiling is enforced. The husband is considered the master of the family, and Islamic customs and traditions dominate the ideas, practices and ambitions of Saudi women. This does not mean, however, that Saudi women find themselves in a closed society where no one listens to their voices, where there are no links to the world of men, or where there is no way in which they can influence policies affecting themselves or society in general” (Bahry) though Saudi women were just recently granted suffrage. Abdulrahim discusses women's lives, cultures, roles, and education in Saudi Arabia. She tells her own story as a mother, wife, and student in the United States.

21-Year-Old Male Collegiate Football Player with Pectoralis Major Rupture
Jennifer Ach, Patrick Meisenheimer, Casie McGuinness
Garth Babcock, Physical Education, Health and Recreation

Pectoralis major tendon ruptures are generally rare in collegiate level events. The usual mechanism of injury is a violent, eccentric contraction of the muscle. This present study focuses on a 21-year-old male football athlete in a Division I athletic program with a unique sequence of pectoralis major injuries. The subject sustained a partial pectoralis major tendon tear while completing a bench press during the spring of 2012. The subject then sustained a second complete tear to the same pectoralis major tendon less than six months after the first tear was conservatively treated. Conservative and surgical treatment is discussed along with post-operative care, rehabilitation, and the clinical outcome.

Metal Concentrations: A Comparison between the Spokane and Little Spokane Rivers
Garth Ahern-Hendryx, Amy Thompson, Cristine Schucker
Carmen Nezat, Geology

Metals in aquatic systems can adversely affect wildlife and pose a human health risk. The goal of our study was to compare dissolved metals between the Spokane and Little Spokane Rivers. Water samples were collected from 14 sites and conductivity, dissolved oxygen (DO), pH, and temperature were measured in situ. Dissolved metals that may be from upstream mining activities in Silver Valley (such as zinc, cadmium, and lead) were analyzed by ICP-OES in the EWU Geochemistry lab, as well as elements commonly found in river water (e.g., calcium, potassium, and silicon). The Little Spokane River showed higher concentrations of most metals, while the Spokane River showed slightly higher levels of the EPA regulated metals Cd and Zn.
Sandbox Modeling of Faulting in Compressional Regimes
Garth Ahern-Hendryx, Shane Kostka
Chad Pritchard, Geology

We modeled an orogenic belt to examine compression on units of different grain-sizes and thicknesses, and to study changes in fault angles through incremental shortening. The forces modeled resemble a tectonic setting such as the Cordilleran thrust belt. In our sandbox model we added alternating layers of kaolinite and sand. The beds were compressed in seven separate increments of three centimeters. We placed two irregular bodies of fine grain orange sand to model igneous intrusions and act as strain ellipsoids in the hanging and footwall. Bedding displayed faults whose angles decreased as compression increased and became inactive when energy transferred to a new fault. Deformation initiated as folding during the first increments and progressed to more complex structures. Fault angles decreased from 30° to 20° over 21 cm of compression. Similar observed features in the model can be found in the natural orogenic settings.

The Effects of Perlite on Compaction, Shear Strength, and Water Retention of Palouse Soil
Garth Ahern-Hendryx, Shane Kostka
Richard Orndorff, Geology

We examined the effects of perlite on compaction, shear strength, and water retention of Palouse soil. Perlite is a natural porous rhyolitic glass formed by the quenching of viscous lavas. Palouse soil is Pleistocene eolian loess and supports productive agriculture in Eastern Washington, Oregon, and Northern Idaho (USGS 2013). We obtained our Palouse soil sample near the campus water tower at Eastern Washington University on 13 February 2013 and subjected the soil to a series of standardized tests (ASTM) to determine its physical and index properties. We added 5% and 10% perlite by weight and replicated several of the tests. Perlite is used as a soil amendment because of its low water retention and ability to resist compaction. We found that Palouse soil containing 5% perlite had a lower maximum dry unit weight. After running a statistical test, we found 10% perlite increased the Palouse soil’s water retention ability (p = 0.003736). Soil with 5% perlite decreased the maximum yield strength achieved by Palouse soil.

Non-Surgical Approach to the Treatment of Hallux Valgus in a Division I Women’s Basketball Player
Asiya Akhgar, Whitney Kath, Alexis Gholston
Jeffrey Kawaguchi, Physical Education, Health and Recreation

Bunions are a deformity occurring at the first metatarsophalangeal joint; often accompanied by a hallux valgus deformity. They can be extremely painful and detrimental to an athlete during their participation in sport. In the present study, the subject is a 22-year-old female Division 1 basketball athlete with both a bunion and hallux valgus deformity. Although the subject has not yet undergone the surgical procedures to correct the deformities, the maintenance plan is often changing due to progressing pains and the complications of an accessory navicular bone. This maintenance plan is what gives the study its uniqueness; oftentimes a patient can maintain play through a certain set of exercises or tape procedures, but this subject has experienced several complications with many of the different maintenance procedures.
K-12 Teachers’ Perception about Integration of Social Media Tools into Instruction in Saudi Arabia
Hamdan Alamri
Jane Liu, Education

This poster is to share the findings from a survey study of social media use among Saudi K-12 teachers. The study investigated the K-12 teachers’ perception about social media use in the classroom. 306 K-12 Saudi teachers from 18 schools of four different cities participated in the study. Descriptive and chi-square analysis was conducted to report findings. The results indicated that the majority of the participating teachers believed in the benefits of social media integration into instruction, as teachers in any other countries. The data also revealed some challenges that imply the urgent need to examine how social media use in a classroom affects students’ learning and how teachers choose their instructional strategies to work with and for students of the 21st century.

Particular Problems Faced by Arabic Speakers in Learning English in the U.S.
Sultan Albalawi
LaVona Reeves, English

This presentation focuses on the particular language challenges for Saudi students who are studying English in the United States and the methods English teachers can use to lessen these problems and help Arabic speakers to overcome language barriers. In language study, Anglophone teachers would do well to have a working knowledge of specific linguistic features of the Arabic language such as phonological differences that affect spelling in English. Arabic speakers face a specific set of difficulties dealing with differences among English and Arabic orthographic characters, pronunciation, and syntax as well as methods of literacy coaching that take into account Islamic tradition.

The Effects of an iPad Application on Letter-Writing Skills for Preschool Children: A Single Subject Design
Philip Aldridge, Julie Daniels, Juanita Villa, Elissa Bell, Amanda Chacon
Roberta Russell, Occupational Therapy

Handwriting is crucial for school success, but some children have difficulty mastering them sufficiently for use in school work. This study sought to find what intervention best supports letter-writing skill development in a preschool setting. This single-subject study with multiple baselines and conditions compared two letter-writing strategies. One strategy taught traditional letter-copying with a chalkboard. The other strategy used an iPad app for instruction. For the last condition the student was asked to choose one of the two strategies. The child copied three sets of letter pairs and successfully reproduced legible letters within four sessions on all letter pairs under both conditions. In the final condition, the child selected the iPad app. For this child, both the iPad app and the chalkboard instruction supported mastery of legible letter writing. However, when given a choice the child preferred the iPad app as a letter-writing learning strategy. Additional subject data is pending.
28 Days Later: A Progressive Feminist Film
Krystal Alexander
Pete Porter, Film

Throughout the history of horror film, women have been depicted as victims and sufferers. These women spend the majority of their films running from their adversaries rather than confronting them head-on. Danny Boyle’s 28 Days Later (2002) reverses these tropes and depicts a contemporary, twenty-first century feminist vision of women. This paper will explore how 28 Days Later breaks from traditional gender ideologies presented in horror films. It will examine the relationships between male and female characters and how their typical gender roles have been switched. As the film explores new territory in horror gender theory, it still adheres to paradigms of the genre, such as the relations between women and monsters. The paper will also apply how both genders are forced back into their archetypal roles when placed into a male dominant society. As opposed to other horror films, the women of 28 Days Later play a significant role and are not mere targets of horrific spectacle like their predecessors. It is because of this that 28 Days Later can be considered a progressive feminist film.

Shrinking DC-DC Converters with Gallium Nitride
Ahmad Al-Hawasli
Jabulani Nyathi, Engineering and Design

Converters available on the market today are bulky and heavy. This is an issue for designers that are trying to achieve smaller and lighter DC-DC converters. The objective of my research is to reduce the size and weight of a Boost converter while maintaining high efficiency by utilizing Gallium Nitride (GaN) Field Effect Transistor (FET) and diode technology. GaN’s unique characteristics of improved high speed switching, lower on-resistance and the smaller size of the actual FET make this a possibility. These capabilities would enable designers to reduce power losses (leading to higher efficiency), reduce system size and ultimately reduce system costs. I put together a PCB board to test the performance a boost converter with the GaN configuration, collect data points, and then compare the collected data to a boost converter that utilizes a commonly used power MOSFET. I hypothesize that using higher bandwidths of frequency leads to a lower inductance value, reducing the size of the energy storage components. Such optimized converters are aimed at the auto and aerospace industries.

Combined Efficacy of Tamoxifen (TAM) and Thymoquinone (TQ) on Total Antioxidant Capacity and Lipid Peroxidation in DMBA Induced Mammary Carcinoma in Female Rats
Nadiah Alotaibi
Karen Carlberg, Biology
Joanna Joyner-Matos, Biology

Reactive oxygen species play a major role in tumor promotion. My aim was to determine the efficacy of combined TAM and TQ on antioxidant status and lipid peroxidation in female rats with DMBA induced mammary tumors. TAM is a drug used to treat women with estrogen sensitive breast cancer, and TQ, from Nigella Sativa oil, is a Middle East natural medicine. My hypothesis was that the combination of TAM and TQ would increase the production of antioxidant enzymes and decrease the lipid levels more than TAM or TQ alone. Five groups of 10 rats each (control, DMBA, DMBA+TAM, DMBA+TQ, DMBA+TAM & TQ) received DMBA (single dose) followed by daily treatments (TAM, TQ, none), by oral gavage. After 10-week blood samples were collected by cardiac puncture. The total antioxidant capacity and the lipid peroxidation were measured by OxiSelect assay kits. Data were analyzed by the Kruskal-Wallis test.
Integration of Technology into Teacher Training Courses in Saudi Arabia
Ahmed Alzahrani
Jane Liu, Education

A survey study of 22 questions was completed by 80 Saudi faculty from five higher education institutions from three different cities. The study investigated the current status of technology integration in pre-service teacher training programs and the faculties’ experiences in using technology in Saudi Arabia’s teacher training programs. Descriptive and chi-square analysis will be reported. The research results indicated faculties’ positive attitudes toward using technology in teaching and learning processes, as well as Saudi faculties’ lack of technology use in their teaching. The data also revealed some barriers that prevented the faculties from technology integration.

An Algorithmic Model for Music Composition and Performance
Yasas Amarasinghe
Benjamin Luca Robertson, Music

The software program was designed using Pure Data, a visual programming language developed for music and multimedia. The program creates a model which is similar to our solar system where a few objects travel around a center on circular paths. Depending on the speed of the object and its distance to the center, a particular pitch map is created on its entire route, and the respective pitches can be heard when the object passes through certain preselected points on its pathway. The user has the ability to control the speeds of the objects and their circular paths’ radii according to the desired aural outcome. The model is visually represented on the screen in real time.

Time Series Modeling of Consumer Gasoline Prices
Tiffany Anderson
Christian Hansen, Mathematics

Gasoline prices are something that affects us all. Whether it is the cost at the pump with each fill up or the cost of goods from retailers, when the costs go up we all feel it. The average cost of gasoline includes, among other factors, the average cost of oil. Being able to predict gasoline prices allows us to make informed decisions about our spending, possibly resulting in a few more dollars in our pockets. This presentation will discuss factors that affect gasoline prices, general statistical forecasting, and end with an example using actual gasoline prices gathered weekly over the last twenty plus years.

I’m Not All That
Darian Andrew, Juline Girts, Molly Fitzpatrick, Chante Curran
Theresa Martin, Psychology

The following study investigates the relationship between self-esteem and relationship anxiety with a variant of the Imposter Syndrome as it pertains to feelings of inadequacy in intimate relationships. We will present initial results drawn from an anonymous, web-based survey and predict that persons who are low in self-esteem and high in relationship anxiety will feel less secure in their intimate relationships.

Scenic Painting
Marlee Andrews
Shana Joslyn, Theatre

The 4’ by 6’ flats presented show the importance of two dimensional painting in Theatre. The flats also feature the basic techniques of scenic painting that deceive the eye into believing its “realistic nature.”
**Ventenata dubia Invasion within a Mima Mound Prairie in Eastern Washington**  
Kristin Anicito  
Rebecca Brown, Biology

Invasive annual grasses like *Ventenata dubia* and *Bromus tectorum* threaten ecosystems of the western United States. While *B. tectorum* is well established, *V. dubia* has expanded, especially in habitat preferred by biological soil crust (biocrust). Our goal was to document how *V. dubia* abundance changed since 2009 in the Mima mound prairie at Turnbull National Wildlife Refuge, including its relationship with *B. tectorum* and biocrust. We surveyed the vascular plant and biocrust communities in 225 1-m² Mima mound plots in 2009, 2010, and 2012, and added plots between mounds in 2012. *V. dubia* abundance increased 10-fold on Mima mounds since 2009, with a greater increase on basalt than alluvial mounds. *B. tectorum* abundance did not change. In 2012, *V. dubia* and biocrust were more abundant between than on mounds; where there was more *V. dubia* there was less biocrust. The area between basalt mounds was once dominated by biocrust, however, it appears that *V. dubia* has open this niche, potentially leading to a drastic decrease in biocrust abundance and diversity in the Inland Northwest.

**4 Poems**  
Derek Annis  
*Aileen Keown Vaux, Creative Writing*

I will be reading 4 poems that I have written since declaring my Creative Writing Major at EWU.

**First-Generation College Student Course Design**  
Jordan Apfelbaum  
Jon Hammermeister, Physical Education, Health and Recreation

First-generation college students (FGCS) face many obstacles when attending college. FGCSs are less likely to graduate in a timely manner, less satisfied with their college experience, and more likely to have difficulty financing their education (Pike & Kuh, 2005). Approximately one-half of the Eastern Washington University student population is first-generation. In response to this large percentage of FGCS, four experimental classes were developed to improve the psychological resiliency, academic performance, and personal success of freshman FGCS at EWU. The curriculum focused on areas of mental toughness, imagery, self-confidence, and goal setting. Four different delivery methods were used for each class; one-on-one meetings, online, lecture, and a hybrid class using the other three methods. Supplementary lectures and materials were also provided through the university’s new classroom management system, Canvas. This presentation will focus on the methods and materials used in those experimental courses. Results of the impact this material had on FGCS will also be discussed.

**Narcissism and Moral Reasoning**  
Elaine Appleby, Melissa Camden, Nicole Huntziker, Robyn Nishimura  
Kurt Stellwagen, Psychology  
William Williams, Psychology

Although a number of researchers have drawn conceptual linkages between narcissism and underdeveloped moral reasoning (e.g., Thoma & Bebeau, 2008), the extant empirical literature has typically failed to indicate a significant narcissism/morality linkage (e.g., Traiser & Eighmy, 2011; Williams, et al. 2006). The present research further explored the moral judgments of individuals possessing narcissistic traits, utilizing hypothetical dilemmas that assessed the willingness to take highly emotionally aversive actions that involve a “utilitarian” attitude towards people (for example, being willing to push one person off a bridge in order to save other lives). Based on prior findings, we hypothesized that there would be no significant association between narcissistic traits and utilitarian moral reasoning. Results of a hierarchical regression procedure (using year-of-study, gender, and ethnicity as control variables) confirmed this hypothesis, although there was a nonsignificant trend for narcissism to be associated with some select elements of a utilitarian response pattern.
Parental Warmth and Psychopathy
Elaine Appleby, Melissa Camden, Nicole Huntziker, Robyn Nishimura
Kurt Stellwagen, Psychology
William Williams, Psychology

The present research explored whether levels of perceived parental warmth were associated with the tendency to show the characteristics of primary psychopathy (e.g. interpersonal callousness, irresponsibility, and a tendency to exploit others). While current etiological models of psychopathy strongly stress neurobiological risk factors (e.g. Hare, 1999), it may be that earlier (descriptive) models of psychopathy that stressed disrupted attachment (e.g. Bowlby, 1946) also describe an important risk factor. We hypothesized that the perception of parental coldness (i.e. high levels of perceived rejection and low levels of perceived affection) would predict the presence of psychopathic traits. Surveys of perceived parental coldness and self-reported psychopathic traits were completed by 221 EWU students. Results of a regression procedure (using year-of-study, gender, and ethnicity as control variables) confirmed our hypothesis. Moreover, results were significant for all four parenting variables assessed (i.e. mother warmth, mother rejection, father warmth, father rejection).

Perceptions of Animal-Assisted Therapy for Children in Grief: A Case Study Approach
Anne Arkell, Denise Alexander, Tawny Robertson, Jayme Gilliam
Susan Burwash, Occupational Therapy
Greg Wintz, Occupational Therapy

Perceptions of children, bereavement counselors, and dog handlers regarding the use of animal assisted therapy (AAT) were explored in a children’s grief counseling setting. This study expanded on research by Kilpatrick et al. (2012) by validating their qualitative findings and adding quantitative support. Participants included 11 children who had lost a loved one, 4 bereavement counselors, and 3 dog-handler/therapy dog teams. Themes were triangulated with counselors and dog handlers survey responses, and with themes identified by Kilpatrick et al. Children’s perceptions were measured using a VAS. Statistical analysis was performed using an ANOVA to detect changes in perceptions. Results support the use of AAT for initiating communication and facilitating relationships in grief counseling through proximity, the just-right-distraction, emotional regulation, and transitioning between activities.

Groundwater Interaction between Columbia River Basalt Group and Paleodrainage Aquifers, West Plains, Washington
Zachary Arms
Chad Pritchard, Geology

Columbia River Basalt Group hosts multiple aquifers and may impede storm water runoff, which are both major concerns in the West Plains of Eastern Washington. The aquifers are dominated by Columbia River Basalts, namely a shallow and less extensive aquifer in the Priest Rapids member of the Wanapum basalts and deeper zones near the contact of the Sentinel Bluffs and Wapshilla Ridge members of the Grande Ronde basalts. When these aquifers are pumped, rapid drawdowns have been measured. Storm water can perch on shallow basalt and lead to property damage and hazardous conditions. However, the presence of a few gravel filled channels (paleodrainages) influence recharge, or drawdown, of the aquifers and may facilitate rapid storm water removal from densely populated areas. We have analyzed samples from drill cuttings and classified the basalts from three wells in Airway Heights. In conjunction with other well data we have produced a cross section that shows that the paleodrainages may act as conduits for groundwater recharge, aquifer mixing, and storm water drainage pathways.
**John Calvin Was a Feminist: The Liberating Effects of a New Doctrine in Seventeenth-Century Dutch Republic**

*Teresa Asbury  
*Barbara Miller, Art*

By examining Calvinist doctrine against the backdrop of the Medieval and Renaissance periods, and through the lens of various painted works from the time, we can see greater value esteem placed on the role of women in 17th-century Dutch Society.

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**Mama Done Flown the Coop**

*Teresa Asbury  
*Greg duMonthier, Art*

In my work I examine the paradox between being a mother and an artist, the drive to pull away from one’s children to create a singular identity while simultaneously embracing one’s role as “mother.” I seek to acknowledge what women are never supposed to admit that there exists a drive pulling one both toward and away from one’s children and, through the use of various woven media, express the resulting state of guilt and isolation a mother often encounters.

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**Film as Art: Why Terrence Malick’s *The Tree of Life* is Art According to Rudolf Arnheim**

*Heather Ashford  
*Pete Porter, Film*

Film theorist Rudolf Arnheim has argued that the more film moves toward reality, the less of an art it becomes. The “complete film,” a film so realistic it can no longer be distinguished from reality, only perpetuates the idea that film is not an art form, but a mechanical reproduction. However, Arnheim believes that when a film diverges from reality it creates art. There are six ways in which films diverge from reality, and the film *The Tree of Life* by Terrence Malick utilizes each of them and therefore is film art according to Arnheim.

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**The Invocative Use of the Name of Jesus in Exorcism in Christian Antiquity and Modern Pentecostalism**

*Anthony Austin-Walker  
*Laura Phillips, History*

This study compares exorcism through use of the name “Jesus” and spirit possession in both Christian antiquity and modern Pentecostalism. In both eras, the Church has made miraculous claims of deliverance from demonic forces actuated by the invocation of the name of Jesus Christ. Reports of demonic possession are not as rare as Westerners may think considering the hundreds of reported cases representing every continent. Therefore, wider scholarly consideration of phenomenological events such as spirit possession and exorcism should occur. Early phenomenological claims being attached to use of the name of Jesus are seen in the Gospels, Acts and post-Apostolic age. In both eras, an individual claimed to invoke the power of Jesus Christ by speaking His name to bring deliverance. Sometimes, the subject would enter into convulsions or be physically transformed into a state of normalcy. The early Christians’ necessary use of the name of Jesus for exorcism is related to the assertions of modern Pentecostals with equal emphasis on the “name” of Jesus being the catalyst of the phenomenal.
Latinos in Print Media: *TIME* Magazine
Fernando Ayala
*Martin Garcia, Chicano Education*

The United States of America is known as one of the most diverse countries in the world. America has over 50 million Hispanics living in it, which makes up about 17% of the nation’s total population. With this population growth a question that must be asked is how they are being represented in the media. The focus of this research is on the print media and how the Hispanic people are portrayed and represented in it, in particular *TIME* magazine. My analysis revolves around one year’s worth of publications (N=48) in 2012. The main question being explored in this research is how the Latinos in the United States are portrayed in such a highly esteemed magazine. For example, was there any Hispanic representation? If so, what was the representation like? The 5 developmental phases discussed by Wilson II et al., (2012), which includes the exclusionary, threatening, confrontation, stereotypical, and multicultural coverage, are being applied in this analysis.

“All Along the Puget Sound”
Jaime Baird
*Natalie Kusz, English - Creative Writing*

This short piece of creative non-fiction leans toward the memoir genre, attempting to explore a past moment in the narrator’s life, in order to arrive at a point of insight. The piece delves into issues of isolation, early motherhood, and therapeutic analysis.

Drinking Patterns and Student Performance
Quinton Baker, Magaly Guzman, Taylor Hansen, Alyson Morgan
*Theresa Martin, Psychology*

Alcohol use on First/Last Thursday at EWU has been known to be excessive at times, and its ramifications pose serious academic and health problems for students. The current study examined the effect of alcohol consumption on academic performance for student drinkers who participate in Thursday-night drinking compared to those who are not Thursday-night drinkers. Data was gathered through an anonymous Web-based survey that included questions on drinking patterns and quarterly/cumulative GPAs. Drinking motives were also assessed using the Drinking Motives Questionnaire (Cooper et al., 1992). Results indicate that there were no significant differences in academic performance when comparing Thursday v. non-Thursday drinkers. Thursday drinkers do tend to have different motives for drinking however.

“A Poem to the Third and Trans”
Fira Ballew
*Mimi Marinucci, Women’s and Gender Studies*

This slam poem addresses the seeming invisibility of non-binary genders in US culture, as well as the moral/emotional dilemma of the cultural demand placed upon people (predominantly transgender, but others as well) to fit into the narrow boxes of acceptability to the extent that they must surgically ‘fix it’ if they don’t.
Attitudes toward Homo-Gendered Relationships in Ancient Egypt
Fira Ballew
Mimi Marinucci, Women's and Gender Studies

The subject of sexuality and various intricacies of gender-relations have largely been ignored in the field of Egyptology; the fact that Ancient Egyptians recognized three genders being one such detail to this point. That being said, the assumption that this ancient culture fell into modern modes of sexuality and relationships is highly inaccurate. I address the cultural details, taboos, and perceptions that were imbedded within the culture to bring to light the relationships many Egyptologists in the past wished (and chose) to ignore, as well as addressing some historical flaws in Egyptology that have led to a misunderstanding of Ancient Egyptian sexuality- all to answer the question: Were there homo-gendered relationships in Pharaohnic Egypt?

The Relationship between Physical Activity and Academic Performance amongst College Population
Sarah Barfuss, Bryce Hobbson, Sandra Avy, Stefan McNamara
Theresa Martin, Psychology

The connection between exercise and self esteem seem to be strongly correlated when it comes to body image. The study aims to seek a connection between a person’s fitness and self esteem levels with their overall academic performance in a college environment. This study used an online survey to gather information among the undergraduates about their exercise habits, self esteem level and their overall GPA. Surprisingly, a connection was found between self esteem levels and over all GPA but in favor of lower self esteem students. Also, there was a marginal difference found in GPAs between the four groups (High SE/ High Ex, High SE/ Low Ex, Low SE/ Low Ex) and in contrast to the hypothesis of the high self esteem and exercise group had the highest overall GPA, it was found that low self esteem and low exercise group had the highest GPA overall. It is concluded that more research needs to be done to see what variables may be affecting GPA other than exercise and self esteem or if this finding is consistent among a larger population and can be repeated.

Walking around in Circles until You See Something New
James Barrett
Greg duMonthier, Art
Lisa Nappa, Art

These sculptures are connected to the eight lamp posts surrounding the EWU art building. The sculptures are constructed out of steel rods, garden hose, and spray paint. They were built in order to explore the idea that shape and color may be connected.

Longhouse Memories - An Ethnographic Field Study
Shawnee BearCub
Sarah Keller, Anthropology

Utilizing and exercising anthropological field methods, I have explored a cultural component of the Moses Columbia Band of the Colville Confederated Tribes; more specifically, the Moses Columbia Longhouse. Data collected includes the old longhouse itself and the surrounding area and reveals glimpses of socio-cultural activity, spatial domain regarding distribution of cultural components (place arrangement) and noted Salishan place names. All are linked as continuity between past, present and future of the Moses Columbia people. Data collected serves as documentation and to encourage a further study.
The More, the Better?
Eric Beisley, Andrew Fleming, Kelly Zimmer
Rodger Hauge, Education

In this investigation we seek to discover the affect of energy produced from fans of varying blade numbers. We will conduct an experiment on a wind turbine to determine whether fewer blades produce more energy due to lack of resistance while rotating. We will test windmills of varying blade numbers from two blades, three blades, and four blades. Our hypothesis is that the three blade windmill will produce the most energy. As time has passed and research has been done on windmills by other scientists, the amount of blades on them have diminished. Past windmills typically had four blades to grind the grains in fields and since then, they have been used to harness energy. This experiment will show us the affect that varying numbers of blades have on a wind turbine and the energy each one produces.

How Depth Jumps Effect Maximal Strength
Lance Beisley
Nate Lawton, Physical Education, Health and Recreation

The purpose of this study was to test the effects of depth jumps (DJ) on maximum strength performance and to see if the number of DJ alters these effects. Fourteen male collegiate athletes participated in this study in which two, four, or six DJ were performed followed by a four minute rest period and a one repetition maximum back squat. Significant improvements in back squat performance were found between each intervention and the control (p<0.005), but not between interventions. These improvements can likely be attributed to Post Activation Potentiation (PAP), a phenomenon found to increase the muscle’s ability to contract forcefully. The researchers were the first to study different volumes of DJ. Adaptation during the study was limited by randomizing the order that each group performed the DJ. Deviation in body weight introduced changes in the load during the Low-Load High-Velocity phase of the protocol, possibly altering the PAP effects between individuals. Investigation into the time period between DJ and subsequent back squats is needed.

Metabolic Disorders in Gray Wolves and Grizzly Bears
Joseph Bell
Institute of Science and Technology at North Central High School
Randall James, Biology

Within the last two hundred years, both the Gray Wolf (Canis lupus) and Grizzly Bear (Ursus arctos horribilis) have gone through major population declines. These declines have resulted in bottlenecks, which potentially cause decreased diversity and the accumulation of maladaptive SNPs. We are currently researching the accumulation of maladaptive SNPs at two specific mitochondrial loci (ATP 6 and Cytochrome B) in the Gray Wolf and Grizzly Bear genomes using DNA sequencing. The results from this study will be compared to previously published sequences for each species and then compared to other bottleneck populations. This will allow us to place the Gray Wolf and Grizzly Bear within the continuum of other bottleneck populations.
The Role of Narcissistic Subtypes in Body Perception
Joshua Bell, Chelsea Joynes, Ashley Brown
Amani El-Alayli, Psychology

Past research suggests that narcissistic individuals revel in their own physical appearance but no research looks at the specific motivations behind ideal body pursuit. We hypothesized that individuals with higher levels of grandiose narcissism would be more likely to utilize traditional narcissistic motivations such as competition and social recognition to alter their body shape. Multiple regression analyses supported this prediction. We also predicted that individuals with higher levels of vulnerable narcissism were predicted to have greater shape or weight concerns. This prediction was also supported, as there were significant grandiose x vulnerable narcissism interactions on weight concern, shape concern, and eating concern, with individuals who were both low in vulnerable narcissism and high in grandiose narcissism showing the lowest levels of concern. These findings suggest that grandiose narcissism may be more beneficial than vulnerable narcissism when it comes to the way individuals perceive and treat their bodies.

History of Sexual Victimization as a Predictor of Alcohol-Aggression Expectancies
Janelle Benedict
Kayleen Islam-Zwart, Psychology

It was hypothesized that men and women with a history of sexual victimization would be more likely to endorse alcohol-aggression expectancies. Participants were 173 jail inmates (133 men and 40 women) involved in a study evaluating psychological adjustment to incarceration. Individuals were classified into one of four groups based on sexual victimization history (88= no history; 30= childhood history only; 25= adult history only; 30= childhood and adult victimization history). After using an ANCOVA to control for gender and age of first regular alcohol use, differences in aggression-related alcohol expectancies approached significance. Age of first regular use was also an important predictor for alcohol-aggression expectancies. Results suggest that a history of both childhood and adult victimization, as well as age of first regular alcohol use, may predict a greater likelihood of endorsing alcohol-aggression expectancies in men and women compared with participants with childhood sexual victimization history only, suggesting these may be important influential factors.

Classroom without Limits
Olivia Bentley, Caleb Watson
Kevin Klim, Physical Education, Health and Recreation

Our group drove down to Moab, Utah for an alternative spring break service learning trip. We worked with the Bureau of Land Management building fences on campsites to keep motorized vehicles on designated pathways and to protect the land. We also worked with a nonprofit group called Trail Mix building mountain biking trails to keep the environment and bikers safe. Through our service learning work we were able to learn a lot about leadership and ourselves. Throughout the trip, two leaders were selected each day to take on the responsibilities of the day. This gave everyone the opportunity to practice and work on their leadership skills. Each night the group came together and reflected on the leadership of those leading the day. Those who led that day were able to hear both positive and constructive feedback from those in the group. We went into this trip with service learning in mind and came out with a deeper understanding of leadership. Through it all, we learned that leadership grows and changes as you develop, and is something that can be used in all aspects of life.
**Needle-Less Anesthetic in Dentistry**
Staci Bewick, Morgan Clark, Kaylene Elam
Arthur DiMarco, Dental Hygiene

Anesthesia has been a part of dentistry since the early 1900s. The progression of technique, drugs involved, and delivery methods is constantly changing, and the newest and exciting breakthrough is needleless anesthesia. This delivery system, currently being developed by St. Renatus, uses an intranasal mist called Kovacaine Mist™. Intranasal mists have been used in the medical realm for quite some time in products such as FluMist® vaccine, allergy medications, and nasal sprays. Kovacaine Mist™ consists of tetracaine and oxymetazoline. Oxymetazoline, while never used in dentistry, is a mucoadhesive that has been used in nasal sprays and eye drops for years. Oxymetazoline allows for improved drug retention at the site of absorption in the nasal epithelium. Studies show that Kovacaine Mist™ anesthetizes the maxillary dentition from premolar to premolar for adults and all deciduous maxillary teeth in children, including the palate. Kovacaine Mist™ is currently still in clinical trials and expected to be FDA approved and launched in 2014.

**Socrates and Aristophanes’ Clouds: A Deadly Combination**
Meredith Bezold
Ann LeBar, History

In the year 423 B.C., the Athenian playwright Aristophanes presented his play, Clouds. The play poked fun at Sophism, and its main target was Socrates. Through a close comparison of Aristophanes’ play and the accusations that led to Socrates’ trial and death, this paper will demonstrate how Clouds laid the foundation for the charges in 399 B.C. that brought about Socrates’ death. Aristophanes felt that philosophy was not improving Athens; instead it was contributing to her demise. He viewed Sophism as “mere charlatanry, with Socrates as its high priest.”

**Technical Communication in Cuba**
Brandy Bippes
Julia Smith, Anthropology
Teena Carnegie, English

Best practice methods of technical communication in the United States suggest technical communicators achieve conciseness by avoiding wordiness and simplifying word usage. When technical communicators in the U.S. create technical communication, the desire to achieve extreme conciseness often leads to distanced, impersonal communication, which effectively communicates technical details while it also alienates the audience by inadvertently communicating an underlying sense of cultural sterility in communication. Technical communication encompasses a broad field of communication methods including visual communication through the use of imagery and typography. This presentation explores the importance of prioritizing emotional connection and meeting the needs of the audience through a variety of methods employed in technical communication, and provides heart-touching examples from research of technical communication in Cuba, a rich, inviting, highly communicative, and interconnected culture.

**A Contemporary Look at Racial Differences in Savings Behavior**
Matthew Birch
David Bunting, Economics

This paper considers the hypothesis that blacks save more at every income level. Using CEX income level and quintile data sets, black and white distributional factors underlying consumption and saving are discussed. Savings rates are compared in 1990, 2000, and 2010 and it is shown that whites save as much or more than blacks at nearly every income level. Possible reasons for the differences between this study and previous ones are discussed.
The Continued Relevance of John Ford’s *The Searchers*
Colin Boley
*Pete Porter, Film*

Consider an oral presentation, to possibly include clips from the relevant filmic text/s, which is based upon the presenter’s senior film thesis and which serves the purpose of elaborating upon the continued relevance of John Ford’s classic film entitled *The Searchers* (1956). The aforementioned presentation will include the following concepts: a glimpse into the poignancy of the main characters of *The Searchers* as embodiments of the American psyche, followed by an analysis of the use of geography and color in the film (which serve to reinforce the values of the opposing worldviews presented in the film), a comparison of *The Searchers* with another classic western, Howard Hawk’s *Red River* (1948), which features John Wayne in a similarly dark role as he plays in *The Searchers*, and finally a perspective on why *The Searchers* continues to be cited by filmic organizations, such as the British Film Institute (BFI), as one of the greatest films of all time.

A Genetic Screen in *Saccharomyces cerevisiae* (Yeast) to Identify Novel *Helicobacter pylori* Virulence Factors
Amelia Bothwell
*Andrea Castillo, Biology*

*Helicobacter pylori* is a human specific gram-negative bacterium that colonizes the stomachs of ~ 50% of the world’s population and is associated with the development of severe gastric disease in 10-15% of infected individuals. Most virulent *H. pylori* strains contain a cag pathogenicity island (cag PAI), which encodes 28 genes that produce a type IV secretion system responsible for injecting CagA into host gastric epithelial cells; CagA is the only intracellular acting *H. pylori* virulence factor identified so far, but additional factors likely exist. To identify virulence factors that contribute to pathogenesis, I generated an *H. pylori* DNA plasmid library consisting of ~6,000 plasmid clones. This library was screened in yeast for toxic effects. Out of 16,000 yeast colonies transformed with the library, 10 had intermediate effects on yeast growth, while 3 were completely toxic. These candidates are now being extracted and re-transformed into yeast to verify growth inhibition resulting from plasmid presence.

Individual Differences in Anti-Atheist Prejudice
Ashley Brown
*Amani El-Alayli, Psychology*

Research shows that many individual difference factors are related to various forms of prejudice (Jones, 2003). This study aimed to investigate whether these factors are similarly related to prejudice against atheists. In this study, we hypothesized that anti-atheist prejudice would positively correlate with right-wing authoritarianism and political conservatism, and negatively correlate with universal orientation (the belief that people are more alike than they are different) and intrinsic religiosity. As predicted, prejudice against atheists was significantly positively correlated with right-wing authoritarianism and political conservatism and negatively correlated with universal orientation, suggesting that these factors all have a similar relationship with anti-atheist prejudice as they do with other types of prejudice. Contrary to our prediction, intrinsic religiosity was positively correlated with anti-atheist prejudice. We discuss possible reasons for this finding as well as directions for future research.
Paleo-Winds Indicated by Loess Distribution in Eastern Washington
Mallory Burgess
Michael Folsom, Geography and Anthropology

This study illustrates the wind patterns that formed the Palouse through deposition of loess. The first step was to generate a map showing the distribution of loess particle size in the Palouse region. One can generate isolines showing a gradient of particle size downwind. As particle size decreases with distance from the source, it’s possible to derive the general wind patterns which deposited the loess. The project is based on data from archived soil surveys created by the Natural Resources Conservation Service for Lincoln, Whitman, Spokane, and Adams Counties in Washington. The study is limited to soils composed of loess. The map’s points were plotted using the soil type localities to generate a map in ArcMap to illustrate the percentages of particles which passed through a No. 200 sieve. With the data table I created, the name of each soil, and percentage of particles through a No. 4 sieve and a No. 10 sieve will also be displayed.

Confederate Privateers and Commerce Raiders during the American Civil War
Adam Calkins
John Dorwin, Anthropology

The American Civil War is often remembered for the great land battles like Shiloh or Gettysburg, while little focus is given to the war at sea. During the Civil War the Confederate Government outfitted hundreds of privateer vessels, and numerous commerce raiders to attack and destroy Northern shipping. I have researched examples of these Confederate ships, like the privateer Savannah and the commerce raider CSS Alabama. I have looked at the usefulness of their exploits during the war, and whether or not they were an effective tool used by the Confederate Government. As more research has been done on this topic, it is clear that the Confederate Government should not have relied on privateers and commerce raiders, but used the resources to fund other areas of the war. My paper will outline how privateers and commerce raiders were used, and will explain how they were not an effective use of Confederate resources.

Study of Public Attitudes toward Wolves in North Central Community
KellyAnn Cameron
Institute of Science and Technology at North Central High School
Randall James, Biology

Ever since wolf reintroduction efforts began in the Northwestern United States in the 1980s, studies have been conducted on public attitudes toward wolves. These surveys have impacted the methods and results of wolf reintroduction. In our study, we have drawn upon two surveys (conducted by the Washington Department of Fish and Wildlife and the Montana Department of Fish Wildlife and Parks) to construct our survey and apply it to the North Central High School community. We will analyze the correlation between attitudes toward wolves and two generations (parent and student), genders, and zip code, taking into consideration the number of years lived in Washington. The student population will be analyzed for the relationship between attitudes toward wolves and GPA, while in the parent/adult population we will observe the correlation between attitudes and income. Our results will be compared to that of other surveys and shared with the public.
How Having More Might Give You Less: Examining Gratitude’s Relationship with Income
Taylor Carabin, Chris Floberg, Andrew Pereira
Philip Watkins, Psychology

Positive psychology researchers have found time and again that income has no relation with one’s happiness. While this precept has been well established, much is left to be understood about exactly why more does not equal better in people’s lives. To examine this from a different angle, we analyzed the self reported income and state gratitude levels of 113 college students as part of a gratitude correlation study. The results show a significant inverse relationship between the two constructs, and this suggests material wealth might lessen the impact of beneficial events on one’s day-to-day feelings of gratefulness. Such findings give a better understanding of how material wealth does not lead to happiness, as strong positive associations have been made between subjective well-being and gratitude.

Untitled
Melissa Carpenter
Lisa Nappa, Art

My ceramic work is figurative in nature and examines the human condition through emotions, dreams, and experience. It also seeks to analyze the connection or disconnection that exists between us, others we encounter, and/or the world we live in.

Online Learning: Is Critical Thinking a Part of the Discourse?
Michael Carpenter
Majid Sharifi, Government

In the growing literature on the online pedagogy, little is known about its impact on the meaning of the often-used pedagogical concepts fostering critical thinking and traditional teachers-students relations. This research addresses this gap. It does so by making an interpretative, comparative analysis of online student learning with traditional methods. Relying on our quantitative and qualitative data, we created a database for a comparative, interpretative analysis. Our data and research has confirmed our initial hypothesis: student-instructor interaction is critical to the transfer of critical and complex thinking skills and the traditional pedagogy advancing these skills is missing within the current debate over online learning. In other words, the necessity for student-teacher interaction uncovered in our interviews, as well as our research into the meanings within the current online learning discourse, has revealed that the meanings of terms like pedagogy, curriculum and critical thinking have changed within the discourse concerning online learning.

Solar Energy Boats
San Juana Carrizales, Chelsea Marker, Jacqueline Thornton, Heather Davis
Rodger Hauge, Education

Every day, the sun sends out a tremendous amount of energy. This radiant energy, also known as solar energy, is vital to our living. Solar energy is considered a renewable resource. Renewable resources are continually renewed by nature, and hence they will never run out. We explore the amount of energy solar panels create. We will use boats to explore the amount of energy these panel create and how far they can push a DC motor boat.
Bipolar Disorder and Working Memory
Dana Case
Jonathan Anderson, Psychology

Medication studies attempt to discern an affect of medication on working memory, Yet, these studies do not quantify a possible intrinsic feature of Bipolar Disorder that affects working memory. This study attempts to identify an intrinsic feature of Bipolar Disorder that affects working memory, instead of medication affects. In this anonymous study, participants must fill out a prescreen survey on the Sona website. Based on the participants’ responses, each participant will be placed in one of three conditions: having been diagnosed with Bipolar Disorder (A), having been diagnosed with any other psychiatric disorder (B), or having not been diagnosed with any psychiatric disorder (C). If a participant is placed in Condition A or Condition C, they will be invited to the laboratory for an experimental session. Condition B participants will not continue in the experiment. In the laboratory, each participant will complete a demographic questionnaire and perform the Digit Span Task, from the WAIS-IV. Performance and provided information will be quantified using raw scores.

Molecular Dynamic Simulation of ITPA and ITPA-P32T
Grant Caudill
Yao Houndonougbo, Chemistry and Biochemistry

Inosine triphosphatase (ITPA) is an enzyme that catalyzes the decomposition of Inosine Triphosphate (ITP), Deoxy-Insosine Triphosphate (dITP) and Xanine Triphosphate (XTP) into monophosphates. ITP, dITP and XTP incorporated into DNA and RNA leads to the cytosolic increase of ITP, dITP and XTP which may result in possible genetic mutation and instability. The mutation of proline 32 [P32T] in human ITPA P32T is associated to a reduced activity of the protein. Molecular dynamic simulations of both ITPA and ITPA-P32T will be performed to provide molecular details insight for the nature and the mechanism of P32T mutant deficiency.

Untitled
Kiyomi Chadwel
Greg duMonthier, Art

This sculpture comprises a use of wooden framing with laid-in glass and a textural-wrapped coil restrained in a hallowed center of a constructed cube form. It investigates the influence materials occupy and explores understandings of confinement.

Fish Egg Cryopreservation
Megan Chastain
Charles Herr, Biology

Cryopreservation, or the storage of biological material at subzero temperatures, is a valuable tool for the preservation of eggs and sperm from endangered species. While the eggs of mammals have long been freezable, eggs from fish, reptiles, and birds have never been successfully frozen. I propose that previous failures cryopreserving fish eggs resulted in closure of the micropyle, the opening through which fish eggs are fertilized. Once the micropyle has closed, eggs become impermeable to ice-reducing cryoprotectants. Using eggs from Danio rerio, I plan to assay for closure of the micropyle and investigate the conditions necessary to prevent this closure from occurring. Next, I plan to investigate the safest and most effective concentration of cryoprotectants for egg cryopreservation, as well as the time necessary to incorporate and remove these chemicals from the eggs. I then will attempt to cryogenically preserve these eggs using programmed freezing and novel, ultrarapid freezing technologies, and finally thaw the eggs using newly developed, ultrarapid thawing technologies.
**Comparison of Energy Expenditure in Your Shape™ Fitness Evolved 2012 Calorie Counter and Indirect Calorimetry**  
Robert Cimball  
*Wendy Repovich, Physical Education, Health and Recreation*

Due to the increased popularity in video game home entertainment systems and the current obesity epidemic, the video game market has developed home fitness games as tools to lead a healthier lifestyle. Among these new entertainment systems is the XBOX Kinect™, which uses whole body input instead of a handheld wand. Currently, there is limited research using these home fitness games and systems. Therefore the purpose of this study is to compare energy expenditure from the proprietary internal calorie calculator in the video game Your Shape™ Fitness Evolved 2012 against indirect calorimetry using an Oxycon Pro™ to estimate the game’s calorie accuracy.

**Home Colony: A Twentieth-Century Example of Resistance to Capitalism and a Practical Elucidation of Voluntary Association and Mutual Aid**  
David Collins  
*Joseph Lent, History*

For my senior capstone project in the History department at Eastern Washington University, I focused on the Home Colony—a radical anarchist-leaning commune in western Washington state. Through a combination of archival, digital, academic journals and scholarly publications, my research indicates that this colony provided practical instances of not only a functional resistance to capitalism but also a deployment of classical anarchist dogma. Specifically, the notions of voluntary association and mutual aid can be found in examples illustrated in the Jay Fox papers, a collection of personal papers and clippings from the final editor of the newspaper of the colony. This assemblage is currently held in special collections at the Foley Library on the campus of Gonzaga University and will be a central focus of this lecture. Finally, I intend to propose practical suggestions for future communal efforts on what proved to be effective and what did not.

**What is Postanarchism, and Why Should I Care?**  
David Collins  
*Mimi Marinucci, Philosophy*

In this presentation I intend to elucidate the emerging school of thought known as postanarchism. This lecture will be divided into three sections. First will be a discussion on the origins of postanarchism, followed by its potential value for the academy and I will conclude with a brief question and answer section. Many trace the emergence of postanarchism to the work of Andrew Koch, Professor of Government and Justice Studies at Appalachian State University. In 1993 Koch published an essay entitled, “Poststructuralism and the Epistemological Basis of Anarchism,” after which postanarchism has advanced considerably. I intend to show how the influence of classical anarchist resistance to the state and the works of thinkers like Michel Foucault, Jacques Derrida and others can be brought together through a dialectic synthesis. While poststructuralists are often criticized for being apolitical or borderline nihilistic, postanarchism carves out a space to deconstruct and resist the power relations in the status quo via resistance to the state.

**COTS SSVEP-Based BCI Control Using the Emotiv EPOC**  
Victor Colton  
*Paul Schimpf, Computer Science*

The goal of this study is the development of a robust, safe and user-friendly visually controlled brain-computer interface for completely hands-free navigation of a powered wheelchair (PWC) by using asynchronous, high-frequency SSVEP-based brain-state detection via the Emotiv EPOC wireless headset. The target application is a cost-effective off-the-shelf system to allow a subject with limited motor capabilities to control the chair with little to no training, and to provide a way to customize the sensitivity of the system to the level desired by the subject. A graphical simulation of object motion control will be used in lieu of an actual PWC for proof of concept purposes.
Parallel Implementation of Emergent Schooling Behavior Modeling and Simulation Using a KNN Topological Distance Model
Victor Colton
Paul Schimpf, Computer Science

This project proposes to model basic emergent schooling behavior with a k-nearest-neighbors topological distance model, using a parallel implementation in C and LAM/MPI. Members of the school or swarm (hereafter referred to as agents) will be modeled using the following simple rules: 1. Move in the same direction as neighboring agents; 2. Remain close to neighboring agents; 3. Avoid collisions with neighboring agents. Additionally, each agent will only pay attention to the k nearest other agents in the school; a topological distance model. This is in contrast to a metric distance model, where each agent pays attention to all other agents within a given range. One primary Server process will be responsible for coordinating the activities of several Client processes, which will separately calculate the movements of a queue of agents.

Exploring Intentions and Perceptions of Code-Switching among Spanish-English Bilinguals
Grace Cooper
Julia Smith, Anthropology

Many anthropologists and linguists have researched how bilingual and multilingual speakers mix languages when they communicate, a process called code-switching. This study examines perceptions and understandings of code-switching in bilingual English-Spanish communication in the Inland Northwest, an area which has not been studied extensively. Earlier studies have reported that speakers hold a negative view of code switching generally. I was interested in finding out if this still holds true today. To do this, I conducted hour-long interviews with ten Spanish-English speakers. We discussed four musical selections as examples of code-switching as well as broader themes of language use. From their responses I have been able to identify how the view of code-switching has changed. This renders older studies problematic for understanding current language use.

Tree Cipher, Painting
Karie Cooper
Tom Askman, Art

My piece, Tree Cipher, utilizes the natural surface of wood in combination with multiple mediums to create a tactile surface which engages the viewer on many levels. On the macro level, this 3-foot-wide piece of wood holds the quality of a finely crafted object. Upon closer inspection, textures take on a topographical quality, becoming hills, valley and rivers. If you look even closer, you will see iconography carved into the surface that references human history and our culture of shared symbols. I created this piece in exploration of ways in which human experience become history by the various ways they are recorded and reflected upon.

Group Initiative
Jonathan Cote
Lisa Nappa, Art
Greg duMonthier, Art

These large ceramic dice were made as an analogy of a group of people. The similarities between them in form and the differences in color symbolize the similarities and differences between the people of that group. The form of the dice shows how much of an impact that random chance can have on the dynamic of the group and how they interact.
**Conceptual Drawing**

*Jonathan Cote*
Lisa Nappa, Art
Greg duMonthier, Art

The purpose of this drawing was to conceptualize a visual idea, then simply execute it without any other influence. The change in value of the stripes, as well as the width of the paper, are meant to lead the viewer’s eye a certain way. Any interpretation of the drawing beyond this is strictly up to the viewer. The artist has no say whatsoever.

**Punitive Populism and the Social Capital It Depletes—Causes, Complications, and the Cure: Restructuring the Criminal Justice System**

*Betty Craipo*
David May, Government

This research uses historical and comparative data to examine the role of popular opinion in creating the current mass incarceration crisis. By tracing the evolution of the “war on crime,” a direct link between punitive populism, mass incarceration and the depletion of social capital can demonstrate the need for a system-wide effort at reform. The effort proposed relies on a data driven approach that rests on three empirically measurable goals, historically low incarceration and recidivism rates, and a system wide return to prevention-treatment-rehabilitation options rather than punishment. The data demonstrates that restructuring the Criminal Justice System to function structurally similar to the Federal Reserve System provides the mechanisms to end America’s addiction to mass-incarceration and allow a rebuilding of social capital by creating the buffer zone necessary to deflect political pressure and realize these objectives.

**Symposium Poster**

*Celeste Crosby*
*Greg duMonthier, Art*
*Travis Masingale, Design*

This 8.5” x 11” poster was made for the Creative Works side of EWU’s Symposium. The Creative Works side is represented through the use of typography and abstract design elements. This poster will be used to create awareness of the symposium throughout campus and the greater community. A postcard version will also be created and sent out.

**The Nightingale in the Nest**

*Danielle Curson*
*John Mason, English*

Emily Dickinson’s “All overgrown by cunning moss” argues that a creative work must be able to stand apart from its author, even to the extent of rejecting the author’s presence in the piece. This rejection of the author is called “text privileging” and seeks to place the author apart from a text in order to add credibility and power to a text. “All overgrown” specifically looks at Charlotte Bronte’s *Jane Eyre* and the pains which Bronte took to publish the novel, which was misplaced effort since the author’s person should have no bearing on a text, says “All overgrown.” While the poem at first condemns Bronte for caring too much about opinions regarding her authorship instead of letting the novel speak for itself, Bronte is later rewarded in Dickinson’s poem for owning her identity and allowing *Jane Eyre* to stand on its own as a novel transformative not only to its time but also to Dickinson herself.
Flow
Elyce Cutshall
Lisa Nappa, Art

With my pieces I try to create a sense of movement. A section may catch someone’s eye, but the flow in the piece makes the eye continue to move. Subtle details are included to surprise and intrigue the viewer.

The Views of Torture between People with and without Family in the Military
Elizabeth Davila
Mahlon Dalley, Psychology

This research is going to analyze the views of torture of participants in a survey. Students were asked to take the Personal and Institutional Rights to Aggression and Peace Survey (PAIRTAPS). The sample size included 278 students from EWU. A specific category I am focusing on is whether or not the participants of the survey had family in the military. I focused on four specific questions in the survey. I will be coding these questions into various categories which will help me run a quantitative analysis to find correlations between the groups being tested. I expect the participants without family in the military will be more sensitive to torture as compared to the people with family in the military. I feel the military desensitizes its troops to not feel pain for others or themselves. People that have military training may come back to their families and share their views, in a way desensitizing their family as well. My ultimate goal is to prove how the military affects not only the men and women that participate in war but how their family gets affected as well.

Dangerous Dentistry: How Safe is BPA?
Nila Davis, Danielle Lycklama, Jennifer Keller
Charles Regalado, Dental Hygiene

As the number of dental materials and options are expanding, so is the demand for esthetically-pleasing dental work. One of the options currently available are composite fillings. Some composite filling materials contain Bisphenol A, better known as BPA. There is some controversy over the potential negative health affects to which BPA may contribute, including increased risk of breast and ovarian cancers, reproductive issues, cardiovascular disease and diabetes.

An Ethical, Ideological and Moral Approach to LGBTQ Advocacy
Eric Dean
Elizabeth Kissling, Communication Studies

This paper explores the strategic problems with strategic essentialism in LGBTQ advocacy and proposes an alternative approach to LGBTQ advocacy that relies on ethical, civil, and moral arguments affirming the LGBTQ population by promoting sexual, ideological, and moral pluralism and affirming the rights of all people to express consensual, non-exploitative sexual, non-sexual, and emotional expressions of love and affection towards the people whom they share these feelings with, regardless of the biological sex or gender similarities or differences of the parties involved in these expressions.
Caffeine and Academic Performance  
Amanda DeBleeker, Cameron Seikawitch, Eileen Mabini  
Theresa Martin, Psychology  

Recent studies illustrate that caffeine is often consumed for many purposes including academic performance. In many of these same studies, data is gathered is typically gathered from a student population, however not often differentiated by gender. This study sought out to see if students believed and consumed caffeine to have a direct effect on their academic performance was what that effect was as differentiated by gender and between consumers and non consumers. Data was collected via a basic, anonymous self report survey. This was distributed to and available to students taking psychology 100 courses. The results came with predominantly positive perceptions of caffeine’s (positive) effect on a student’s academic performance. Results also concluded that women versus men believed caffeine to have a greater effect on their academic performance at higher amounts than men. Further research surrounding caffeine consumption and gender would likely be beneficial to student populations.

Vampire Energy  
Ashley Dickerson, Aimee Smith, Haley Tank  
Rodger Hauge, Education  

Vampire energy is the energy used to power devises when they are either in standby mode or in the off position, but still plugged in. We will be demonstrating how much energy is used to power a device when in a standby mode. For the interactive presentation, students, staff and faculty will have the opportunity to measure energy use in the standby mode. Devices that will be offered are a phone charger, a laptop, alarm clock, blender base, cable box and a wireless router. Over time unplugging electronic devises could save money and wasted energy.

Oral Health: A Correlation between Periodontal Disease and Athersclerotic Vascular Disease  
Lindsay Doerschuk, Jolynn Jernigan, Salysia Lopez, Taylor Rogers  
Rebecca Tranmer, Dental Hygiene  

Over the last two decades, there have been many research studies conducted on the link between periodontal disease and atherosclerotic vascular disease. Despite these studies, in 2012, the American Heart Association released a statement, which advised there is not a causative relationship between the diseases. In the statement, the AHA recognized, “Although a contribution of periodontal disease to atherosclerotic vascular disease is biologically plausible, periodontal and cardiovascular diseases share multiple risk factors that are prevalent and powerful promotors of disease, including tobacco use, diabetes mellitus, and age” (AHA, 2012). The poster highlights the shared risk factors for the diseases and will show that although this is not a cause and effect relationship, there is behavior and treatment modifications clinicians can utilize in practice to reduce the risk factors for periodontal and atherosclerotic vascular disease. The poster will show the importance of oral hygiene and incorporate the awareness of the oral-systemic link, which can reduce future oral health issues.

Arsenic, with a Side of Rice... Please?  
Simon Doi, Shane Kostka, Carly Sorensen  
Carmen Nezat, Geology  

Rice is a staple food for many communities around the world; countless cultures eat rice at breakfast, lunch and dinner. This makes high arsenic concentrations found in rice grains enormously important. We aimed to 1) confirm the presence of arsenic within rice grains, and 2) determine if the concentrations are high enough for concern. Our rice samples came from various locations around the world including China, India, Japan, Thailand, USA and Madagascar. We analyzed each sample for the presence of arsenic and found that some do indeed have a small arsenic component, and one sample had high enough concentrations to be of major concern.
The Effects of Mazama Ash on the Engineering Properties of Palouse Soil
Simon Doi, John Thurston
Richard Orndorff, Geology

The purpose of this study was to determine the impact of volcanic ash on the engineering properties of Palouse soils. A second goal was to determine whether volcanic ash can aid in water retention, thereby benefitting agricultural activities in the region. The Palouse is one of the world’s most productive agricultural regions. The key to productivity in the region is its rich soil, deposited during following the last ice age, it is an eolian silty loess bed up to 200 feet thick. During the deposition of the Palouse soils, approximately 50 Cascadian volcanic eruptions, occurring in within the last 4,000 years, have deposited thick ash beds which are inter-fingered and mixed within the soil. The Palouse is a semi-arid environment and water retention in the soil is an important agricultural issue. This study includes engineering soils tests for water retention, compaction, unconfined compression, Atterberg limits, sieve and hydrometer analysis on a sample of Palouse soil, a sample of a local ash deposit from the Mt. Mazama eruption, and a 50/50 mix of the two soils.

Cellular Stress Proteins: A Review of Function and Future Research Pathways
Melody Dossey
Joanna Joyner-Matos, Biology

Organisms respond to a large variety of environmental stressors with a relatively small set of proteins, termed the stress proteins. Most stress proteins fall into three categories: antioxidants, heat shock proteins and chaperones, and the cytochrome p450s. While each category was initially described with reference to a single stress type, we now know that the expression and/or activity of many of the proteins are altered in response to multiple stressors. Many stress proteins are highly conserved across all organisms that have been studied. Here I will present a brief review of each of the three categories of stress proteins, highlighting how our understanding of their function has expanded from single to multiple stressors. I then will provide an integrated view of the cellular stress response. I will introduce one of the newest topics in cellular physiology, the regulation of protein expression by Drosha and Dicer, which alter the expression of microRNAs. Finally, I will give a brief overview of how the cellular stress response and the processing modifiers will be explored in freshwater clams exposed to heavy metals.

Treatment of an 18-Year-Old Women’s Track and Field Athlete Post Grade 3 ACL Tear Reconstruction Surgery Using a Hamstring Autograft: A Case Study
Andrew Downing, Stephen Schrater, Jodee Hickman, Pamela Earl
Garth Babcock, Physical Education, Health and Recreation

The case study was conducted on a female track and field athlete that underwent ACL reconstruction as treatment for a grade three ACL tear. This process involved gathering all pertinent information such as medical documents, rehabilitation protocols, and an interview that helped formulate an accurate case study. The purpose of this case study was to explore the uniqueness of the patient. The patient tore her ACL in January of 2012 and put off surgery for 6 months. The patient returned to full participation 6 months post surgery, which is rare. This case study focuses on the initial injury, the 6 months pre-surgery, the surgery, the rehabilitation post-surgery, and the patient’s current status.
**Imagining “The Lady of Shalott”**  
Kirsten Dresker  
*Logan Greene, English*

William Waterhouse, John William Hunt, and Dante Gabriel Rossetti are just a few Pre-Raphaelite painters providing numerous and diverse depictions of Alfred Lord Tennyson’s poem “The Lady of Shalott.” The diversity of paintings demonstrates not only personal interpretation of the poem’s meaning, but fanciful individual imaginings of the visual setting and character of the lady. The lack of precise detail, yet abundance of description, give agency to the artists to portray their own imagined version of the Lady and her prison tower. This presentation will analyze how Waterhouse, Hunt, and Rosetti re-interpret the poem visually through their paintings; incorporating both symbolism and realism to convey Tennyson’s “The Lady of Shalott.”

**Influence of Stream Incision on Invertebrate Assemblages**  
Kaitlin Driscoll  
*Camille McNeely, Biology*

Many streams in the southeast U.S. have experienced incision, or deepening and narrowing, as a result of human land use. Incision disconnects streams from floodplains and interrupts hydraulic cycles that create habitat heterogeneity and promote biodiversity. Incision alters fish communities; however, there is little understanding of its impact on invertebrates. I sampled 9 streams from the Tallaposa basin (AL) with varying incision. Regression was used to compare invertebrate parameters (taxonomic richness, diversity, and functional feeding group proportions) and incision. Physiochemical measures were also correlated to incision. No significant relationship was found between taxonomic richness or diversity and incision. However, an NMS analysis indicated a shift in the functional feeding groups with incision. A functional shift in invertebrate composition away from the expected shredders for these lower order streams toward filterers may be a response to altered benthic substrate in incised streams, and may indicate altered patterns of decomposition and organic matter cycling.

**Irene Ryan Scholarship Audition Package**  
Teko Dumoulin, Nicki Meyer  
*Jeff Sanders, Theatre*

A scene from *The Taming of the Shrew*, a scene from *The Diviners* by Jim Leonard Jr., and a monologue from Julius Caesar. This package was presented in competition for a national acting scholarship presented by the Kennedy Center American College Theatre Festival. 6 minutes in total.

**The Impact of Virtual Currencies on Real Markets**  
Eric Dunaway  
*David Bunting, Economics*

With the advent of internet based interactions between consumers, new tools have arisen to facilitate the exchange of goods and services. While real money (Dollars, Euros, etc.) is typically used in these transactions, many new forms of virtual currencies are appearing throughout the internet, and with them, a market for their exchange with real monies. While small in scope, the growth of virtual currencies could have significant impact on the real world markets depending on how both the public and private sectors respond to their proliferation.
How a Woman Bewitched a Town: Tituba and the Salem Witch Trials
Cheyenne Dunham
Anne Le Bar, History

This essay contains research concerning the role of Tituba in the Salem Witch Trials of 1692, the various myths surrounding her identity, her actions throughout the event, the effects of her confession, and how she has endured in historical records since then. Shrouded in myth and legend, Tituba encompasses the very essence of what intrigues us about the Salem Witch Trials. The fact that there is so little concrete historical knowledge about the slave woman lays the foundation for the constant speculation and bewilderment surrounding her. She both fascinates and challenges scholars who attempt to understand her and the role she played in the trials themselves. For a woman with a contested racial identity, unknown past, and undefined social status, she is engraved into historical knowledge as a catalyst in a dark chapter of early American history. She displayed intellect, creativity and manipulation in her confessions, therefore creating a plausible canvass for the hysteria of witchcraft throughout the town to be painted upon.

Socializing and Self
Christopher Durall, Michael Jones, Lauretta Burton
Theresa Martin, Psychology

The daily Facebook habits of EWU undergraduates were examined to determine the relationship between FB use, self-esteem and offline social behaviors. An independent sample t-test was conducted with high and low Facebook use as the grouping variable and self-esteem as measured by the Heatherton & Polivy Self-Esteem Scale and a locally developed measure of face-to-face social interaction as the dependent variables. We found that high FB users also spent significantly more time socializing with others in face-to-face settings. No between-group differences were found for self-esteem.

Wonder How Long Bread Lasts
Christy Egger, Amanda Hoff, Brittney Sjordal
Rodger Hauge, Education

We will be experimenting using white slices of Wonderbread and testing what kind of food wrap best prevents mold. We will be testing three (3) types of food: wax paper, Saran Wrap and aluminum foil. We will also have a control slice of bread, unwrapped. We will leave the bread out, unrefrigerated, for two (2) weeks. We will then compare the mold on the various slices to determine which wrapping is most effective at preventing mold. We will have a poster explaining our procedure and experiment, and will have the four (4) slices of bread on display to show the amount of mold that resulted from each wrapping.

Nietzsche: The Monsters and Abyss
Seth Eisele
Thomas Hawley, Government

I look into the definition of Monsters and Abysses. The monster is born internally inside every weak individual growing stronger through time until the weak individual can no longer resist and turns inwards losing all inward strength, furthermore the monster comes from the repression and the need to look outward to the world and see it as hostile. The abyss is the internal reflection that every individual has, though after the wisdom of Silenus individuals have become separated into the weak and the strong. The weak look into the abyss and are crippled by the past which they cannot get over, they become unable to accept the past and move into the present. The strong look into their abyss and rejoice they understand that there is the past but it has made them so strong, they focus solely on the present knowing that this is were they can control their future and make it work for their benefit.
Water Conflict in Southern Asia
Seth Eisele
Vandana Asthana, Government

I will be presenting on the water conflict in Southern Asia, specifically Kashmir. My presentation expounds on the growing tension, interdependence and attempted resolutions in the region over water sources primarily the Indus River its tributary the Jhelum River. This research presentation defines the increasing need to refine and refocus laws regarding land tenure. I look at examining the Tulbul Navigational Project as India has had a self imposed twenty-four year suspension on the project following Pakistan’s voiced concerns that the project violates the Indus Water Treaty. Though with thorough research I come to the conclusion that there are no violations in the Tulbul Navigational Project. I finally explain the reasoning behind Pakistan’s continued belligerence to India and procure possible solutions to the states issues.

Personal Use and Perceptions of Substance Use among College Students
Michelle Elder, Darian Andrew, Brendan McKinney
Theresa Martin, Psychology

Marijuana use among college students has becomes increasingly prominent behavior, especially with the recent legalization of marijuana in December of 2012 in the state if Washington. The current study reviewed perceptions towards marijuana users, estimations of marijuana use among college students, and personal use of marijuana after legalization. More specifically, the current study classified the participants into three groups: marijuana-users, non marijuana legal substance-users, and non marijuana illegal substance-users. 134 college students participated in the online survey where 46 were categorized into the marijuana-user group, 38 participants were included in our non marijuana legal substance-user group and 23 participants were included into the non-marijuana illegal substance user group. Statistically significant differences were found in analyses of marijuana users in college using one way ANOVAs. The majority of marijuana users reported that their frequency of use actually stayed the same after the legalization of marijuana in the state of Washington.

Technical Editing Service Learning: Corbin Style Guide
Nicole Elliott
Teena Carnegie, English - Technical Communication

Service learning projects allow students to gain real life experience during the learning process. Best practices in technical communication suggest consistent document design features, such as headings and subheadings. In a service learning project, my team and I edited the Corbin Senior Center newsletter and created a style sheet. The style sheet provides consistent rules for everyone who submits articles to the newsletter to follow. The style guide also improves readability and document design. This service learning project had several technology challenges. In this presentation, I discuss those challenges and how we overcame them. We also developed a valuable relationship with a community partner that values education and service as much as EWU does.

“Big Girl Shoes”
Diana Emmons
Rachel Toor, English - Creative Writing
Natalie Kusz, English - Creative Writing

This creative non-fiction essay is a humorous but honest take on what it is like to grow up as a bigger girl with even bigger feet. It also looks at the stereotypes of what it means to be “pretty” and the idea of gender identity that is attached to that concept.
Structural Analysis of an Ice Hockey Skate Tower
Cody Engelke
Awlad Hossain, Engineering and Design

An ice hockey skate tower, consisting of a high density polyethylene (HDPE) holder and steel runner, is the main interface between the human body and a sheet of ice. Over the years advancements in technologies have allowed companies to refine the tower concept and produce leaner and stronger models. Through the use of “Solidworks,” a 3-D drafting program, I was able to render a full size model of an ice hockey skate tower, with side mounted fasteners, which I utilized to perform structural analysis. Since hockey skate towers have very complex geometries, it is very difficult to perform any sort of meaningful structural analysis, under an applied load, without the use of a finite element analysis software (FEA) package. With the use of the FEA software package ANSYS, I was able to perform a static structural analysis mimicking the response of the tower subjected to a 200 lb load. The results obtained provided very insightful data that could be utilized to further refine the skate tower concept without having to produce physical models during the intermediate stages of production.

Free Will Is an Illusion; and Why We Don’t Need It to Be Moral
Nicholas Ettel
Kevin Decker, Philosophy

Determinism. Free will. Morality. These are all sticky issues, and I intend to, briefly, tackle them all. Determinism is a fact. Free will is a fiction. What about morality, then? How can we be moral agents without free will? This is a legitimate concern, one I hope to assuage. Science has long given us the concept of a deterministic universe: cause and effect, and the natural laws. Science has also made free will no longer a tenable concept: our thoughts and actions are caused by unconscious, non-willed brain activity. But science cannot answer questions of morality, right? One cannot derive an “ought” from an “is.” This fact/value dichotomy is a false one, and damages our moral development. Yet Hume’s Law remains a pervasive belief today. However, neuroscience can, and should, inform our morality. Which might lead us back to the beginning: if our morality is but a mere trick of the brain, won’t it only degrade our reasons for being moral? On the contrary, the Science of Morality can better inform us of what being moral means; that can only strengthen our morality.

Elemental Analysis of Garden Springs Creek, a Tributary of the Spokane River
Nathan Fall, Wyatt Lindsly
Carmen Nezat, Geology

Studies have shown that anthropogenic factors pollute water bodies through unintended runoff. In this study we chose to measure the contaminant concentrations of local highway runoff due to the negative impacts they present for the biota of local streams and rivers. During the study several water samples were taken along a Spokane River tributary, called Garden Springs Creek, that surfaces within Finch Arboretum and runs along and under I-90 West. The samples were analyzed for concentrations of several dissolved elements associated with traffic and urban activity using an Inductively Coupled Plasma Optical Emission Spectrometer. The mean concentrations of some elements in the tributary were compared to those measured by previous studies of the nearby Spokane River. Additionally, the composition of the tributary was compared to the EPA Criterion Continuous Concentration (CCC) for aquatic life, which indicates the highest concentration of metals to which an aquatic community can be exposed for an indefinite amount of time without having a negative impact.
Corporate Influence on American Democracy
Kyle Faltin
Thomas Hawley, Government

The purpose of this paper is to explore the extent of corporate influence on the American democratic process. The paper will begin by establishing a democratic framework with which to judge whether or not and to what extent corporate influence perverts American democracy. Three corporate entities, Bank of America, Goldman Sachs, and Koch Industries, will serve as case studies in order to ascertain the amount of influence they are permitted to exert on the decisions of the United States federal government. Next, the role of national identity as it relates to false consciousness will be examined in order to display the manner in which corporations pacify and influence public opinion in order to perpetuate their ability to exploit the general public and advance their economic interests. Lastly, this paper will conclude by suggesting what can be done in order to limit or eliminate the undue influence corporate entities and other moneyed interests have on American governance.

Link between Visceral Fat and the Metabolic Syndrome
Melissa Farnsworth
Wendy Repovich, Physical Education, Health and Recreation

Metabolic syndrome (MS) is characterized by a combination of metabolic risk factors including dyslipidemia, hypertension, glucose intolerance, and abdominal obesity. Research indicates that visceral fat may play a role in the onset and development of several metabolic syndrome risk factors. PURPOSE: To measure characteristics of MS in relation to VF depth. METHODS: Forty-four subjects (ages 18-68 years) participated in the study. VF depth was measured by BodyMetrix ultrasound. Triglyceride (TRI), HDL, and blood glucose (BG) levels were assessed using Cholestech. Blood pressure (BP) and waist circumference (WC) were also measured. The link between VF and MS characteristics was evaluated using Pearson’s Correlations at $p \leq 0.05$. RESULTS: Significant positive correlations were found between VF and BP (systolic: $r=.556$, $p<.0001$; diastolic: $r=.466$, $p=.001$), WC ($r=.708$, $p<.0001$), BG ($r=.482$, $p=.001$) and TRI ($r=.376$, $p=.012$). CONCLUSIONS: These findings suggest that VF is positively correlated with the above mentioned risk factors and that the BodyMetrix ultrasound machine can serve as a cost-effective, non-invasive screening tool for identifying potential MS risk by detecting changes in VF and subcutaneous fat.

Landscape Use by Elk (*Cervus elaphus*) in and around Turnbull National Wildlife Refuge
Katherine Farrell
Margaret O’Connell, Biology

Knowing how wildlife use habitat is a major part of wildlife ecology. Elk (*Cervus elaphus*) move across the landscape using different habitats at different times. When hunting disrupts how elk traditionally use landscapes elk are forced to find other landscapes. In 2010, 34 elk from Turnbull National Wildlife Refuge were fitted with radio collars and have been tracked since April 2010. In September 2010 a hunt was begun to disperse elk off-refuge. I used Geographic Information Systems to show how elk moved across the landscape in relation to Turnbull and to hunting areas. I compared elk ranges by size, location, and habitat type, and by year and season (pre-hunt, hunting, and post-hunt). New maps will be created to show other disruptions such as land use changes or human-induced climate change. New movement patterns can be predicted using current habitat information. By examining how elk use landscapes spatially (around Turnbull, hunting areas, and habitat) and temporally (before and after disruptions) refuge managers can continue to develop effective wildlife management programs.
Trauma Sensitive Interventions in Life: The Part YOU Can Play
James Faulkner
Amanda Reedy, Social Work

Within our society there is a lack of understanding about trauma in children’s pasts. Oftentimes, we don’t acknowledge trauma as a reason for why children “misbehave.” Instead, we label them as problems when we should separate the problem from the child. Children within the foster care system have an inordinate amount of trauma and few people recognize this trauma as a reason why they might “misbehave.” Through my lecture I will define trauma, present what an Adverse Childhood Experience study (ACE, Kaiser Permanente, 1995-1997) has revealed about trauma and, describe an ecological systems view that can play a positive part in helping foster children who have experienced trauma thrive within the community.

Our Experience with Leadership
Micah Fechner, Joseph Cronrath
Molly Orheim, Academic Success Center

Over spring break our service learning group took a trip to Moab, Utah. We experienced many different scenarios that will our future careers within leadership roles. We will present our experiences with leadership in a multimedia presentation by displaying pictures of different parts of the trip. The leadership values that we improved on were group management, confidence, time management, and adequate preparation. The most important values we learned were consciousness of self, congruence, and collaboration within the group. The presentation will include our experience with rock climbing, river rafting, service work and hiking. Our presentation will display how the activities and experiences we had on our trip affected our leadership values and beliefs. We will also discuss how we felt prior to the trip and give an interpretation of how we felt we grew by taking part in it. Finally, we will discuss the ways in which we learned and how we believe that will affect us in our future lives.

Vicissitudes of Reality
Michelle Ferraro
Greg duMonthier, Art

The idea behind this drawing began with a photograph I had taken, emphasizing the process of composition by including random works of objects. From this point, the drawing experiences a transformation of recognizable forms into indistinguishable solidity. The final effect is meant to give the viewer a highly subjective interpretation with multifaceted possibilities of reality.

Profile of Role Delineations for Rehabilitation Professionals in the Neonatal Intensive Care Unit
Monique Fisher, Kelley Devoe, Heather Gianola, Jennifer McManus, Ashley Richardson, Robin Serquinia
Kathryn Abram, Occupational Therapy
Margaret Miller, Occupational Therapy

This exploratory study used a survey to explore the roles of rehabilitation practitioners (occupational therapists, physical therapists, and speech language pathologists) working in neonatal intensive care units (NICU) throughout the United States. Identifying current roles of rehabilitation professionals, team models, and areas of role overlap ensures best practice and identification of team approaches in this specialty setting. Frequency counts were conducted on demographics and roles across disciplines. Additional comments were qualitatively assessed using thematic analysis. The results indicated that each discipline has primary roles, but that frequently there is role overlap between NICU rehabilitation professionals. Possible explanations for variations in role delineations are discussed.
Top Commercial Crops of Washington State: An Educational Text for Grades 4-8
Melinda Fisk
Rodger Hauge, Education

As a current student of Eastern Washington University, I have been working collaboratively with Professor Rodger Hauge to create an educational text that can be used in Washington State elementary and middle level classrooms. This text focuses on Washington State’s top commercial crops and includes detailed information of each crop that is aligned with the Common Core State Standards of Washington. Our goal is for this text to be published and used as an educational reference for teachers and students.

The Transformation of Sovereignty: How Globalization Has Affected the Nation-State, Authority, and Contemporary Border Control
Alyssa FitzGerald
Majid Sharifi, Government

In the age of increased and extensive globalization, there has been much discussion of the “threats” imposed on the sovereignty of the nation-state. One common assumption is that sovereignty is deteriorating. The goal of this presentation is to contend that assumption by concluding that sovereignty is simply transforming into a version of itself that has never existed before. This is not an argument on whether or not sovereignty still exists, because it is clear that it does. The argument is to examine what means are required to enforce it, which nation-states can still project their sovereignty globally, and in what ways can states impose their sovereignty both domestically and internationally. One way to analyze this scenario is to study the paradox of borders and boundaries that exists. After the felling of Berlin Wall, the world thought the era of walls had vanished, but it has actually re-emerged in full force. Borders are everywhere and their re-emergence is simply a facet of contemporary sovereignty. A new model of sovereignty exists and this presentation examines that model.

Friends with Benefits: Studies 4 through 6
Molly Fitzpatrick, Stefan McNamara, Darian Andrew, Alicia Schimanski, Holly Keller, Amanda DeBleeker
Theresa Martin, Psychology

This presentation provides an overview of and preliminary results from our continuing studies of Friends with Benefits. Study 4 targets non-college students (same age) populations, Study 5 - LGBTQ populations and Study 6 - older adult populations.

Strategies for Initiating Relationship
Molly Fitzpatrick, Holly Keller, Christina Nagel
Theresa Martin, Psychology

This web-based anonymous survey investigates the various strategies that individuals use, regardless of their sexual orientation, to discover the availability and sexual orientation of potential dating partners as well as those strategies that they use to communicate their own availability and sexual orientation to others.
Debugging the Future: Quality of Life, Academic Success and Student Acceptability of Assistive Technology
Brooke Flodin, Adriana Sanchez, Anna Klingensmith, Curtis Bennett, Marissa Bronowski
Susan Ruby, Psychology

Integration of Assistive Technology (AT) in the educational environment is minimal but can offer life-changing benefits. Our study explores the obstacles of AT and the relationship between acceptability of AT and student quality of life as well as individual academic success. We surveyed two existing groups of students at a regional comprehensive university. The first group is receiving assistance through instruction and tutoring services. The second group is receiving support to pursue future doctoral studies. Participants provided self-report of their academic strengths and challenges, acceptability of AT, and quality of life. We offered multiple opportunities to engage in different types of AT, including: Read and Write Gold 10 (Texthelp Ltd., 2013) Grammarly (Grammarly, Inc., 2013), Dragon Naturally Speaking (Nuance Communications, 2013), and voice recorders. We predicted that higher self-reported academic challenges would increase acceptability towards AT and decrease self-reported quality of life. We also predicted that students with higher GPA would be less accepting to AT.

Complete Mitochondrial Genome of Ancient Bighorn Sheep
Cherish Flores, Duncan Mize
Institute of Science and Technology at North Central High School
Randall James, Biology

We are attempting to obtain the complete mitochondrial genome of ancient bighorn sheep for comparison to modern bighorn sheep (Ovis canadensis). Our sample of study is a 10,000 year metacarpal bone provided by Eastern Washington University. Ancient bighorn sheep have never before been sequenced and our sample is one of only five in the world of this age. Currently, we are optimizing procedures to increase the yield of the extracted DNA prior to amplification. Due to DNA degradation over time, the DNA is fragmented into small pieces of around 100 base pairs. After these fragments are compiled, comparison analysis can be made to genetically age populations of bighorn sheep, aid threatened sheep species, and identify possible genetic diseases.

Fast Acting Topical Anesthetic
Ashley Flynn, Megan Apple, Jaelyn Johnson
Jamie Woods, Dental Hygiene

Pain Ease® is a fast acting topical anesthetic. This product cools the skin and helps to ease pain associated with needles. Pain Ease® is not currently being marketed and used in dental practices. However, this product has many benefits for patients and professionals including: no toxicity, very fast acting, and no adverse reactions. There is a current study going on at Eastern Washington University using this product against other more widely used topical anesthetics. Our school is a part of one of the first trials for this product and as a group of students we want to help inform others of the great benefits this product can have for their patients.
**Naegleria fowleri in Spirit Lake, Mt. Saint Helens: A Supporting Case for the Fagellate-Empty Habitat Hypotheses**

Heather Frady  
Camille McNeely, Biology

*Naegleria fowleri* is an opportunistic parasite that infects humans, causing a fatal brain infection, primary amebic meningoencephalitis. The criterion for initiating tests for *N. fowleri* in a water-body is currently based on temperature, leading to most testing occurring in the southern United States. The flaw in this criterion was shown in 1991, Detterline et al, discovered the presence of *N. fowleri* in Spirit Lake, Washington. By exploring the physiological requirements and life-cycle of *N. fowleri*, I was able to indicate a probable blooming date in Spirit Lake. The eruption of Mt. St. Helens was the key factor to inducing the proper conditions for the bloom. Using the known physiological requirements for temperature, water acidity, dissolved iron, dissolved O2, prey availability, and competition presence levels, the probable initiation of the bloom was dated at July 1981. The limiting factor for the bloom was in line with Griffin’s (1985) flagellate-empty habitat hypothesis. This new testing approch could lead to more efficient detection rates in other possible *N. fowleri* habitats.

**One Day**

Margaret Francik  
Benjamin Luca Robertson, Music

When I began writing *One Day*, an original composition for cello, double bass, and bass drum, I had several goals clearly in mind. Firstly, I wanted to utilize the gloriously low range of the double bass, often letting it take over lyrical lines and melody. I also knew I wanted to use the booming voice of the bass drum, allowing the percussion to have an active, moving part in the piece. Adding a cello line allowed me to explore the possibility of harmony and expression between two string instruments, while still maintaining the low timbre I was after. And finally, with all three instruments combined, I hoped to convey a sense of longing, a sort of bittersweet nostalgia I believe everyone experiences at some point in their lives. This feeling can strike in many ways, as a tender memory or a forceful passion. It is something you said to yourself a long time ago, when you were just a child, thinking to yourself, “One day...”

**Finite Element Analysis Investigating the Effect of Bell Features on Acoustic Performance**

Megan Frederick  
Awlad Hossain, Engineering and Design

A bell’s performance is dependent on various factors including material properties, size, and geometry. A suitable combination of these is required to attain desired acoustics. Finite Element Analysis (FEA) provides a simulation of any engineering structure, such as a bell, and its responses. This allows its parameters to be altered and tested prior to manufacturing. This numerical analysis decreases design time and expenses while allowing for the optimization of bell features for ideal performance. A bell’s vibration produces sound waves and the frequency of that vibration determines the pitch. With a focus on acoustics, both modal and harmonic analyses were performed on bell models using the commercially available FEA code, ANSYS. These numerical simulations were conducted with varying material properties and geometries of the bell, which included exploring the real world instance of the Liberty Bell. The results of the analyses confirmed the expected correlations between bell parameters and performance and also demonstrated the effectiveness of Finite Element Analysis in product design.
Using Newspaper Design to Increase Readership
Joshua Friesen
Jamie Neely, Journalism

While the practice and teaching of journalism is not in any danger, one essential medium in which journalism is showcased is. Newspapers are suffering from a steady decline. While newspapers stay true to traditional ways of design, perhaps it is time for a new age of print media. Newspapers must find a way to keep up with the evolutionary pace of social media and the internet. One way this can be accomplished is by revamping the culture revolving around newspaper design. Studies on newspaper design show that it affects the way in which information is taken in. Many readers scan rather than read stories in detail, graphics and photos attract reader attention. These studies can be used to improve newspaper readership. I will showcase my own newspaper designs from my work at The Easterner, and I will evaluate them based on these traits. If newspaper companies can embrace bold, magazine-style designs while maintaining their level of professionalism, younger generations will become more attached to newspapers.

Daniel Saint Daniel
Claire Fritze
Tom Mullin, Film

A young girl persuades her new lover to murder her boyfriend, but plans go terribly wrong. The work’s stylistic elements were inspired by German Expressionist film of the 1920s and attempts to create a contained world as seen through the eyes of the characters.

Moral Reasoning Distinguishes between Primary Psychopathy and Machiavellianism
Trevor Fry, Abby Erickson, Ashley Nienhuis, Michelle Whitlow
Kurt Stellwagen, Psychology
William Williams, Psychology

Our research explored the distinction between Machiavellianism (MACH) and primary psychopathy in terms of moral reasoning. MACH refers to the tendency to manipulate others, while primary psychopathy refers to the tendency to callously pursue antisocial goals (e.g., crime). While many argue that both constructs are identical, Stellwagen (e.g., 2010) asserts that while primary psychopaths are callous there is no evidence that Machiavellians are likewise emotionally indifferent. The present study assessed the moral reasoning associated with both constructs via hypothetical dilemmas that involved the willingness to take emotionally aversive behaviors that require a “utilitarian” attitude towards people. We hypothesized that primary psychopathic personality traits would be associated a utilitarian response pattern while Machiavellian traits would not. While the results of a regression procedure (utilizing 220 EWU students who completed surveys) supported our hypothesis, there was a nonsignificant trend for Machiavellianism to be associated with some aspects of a utilitarian approach.
Self-Awareness and Self-Monitoring of Time Estimation
Trevor Fry, Dana Case
Jonathan Anderson, Psychology

In this study, two computer-based time estimation tasks were presented to undergraduate students at EWU. The study involved an attention-demanding task, requiring the participant to serial sum a sequence of numbers, and a non-demanding attention task, instructing the participants to recite a sequence of numbers. Each task presented the digits 1 through 9, appearing in 1 to 3 second intervals. Each task consisted of three practice trails and 16 experimental trials, lasting 10s, 25s, 45s, or 60s. To assess self-monitoring, participants were instructed to estimate the length for each trial of both tasks. To gauge self-awareness, each participant provided a confidence rating, as a percentage from 0% to 100%. The main findings included: more under-estimating and lower confidence ratings for the attention-demanding task, less variance for the non-demanding attention task, and greater under-estimation on the length of the trials of the attention-demanding task. Self-monitoring participant percentage responses on their time estimation, was consistent with their actual time estimation.

The Effect of Caffeine on Time Perception in a High Demand Task
Trevor Fry, Dana Case, Chelsea Joynes, Andrew McCall, Christin Quinn
Jonathan Anderson, Psychology

The purpose of this study was to investigate the effect that caffeine has on time perception during a task involving high cognitive demand. Previous research has supported this and shown that caffeine does not have an effect on time estimation in tasks that are low in cognitive demand (Gruber & Block, 2005). Participants were randomly assigned to consume either 200mg of caffeine or placebo in a double-blind fashion. We measured retrospective and prospective time estimation in a number of trials. We predicted that participants who were given caffeine would report shorter and less accurate prospective time estimates than those given the placebo. Data collection continues however preliminary results support our hypothesis. Furthermore, coefficient of variance scores demonstrate consistency which supports the theory that the brain utilizes an internal clock mechanism. These results suggest that a moderate dose of caffeine can have a noteworthy impact on our ability to estimate time while performing demanding tasks.

Invasive Reed Canary Grass’ (Phalaris arundinacea) Effects on Stream Flow
Adam Gebuaer
Rebecca Brown, Biology

In much of the western U.S., riparian zones (floodplains) are shifting from native woody and herbaceous species to invasive grasses that can alter hydrology, including stream flow. Compared to the woody species they often replace, dense grass stands may have higher rates of growth and transpiration (water loss), and may access shallower water and reduce stream flow. In eastern WA, many streams experience low flow degrading water quality and reducing habitat. Most of these streams’ riparian zones have extensive stands of invasive reed canary grass. Our goal is to determine the effect of reed canary grass on stream hydrology. Although, this grass’s transpiration rates per leaf surface area are similar to other riparian plants, it can produce more leaf surface per ground area than other riparian species, increasing its potential to draw water. When calculated over 1 m² plots, the transpiration rates of reed canary grass were up to 10-25 times higher than other species. Isotope analysis suggests this grass uses water from surface sources, increasing its potential to reduce stream flow.
Anterior cruciate ligament (ACL) ruptures are a common type of injury in athletes, resulting in about 250,000 new ACL ruptures each year (Marralle, Morrissey, & Haddad, 2007). Following a “rupture” to the ACL, the typical treatment is surgical reconstruction. Much more rare are re-injury to reconstructed ACLs. About 5-20% of the reconstructed ACLs will rupture (Magnussen, Taylor, Toth, & Garrett, 2012). Thus, this cased study will examine the reoccurrence of an ACL rupture in a high school athlete. This study will discuss an 18 year old athlete who first ruptured his ACL in 2010 during a football game. He received ACL reconstruction surgery using an allograft. He then tore his allograft ACL in 2011. This injury recurred in spite of recommendations that adolescents not receive an allograft but rather an autograft ACL (van Eck, Schkrohowsky, Working, Irrgang, & Fu, 2012). This study will look at why an allograft was used, why they shouldn’t be used on adolescents, differences in the quality of an autograft and allograft, and what the process was to get him back to playing sports.

The Sweet Time Suite: Part I
Michael Gerety
Benjamin Luca Robertson, Music

Kenny Wheeler’s “Sweet Time Suite” off of 1991’s Music for Large and Small Ensembles is an incredibly important work for Jazz Orchestra. It has had a profound effect on me, both as a player and composer. This arrangement is based on a transcription of the first movement, set to my own text. It deals with the idea of “love lost,” juxtaposing somber text over beautiful, yet tense harmonies. Kenny Wheeler has a very developed and unique harmonic language, and studying his music has given me some insight and understanding into how he writes and has become my greatest influence as a jazz ensemble writer.

Impacts of Spawning Sockeye Salmon (Oncorhynchus nerka) on Benthic Macroinvertebrate Production in the White River, WA
Conor Giorgi
Camille McNeely, Biology

The White River is one of four tributaries to the upper Wenatchee River that are currently the focus of anadromous salmon restoration efforts. It is thought that these four systems are not capable of supporting large numbers of rearing fish due to a lacking food-base of benthic macroinvertebrates, thus limiting salmonid populations. Being the only one of these four rivers with a self-sustaining run of anadromous fish, sockeye salmon, the White River affords us the opportunity to quantify and characterize the benthic macroinvertebrate community in response to spawning activity. I am calculating estimates of invertebrate production, as well as describing the community, above the distinct salmon spawning reach and within it. This upstream-downstream comparison will give insight as to how spawning anadromous fish and the nutrients their carcasses provide alters invertebrate community composition and total biomass accrued over time. Management agencies may then use the findings of this study in developing a restoration program for the three remaining systems.
The Effects of Road Runoff on a Freshwater Food Web
Kimberly Givan, Michelle Warren
Camille McNeely, Biology

There are many studies done that test the effects of pollution on aquatic upper food web animals such as fish, but there are few studies that test their effects on the base of the food web, which is what our study intends to test. We used a manipulative study to test how common road runoff (used 5W-30 motor oil, road salt, and sand/road abrasive) affected the mortality rate of *Daphnia pulex* (water flea), and the chlorophyll levels of *Chlorella* algae with and without the presence of *Daphnia pulex*. Overall we found that the pollutants had a negatively correlated effect on both *D. pulex* mortality and *Chlorella* chlorophyll levels. Research on how pollutants impact the food base of an aquatic ecosystem is important because if the primary food web is negatively affected, the rest of the trophic system that depends on it will also decline.

Connecting the Past and Present through Your Smartphone!
Laura Glasgow, Anna Greiner-Shelton
Larry Cebula, History

Spokane Historical is a relatively new mobile application (app) that shows viewers the historical significance of sites around the greater Spokane area through mobile walking tours. This project allows viewers to learn the history of the places they are standing in front of without having to go digging through archives or old newspapers. We researched and developed content for 10 historically significant sites in the greater Cheney area such as Turnbull National Wildlife Refuge, Bill’s Tavern, the University House (president’s residence) and the State Archives Building. In our search for information we utilized the archives in the JFK Library as well as city archives. In our content for the app, we found primary (pictures), secondary (news paper articles) and tertiary (textbooks with information) sources that allowed us to get more well-rounded information. We presented this information with audio as well as visual guides to enrich the experience of the viewer. These works are published through the mobile app as well as on the website at SpokaneHistorical.org.

Upper Extremity Forces Generated during Activities of Daily Living: Implications for Patients following Sternotomy
Bradley Goff, Tyler Christensen
Tanya LaPier, Physical Therapy

In most thoracic cavity surgeries a median sternotomy is the incision of choice. Following a median sternotomy patients are instructed to not lift more than 10 lbs for 8 weeks. These are very broad precautions and difficult for most patients to be compliant with. We have chosen select activities that are commonly used in daily living and evaluated how much force is required to carry out each specific task using a force dynamometer. The data will be useful for explaining to a patient what activities are safe for them to perform, as well as to give surgeons quantitative data for determining what precautions they prescribe.
The Evolution & Revival of Indigenous Women's Political Powers in North America
Faith Golden
Kimberly Richards, American Indian Studies

Traditionally, indigenous women of North America were highly valued, greatly respected, and were active participants in policy and decision making within their families and communities. Their roles were complimentary to the roles of indigenous men. After European colonization took place, paternalistic views were forced upon indigenous people through assimilation and dominated political policies. Non-indigenous people refused to include indigenous women in policy or decision-making. As a result, indigenous women's political powers were devalued. Their roles were reduced to those that resembled non-Indigenous women's roles, which made their political powers non-existent. Their voices were not being heard or valued as they had been in the past. Indigenous women have struggled to restore their political powers back to the traditional ways of indigenous culture. This presentation will focus on how Native women have actively worked to regain their political power (both domestically and internationally).

Windmill Blade Design
Gwen Gossler, Tara Reisenauer, Rachel Rasmussen
Rodger Hauge, Education

Wind power generates a form of renewable and sustainable energy. We are going to be testing the effect of different blade designs, to determine maximum power output at a constant wind speed. We will test three different blade shapes mounted to three identical turbines. We will measure power output by voltmeter. A household fan will artificially generate the wind. This will provide a constant wind speed for the experiment.

A Philosophical Investigation of Play
Brolin Graham
Chris Kirby, Philosophy

Play is a subject that has garnered recent attention among the communities of philosophy, psychology, and recreation. It has been shown that people who play are as a whole, happier. But what is it about play that makes it so unique? This examination of play investigates what it is that makes play so unique. This investigation of play uses philosophical techniques to uncover why play presents itself to us in such a manner, making it so important for philosophers, as well as many other disciplines, to investigate play.

Aspartame: Good or Bad?
Jennifer Graham
Luis Matos, Biology
Joanna Joyner-Matos, Biology

Many people have replaced sugar with artificial sweeteners to reduce their caloric intake. These sweeteners have fewer calories but whether they are detrimental to humans is a controversial topic. Aspartame is the main sweetener in Equal, a popular sweetener. Here we used the Drosophila model, which has been used for many genetic and physiological studies, to test whether aspartame adversely affected development. At high concentrations, aspartame significantly slowed fly development. At low concentrations, aspartame significantly increased egg to adult success; likely by phagostimulating newly hatched larvae. Although aspartame has been deemed safe at the prescribed daily values, it is possible that unexpected effects may occur as was the case with our flies.
Evolution of Virulence following a Host Shift in the Drosophila Model

Amy Gray
Luis Matos, Biology

The Drosophila-Sigma virus system is a new model for the evolution of host shifts and virulence. Drosophila is a good model because, like many vectors of human diseases, it is a complex multicellular dipteran. Sigma is a –ssRNA rhabdovirus and, as such, is similar to many causative agents of human disease. The evolution of virulence has been studied using serial passage experiments (SPE) with unicellular hosts. We used a multicellular host to test the generality that virulence increases following a shift into a novel host. The sigma virus was injected into naïve native (D. melanogaster) and novel (D. simulans) host females. Viral Infectivity and transmissibility were determined over sixteen host generations. We determined host and virus fitness at various times in that period. The novel host was easier to infect but harder to maintain infected and virulence increased on the novel host. These results support the SPE studies and suggest that, for virulence, unicellular and multicellular model systems respond similarly after a host shift.

Feminist Theory in 28 Days Later

Jathan Greathouse
Pete Porter, Film

My thesis paper is about feminist theory as per Cynthia A. Freeland’s Feminist Frameworks for Horror Films, in application to Danny Boyle’s 2003 horror film, 28 Days Later. It examines what Cynthia A. Freeland describes as the optimal method in exploring gender theory demonstrated in horror films. The thesis is: “According to Cynthia A. Freeland’s Feminist Frameworks for Horror Films, 28 Days Later can be examined as a progressive film that questions and reverses normative gender expectations.” The paper applies Freeland’s theory scene by scene to decode the implicit ideological message. 28 Days Later can certainly be seen as a progressive film on gender expectations. Not only do the female characters of Selena and Hannah present themselves as competent equals to men, but at the same time, the film does not belittle men for not being superior. It is clearly a film that assumes that the third wave of feminism is in session. Subtleties in the film show remnants of an era before the third wave, but in the end, it clearly proves to be a film with a postmodern stance on gender issues.

The Shortcomings of the Environmental Policy of the Hanford Site

Connor Griffin
Paul Lindholdt, Modern Languages, Literature and Philosophy

For nearly four decades the Hanford Site in Southeastern Washington State was one of largest producers of nuclear weapons-grade plutonium. During that time, millions of tons of solid waste and billions of gallons of liquid waste were produced. As a result, the 1989 Tri-Party Agreement —one of the most complex and expansive pieces of environmental policy in the world - made the Hanford Site the single largest environmental clean-up project in United States history. With the implementation of the Sequestration, a federally mandated budget cut as a result of the Budget Control Act of 2011, the Hanford Site clean-up project will see a $20-30 million cut in funding a total loss of 2,235 contract-based workers. I will present my findings on the environmental shortcomings of current policy and offer alternatives that will address these environmental threats to air quality, the ground, the water table, the Columbia River, the people working on the clean-up project, and the “Downwinders” living in Spokane County.
Predicting the Success of Teams in the National Basketball Association Using Time Series Analysis
Jarod Gunning  
Christian Hansen, Mathematics

Forecasting in professional sports is an extremely challenging task. There are an immense amount of factors that go into developing a model that can accurately predict results of sporting events, including: age, location, quality of players, salary, etc. There will never be a model that can predict the results every time, but the closer one can get to anticipating the actual figures, the more success they will have in their appropriate field. There is a high demand for insight into how successful a professional sports team will be in their league. One such league is the National Basketball Association, the premier basketball league of North America. Trying to predict the outcome of basketball games can be done in a variety of different ways, including time series analysis. This project will discuss using time series analysis to create a statistical model that will generate a forecast of the amount of wins that each team in the National Basketball Association will have in a given season.

Advancement in Health Care in Saudi Arabia
Ahmed Hafizallah  
LaVona Reeves, English

Saudi Arabia has been ranked among the top 30 health care systems in the world by the World Health Organization. With a robust economy, the system has improved significantly over the past decades and is still continuing to advance. The health care system is structured by the Ministry of Health, and has 3 levels: primary, secondary, and tertiary. There is also a distinction between the private and public health care, the bureaucracy that they dictate, services they provide, and the demographic that they mainly cater to. Aside from reviewing the infrastructure of the health care system, a systematic review of the total quality management, and the need for it, has been given significant attention. There have been several changes and challenges facing the advancement of the health care system and implementation of quality assurance and management. However, steps in the right direction have been taken, and the historical overview of the health care infrastructure, in addition to various data and indicators, have been shown to support the progress being made in Saudi Arabia.

Thermocouple Amplifier Box
Paz Hakim  
Martin Weiser, Engineering and Design

The project I took on winter of 2012 was an amplifying circuit used to read temperature. The circuit was supposed to amplify the signal coming in from a thermocouple and output it to a computer using a data acquisition module. The amplifier was a student-made amplifier circuit. When I tested the thermocouple in boiling water, the voltage would increase to a point, then dropout, then rise again to a higher voltage. At first this seemed like a problem that could be caused by capacitors within the circuit. Since the problems were uniform across all boards, I simulated the circuit to analyze and find out if the capacitors were the problem. However, I found that the theoretical circuit had no flaws and worked as initially anticipated. The only component that I was unable to simulate was the battery because it did not produce an ideal 9v. To rectify this error I installed a 9v regulator to remove any voltage fluctuations within the battery. This regulator would give a constant nine-volt output to the circuit and bring the real circuit close to what the simulated circuit behaved like.
VIPER: Ergonomic Applications in the Grocery Industry for Prevention of Musculoskeletal Injuries
Laura Hall, Julianne Keenan, Brian Coleman
Dan Anton, Physical Therapy

Grocery work is the fifth leading cause for all paid work injuries in Washington. Causes include repetitive movement, heavy lifting and sustained or awkward postures. In an attempt to reduce the risk of injuries, we implemented an ergonomics training program at several local grocery stores. As part of this program, we made three ergonomics education videos. In this presentation we will show the videos we created and discuss the research behind them.

Characteristics of Your Ideal Partners
Heather Hanson, Silver Lewis
Theresa Martin, Psychology

This poster reviews data gathered via an anonymous, web-based survey regarding personal perceptions of current body shape and ideal body shape of oneself as well as preferred body shape for an ideal intimate partner.

Causes of Insurgency
Michael Hanson
Majid Sharifi, Government

The problem of insurgency is a political one and one that requires a political solution. This is because insurgencies occur when a group of people abandon their political process as futile and resort to violence to advance their agenda or to bring about change. Counterinsurgency, by extension, is the response of a government to quell the insurgency. Often times governments resort to military force to suppress their insurgencies, but this is not always the best course for a solution and in many cases only exacerbates the problem. The roots of insurgency grow deep, they reach far and wide. Each case is different, but there are many factors that contribute to the grievances people feel compelling enough to force them to act violently. There are cultural, religious, historical, economic and civil aspects to insurgencies and to understand how to defeat an insurgency one must understand how significant of an impact each of these areas weigh into a certain insurgent situation. My research has led me to the conclusion that the best way to stop an insurgency is not to let it start.

Film as Art and In The Mood For Love
Peter Hanson
Pete Porter, Film

In my essay I focus on how film is considered art in relationship to Rudolf Arnheim’s theory stated in his book Film as Art. In short his theory states how the use of the peculiarities of film that make it less like reality is what really drives it to possess more artistic values. I explore these peculiarities and state examples found throughout the film In the Mood for Love, directed by Kar Wai Wong. I will also further explore how each aspect Arnheim states is supposed to affect the viewer of the movie. As I explore this subject, I learn some ideas of how we can consider film as art and what qualities, specific to film, make it art. I feel this subject is quite interesting because film is something I enjoy immensely and the idea of what certain aspects cause film to be considered as art is extremely interesting to me.
Formalist Theory and *The Tree of Life*

**Kaylee Hardin**  
*Pete Porter, Film*

Film is a visual art form; however, not all film can be considered art. Rudolf Arnheim, a formalist film theorist, believed that film differs from reality in six distinct ways: the projection of three dimensions on to a two dimensional plane, the reduced sense of depth, lighting and the absence of color, framing, the absence of the space-time continuum, and the absence of non visual senses. Arnheim argued that it is the artistic utilization of these differences that makes a film art. This paper will examine the six divergences between film and reality and apply them to Terrance Malick’s *The Tree of Life*. It will prove that Malick uses the peculiarities of his medium in a way that makes his film art. By studying these ideas and applying them to films, we are able to gain a deeper appreciation for film as art.

The *Ogbanje* in *Little Bee* by Chris Cleave

**Courtney Harler**  
*Beth Torgerson, English*

In his 2008 award-winning novel *Little Bee*, British writer Chris Cleave implicitly depicts the Nigerian folk tradition of the mythic spirit-child, known as *ogbanje* to the Igbo and *abiku* to the Yoruba tribal peoples. In essence, Cleave creatively reinscribes the myth of the *ogbanje-abiku* in response to previous literary portrayals. The workings of Cleave’s representation of the spirit-child are made visible through an intertextual analysis of Cleave’s *Little Bee* and several other Nigerian works—most importantly, *Things Fall Apart* by Chinua Achebe (1959), *The Famished Road* by Ben Okri (1991), and *Half of a Yellow Sun* by Chimamanda Ngozi Adichie (2006). The specific *ogbanje-abiku* characters in these texts are as follows: Ezinma in *Things Fall Apart*, Azaro in *The Famished Road*, Amala and Baby in *Half of a Yellow Sun*, and of course, Little Bee and her sister Kindness in Cleave’s more recent novel. Through implicit or “imbricated” representation of the spirit-child, Cleave effectively addresses the post-colonial issues of Western hegemony, cultural liminality, and subaltern agency.

10 Minutes of Me

**Milton Harper**  
*Sara Goff, Theatre*

A personal devised showcase theatrically exploring through writing and performance the people of past and present who have changed the life of a developing artist. Originally written, created, and performed in the Fall Quarter of 2012 for the Directing I class.

Structural Analysis of Seattle Great Wheel

**Adam Harris, Keith Hadley**  
*Awlad Hossain, Engineering and Design*

The Seattle Great Wheel has become an icon of amusement for tourists and residents. This research involves structural analysis of the wheel to correctly analyze the forces/stresses developed at different connections. This was conducted using the Finite Element Analysis software ANSYS. FEA is a numerical tool to solve complex engineering problems where closed form solutions are unavailable. We modeled a pin that connects the outer circumferential beams of a Ferris wheel together. ANSYS Workbench and APDL were used to examine the static structural, fatigue, modal, and harmonic analyses. These are all vital to investigate whether the structure operates safely.
“Formula #1 for Chance Conversations”; from My Book of Indeterminate Events
Scot Hebert
Benjamin Luca Robertson, Music

I have written an ongoing collection of pieces in order to explore the nature of indeterminate music. I am examining how and why it is composed, practiced, and performed in relation to how it sounds by exploring indeterminate techniques such as alternative events; choices in articulation, dynamics, playing modes, and tempos; indeterminate repeats; ordered/unordered elements; and multiple choices.

Media Translation: Why the Book Is (Usually) Better
Hannah Heilman
Pete Porter, Film

This presentation dives into audiences of both literature and film, endeavoring to answer the age-old question “Why is the book better than the movie?” It will focus on Harry Potter and the Sorcerer’s Stone both as a book and as a film, drawing comparisons and differences in their experiences in addition to delving into how the book and film complement each other as well. Some areas discussed will be the writing process vs. the production process, the qualities that differentiate film from literature (such as presence of concrete images, time it takes to watch a movie/read a book, portability of both experiences, etc), and the amazing power of imagination.

Studio Solitary
Bryce Henderson
Sara Goff, Theatre

Studio Solitary is about the personal connection I have with the rehearsal studio the Theatre Department’s Creative Works will be presented in. It was originally performed as an assignment for my Directing 1 class in Fall 2012. The assignment instructed my classmates and I to each create and perform a 10 minute solo play incorporating elements of lighting, sound, scenic staging, props, costumes, movement and language to express personal aspects or stories from our lives. I chose to base my piece on my experiences in the studio and how they’ve grown me as an artist and human being.

Native American Cherokee Resistance and Removal
Megan Hewins
Judith Logan, English

In 1839 the Cherokee nation’s land was illegally confiscated and the tribe was forcefully relocated. Over 4,000 men, women, and children died in the course of the atrocity perpetrated by the American Government. Before removal the Cherokee people used many peaceful means of protesting the removal from writing editorials to organizing petitions and memorials to Congress. While there exists a great body of abolitionist literature in the 18th century, the majority of 18th-century literature is silent on the issue of genocide and atrocities committed against Native American peoples. Norton Anthology of American Literature contains a small section with selections of writings from this time. I will present my research on these selections written by individual members of the Cherokee nation to demonstrate the selections value to American Literature.
A Modern Kithara
Davis Hill
Jane Ellsworth, Music

This presentation will present the results of the directed study courses Ancient Greek Music I and II. This series, undertaken during the 2013 winter and spring quarters, examines ancient Greek instruments and musical thought, with the goal of recreating an ancient Greek kithara, an instrument of the lyre family. In reconstructing ancient instruments, the greatest problem is the lack of workable plans: the design, sound, and function of such instruments must be deduced through careful study of extant sources, many of which are both cursory and technically non-specific. After completion of the first quarter, the construction segment was revised to put greater emphasis on functionality. The new goal is to create an instrument whose sound and design is informed by the ancient kithara but which is playable, serviceable, and durable enough to conform to modern standards, including the use of modern tunings. The presentation will include salient research, a description of the building process, and an overview of the historical and religious significance of the ancient kithara.

The Caves of Steel
Davis Hill
Benjamin Luca Robertson, Music

This piece is written for Agrippa, an electro-acoustic instrument of my own design; voice; and electronics. The Caves of Steel is influenced by the work of Japanese composer Ryohji Yoshitomi, who pioneered the use of experimental music within 8-bit video games. The piece revolves around supercharged harmonics created by feedback loops initiated with Agrippa. Snatches of voice, metallic rustlings, and fragments of prerecorded sound are added to these textures. As more elements are introduced, the piece builds into an effervescent soundscape: a thrilling evocation of the metallic warrens envisaged by Isaac Asimov in his Robot novel series.

What is Music?
Davis Hill
Benjamin Luca Robertson, Music

What is the relationship between sound, music, and performance? Are they the same or different things? Can they—and should they—ever be exclusive from one another? What is the purpose of music, and what is its role in modern society? This presentation aims to illuminate these questions and provide resources for further consideration. It will draw upon historical and contemporary musical thinkers ranging from Pythagoras to John Cage.

A Gender Analysis of the Film 28 Days Later
Sean Hill
Pete Porter, Film

The meanings of the works of film are intrinsic and their real meanings usually reside far below the surface, requiring the viewer to move between the multiple layers of a film to discover an even deeper meaning. Analyzing genders within films, I have revealed one of the many deeper meanings hidden within the characters themselves and how their genders reinforce the true meaning of the film, 28 Days Later. The differences between the male and the female characters inside the film show not only that the roles of genders are becoming severed from past male and female roles that people have been used to seeing, but also and more importantly the way male and female genders have been up and coming together throughout the world.
Scene from *Macbeth*
Lexie Hoffpauir, Milton Harper
Jeff Sanders, Theatre

Originally presented in the Fall Quarter of 2012 for “Acting III,” this scene from Shakespeare’s *Macbeth* (Act 2, Scene 2) follows the aftermath between Macbeth and Lady Macbeth after having just slain Duncan.

American Primacy and the Evolution of Terror
Brian Holt
Dorothy Zeisler-Vralsted, Government

“American Primacy and the Evolution of Terror” reflects upon the phenomena of terrorism and seeks to understand it within the historical context of American hegemony. The research attempts to demonstrate a prominent link between the security strategy of the United States and the development of modern terrorism. It questions whether the technological means favored by American defense agencies to maintain our security and global preeminence are effective in accomplishing these goals. Additionally, it intends to show how our penchant for direct and indirect intervention in foreign affairs on behalf of our interests could fundamentally undermine broad American security objectives. Instead, the research suggests that American security policies likely produce significant anti-western backlash and promote global insecurity. Also examined is the rapidly evolving nature of terrorism in response to the United States’ conventional preponderance of power and the risks it poses to the American Republic.

A Study of Global Launch Activity: An Exercise in Time-Series Analysis
Johannah Hooft
Christian Hansen, Mathematics

The goal of this project is to examine data available through the NSSDC Master Catalog on global launches of manmade objects into low earth orbit or beyond from 1957 to 2012 with which to create a simplified mathematical model of the frequency of human interaction with the orbital environment. Using methods of time-series analysis, I attempt to decompose an approximate curve of the discrete data set - launch totals by month - into random and deterministic elements, seeking evidence of an embedded linear trend or seasonality, as well as attempting to model components of the curve not captured by deterministic elements as an ARMA(p,q). The merits of approximations by both an additive discrete time series model as well as a multiplicative model are considered. The model developed with these methods is not without shortcomings, and requires further refinement either in the characterization of data or in the theoretical assumptions upon which the model is built. Also, parallels of this subject with larger-scale mathematical models of the growth of the orbital debris field are addressed.
Identity Transformation: An Auto-Ethnography of Study Abroad
Reika Horio
LaVona Reeves, English

While some positive outcomes of being abroad include improving second language, there are some negative outcomes such as having culture shock. Last summer, I went home to Japan, and I had an uncomfortable experience. I did not feel I am Japanese anymore, but at the same time, I did not see myself as American. I asked, “Who I am?” In order to find out why I felt so strange and what was going on to me is, I began to research how study abroad affects one’s identity, and I met a word, identity transformation. Generally speaking, study abroad has been considered a great opportunity to explore oneself in a different culture, and there are always benefits through multiple experiences; however, there is one thing you have to be aware which is your identity will be changing through the program. Once you step out of your country, your identity will never be the same again. Moreover, identity transformation will occur not only while studying abroad, but also during the re-entry phase and possibly for a lifetime. I will discuss the literature of transformation and relate it to my life.

Genetic Analysis of D-loop Diversity in Canis lupus and Ursus arctos horribilis
Corey Horn, Dylan Smith, Deauntae Floyd
Institute of Science and Technology at North Central High School
Randall James, Biology

Through noninvasive sampling, our research looks at single nucleotide polymorphisms (SNPs) to determine the severity of bottlenecks on Gray Wolf (Canis lupus) and Grizzly Bear (Ursus arctos horribilis) populations. Bottlenecks create low diversity levels within a population and therefore threaten the viability of the species. By analyzing DNA extracted from hair samples, we have successfully amplified a portion of the D-Loop region of the mitochondrial genome in both Gray Wolf and Grizzly Bear. Comparing our results to published D-Loop sequences allows us to determine how much gene flow is occurring within each species. Collection and analysis of additional samples will enable us to determine which population has experienced the most severe repercussions from their respective bottlenecks. From this research we hope to gain a better understanding of the genetic endangerment these populations are experiencing and influence policies regarding these species.

Case Study of a 19-Year-Old Male Collegiate Basketball Player following Arthroscopic Patellar Chondrectomy
Jake Howell, Whitney Champlin, Marissa Cox, Farrah French
Jeffery Kawaguchi, Physical Education, Health and Recreation

Osteochondral defects in the knee are present in almost all active populations and often go undiagnosed due to lack of symptoms. Defects that are severe enough to produce symptoms are much less common; and even less common still, is a defect localized to the patella that needs to be surgically corrected. This case study aims to provide some insight into the rapid rehabilitation process of a 19-year-old male collegiate basketball player who underwent surgical repair on an osteochondral defect of the patella less than 2 months before the beginning of the season. The patient, who is a male basketball player at Eastern Washington University, underwent surgery only 53 days before the start of play for the 2012-2013 season and a mere 24 days before the beginning of practices. This process involved gathering information related to past medical history as well as previously published scholarly literature related to such injuries and procedures, review and observation of rehabilitation, and interviewing of medical personnel directly involved in the case as well at the patient himself.
Usage of Salmonids by Pre-contact Native Americans in the Columbia Plateau
Courtney Hudson
Jerry Galm, Anthropology

Historical accounts record native efforts to mass-harvest and process salmonids for delayed consumption in the Inland Pacific Northwest. This record contrasts the archaeological record, which reveals a smaller usage of salmon. This research considers salmon biology as well as reconstructions of prehistoric Plateau cultures to explain when and why regional peoples initiated the mass-harvesting of Columbia River salmonids. Research reveals that salmon runs are cyclical and while native populations used fish, reliance on them was variable dependent on distances from the ocean. Investigation also reveals that pre-contact native populations were low, questioning the need for stored fish. The impact of Little Ice Age climatic conditions as well as contact with coastal populations and European traders are interpreted as factors in the mass-harvesting and processing of salmon. The implications of this research may change the lens through which researchers view past salmon consumption and provides a basis for future research emphasizing other aspects of pre-contact Columbia Plateau diet.

Management of a Male Football Athlete with Sickle Cell Trait
Amanda Humphrey, Kaiti Bolles, Rachel Weiss
Garth Babcock, Physical Education, Health and Recreation

The purpose of this study is to research the education, management, and prevention of complications for sickle cell trait and implement these findings in the treatment of a male 19-year-old football quarterback with sickle cell trait. The research included the NCAA statement, NATA consensus statement and NATA position statement. The first step towards preventing fatal complications in an athlete with sickle cell trait is in educating the staff of the characteristics of the condition and grave complications that can occur. Overall, an athlete is able to participate at the collegiate level as long as proper preventative measures are taken.

“The Oceanographer I & III” and “Zashiki Warashi”
Laura Humphreys
Aileen Keown Vaux, Creative Writing

This is a paired poem/short fiction work and a third standalone poem for presentation as part of Northwest Boulevard.

Variations in Economic Development in the United States
Sarah Hunt
German Izon, Economics

Two years ago, Spokane was projected to be one of the worst places to find a job by Forbes magazine because of the huge decreases in labor demand and low economic growth. However, some cities around Spokane are growing and hiring like never before. The level of economic development is very imbalanced across the United States. For example, in 2000, the median household income across counties varied from about $18,000 to about $91,000 in the United States. The unemployment rate varies across counties as well. What is it that makes some counties, cities, and regions more economically prosperous than others? Through research on household location decisions, tax burdens, and geographical preferences, the differences in economic growth are found to result from an array of factors. These factors are used as independent variables in an econometric analysis to suggest much of the variation in the economic well being can be explained by these household location decisions, tax burdens, and other predictors of economic development.
Girls’ Day in Japan: Historical and Sociocultural Perspectives
Saki Ichii
LaVona Reeves, English

In Japan, Girls' Day became an official holiday in 1687, and most families with daughters celebrate it today by displaying dolls and serving chirashi zushi (a rice dish) in some cases. These families pass down the dolls from generation to generation or buy new ones. Customs associated with the holiday include taking down the display on a certain day so as not to delay the daughter's marriage. The festival is often depicted in art work. For example, Mizuno Toshikata, in 1900, created a woodblock “showing a hina-dan, with two young women planning the celebration” including two main dolls and two guardian dolls on display in the painting. Historically, there have been displays with “at least fifteen dolls” and “plenty of miniature furniture” (Shoaf 2013). By the early 20th century, most girls in Japan had a doll collection for display on Girls' Day, but they were smaller and cheaper. It is said that the custom originated in Shintoism and involved purification, but others suggest that it is simply a secular holiday with not religious meaning. Enculturation of girls is explored.

The Ecological Architecture of Paolo Soleri
Inga Ilich
Barbara Miller, Art

Paolo Soleri is an Italian architect experimenting with new and innovative forms of ecological architecture. Nicknamed “Arcology,” Soleri’s structures are efficient and sustainable living systems with maximum population densities that incorporate humane and compassionate design. All of Soleri’s master plans and concepts are unrealized, even the experimental society Arcosanti he founded in the middle of uninhabited desert mesa in Arizona. The lack of interest and financial support could be due to the fact that Soleri’s arcologies are the antithesis of the urban sprawl of suburbia, the American Dream. While Americans might be unable to depart from their preference for the dispersed cities of suburbia, Soleri’s arcologies have been explored recently as possible solutions for the ever-growing urban populations of China in need of innovative and sustainable architecture.

Analysis of ATP 6 and Cytochrome b Sequence for Adaptive SNPs in Ancient Bison bison from Multiple Locations
Candace Ireland, Nicole Ecklund, Elijah Hiler
Institute of Science and Technology at North Central High School
Randall James, Biology

Between the nineteenth and twentieth centuries, the Bison bison population experienced an extreme bottleneck, which resulted in the near extinction of the species because of factors including overhunting, disease, and poor weather. Through government support and private conservation efforts, including intentional interbreeding with cattle, the Bison population was returned to sustainable numbers. The severe bottleneck and introgression with cattle brings the Bison’s genetic diversity and purity into question. The expected genetic impacts of a population expanding out from a severe bottleneck include the potential for high frequencies of maladaptive alleles that were originally rare in the founding populations. We are looking at baseline allele frequencies using DNA sequencing of two mitochondrial genes, Cytochrome b and ATP 6, within multiple ancient Bison populations that precede the introduction of cattle to North America and the nineteenth century bottleneck of Bison bison.
Urinary Incontinence and Balance in an Elderly Population
Kathryn Irish
Patricia Nelson, Physical Therapy

Poor balance and risk of falls are a large concern in the elderly population. Many studies have looked for links between balance and other factors. I researched the relationship between urinary incontinence and balance as well as outcome measures that best predict falls in a population of “well elderly” residents of Riverview Retirement Community. Subjects were followed for 12 months and outcomes were measured at 6 and 12 months. Outcomes were assessed using four balance measures and four self-assessment measures as well as two questionnaires regarding urinary incontinence. There appears to be a relationship between mixed urinary incontinence and increased risk for falls although the sample size in this study is smaller than desired for adequate power.

Children and Families: Second-Generation Incarceration
Gail James, Amber Erickson, Megan Watkins
Theresa Martin, Psychology

The children of parents in state prison increased from 860,000 to 1,427,500 between 1991 and 2007 and has been shown to continue to rise at more than a 17% increase (U.S. Department of Justice, 2010). They have become the “invisible” children and the problem confronting society today is the children whose parents are incarcerated are more likely to end up in the juvenile justice system themselves. The influence and risk factors become more alarming when siblings are also incarcerated. Results from an anonymous, web-based survey found statistically significant correlations between personal involvement with the juvenile justice or legal system and having parents and siblings also involved in those systems. The present study adds to the literature by further by investigating these connections and suggests that family service programs are particularly important in these situations.

Effect of Kinesiotape on Edema Reduction after an Acute Lateral Ankle Sprain
Megan Jeffris, Jamie Nikander, Quinn Marianno, Kent Wilcox
Garth Babcock, Physical Education, Health and Recreation

The interest in this study is to develop evidence that may help in our decision to use kinesiotape as a treatment for swelling reduction after injury in an Athletic Training setting. Participants in our study have acute ankle sprains with a measurable amount of swelling. Methods begin with two different types of swelling measurements including figure of eight girth measurement and water displacement. Subjects will be measured immediately after injury and each day for three days post injury. After initial measurement clinician will apply kinesiotape to the experimental group in the specific pattern described by a Certified Kinesiotape Applicator. Rehabilitation will be consistent across all subjects according to their institution’s athletic trainer. Changes in swelling measurements will be recorded and compared each day across control group and experimental group. At the conclusion of the study patients will continue any treatment and rehabilitation necessary as seen by their respective Athletic Trainers.

Archaeological Signatures of Vikings In North America
Jeffrey Johnson
Jerry Galm, Anthropology

There are various archaeological signatures of the Viking explorations and occupation of North America during the medieval warm period. These archaeological signatures are aligned to the Norse myths of the Greenlanders and Erik the Red. Specifically, the strongest signatures are found in Greenland, Newfoundland, and Baffin Islands. The earliest occupational sites are documented in Greenland around 1000 A.D. Interpretations as to why the Norse decided to travel to North America include factors such as overpopulation, the ivory and timber trade, as well as treasure seeking. Exploring what technology and social structures the Vikings implemented during their time in North America is essential to the elaboration of archaeological interpretations.
The Trail Map: A Goal Organizational Tool for First-Generation College Students
Caitlyn Jordan
Jon Hammermeister, Physical Education, Health and Recreation
Emily Messina, Physical Education, Health and Recreation

Previous research has shown that First-Generation College Students (FGCS) struggle academically when compared to their non-FGCS peers (Bui, 2002). For example, FGCS tend to experience a lack of social, financial and emotional support which contributes to the following student success deficits: 1) lower academic performance, 2) problematic transitions, 3) and poor retention (Majer, 2009; Terenzini et al., 1996). Studies have shown that mental fitness skill (MFS) constructs such as self-efficacy, goal setting, motivation, and resilience are all related to academic success (Hammermeister, Jordan, Briggs, Galm, & Pickering, 2012). This study aimed to explore further the idea that MFS can be of utility to FGCS in their pursuit of academic success. Specifically, this study focused on a curriculum, which intensively immersed each participant in the goal setting process using the “Roadmap” model developed by South (2005) as a tool to more effectively prepare for classes, exams, and presentations. A single subject non-experimental design with follow-up member checking was used to validate quantitative results (Creswell, 2007). Positive changes in a number of MFS variables were seen in each participant.

Gratitude and Grateful Coping Strategies on Student Success in College
Chelsea Joynes
Amani El-Alayli, Psychology

Gratitude involves appreciating one’s life without having feelings of resentment or bitterness, while being thankful for the good things in life. Research has found that those with higher levels of gratitude tend to have more adaptive coping strategies. This study aims to discover if trait gratitude and grateful coping would be associated with greater academic success. Participants were given an anonymous questionnaire packet that measured coping strategies, levels of gratitude, resentment, appreciation, college persistence and the number of failed and withdrawn courses. As predicted; trait gratitude was significantly associated with higher academic integration, social integration, degree commitment, overall persistence, and GPA. Overall grateful coping was related to higher social integration, degree commitment, and overall persistence. This research suggests that the implementation of gratitude enhancing techniques and growth-focused coping may contribute to higher levels of integration, commitment, persistence and academic performance in college.

Genetic Variation in Arctic Grayling (Thymallus arcticus) from Southwestern Montana
Sabrina Judson
Institute of Science and Technology at North Central High School
Randall James, Biology

In this research, Arctic Grayling (Thymallus arcticus) found in Odell Lake and Bobcat Lakes, Montana were studied to see if the two populations have shared genes (due to gene flow via illegal stocking) and adequate genetic diversity worth preserving. Restriction fragment length polymorphisms (RFLPs) were used to analyze 100 samples, looking at four loci (D-loop, Cyt b, Cyt C, and ND5). Currently, the study is focused on the ND5 region due to the promising variability in the banding patterns between fish samples seen in gels which tested for functional enzymes and primers. The results from this study will be used to inform the Montana Department of Fish and Wildlife about the current genetic condition of the Grayling and ultimately help them determine whether or not to protect the two populations.
Multitasking with Music
Garrett Jutte
Teena Carnegie, English - Technical Communication

When studying technical communication, it is very important to be able to work with different formats and types of writing. With such a wide range of possible activities, it is entirely possible that multitasking may be a central part of accomplishing a task or project for students in technical communication. This project will include research and a survey from local students about the effects of listening to music while working on school work in association with being able to successfully multitask. A study at Stanford has shown that listening to music while multitasking helps the brain to stay focused and organized even with multiples events or chaotic scenarios occurring. Preparing for a job in the real world is affected by how we’ve trained ourselves up until now. This study is meant to show that we can ready ourselves for the real world from unconventional and surprising means that are also enjoyable.

The Winter’s Tale Act I, Scene II
Kyle Kahklein, Milton Harper
Jeff Sanders, Theatre

In this scene, King Leontes is convinced that his wife has been unfaithful to him. Camillo, Leontes’ servant, attempts to reassure his majesty that he is wrong, but will the blindingly jealous king listen? This scene explores the themes of honor, friendship, and the relationships between men and women.

Does Semen Have Anti-Depressive or Anti-Anxiety Properties?
Jessica Kauffman, Holly-Ann Musgrave, Timothy Weber
Charalambos Cleanthous, Psychology

Gallup (2002) provided early research on the effect of semen as a natural antidepressant. Tangen and Mykletun (2008) reported that depression and anxiety are higher in women during their menstrual cycle. These two lines of research suggest that women who have vaginal intercourse without a condom during their menstrual cycle are benefitting from the supposed natural anti-depressive properties of semen. We hypothesized that women would engage, as a percentage of sex acts, in more vaginal intercourse than oral and anal intercourse during their menstrual cycle as compared to the off menstrual cycle days. Our results support Gallup’s conclusion, however, other factors do not permit for an unequivocal conclusion.

Use of the iPhone’s Accelerometer to Help Physical Therapy Students Improve Skill Acquisition of Spinal Manipulation
Julianne Keenan, Laura Hall, Brian Coleman
Dan Anton, Physical Therapy

Spinal manipulation is an effective treatment for various musculoskeletal disorders. In order to make the treatment as safe and effective as possible, it is important to consistently deliver manipulation with precision. In this pilot study, we plan to investigate the use of iPhone accelerometer data to provide immediate feedback on the velocity and direction of force during a spinal manipulation. The purpose of this presentation is to describe the background and importance of the topic as well as the methods we intend to employ in this study.
Initial Investigation into the Effects of Root-Fungi Mutualism on the Trichome Density of Tomato Plants
Michelle Keller
Robin O’Quinn, Biology

Most plants demonstrate increased nutrient uptake, pathogen resistance, and tolerance to drought and herbivory when colonized by mutualistic fungal species. Arbuscular mycorrhizal fungi (AMF) infect plant root cells, enabling them to improve nutrient uptake and enhance root function, promoting overall plant health. Trichomes, projections from epithelial cells, are found on plants’ aerial tissues and mitigate many environmental stressors. Trichome densities vary among plants and demonstrate plastic responses to environmental stressors and potentially to mycorrhizal symbioses, but the latter has not been specifically tested. We hypothesize that inoculated tomato plants will acquire water and nutrients more readily and experience less stress, which will increase trichome densities. This study aims to determine if the density and types of trichomes on tomato differ due to inoculation with AMF. Treatment plants were inoculated with four species of AMF in the Glomus genus and grown in the EWU Greenhouse. Trichome densities were compared across treatment types and analyzed using ANOVA.

Summer 2012 Senior Project “The Mowerator”
Justin Kellum, Dan Howard, Arturo Martinez
Jason Durfee, Engineering and Design

The “mowerator” is a concept design. The purpose of our project was to design an affordable emergency generator system that the most common push lawnmowers can be utilized to drive the electrical generator. We will be discussing manufacturing costs, practical purpose, and our design plan.

Effects of a Running-Based High-Intensity Interval Training Protocol on Aerobic Adaptations: A Pilot Study
Nick Kelly, Efraim Sanchez
Wendy Repovich, Physical Education, Health and Recreation

High-Intensity Interval Training (HIIT) has shown significant increase in many aerobic adaptations normally gained from Continuous Endurance Training (CET). One of the most common and successful HIIT programs has used the Wingate Anaerobic Test (WAnT) as the interval workload. The impractical form of the Wingate workload has lead researchers to look for more practical modes of HIIT. The Running based Anaerobic Sprint Test (RAST) was originally developed to be a running based form of the WAnT protocol. The purpose of this study was to see if a 2-week RAST based HIIT protocol can elicit adaptation in body composition and VO2max. There was no significant difference found between pre and post measurement in body composition and in VO2max. The RAST protocol was found to be too taxing on the participants, and the workload could not be maintained by some of the participants.
Analysis of Gene Flow in Arctic Grayling (*Thymallus arcticus*) in Big Hole Valley, Montana

Kylena Kerr

Institute of Science and Technology at North Central High School

Randall James, Biology

Arctic Grayling have gone through a series of population declines for a multitude of reasons since the last Ice Age. They currently reside only in Montana since the populations in Michigan became extinct over 70 years ago. It is hypothesized that there is no correlation between the two populations because there is no geographic linkage. Additionally, there is a lack of diversity due to breeding habits and outside contributing factors. The purpose of this study is to determine genetic diversity between populations of Arctic Grayling, as well as gene flow between two Montana populations. To accomplish this, samples have been collected from both Bobcat Lake and Odell Lake and will be analyzed for Restriction Length Fragment Polymorphisms (RFLPs). This information will be used by the Montana Wildlife Department as well as the Endangered Species List.

Tiered Testing, Standards-Based Grading, and Next Steps

Adrienne Kilbourne

Sean Agriss, English

Tiered testing is an assessment option that embraces concepts of differentiation, standards-based grading, and administrative requirements for the implementation of TCI-published social studies curriculum in the Cheney School District. I conducted a controlled study in a limited setting at a local middle school. Two classes were selected and were taught the TCI curriculum. Both classes were taught using the same lessons, activities, and pedagogy. One class was assessed using the TCI summative assessment and the other class was assessed using the tiered summative assessment that I adapted to encompass the above-mentioned elements. I established that my tiered assessment is valid, accessible for students, and is compatible with standards-based grading.

Smart Cruise Control

Seungmin Kim, Peter Barry

Jabulani Nyathi, Engineering and Design

Arindam Das, Engineering and Design

Smart cruise control is an advanced cruise control system that detects a car in front, its distance, and stays a safe distance away. This system will increase the convenience of drivers especially in heavy traffic. Also, the system will overcome the shortcoming of current cruise control, which should be reset or turned off whenever a slower car is ahead. When activated, the system detects a car in front, calculates a safe distance according to the current speed and closing speed, and keeps a safe distance automatically. The safe distance keeps being adjusted as the speed changes—faster speed keeps a further distance. In some case of human decision is necessary, the system will warn the driver to turn the control off or ease the car off the control if there’s no action from the driver. Using the system, drivers are set free from the tedious operation of many repetitions of pressing the accelerator and brake.
Shear Modulus of Laminated Materials for Predicting Rocket Fin Failure Due to Flutter
Nicholas King
Martin Weiser, Engineering and Design
Awlad Hossain, Engineering and Design

The design, construction, launching, and operation of rockets are an important topic in academic interest. One of the reasons why a model rocket can’t reach its optimum height nor remain within its projected path is the undesirable oscillations of the fins. This phenomenon is called “fin flutter,” which progresses into a severe issue when the compliant (flexible) materials are used for fins in rocketry projects. Therefore, the fin flutter issue may be reduced or eliminated by using materials with a higher shear modulus. During this research, we are planning to determine shear modulus of laminated materials such as plywood and fiberglass by the asymmetric four point bending test. Several tests will also be conducted along different fiber directions resulting in different numerical values for the material’s shear modulus. To validate the experiment’s results, multiple metals of known shear modulus will undergo the experiment in the same environment. The overall project will give the designer more options to use the most suitable material for rocketry projects with intended performance.

Comparing Japanese Phonetics to English: A Learner’s Guide
Tiffani Kittilstved
Julia Smith, Anthropology

Different languages have different phonetic systems. Understanding the phonetic features of a language can help ease second language learners in learning the language. Often, learners have difficulty hearing the ways sounds are pronounced in their target language. In order to benefit Japanese-primary English as a Second Language learners and English-primary Japanese as a Second Language learners, I collected examples of native Japanese pronunciation of sounds that differ between the two languages. I focused on a lack of aspiration in certain consonants; differing pronunciation points for certain consonants; differing pronunciation points of approximates; and the distinction between short and long duration of vowel sounds. This collection is the starting point for a phonetic audio book to be used by non-native Japanese as a Second Language learners. This documentation can be used to enrich the teaching of languages by incorporating phonetics into the curriculum. Its usefulness might suggest this as a strategy for teaching other languages as well.

The Rubenesque Figure and Concepts of Beauty in the Baroque
Katrina Knizek
Barbara Miller, Art

The term “Rubenesque” has expanded beyond the realm of art history and into the common vernacular: Merriam-Webster defines Rubenesque as “plump or rounded, usually in a pleasing or attractive way.” There are many elements of the Baroque and preceding time periods that informed and influenced Rubens’ painting style and subject. Upon close examination of Baroque era trends and style, it becomes apparent that Peter Paul Rubens’ signature plump female form is an amalgamation of the contemporary Northern style of realism, his Classical Italian training, and his personal taste regarding feminine beauty.
**Determination of Water Hardness: An EDTA Titration**  
**Bonnie Kongchunji**  
*Wes Steiner, Chemistry and Biochemistry*

The term “hard water” is referred to water that has a high enough concentration of alkaline earth metal ions dissolved into it so as to affect the sudsing ability of soap by definition. To that end, most metal ions, including the alkaline earth metal ion Mg$^{2+}$ in this case, will form what is called a metal-ligand complex with the hexadentate ligand ethylenediaminetetraacetic acid (EDTA) in aqueous environments. This experiment focuses on determining the actual concentration of Mg$^{2+}$ in units of parts-per-million (ppm) in an unknown water sample and quality control (QC) standard. To determine the actual concentration of Mg$^{2+}$ in the unknown water sample and QC standard, a series of standardizing titrations of a 0.010 M EDTA solution with a primary standard Mg$^{2+}$ solution was done to calculate the true molarity of the EDTA standard solution. The standardized EDTA solution was then used to determine the concentration of the Mg$^{2+}$ in the unknown water sample and the QC standard.

**Contextual Priming of Emotion Ratings to Graphic Images**  
**Megan Korst, Brittany Haugen, Brittany Myers, Michelle Whitlow, Abby Eriksen**  
*William Williams, Psychology  
Kurt Stellwagen, Psychology*

The purpose of this project was to develop stimulus materials that could be used to investigate emotional reactions to graphic stimuli with attitudes or personality as subject variables. Participants were shown 16 graphic images of violent or disturbing scenes. Each image was preceded by a caption that either reinforced or rationalized the affective content of the scene. For example, a scene portraying a knife at a young woman’s throat is reinforced by describing the scene as a violent attack or is rationalized by describing the scene as a lesson in self-defense. Eight graphic images were preceded by a reinforcing caption and eight by a rationalizing caption. Participants were asked to rate their emotional reactions following each scene using a 7-point Likert scale. The participants rated scenes preceded by reinforcing captions as significantly more negative than scenes preceded by rationalizing captions, $t(38) = 8.79$, $p < .0001$.

**Effectiveness of a Lumbar Brace to Reduce Spinal Shrinkage while Running**  
**Jennifer Kumanchik, Anastacia Lee**  
*Jeni McNeal, Physical Education, Health and Recreation*

The application of compressive forces on the spine results in shrinkage, an overall reduction of space between vertebrae resulting from intervertebral discs expelling fluid as load is absorbed. A brace is commonly used to treat or prevent the occurrence of injury in the lumbar spine. The purpose of this case study was to assess how effective a lumbar brace is in reducing spinal shrinkage while running. The subject was a female recreational runner with a history of lumbar pain and injury. Two data collection days encompassed the subject running for two, consecutive fifteen-minute intervals at a constant speed with and without a lumbar brace. Stature measurements were recorded pre and post running intervals using a stadiometer and anthropometer with the subject in standing, seated, and supine positions. Results demonstrate support for a greater amount of spinal shrinkage occurring within the first fifteen-minute interval and that the use of a lumbar brace reduces the amount of shrinkage (e.g.: sitting height with the brace averaged .43% shrinkage and without the brace 1.75% shrinkage).
Effects of Language Errors on Advertisement Persuasiveness
Adrian Kunemund, Elizabeth Conkey
Amani El-Alayli, Psychology

The purpose of this study was to investigate how language errors in advertisements affect people’s perceptions of advertisement persuasiveness. Participants were randomly assigned to review an advertisement that featured one type of business (blue collar or white collar) and either contained many language errors or no errors. Participants’ views of the advertisement and of the relevant business and its employees were then assessed. We hypothesized that an ad with more errors would be considered less persuasive and the associated business would be considered as having inferior service and staffing.

Lead Contamination Effects in C3 and C4 Plants
Helen LaChance, Katherine Poteat, Sergey Bochev
Suzanne Schwab, Biology

Phytoremediation has become a popular method of removing harmful heavy metal contaminants like lead from soil. We tested the C4 plant *Amaranthus cruentus* and the C3 plant basil (*Ocimum basilicum*) in order to study how their different photosynthetic systems would affect survival and metal uptake when grown in lead contaminated soil. We hypothesized that *Amaranthus* would have the highest survival because it's a C4 plant, already adapted to harsh environments. We also expected it to have higher lead absorption rates due to previous phytoremediation studies. *Amaranthus* and Basil had no significant differences in CO₂ uptake rate, internal CO₂ concentration, stomatal resistance or transpiration, but the water potential of *Amaranthus* was significantly lower for lead treated plants compared to control plants (p-value = 0.059). We saw a significant loss of leaf mass in leaves of both *Amaranthus* and Basil lead treated plants with *Amaranthus* having the largest loss of leaf mass (p-value 0.000). *Amaranthus* absorbed significantly less lead than basil, which is the opposite of what we expected.

Beacon Hill Structural Analysis of the Spokane Dome
Michael Landkammer, Amy Thompson
Chad Pritchard, Geology

During the Sevier Orogeny, the regions lower crust underwent high grade metamorphism which formed the Spokane Dome on the southern portion of the Priest River Complex. It has since been exhumed and now exists as an antiformal dome of mylonitized gneiss and schist (Till, et al., 2007) with pegmatitic dike intrusions. Doming is confirmed by the foliation dip recorded at about 20-40° southwest on the west side and about 60-80° south on the southern side of Beacon Hill. There is a mylonitization plane exposed in this area which is perpendicular to foliation and offset by faulting. This compressional deformation likely occurred during the formation of the Cordilleran Thrust Belt in the Jurassic into the Miocene. Additionally, multiple normal faults exist which originated during Eocene extension (Rhodes, 1986). One such fault recorded was a shear zone antithetic fault at the southern edge of Camp Sekani Park, which strikes at about 300° with a 65° dip to the northeast.
Engineering Effects of 15% Mushroom Compost on Palouse Soil
Michael Landkammer, Amy Thompson
Richard Orndorff, Geology

Compost is commonly used as an additive to soils by gardeners and farmers to both add essential nutrients to a soil as well as to decrease the rate at which water evaporates. However, little is known about the long term engineering effects of compost, especially if the land is later used for construction. For this experiment, we added 15% compost by weight to a sample of Palouse soil to test the overall effects on engineering properties such as dry strength, dilatancy, water retention, compaction, compression, and deformation behavior at 5%, 10%, 15%, 20% and 25% water contents. Overall, the addition of compost had a negative effect on engineering properties of Palouse soil. The compost decreased moisture holding capacity, yield strength, dry strength and unit dry weight. However, it increased the water content at which the soil became ductile, and increased optimum water content for compaction and compression.

Temporal and Spatial Variation in Dissolved Metal Concentrations in the Spokane River
Michael Landkammer
Carmen Nezat, Geology

The Spokane River has some of the highest concentrations of heavy metals (e.g., lead, cadmium, zinc) in Washington State; these metals have originated from historical mining in the Coeur d’Alene Mining District. The purpose of this ongoing study is to measure these elements as well as pH, alkalinity and some more common elements (e.g., calcium, sodium) at approximately three week intervals at eight locations along the Spokane River through the Spokane industrial district. Samples were also collected from Arthur Lake, an artificial lake on Gonzaga’s campus which is fed by the river. Our goal is to understand how the stream water chemistry changes throughout the year as a result of seasonal variations, episodes of rain and snowmelt, surface runoff, and storm water input. Preliminary results indicate that river chemistry does not change significantly over the two mile stretch; however, the concentrations of some elements can differ by 200% in as short as a three week period.

Density and Genera Richness of Native Gastropods and the Occurrence of the Invasive New Zealand Mud Snail (Potamopyrgus antipodarum) in the Lower Snake River and Three Tributaries.
Michele Larson
Ross Black, Biology

The New Zealand mud snail, Potamopyrgus antipodarum, is an invasive gastropod that can impact native gastropods in the United States. However, limited knowledge on the native snail community prior to invasion by P. antipodarum makes assessing these impacts difficult. A baseline survey was conducted to determine the density and genera richness of gastropods in four rivers near Lewiston, Idaho that are downstream of the current invasion area of P. antipodarum. A total of nine genera from five families were found among the fifteen sites surveyed including P. antipodarum. Sites ranged from zero to seven genera of gastropods with a mean gastropod richness of 3.067 genera per site. Average site densities ranged from zero and 625.33 snails per m² with the highest river mean density found in the Grand Ronde River with 251.66 gastropods per m².

Solar Cars
Savannah Larson, Shelby Wolfe, Ashley Cook, Erin Bartlett
Rodger Hauge, Education

This experiment is designed to test the effectiveness of solar energy using three differing sizes of solar panels attached to model cars. It will also test each model car to determine which size of the solar panel absorbs the highest amount of light resulting in the fastest speed. This experiment will prove the importance and growing awareness of the viability of solar energy.
Preparation of Mono- and Dialkylacetylphosphonate: Synthesis, Isolation and Purification
Anh Le
*Travis Denton, Chemistry and Biochemistry*

The phosphonate analogue of pyruvate, acetyl phosphonate (AP), is used biochemically, *in vitro* and *in vivo*, as an inhibitor of pyruvate dehydrogenase (PDH). The small molecular weight and hydrophilic nature of AP make it difficult for AP to gain excess to the intracellular domain of the cell. Therefore, to increase the efficiency of cell membrane translocation, the hydrophobic nature of the compound must be increased. Studies have shown that small alkyl monoesters of AP are equally active towards inhibition of PDH as the diacid form of AP. Previously shown, in the case of \( \alpha \)-ketoglutarate (KG), that octyl ester groups provide efficient hydrophobicity to mask very polar, small molecules for membrane translocation. It has been confirmed that the octyl esters of KG are substrates for cytosolic, non-specific esterases that hydrolyze the ester bonds releasing the free acid. In an effort to optimize the enzyme inhibition, cellular transport and availability of AP, a number of mono and diester acetyl phosphonates were prepared. The results of the synthesis methodology will be discussed.

The Effects of Emotion Regulation on Time Estimation
Kourtney Lechner, Taryn Brannon
*Jonathan Anderson, Psychology*

According to Vohs and Schmeichel (2003), suppression of emotions leads to overestimates of a given time duration. However, Brown (1985) suggests that increases in emotion regulation leads to underestimates of time duration. The purpose of this study was to duplicate Vohs and Schmeichel’s (2003) study to distinguish inconsistencies between their findings and past time estimation literature and to extend it by including a prospective paradigm with the retrospective paradigm. It was hypothesized that emotion-regulation will lead to overestimation of time in a prospective paradigm. The present study indicates that individuals in the retrospective paradigm who were instructed to suppress their emotions while watching an emotionally-provoking video clip overestimated the length of the film compared to individuals that experienced their emotions naturally (control). However, there were no statistical differences in time estimation accuracy between individuals in the retrospective control condition and either of the emotion regulation conditions completed in the prospective paradigm.

The Role of Culture in Substance Abuse Treatment
Tabria Lee-Noonan
*Michael Zukosky, Anthropology*

The most common methods of addiction treatment in the United States are behavioral therapy, therapeutic communities and biopharmacological treatments. This paper asks the question of what role does culture play in these different forms of treatment. For this research I used exploratory methods, as well as an in-depth cross-disciplinary literature review to determine the role of culture in substance abuse treatment in the United States. Within the literature I concluded that culture, while not entirely disregarded, is not a main factor when implementing substance abuse treatment methods.
“This Kind of Thing Happens Every Day”: The Emotions Bullying Produces
Lateasha Lewis  
*Sue Wright, Children’s Studies*

This research offers some perspectives of current middle school students on bullying. The results are based off of 253 surveys from students. Each survey was analyzed using SPSS software. The current study will not focus on all the questions in the survey; however, it will examine: 1) the number of students that reported seeing bullying, 2) how bullying makes students feel, and lastly, 3) what students want adults to do in combating bullying behavior. The three most frequent things students proposed adults do to help combat bullying was to: monitor in the hallways during transition between classes and assemblies more, have more bully prevention activities to make the kids more aware, and provide cameras throughout the school that work and have audio. Disturbingly, more than half of the participants in this study reported witnessing bullying.

The Sexualization of Women: Strip Clubs and the Females Who Patronize Them
Heather Liddicoat  
*Galina Sinekopova, Communication Studies*

The paper explores the recent cultural phenomenon of gentlemen’s clubs being overrun with female patrons. I used the method of observation to examine how females are treated in such establishments. My personal observations were supported by extensive analysis of academic research on this topic. It seems that even though it has become acceptable for females to go to a strip club and has started to become a social norm, they way they are treated inside tells a different story. This paper is but the beginning of what I hope to be a much more in-depth study, however it does give us a glimpse into a greatly understudied topic. The results of this study will help us understand how the dancers perceive females in what they consider a place where they do not belong. I would like to do future research to find out why this phenomenon has occurred.

Show Me the Money
Alexis Lindeman  
*Teena Carnegie, English - Technical Communication*

Education is key in combating the depletion of natural resources and rising energy costs. Environmental Education gives families and individuals the knowledge and tools needed to reduce energy costs and make improvements to their homes, while improving their environment. Environmental education enables low-income persons to make changes to their home that could lower energy costs. Education cannot happen unless there is funding. Grant writing plays an important role in achieving financial support for these programs to take flight. My poster will explain my experience with the process of grant and proposal writing in relation to SNAP, a non-profit agency that serves Spokane by aiding citizens during economic hardships. SNAP is searching for funding to establish a Living Green program that recognizes the needs of low-income individuals, families and vulnerable demographics while also benefiting the environment. My poster will teach the proposal writing process and how SNAP is involved in the community, with a focus on the Living Green program and its hope to transform Spokane.
We Went to Moab, Now What?
Conner Linscott, Makinsie Morgan, Jessica Hernandez
Summer Hess, Academic Success Center

This visual presentation demonstrates a spring break alternative where students worked to bring together community service, as well as a learning experience. Through this service-learning trip, the students worked with Trail Mix, as well as the local office of Bureau of Land Management, to provide a lasting service, and to learn about the community that they were shaping. We also learned about how it feels to lead a group, and realize all the effects of gaining more consciousness of ourselves when we were given a leadership position. We were able to also gain a deeper sense of our common goal as a group as we problem solved mishaps and problems that occurred during our trip. This presentation is the three of us telling our side of the story, and what we learned about the community as well as what we learned about ourselves. Through this entire experience we have grown into becoming more self-aware of the people we would like to become in the communities we serve in our daily lives.

“My Lola”
Jason Ludlow
Rachel Toor, English - Creative Writing

This creative nonfiction essay is centered around Lola, my Filipino grandmother. The essay is at once a character portrait and, at the same time, an example of how creative nonfiction can be used as a means of cultivating self-awareness and acknowledging complications in the way that human beings see one another.

“I Hate To Love You”
Briana Lummus
Aileen Keown Vaux, Creative Writing

This is an essay which describes the way I grew up fearing and at times, hating my grandmother for reasons I didn't want to understand. As I grew and became a mother myself I saw the ways in which I had become like my grandmother. This shift within myself showed me the ways that we as people deal with events in our lives that are at times, too much to handle. As a young child I resented many of my grandmother's decisions but as I became an adult I saw that my grandmother had her own story to tell.

The Other Side of the Grant Writing Process
Neil Lundin
Teena Carnegie, English - Technical Communication

The ability to craft a winning grant proposal is crucial to the financial health of every non-profit organization. Many professionals who write proposals are adept at articulating their own organization’s mission and values, but neglect to consider the objectives of the foundation they are submitting the proposal to. Within the non-profit world, grant funds are allocated to only a few organizations within a large pool of applicants. In order to create a proposal that stands out from the crowd, it is critical for grant writers to craft a dynamic proposal that resonates with the foundation they are applying to. This spring, as an aspiring grant writer, I made it my goal to research specific elements within a proposal that foundations are looking for. I wanted to see for myself what key words make foundations say “Bingo!” and cut a check to the grant applicant. In order to accomplish my mission, I volunteered at United Way as a grant proposal reviewer. My poster focuses on the other side of the grant writing process, and shows you what foundations are looking for in a winning proposal.
Youth Soccer Player with a Fracture to the Traverse Process of L3  
Nicole Maiden, B.J. Leach, Jamie Knikander
Jeffrey Kawaguchi, Physical Education, Health and Recreation

The transverse process is a segment of bone that protrudes from a vertebra. A fracture to this area occurs due to a forced compression of spine, causing pressure along the processes. It is usually the result of a hyperextension or a compression on the vertebra to one side or the other of the spine (Navdo, et al., 2012). This case study is about a high school athlete that received a fracture to their transverse process of the L3 vertebra with the complication of an extra vertebra found. The athlete received this fracture along with a grade II AC sprain during a soccer game; both injuries were received from the athlete having her legs being thrown behind her as she was in the air.

An Annotated Mitochondrial Genome of Arctic Grayling  
Jacob Mallery, Courtney Wanke
Institute of Science and Technology at North Central High School
Randall James, Biology

The Arctic Grayling (Thymallus Arcticus) located in the Big Hole River, Montana, are the last native fluvial Grayling in the lower 48 states. Their range has experienced a dramatic decrease due to a variety of factors, including human interaction, environmental issues, and the introduction of invasive species. The Big Hole River Grayling’s genetic uniqueness and diversity are potentially threatened by attempts to augment the local population with non-native Grayling and hatchery populations. Our goal is to establish complete sequence coverage of the Montana Arctic Grayling Mitochondrial Genome and for use as a template to assess introgression and diversity. Our initial sequencing efforts have been focused on metabolic regions like Cytochrome B and ATP6. To this point, we have successfully sequenced 39.2% of Cytochrome B and are actively working to increase our coverage.

Single Spermatozoon Injections into Rana pipens Oocyte from a Pipette  
Gureet Mann
Charles Herr, Biology

The research focus is to develop a technology for sperm injection. A technique for injecting a single spermatozoon into an oocyte from a pipette filled with spermatozoa is the specific goal of our project. Frog spermatozoa can be successfully frozen but are non-motile upon thaw. The nucleus is intact when tested by live-dead cell stain, but motility is not functioning thus the spermatozoa are useless for fertilization. If cryopreserved spermatozoa could be injected into the oocytes successfully, cryopreservation would then be a useful means for preserving allelic diversity within these species.

Using Public Records in Crime Reporting  
Jane Martin
Jamie Neely, Journalism

As an investigative reporter with a focus on crime coverage, knowing how to effectively use public records to gather information for the meat of an article is vital. Over the past year, I have learned some of the ins and outs of the court system and have learned how to obtain public records, such as police reports and various court documents, sifting through jargon and transforming it into consumable news. The importance of fairness, accuracy and sensitivity has been deeply imprinted on the consciousness of the staff at The Easterner, as they have been faced with the challenges of reporting on arrests for assaults and drug charges and the chain of events which led to a sudden change of leadership in the ASEWU. In all cases, it was the responsibility of those at The Easterner to use the records and resources available to them to produce accurate and relevant news to community at EWU, while taking extra care to be fair to all concerned.
A Female Soccer Player with a Deltoid Ligament Sprain and a Non-Displaced Distal Fibular Fracture: A Case Study
Leslie Martin, Breann Booher, Joe Cordes
Jeffrey Kawaguchi, Physical Education, Health and Recreation

Eversion ankle sprains account for only about 5-10% of all ankle sprains (Corwin, 2011). Injuries to the deltoid ligament from an eversion ankle sprain can be more debilitating and are sometimes accompanied by a fibular fracture at the lateral malleolus of the ankle (Corwin, 2011). The purpose of this investigation is to discuss the pertinent anatomy of the ankle, the mechanism of injury of a female soccer player who sustained a deltoid ligament sprain with a concurrent non-displaced distal fibular fracture, the treatment initiated, the subsequent rehabilitation techniques used, and the current status of the patient. The method for obtaining the data is a review of existing medical records and a short interview with the subject.

Native Bees at Turnbull National Wildlife Refuge
Carla Martinez
Justin Bastow, Biology

In this study I compared native bees from cup traps at Turnbull National Wildlife Refuge with the phenology of potential forage flowers from April 2, 2012 to October 26, 2012. The cups were in an array at a site that was in an open shrub-steppe habitat with no nearby tree canopy. In the samples that I collected from July 13 to October 26, I found a correlation between the flowering stages of the plants and the bees present. Though this data only reflects the second half of the season, it shows an absence of Megachilidae and Andrenidae once all the flowers disappeared. At the same time, the number of bees in the Halictidae and Apidae families increased, along with the overall number of bees collected. This change in the bees caught was due to the location of the collection site. Many Halictidae and Apidae species are ground or plant stem nesters and probably nested at the collection site. The Megachilidae and Andrenidae likely had nests located further away, in or near woodlands. Once their forage plants stopped flowering, they had no reason to visit the collection area.

A History of Conspiracies and Misinformation: The History of the Order of Assassins and the Etymology of the Word Assassin
Kelly Mathews
Michael Zukosky, Anthropology
Patricia Chantrill, Communication Studies

Today the word assassin is used to denote forms of murder which are usually paid for or political. The image of the assassin has been somewhat romanticized in popular culture, as a killer par excellence, who is either a lone wolf independent agent or one who works for a covert society. The pertinent questions to ask then, are when and where did the word assassin enter the popular usage in European languages and how did it evolve? The answer to this question is bound up in the intriguing answer of who were the ‘real’ assassins and what their history was. Using research from a documents based research paper including the history of the order of assassins and the etymology of the word assassin, the linguistic and historical backgrounds of “assassin” will be presented. This will trace how the use of the word in European languages was influenced due to how the Islamic sect of the Ismailis who later became called assassins depending on which scholarly research you follow. The various debates surrounding the meanings and translations of assassin will be shown.
How Performance Poets Build Community: Reclaiming Shared Experiences of Emotional Intimacy
Kelly Mathews
Julia Smith, Anthropology

Theorists like Anthony Giddens have argued that modernity has led to the breakdown of social communities. At the same time traditional communities are under attack, people are constructing new communities based on social identities. Using ethnographic research done in the summer of 2012, this paper presents case studies from the Spokane poetry community to examine how poets build community and deal with conflict. The poetry community is built through both performance venues and mentoring relationships. Poetry performance has been key, as it builds a sense of intimacy among the regulars based on a shared vulnerability drawing them together through rituals of performance and interactive listening. The exchange of ideas and sharing of experiences makes for a sustainable and growing community. While there may be a breakdown of traditional communities as Giddens suggested, this study suggests avenues of exploring new ways of building community.

Technical Communication in the Technological World
Rory Mathias
Teena Carnegie, English - Technical Communication

To be a technical communicator one must constantly adapt to the ever-changing professional world around us. With the emergence of technologies like Skype, Twitter, and other social medias, information is communicated at lightning speeds on an international scale. Because the technical communicator is not immune from these trends, it is their responsibility to meet the challenge of these new emerging technologies. In this poster, I will demonstrate to you the ways in which technical communicators, as a whole, have furthered their education, skill set, and expertise to fulfill the emerging needs required from these web 2.0 technologies.

Commercially Ever After: Folklore in a Capitalist Economy
Shannon Mauldin
Henry-York Steiner, English

Folklore and commercial art have been seen as two distinct spheres existing in opposition to each other. This is true to such a degree that, for many folklorists, folklore is anything and everything that is not institutionalized. However, the commercialized world we live in makes that distinction a difficult one. As traditional folklore material continues to be reinvented for presentation to a commercial audience and folk artists copyright and perform their art for profit, the line between folklore and commercial art is becoming blurred. This paper evaluates the relationship between folklore and the commercial market, arguing that commercialized folklore is both a reality of the modern world and a valid continuation of the folklore tradition.
Housing Discrimination against Prospective Muslim Renters in a Non-Fair-Housing Market
Andrew McCall, Ty Finkas
Amani El-Alayli, Psychology

The present study hypothesized that we would see a general negativity towards Muslims coupled with overt forms of discrimination. We tested this hypothesis by calling 62 rental agencies in Fargo, ND, Sioux Falls, SD, and Cheyenne, WY. We used a 2 caller gender / 2 caller name (Christian or Muslim) design. We found that apartment availability was significantly lower for the Muslim condition than for the Christian condition. We also observed that both the male and Muslim condition received lower security deposit quotes. Upon further analysis we found that the Christian caller was offered more bedrooms in the first unit described by rental agents than the Muslim caller. There was also a significant interaction showing that male Christian callers were offered the most bedrooms per unit. Finally, we observed a significant caller sex / caller name interaction on application fees that showed preferential treatment to female Muslims and negative treatment toward male Muslims.

Hydro Cars
Holly McClanahan, Hilary Davis, Mike Hurley
Rodger Hauge, Education

We are going to demonstrate the technology required to safely power a car using the natural and renewable resources of water and sunlight. Our presentation will model how water can be electronically charged, the sun’s rays can be captured, and both can be converted to an energy needed to power a car. To demonstrate this, we will use four small, model cars that all have different systems but use the same two resources. Viewers will be able to see how fuel cells are a potential power for our future cars!

Juvenile Delinquency: A Macro Perspective
Jose Mendez
Kerryn Bell, Sociology

This research looks at macro-level correlations between violence and delinquency among juveniles. Studies show a correlation between economic inequalities, mis-labeling by law enforcement, and social exclusions of communities that cause adolescences to become juvenile delinquents. Specifically, this research examines the effects of gang/peer pressure, school administration, the community, and injustices of the criminal justice system on adolescent behavior using qualitative in-depth interviews. Further, this study will research the connection between conflict, learning, and labeling theories thus establishing theory integration focused on explaining macro-level factors of juvenile delinquency and how adolescent behavior pertains to each theory.

Relative Abundance, Distribution, and Life Histories of Fish Species in the Colville River Watershed
Aaron Mettler
Allan Scholz, Biology

Sampling efforts by Washington Department of Fish and Wildlife (WDFW) and United States Forest Service (USFS) have identified eleven species found in the Colville River watershed; however, the majority of their efforts have been located on public lands leaving the vast majority of the watershed unsampled. These agencies have also collected little data on fish life histories. I propose to expand upon the work started by WDFW and USFS. My study will sample sites located on both private and public lands, with a major sampling effort on the Colville River and each of its major tributaries. Sampling methods will include backpack electrofishing, beach seine netting, and baited minnow traps. I will also collect data on length, weight, age, diet, and fecundity.
Eagles and Phoenixes: How the EWU Student Newspaper Produced an Award-Winning Website out of the Ashes of a Catastrophic Website Crash

Amy Meyer  
*Jamie Neely, Journalism*

Just prior to winter quarter, the self-hosted, student media Wordpress website, Easterner Online, needed some maintenance. At the end winter break, the staff took the necessary steps, but less than one week later, the site went down. With the website down, the clock started; students needed the site up, yesterday. We had to explore options. Could we fix what was broken? Should we hire a professional? Should we investigate other hosting solutions? What did computer science professionals suggest? After conversations with web professionals, EWU faculty, and Easterner staff, a “temporary fix” was created. This fix proved to be the long-term solution.

Untitled I

Erin Mielcarek  
*Lisa Nappa, Art*

My current body of work consists of sculptural explorations of delicate organic forms with the juxtaposition of crisp thin lines, applied with colored slips, on bare clay bodies. I often choose to leave the body of the clay exposed because I enjoy the purity and rawness of the bare clay. The small to midsized scale of my work offers viewers an intimate connection with the work, letting them feel like they could perhaps hold it. The contours of the forms and the crisp lines of color invite the viewer to explore the curves and edges. While my work references nature, the abstract forms lets the audience come up with their own feelings or emotions about the work.

Chicana Feminism

Bethany Mies  
*Martin Meraz-Garcia, Chicano Education*

This essay presents the history and culture of Mexican-American women in two parts. Part one focuses on Chicana history, from Aztec priestesses to Chicana activists of the 1970s. The essay follows the effects of the Spanish takeover of Mexico on the indigenous women, explains the popular perceptions of Chicana women by Anglo men prior to the 20th century, and explores the female influence on the beginnings of the Chicano movement and the treatment of women in this movement. Part two of this essay picks up in the 1970s when Chicana feminism became its own movement and explores the challenges this community faces. These issues include gender roles, expectations of chastity and marriage, religious conflict, and balancing their professional and personal lives. My research findings conclude that these women often feel torn between the strong Chicano tradition and a freer, more enlightened way forward.

Stimulant Medications to Treat ADHD: Effective or a Side Effect

Kayla Miller  
*Matthew Hodgson, English*

An estimated 5.5 million children between the ages of 4 and 17 suffer from a condition known as attention deficit hyperactivity disorder (ADHD). Of those, 2.2 million are users of stimulant medications, such as amphetamines and methylphenidate. Although effective in controlling the symptoms of ADHD, these medications are accompanied by an assortment of unpleasant side effects such as headaches, agitation, and high blood pressure that are often amplified with incorrect administration. This project investigates the short-term, as well as the chronic, effects of these psychotropic medications, in comparison to alternative treatments, such as physical and neurological stimulation. Such alternative treatments reap the benefits of medication, but without the potentially harmful side effects, and should thus be utilized with, or in place of, stimulant medication.
Floating
Jacob Moe
Tom Mullin, Film

Brian is a medical student, $200,000 in tuition debt, and threatened to be kicked out of his medical study if he does not start paying back his loans. Desperate and completely broke, he begins stealing prescription drugs from the hospital and attempting to sell them on the street to pay them off.

After Hours
Christina Montgomery
Tom Askman, Art

This painting is an abstract urban landscape that is reminiscent of early American Abstract Expressionists. It is a dreamy night scene that speaks to the idea of an emotional response to feeling alone in a giant metropolis.

Battle of Professors
Hannah Morgan, Erin Curtis
Kirk Aiken, Business

Every man and woman should have equal opportunity to be a hero. In this case, both men and women are heroes in our education system. Instead of being called “The Amazing Spider-man” or “Wonder Woman” they are better known to us as “Professor.” As college seniors at Eastern Washington University, we conducted a study based on the stereotypes and perceptions that students have for the genders of their professors. We decided to use an experiment that would test the stereotypes and perceptions of our peers at EWU. Our goal was to obtain as much helpful information as possible for our fellow students here at EWU as well as for our professors. We gathered a total of 177 surveys from various majors and ages. Unlike our predictions, male professors were viewed as more educated and were preferred when teaching Business courses and Social Work courses, yet female professors were viewed as more caring, kind, and approachable. We found many other perceptions and stereotypes that were surprisingly different than we had predicted.

Effects of Essential Oils vs. Chlorhexidine on the Growth of Streptococcus mutans and Other Oral Bacteria
Max Morganti
David Daberkow, Biology

Essential oils (EOs) are concentrated, aromatic oils extracted from plants. EOs may be useful as antibacterial agents in oral rinses as an alternative to chlorhexidine (CHX), a common active ingredient in oral rinses. The purpose of this study was to investigate the inhibitory effects of rosemary, oregano, and basil EOs in comparison to the effects of CHX on the growth of Streptococcus mutans and other common oral bacteria. Swabs containing oral bacteria and S. mutans were applied to ten TSA plates. Four filter paper discs were placed on each plate. Plates were treated with specific concentrations of EOs and CHX. Two plates contained control discs treated with DMSO (dimethyl sulfoxide), water, and bacitracin. After approximately 24 hours of incubation, the zone of inhibition around each filter paper disc was measured. At the same concentration, CHX produced significantly greater zones of inhibition around discs compared to EOs. EOs produced comparable results at higher concentrations. We conclude that CHX is significantly more effective in inhibiting the growth of S. mutans and oral bacteria. However, EOs – particularly oregano – do possess some intriguing inhibitory effects against the growth of these bacteria, and in addition to CHX, may aid in the prevention of dental caries.
The Psychological Impact of the Dutiful Daughter Role within the Mexican American Community from a Feminist Perspective

Nancy Muñoz
Jessica Willis, Women’s and Gender Studies

This study's focus is on first generation women who have a Mexican descent background and who where born/ grew up in the United States. This research looks at possible factors that may contribute to Mexican American daughters feeling obligated to still try to preserve their good daughter roles, while also attempting to gain a higher education. Marianismo, machismo, familismo and respeto were found to be the most influential factors to this cultural dilemma. This research is centered on investigating how cultural gender norms contributed to Mexican American women's pursuit and achievement within a higher education, as it is linked to the development of individuality, autonomy and self sufficiency/ competency. And focuses on the emotionally impact of traditional gender roles, and possibility that different gender norms and roles may provide increased flexibility for women within the Mexican American community.

Japanese Women’s Language Used by Okama in Japanese Educational Institutions

Miyuki Murotani
Michael Zukosky, Anthropology

The Japanese language has three major gendered language varieties: men’s language, women’s language, and neutral language. The use of each language variety is relative to culturally-specific Japanese social constraints, especially in institutional contexts, and if these constraints are ignored, the speaker and/or language variety is marked ‘abnormal.’ Under these circumstances, a distinctive language variety is marked abnormal and subsequently disadvantaged in Japanese society: Onee Kotoba. Onee Kotoba is a relatively new language variety used mostly by Okama, Japanese drag queens. Onee Kotoba does not belong to either men’s language or women’s language, or even neutral language, since Onee Kotoba is a mixture of each language. This research paper discusses the morphological and phonological features of Onee Kotoba and how the use of Onee Kotoba is socially disadvantaged and pragmatically controversial in the context of Japanese educational institutions.

Power of Television Media on Latino Stereotypes

Emma Murillo
Martin Meraz-Garcia, Chicano Education

This research paper is about the power of television media on Latino stereotypes. The media is a very powerful and is often a reflection of current ideas, events and agendas. The television has been proven to affect or influence people’s behavior after watching films. This paper looks into the psychological effects of television on the mind, which is explained through two experiments that were conducted on television viewers. Then looking into history of Latinos in the media and how they have been portrayed throughout the television media. Latinos do have a long history in the film industry tracing back to the silent film era. This takes a look at the different depictions that have been put in front of viewers for the last century. Finally, this research paper will take a look at the tangible effects of media on the present day Latinos, and how they are seen by the general public. Latinos are one of the top most discriminated minority group in America.
Increasing Correct Condom Use in University Students
Holly-Ann Musgrave, Timothy Weber, Jessica Kauffman
Charalambos Cleanthous, Psychology

Not using a condom or using a condom incorrectly has the possibility to open up Pandora’s STI Box. Sexually transmitted infections (STIs) are rampant: Approximately 19 million new infections in the US alone, globally that number climbs to over 300 million. The data is quite clear, male condoms are effective between 85-95% of the time. The proviso is that with new or untested partners for STIs, the condom must be used 100% of the time and must be used correctly Paz-Bailey. The data is telling: Condoms are used in less than 50% of instances of vaginal intercourse (Kalichman, Hunter, & Kelly, 1992). Furthermore, approximately two-thirds of sexually active males do not use condoms (Tamper, Grady, Klepinger, & Billy, 1993). We suspect that part of the condom failure rate is due to user error. Thus, we hypothesized that, on average, students in the risky behavior course would demonstrate several errors or omission or commission, and that with minimal training such errors could be corrected. The hypothesis was tested and confirmed.

Effectiveness and Credibility of Emotion Primes for Graphic Scenes
Brittany Myers, Jay Chui, Abby Erikson, Trevor Fry, Ashley Nienhuis
Kurt Stellwagen, Psychology
William Williams, Psychology

This research follows-up our prior study reporting that emotion ratings for graphic scenes are influenced by captions presenting alternative portrayals of what the scenes depict. For example, an image of a knife at someone’s throat can be portrayed as an attack, reinforcing the violence, or as a lesson in self-defense, rationalizing the violence. The first objective of the present study was to assess the effectiveness of the scenes portrayed in the original study. This involved a scene by scene re-analysis of the data. Emotion ratings for reinforced scenes were significantly more negative than for rationalized scenes for 14 of 16 scenes. Effect sizes ranged from large to very large (d = .7 to 2.4). The non-significant scenes were deleted. A second objective was to determine whether participants perceived the captions to be good fits for the scenes they purported to describe. A new sample was collected using a measure of caption validity instead of emotion. The outcome was that reinforced scenes were rated as more credible than rationalized scenes, t(24) = 2.94, p < .0068.

Call For Change in United States Department of Housing and Urban Development Funding Practices
Bailee Nebeker
Mimi Marinucci, Women’s and Gender Studies

The individuals, communities and organizations the United States Department of Housing and Urban Development (HUD) was designed to help are now, ironically, being harmed by the massive amount of bureaucratic oversight and unstable funding methods the organization has adopted. These problems began in the mid-seventies when HUD endeavored to better communities through development and diversity projects through their Community Development Block Grant (CDBG) program.
Evaluation of the Ultrasound Method for Assessing Body Composition: A Pilot Study
Austin Nelson
Wendy Repovich, Physical Education, Health and Recreation

Few studies have been completed to investigate the validity of ultrasound to predict body fat. PURPOSE: The purpose of this study is to compare ultrasound method (US) to skinfold method (SF) of predicting body fat, using the BOD POD® as a reference. METHODS: Subjects (mean age 23) completed the Bod Pod® first than SF. Jackson Pollock was used for SF and US (Males = chest, abdomen, thigh, Women = triceps, suprailiac, thigh) was used for SF and US. Data was entered into SPSS for a Pearson’s Product Correlation, alpha level set at \( p \leq .05 \). RESULTS: SF had a significant \( (p = .001) \) high correlation to Bod Pod® \( (r = .89) \) compared to US’s \( (p = .028) \) high \( (r = .72) \) correlation to Bod Pod®. CONCLUSION: Skinfolds showed a higher significant correlation than Ultrasound. Further research is needed to validate the Ultrasound method for assessing body composition.

Electrogravimetric Analysis: Copper
Phuong Nguyen
Wes Steiner, Chemistry and Biochemistry

Electrogravimetric analysis is used for the quantitative determination of metals in a wide variety of solution through the process of electrolysis where the metal of interest is deposited on an electrode. The electrode is weighed before and after deposition to determine how much metal was deposited. In this experiment, the process of electrolysis is used to determine the percent of copper in an unknown sample (copper brass) and quality control standard (copper foils). Also, this experiment had been adjusted with many replicates to minimize time and material consuming, but maximize the amount of copper deposited into the electrodes to develop efficiency of this experiment. The experiment can be applied as a standard laboratory experiment in a quantitative chemistry course.

Vu Nguyen, Connor Szott
Molly Orheim, Academic Success Center
Summer Hess, Academic Success Center

Our presentation will revolve around the service learning trip we took to Moab, Utah over spring break. We will focus upon the volunteer work aspect of this experience. In addition, teamwork oriented services will be highlighted throughout our presentation. More specifically, our mindset and how we developed as leaders and people. This was seen through our work with a non-profit group named Trail Mix and the Bureau of Land Management as we shared a common purpose with the individuals we spent our time with. As we worked as a group our individual commitments evolved into a unified approach to completing some objective. In this case, that objective was building a mountain biking trail, as well as improving the overall aesthetic of a local campsite. Along with teaching lessons, the work we put in possessed a very rich and exciting atmosphere. The effort we were a part of was both rewarding and enjoyable. This combination is hard to find and served to make what we accomplished unforgettable. This trip is quintessential of how the journey can be more meaningful than the destination.
Metabolic Disorders in *Thymallus arcticus*
Ceaira Nichols
Institute of Science and Technology at North Central High School
Randall James, Biology

The Arctic Grayling has gone through a genetic bottleneck in recent years due to habitat loss. Many other species have gone through bottlenecks and are reported to have developed metabolic disorders as a result. The ATP6 gene plays a vital role in metabolism, and any changes could potentially cause a metabolic disorder. We will be extracting DNA from 30 different samples taken from Bobcat and Odell Lakes, to study Single Nucleotide Polymorphisms (SNPs) in the ATP6 gene. By studying SNPs, we can determine if there are metabolic disorders in the Grayling. If a SNP is found, we can see if it changes the gene, and if that change causes any disorder in that particular fish. This species is nearly gone in the lower 48 states. From this research, we hope to provide evidence that the Arctic Grayling should be on the endangered list due to lack of genetic diversity.

The Cuban Educational System
Amy Nunez
Martin Garcia, Chicano Education

According to scholarly articles on education, Cuba is outstanding when it comes to math and science achievement, attendance rates, literacy rates, and retention rates in the schools. Additionally, Cuba has a dropout rate that is nonexistent and repetition rates are extremely low. My research will explore the similarities and differences in the educational system between Cuba and the United States especially when it comes to standardized testing, teaching strategies, and the use of different teaching resources. In this research I discuss the findings of field research conducted in Cuba which includes interviews of teachers, students, and government officials. The preliminary findings of my research helps us understand the Cuban educational system, curriculum, development, and teaching techniques which make their system a model to be emulated by developing as well as industrialized countries in the world.

The Depiction of Latinos on KIMA Action News
Amy Nunez
Martin Garcia, Chicano Education

In Washington State, Yakima has a reputation for high crime rates involving gangs, graffiti, drugs, and shootings. The focus of this research is on the depiction of Latinos by KIMA Action News which covers the Yakima area. Through a systematic analysis of KIMA Action News for over six weeks, I reviewed forty two stories (N=42) involving Latinos and identified the main themes on these reports. My research is a preliminary attempt to examine the extent at which KIMA’s news reporting perpetuates negative stereotypes and perceptions of Latinos in the Yakima Valley.

Aesthetic Forms & Zen Arts in Japan: Ikebana (Flower Arranging)
Naoko Oka
LaVona Reeves, English

In *The Zen Arts: An Anthropological Study of the Culture of Aesthetics Form in Japan* (2007) Cox argues that ikebana is a cultural text and its “images emerged fully as systems for representing the arts during the modern period, produced within Japan as a form of cultural nationalism and outside Japan as part of an orientalist discourse.” For some, flower arranging is in fact a kind of meditation. The art form is an aesthetic discourse. Practitioners’ experiences are in fact rarely referred to in terms of Zen or art, but instead are “spatially and socially grounded” (Cox). Those who study and practice the art enter a kind of aesthetic discourse on art and culture—this involves “embodied experiences” that can be found only in the selecting and arranging of flowers, branches, and leaves in ways that represent seasons of life and then reflecting on these arrangements during tea ceremony or in a tatami room in the Japanese home as the season pass. Dimensions represent highs and lows of life to many who meditate on the work of art.
The Impact of Corporate Governance on Monetary Variables
Greta Olson
Arsen Djatej, Accounting and Information Systems
Elizabeth Tipton, Accounting and Information Systems

Many variables can affect the economic success of a nation and its citizens. One variable that is rarely studied corporate governance, specifically how a change in corporate governance influences a change in monetary variables. By analyzing data from over 6,100 companies from 34 countries in Europe, I will attempt to prove a relationship between a change in corporate governance and a change in monetary variables. To prove this relationship, I will do a multivariate analysis of the data, as well as a literature review of current research.

Human/Being
James Olson
Tom Mullin, Film

In a post-apocalyptic world, a man and his family struggle to survive and fend off an ever-growing population of “Beings.” Even though his resistance efforts are futile, he is blinded by his commitment to his human-ness. But when a member of his family is converted, he must face a great question; what does it mean to be human? Is it merely our biology, or something greater and more intangible?

Isn’t Life Disappointing?
James Olson
Pete Porter, Film

No story could be simpler than Ozu’s Tokyo Story. An elderly couple visit their children in the city and find that they all have established their own lives and have little need for their parents anymore. However, it is not simply the story that makes this film special. The unique and masterful way in which it is told helps to enhance the themes of the story and make a lasting impression on the viewer. The film deals with some universal human experiences, such as marriage, children, and death, but shows how these events are just that - merely events in a world where change is always occurring. Life can be disappointing, but that’s life.

Demystifying the Annual Report
Devin Parker
Teena Carnegie, English - Technical Communication

One of the lesser-known forms of technical writing is the annual report—a document that is composed of many of the same aspects found in other technical writing disciplines. An annual report combines research, journalism, and marketing to create a fact-based rhetorical piece that is designed to create affiliation or buy-in from its audience through organizational branding or transparency. And just as an annual report is composed of multiple facets, a report’s audience may also be multi-layered; executives, stakeholders, experts, donors, and the general public may all be targeted audience members. My research project will focus on discovering how technical writers tackle the challenge of an annual report, including best practices, audience assessment, report goals, and report research. The ultimate goal of my project will be to demystify the annual report to a technical writer just completing his or her degree, answering common and technical questions surrounding how to start, manage, edit, and complete a report as well as identifying traits of other successful reports.
The Role of an Occupational Therapy Fieldwork II Student in a Program for Assertive Community Treatment
Andrew Peaker, Kim Brewer, Bethany Mason, Meghan Sanborn, Jess Ullman
Diane Norell, Occupational Therapy
Greg Wintz, Occupational Therapy

Programs of Assertive Community Treatment (PACT) have been shown to decrease the number of hospitalizations and increase independent living in the community for individuals with severe and persistent mental illness. Occupational therapy has not had a significant role in PACT but has a considerable history in mental health treatment and skill development. The research currently available regarding the relationship between occupational therapy and PACT misses a substantial amount of in-depth information pertaining to the scope of skilled interventions possible for an occupational therapist to contribute to a PACT team. This qualitative case study analyzed the role of two occupational therapy fieldwork students practicing within the Spokane PACT.

“Thrift Store”
Margo Pecha
Aileen Keown Vaux, Creative Writing

This abstract is being submitted for the Northwest Boulevard presentation. This is a simple poem that tells the story of a character I ran into a few years ago at Value Village. She called herself “Cat Mama,” and I thought she was too fantastic a character to not write about. The poem is based off of my observations of her, but I also chose to use language that would make her seem more cat-like in order to help her better fit the tone of the piece.

Velázquez and Goya: Seeking Connections within Centuries of Spanish Painting
Stefanie Pendleton
Barbara Miller, Art

Diego Velázquez and Francisco Goya were both extraordinary painters of their respective time periods. Both were highly influential to Spanish painting; Velázquez lived through the “Golden Age of Spanish Painting”; whereas, Goya lived through the Spanish enlightenment and Napoleonic War. Both are credited with remarkable talent, as well as possessing the ability to create new perspectives within the craft of painting. Although Diego Velázquez and Francisco Goya lived practically a century apart, there are notable similarities within their works. These works range from royal portraiture, woman as image and profound perspectives relating to social contexts that had rarely been expressed, if ever before.

U.S. Mexican Deportation and HIV/AIDS
Andrew Pereira
Martin Meraz-Garcia, Chicano Education
Jane Simoni, Psychology

HIV/AIDS prevention researchers have suggested that U.S. deportation policies have contributed to the increases of infection rates among Latinos in U.S./Mexico border areas. In examining this phenomenon, it becomes apparent that this may be a two pronged problem, where internal cultural stigma towards HIV-positive Latinos perpetuates external disenfranchisement effects of deportation, by driving individuals outward for resources and support where very little exists. To better understand the depths of this problem, I descriptively analyzed the demographic variables of a data set with 255 Mexican HIV-positive men and women in the El Paso/Juarez area, which was collected by Dr. Jane Simoni through NIMH R34 funded research at University of Washington. The analysis confirmed that much of the stigma surrounding HIV-positive Mexicans is unfounded, both internally and externally, and such findings suggest that cultural outreach education initiatives are sorely needed. Possible solutions to this problem are discussed as well as barriers that may reduce their efficacy.
ICP-OES Analysis of Columbia River Basalt Flows
Andrew Perham
Carmen Nezat, Environmental Science

Geochemical analysis of local rocks could prove to be a valuable asset to future geologic research at EWU. Current research on elemental concentrations from local rock formations, such as Columbia River Basalt flows, is done on solid samples using an XRF (x-ray florescence) analysis located at WSU. Because of the absence of an XRF instrument at EWU, samples must be analyzed in liquid form, in order to be analyzed by the available equipment (i.e., ICP-OES, inductively coupled plasma optical emission spectrometer). Before the ICP-OES analysis, pulverized basalt and lithium metaborate was melted in a muffle furnace at 1000 degrees Celsius, and then dropped into 5% nitric acid. The solutions were analyzed by the ICP-OES for concentrations of titanium (Ti), phosphorus (P), nickel (Ni), lead (Pb), zinc (Zn), and zirconium (Zr), which was then compared to previous XRF data. If uniform accuracy is obtained between the XRF and the ICP-OES data, the ICP-OES analysis of elemental concentrations could replace the XRF technique.

Morality and Religion? An Atheist and a Theist Debate the Bearing Religion Has on Morality
Samuel Phelps, Sean Scoggin
Kevin Decker, Philosophy

Is God necessary for Morality? Is it possible to be ethical without a belief in God? Such questions have been disputed for centuries, and answers pertaining to such questions have been used as justification for personal and social conduct. This presentation promises to be a well-mannered debate between two colleagues from either ends of the religious spectrum. Topics will include: the issue of free will and whether God’s presence takes away from this; the credibility of religious experience; arguments of evolutionary theory as it pertains to God and morality; and original sin with respect to the problem of evil as it pertains to a world overseen by a supposedly omnipotent, omniscient, and omni-benevolent God. The final aim of this presentation is to reach a synthesis stemming from the answers to these philosophical questions through a dialectical process.

Theodicy through Kant
Samuel Phelps
Kevin Decker, Philosophy

How is it possible that evil exists in a world overseen by a supposedly omnipotent, omniscient, omnipresent, and omnibenevolent God? The problem of evil has long plagued humanity, but thinkers since the ancient Greeks have attempted to answer the question. Theodicy, or the vindication of God, is that attempt to answer the problem, and there are many different views on what the answer is. This presentation will look at some of those views from the times of the ancient Greeks, biblical views such as that of original sin, St. Augustine’s views on goodness, GW Leibniz on free will, and up through the seventeenth century philosopher Immanuel Kant. Much ink has been used attempting to formulate answers to the problem of evil, and the end goal is that this presentation will take the best of those answers and create a synthesis.

Otherworlds
Lauren Phillips
Tom Askman, Art

This painting plays with the idea of Imagined worlds seen on TV or played in games. It started as a simple “What if?” question and turned into a vast landscape of colors, and new human worlds come to life.
The Impacts of Eastern Washington University’s Climbing Wall on Student Grades
Casey Picha
Kelley Cullen, Economics

This paper will be looking at the correlation and the possible impacts that enrollment in classes offered at Eastern Washington University’s (EWU) climbing gym has on student grades. Some of the previous literature only pertains to general exercise and does not target participation at a climbing gym. It also states that there is a connection between physical activity and increased functionality in various parts of the brain. One difference between just lifting weights and using a climbing gym is that in a climbing gym the users are combining the physical exercise and the problem solving aspect of climbing a specific “route” or “problem.” The expected outcome of this connection is that there will be an increase in grades of students who have taken a climbing class through the university.

Physical Restraint in Long Term and Acute Care: A Review of the Literature, Regulations, Ethics, and Legality
Kyle Prescott
Kimberly Cleary, Physical Therapy

While the rates of physical restraint use in health care facilities has decreased over the past three decades, the use of restraints is still commonplace. Restraint use is most commonly justified on reasons such as, an individual is at a great fall risk, will interfere with medical treatment, has confusion, is prone to wander, or is agitated. The fear of liability and lack of alternative treatments are also cited reasons for using restraints. According to the current literature, there appears to be little to no evidence supporting the use of restraints for any of these reasons in both long term and acute care settings. Alternative treatments to restraint use appear to be the best course of action to address patient impairments and functional limitations. The purpose of this report is to present the most current literature, regulations, ethical implications, and legal considerations surrounding the use of restraints. This information may aid facilities, licensed independent practitioners, and other health care professionals in their clinical decision making related to this issue.

Components of Effective Instructions and Procedures
Michael Price
Teena Carnegie, English - Technical Communication

Work procedures are found in virtually every business industry. Procedures are fundamental to a company’s success and ensure that a specific process is done the same way each time. The benefits of work procedures include promoting adherence to safety and regulation standards while creating an effective internal control system. Unfortunately not all work procedures are created equally. The amount of content and/or level of depth of a set of work procedures varies from company to company, industry to industry. The purpose of this research based poster is to examine the levels of information required to create effective work procedures. Work procedures consist of more than just a title followed by steps. The process is more intricate, requiring multiple components of information to assist the user. The findings documented will help writers create highly effective work procedures.
Educating Students about Usability Testing  
Tara Probst  
Teena Carnegie, English - Technical Communication

When students consider research methods, usability testing rarely comes to mind; however, it is one of the most accurate methods for discerning user response. Usability testing is the process of conducting diagnostic examinations with multiple users to measure the usability of a product. It may sound daunting, but actually it is a very simple process which when done properly can bring profitable results. The most common reason students do not practice usability testing in their research is lack of education on the topic. To reap the benefits of this method, students must be informed about usability testing’s advantages and how to perform the testing process. In this presentation, I will examine and show the benefits of usability testing and provide an instructional guide for students. The samples I provide will be based off of real tests, some of which I will have facilitated myself. The goal of this presentation is to inform students of the value of usability testing and to provide basic instructions, which will enable students to perform this research method on their own.

Designing and Building a Cardboard Vehicle  
Ken Prothero, Paz Hakim  
Awlad Hossain, Engineering and Design

Every year, Eastern’s Department of Engineering hosts the intercollegiate Human Powered Paper Vehicle (HPPV) competition each. This engineering competition has been found to inspire students to apply their engineering skill and creativity to form a team to build a vehicle from an unconventional material. The basic idea is to construct a human powered vehicle out of 90% paper products (by weight). The remaining 10% is limited only by the imagination of the designers. The vehicle’s total weight must not exceed 75 pounds. Following the guidelines, we have designed and constructed a vehicle to enter into this competition. We tested several types of adhesives and materials before constructing the vehicle. The design we created is unique, something that no other teams will bring, while still being competitive. We will discuss the details of vehicle construction and its performance including the failure modes in our presentation.

Testing and Comparing Rocket Motor Chemistry  
Ken Prothero, Lucas Warren  
Martin Weiser, Engineering and Design

The purpose of this project is to test a new rocket motor binder chemistry against the currently accepted industry standard. The two main components in a solid rocket motor are a rubber and a salt, which require a chemical binding agent for a proper mechanical bond. A colleague of Dr. Weiser, the project mentor, proposed a new binder and our purpose is to test this new chemistry. Using a pressure transducer hooked to a computer through an analog to digital converter, we were able to take pressure data over the small amount of time the motor burns. By varying the size of the nozzle the exhaust exits through, we can change pressure inside the motor and the burn rate. Eight different chemical compositions were tested using five different pressures for each. The new binder was more energetic as predicted from its chemistry, but also exhibited some unusual characteristics during the early stages of the motor burn that will require additional investigation.

The Lasting Stability of Martin Scorsese’s Taxi Driver  
Alexander Quam  
Pete Porter, Film

The ability of Martin Scorsese’s Taxi Driver to stay relevant since its release in 1976 speaks wonders of both the stability of the film and its cast and crew and their lasting effects on both the singular genre and the future of film as an art form.
The Effects of 10-HDA on \textit{Drosophila melanogaster} Development
Lori Quiles, Jacques Lenoue, Kate Zopolos, Bogdan Lisovenko
David Daberkow, Biology

Produced by the Honey Bee (\textit{Apis mellifera}), Royal Jelly (RJ) has been shown to have beneficial developmental and reproductive effects in multiple organisms. This study investigated effects of 10-HDA, an active component of RJ, in the maturation process of \textit{Drosophila}. There were three experimental groups: the control group (no 10-HDA), treatment group \#1 (0.05M 10-HDA), and treatment group \#2 (0.08M 10-HDA). Three female \textit{Drosophila} were placed in each vial for one day and then removed. Maturation rate, and number of pupa and adult flies was recorded to determine the effect of 10-HDA. Development of \textit{D. melanogaster} in the presence of 0.08M solution of 10-HDA showed a significant increase in the number of mature flies and pupa compared to the control group, as well as significantly increased the rate of maturation when introduced during the larval stage. The results of this study suggests potential nutraceutical benefits of 10-HDA, as well as a basis for further clinically related research on 10-HDA.

Determining the Genetic Differences and Nutritional Content of \textit{Claytonia lanceolata} (Montiaceae) Corms from Historically Harvested Populations
Paul Reilly
Robin O’Quinn, Biology

Corms of the herbaceous perennial \textit{Claytonia lanceolata} were an important plant food to indigenous cultures in the Pacific Northwest. Historical record shows indigenous people traveled to gathering sites at approximately the same time each year and large quantities of the corm were eaten immediately after harvest, stored for future use, or traded. Previous research implies that anthropogenic use can affect genetic diversity, especially with increased movement of reproductive structures through human interaction. Historically, the corms were one of the first available plant foods to be incorporated into the indigenous diet, yet nutritive content has not been quantified. To determine if anthropogenic use of \textit{C. lanceolata} has affected the current genetic diversity, I will compare variation within and among wild and anthropogenic populations using variable chloroplast simple sequence repeat regions. To assess nutritive content, and determine if it varies with phenology, I will quantify the nutritional components of samples from three anthropogenic sites at early, mid and late season. I expect genetic diversity to be increased in anthropogenic populations due to the increased movement of plant material by indigenous people, and expect the nutritive content of the corm to increase across the growing cycle as nutrients are stored in the corm.

Good Lovin’: The Effects of Stressors on Sexual Satisfaction among Non-cohabitating, Cohabiting, and Married Couples
Wylie Rhoads, Marlena Kennedy, Leah Ruiz, Lauren Thomas
Jonathan Anderson, Psychology
Dennis Anderson, Psychology

Understanding how stress may negatively affect one’s sexual satisfaction in different groups is important so couples can develop proper coping mechanisms to defend against the damage stress can cause. The present study investigated whether stress negatively impacts perceptions of sexual satisfaction between married, cohabiting, and non-cohabiting relationships. It was hypothesized that married couples would report more sexual satisfaction and less stress both before and after a stressful task due to better coping skills than non-cohabitating and cohabitating couples. No significant difference was found in sexual satisfaction and stress between different groups. In addition, there was no difference between groups in either dyadic or individual coping. Exploratory analysis found that sexual satisfaction related to dyadic coping skills and stress related to individual coping skills. This suggests that the stronger an individual’s coping strategies are with their partner (dyadic coping), the more sexual satisfaction participants reported experiencing, and the stronger an individual’s coping strategies, the less overall stress they may experience.
Molecular Simulations of Adsorption Separation of CH₄/CO₂ in Zeolitic Imidazolate Frameworks
Melissa Rhodehouse
Yao Houndonougbo, Chemistry and Biochemistry

Zeolitic imidazolate frameworks (ZIFs) are porous materials in which the silicon and bridging oxygen in zeolite frameworks are replaced with a transition metal and an imidazole linker, respectively. Grand Conical Monte Carlo simulations are used to calculate the uptake capacity of carbon dioxide (CO₂), methane (CH₄), and their mixtures in a series of ZIFs with five different 4,5-functionalized imidazole units, namely ZIF-25, -71, -93, -96, -97. The results will be compared to experimental data to determine accurate Force Field parameters. The results of our calculations will also help in screening ZIF materials for their use in CO₂ capture and separation.

Daniel Saint Daniel
Nicole Richerson
Tom Mullin, Film

This short film is about two teenagers, Adrian and Daniel. Adrian is addicted to drugs and manipulates Daniel into killing her blind boyfriend, Elliott.

Rot You Looking At?
Ana Rockstrom, Andrea Homburg, Sandra Anaya
Rodger Hauge, Education

In this project we are observing the rate at which fungi builds on a non-organic piece of banana, piece of whole wheat bread, and small portion of milk versus an organic piece of banana, piece of whole wheat bread, and small portion of milk. All six items will be placed in a controlled chamber set to 100 degrees Fahrenheit on labeled sterile petri dishes. Throughout the conduction of this two-week study, we will be recording data on the amount of decomposition that has taken place on all six items by charting with words and photographs. Our hypothesis is that if all six items are in a controlled environment, then the non-organic items will mold at a faster rate than the organic items because they contain no preservatives.

Human Trip Planner—Wayfinding for Transit Users
David Rossman-Robinson
Thomas Couraud, Design

When the familiarity of using transit varies between riders, the intricacy of a transit system might seem intimidating, creating navigational difficulty. During a literature review, I identified five topics important to the legibility of using transit: Wayfinding Concept, Transit System Configuration, User Characteristics, Users with Special Accessibility and Wayfinding Needs, and Delivery of Transit Information. In order to find our way to a destination, we engage in wayfinding, which is an active cognitive process of accessing one’s location and direction of travel, whether in a familiar or unfamiliar environment. When using transit to reach a destination, the rider becomes bound to its system characteristics. The knowledge of a transit user is accessed differently depending on the user characteristics: if they’re a frequent user, commuter, infrequent user, new rider, tourist, or rider with special needs. Various sources of information are essential for a transit trip, such as: maps, schedules, and signs.
Treatment of a 21-Year-Old Male Track Athlete with an Osteochondral Lesion of the Talus Using a Microfracture Surgery
Virginia Roth, Quinn Marianno, Maria Aparicio, Alex Klota
Garth Babcock, Physical Education, Health and Recreation

A male track athlete suffered an Osteochondral Lesion of the Talus. The patient was at first having it treated as a sprained ankle until the pain persisted and diagnostic imaging revealed the osteochondral lesion, which had left the patient with barely any cartilage around the talus. The patient then had microfracture surgery; this surgery involves creating tiny holes in the bone to promote self-healing. Following the surgery, the patient had his ambulation reduced and would slowly gain it back. The patient also participated in a rehabilitation program at EWU’s Athletic Training Room. The patient had no trouble progressing through the rehab program which focused on gaining full range of motion and dynamic stabilization. The patient finished his rehab and was cleared for full return to play in December of 2012. Currently, he states he doesn’t have pain whilst exercising on his own (he is no longer on the track team).

Effects of Procrastination on Self-Esteem
Leah Ruiz, Patrice Frazier
Jonathan Anderson, Psychology

Research has shown that those who procrastinate more than others have lower self-esteem (Solomon & Rothblum 1984). This study aimed to examine the link between procrastination and self-esteem. It is predicted that those who imagined receiving a low or high grade after procrastinating would have lower overall self-esteem compared to those who imagined studying. Participants from EWU answered demographics questions (age, gender, and race). Participants were randomized into one of four scenarios relating to levels of procrastination (high vs. low) and achieved grade (i.e., high vs. low). For example, individuals were told to imagine that they waited until the night before a test to study but achieved an “A” grade on the test (i.e. Procrastinating-High Grade scenario). After reading the scenario, participants filled out the Rosenberg Self-Esteem Questionnaire (1965). The answers were used to correlate procrastinators and non-procrastinators with self-esteem. Results are currently being gathered. It is expected that we will have enough participants to present the data at this symposium.

Personal and Social Lives of College Students
Leah Ruiz, Brittannie Davis, Brittany Espinoza
Theresa Martin, Psychology

The purpose of this study was to investigate the relationship between religiousity and attitudes/behaviors regarding sex, drugs and alcohol. We expected that religiousity would affect attitudes but that behaviors would not differ between high and low religious groups of respondents. Please attend our session to hear the results!!

Perceptions of Interracial Dating in College Students
Adriana Sanchez, Kristina Omeli, Stephanie Stephens
Theresa Martin, Psychology

In the past, interracial dating was not considered socially acceptable but now interracial dating, domestic partnerships and marriages between members of different races are increasing (Elizabeth, 2010). Previous literature has found that interracial dating does happen in college students, but is often cut short because of pressure from members of the same race as the individuals and does not usually lead to marriage (Kreager, 2008). The current study examined if levels of racism affect willingness to date interracially, if college students have positive attitudes about dating interracially, and if people who have or are in relationship with those of the same race are likely to have longer relationships than those that date interracially. Eighty-two EWU students (33 males, 48 males and one transgender/intersex) ranging in age from 18 to 40 years old were studied. Although no statistically significant differences were found, the results indicate that students have positive views about interracial dating (62% have done so).
Daniel Saint Daniel
Jake Sanders
Tom Mullin, Film

This short film was one of several based on the same script. The central focus of this short, to differentiate it from the others, was to emphasize the importance of one of the supporting character, and drive her point of view forward to change the perspective of the story. The short also was a practice in establishing a darker atmosphere and more dramatic, realistic setting for the characters and story as it plays out. This was done to create dynamic contrasts between the characters, and clarify their varying emotions when compared to the rest. The film itself is a fairly direct representation of the script, but the way in which it was filmed was intended to feel more atmospheric and realistic, and less like a simplistic representation of the script.

Immigrant Workers in Japan: Benefits and Challenges
Aiko Sato
LaVona Reeves, English

As the world becomes more globalized, more people leave their home countries to look for work in other countries and to find a better life. This presentation focuses on immigrant labor in Japan—how Japan accepts immigrant workers, what kinds of problems workers encounter, and how such problems have been addressed by the Japanese government and/or companies. Some Japanese people accept them to create a more efficient economy and provide a solution for the birthrate declines and the population age, while others are unwilling to receive them for fear of cultural conflicts and reduced job opportunities for young Japanese. Historically, the number of foreign workers in Japan has increased, but language barriers and inadequate labor laws have held up expansion of immigrant labor. Further, we must examine Japanese labor conditions and consider accommodations that could be made for such workers. To conclude, the acceptance of foreign labor remains controversial. A brief history of labor and industry in Japan will contextualize the social and labor issues.

Climbing Cam Lobe Structural Analysis
Jared Schiff
Awlad Hossain, Engineering and Design

Climbing cams, also known as Spring Loaded Camming Devices (SLCDs), are a piece of removable rock climbing protection. Rock climbers place these devices into cracks in the rock in order to catch a fall. I performed a static structural analysis on the solid lobes of a single size of climbing cam using the Finite Element Analysis (FEA) software ANSYS. An FEA is a numerical method commonly used to solve complex engineering problems whose closed form solutions are not available. Several structural analyses were conducted using ANSYS to reduce the weight of the lobe by removing unneeded material. Using this method, I was able to reduce the weight of the lobes while still maintaining the required strength, thus optimizing the design.

Non-Linear Beam Bending Bow Limb Design
Daniel Schilter
Awlad Hossain, Engineering and Design

The traditional process of bow design is a painstaking, trial and error procedure. I have proposed in my research to design, analyze and refine a bow using commercially available Finite Element Analysis (FEA) software ANSYS. An FEA is a numerical method to solve complex engineering problems whose closed form solutions are not available. In this way a bow may be optimized to a specific weight and deflection without ever doing any physical modifications to any raw materials. In my research presentation, I will outline the procedure I have taken for defining, designing and adapting a large deflection beam bending problem for isotropic and orthotropic materials.
Modeling of Strike-Slip Faults
Joe Schilter, Ramsey Nersinger
Chad Pritchard, Geology

Many experiments modeling strike-slip faults have been carried in the past. Riedel's experiments in the 1920s of strike-slip fault modeling show that secondary fractures known as R-shears and R'-shears develop simultaneously with a major fault. These structures form as stress is transferred to the overlying sediments giving rise to their formation in the sediments. This project was an attempt to determine if there is a correlation between the thickness of the overburden above the strike-slip basement fault and the size of the structures that form in those overlying sediments, specifically the length of R-shear fractures. We did not consider R'-shears in our experiment because they are less common than R-shears and they are also not as well developed. Data shows that the fracture length increases as clay ‘cake’ thickness increases. This information may prove useful in future attempts to predict the distance from the surface to the basement fault. However, this would require more research and intensive modeling experiments.

Personality and Embarrassment
Kjersti Schmere, Rebecca Erb, Brett Scott
Theresa Martin, Psychology

Not much research has been done looking into the causes of embarrassment or personality types that are most susceptible to it. This study sought out to find what type of personality is more susceptible to the experience of being embarrassed. Using several components of the Big five personality traits assessment, focusing namely on introversion and extroversion, the study was designed to analyze whether or not these traits correlated with the embarrassment levels that participants experienced. Contrary to all the previous research, the original hypothesis was not supported by the study. There was no evidence that introverts experience embarrassment differently than extroverts. The findings concluded that the levels of embarrassment are felt equally between both introverts and extroverts. There is reason to believe that the study was flawed in various aspects and could be altered to produce different results. This study opens the door for the creation of new and more focused studies.

Critical Voice: Utilizing Voice to Foster Intrinsic Motivation beyond Expressionism
Cynthia Schoch
Justin Young, English

This presentation focuses on utilizing voice as a tool for intrinsic motivation in students of composition. Typically, the use of voice as a teaching tool is reserved for expressive writing, but I will present research that supports the use of voice for developing critical literacy in undergraduate composition instruction. By instilling the need for discovery and identity in students using expressive techniques that develop voice, composition educators can facilitate an interest in critical literacy that will extend beyond the classroom and enable students to seek lifelong learning.

“Real Friends Help You Vomit”
Cynthia Schoch
Rachel Toor, English - Creative Writing

“I haven’t eaten in almost twenty hours and I started throwing up this morning. The morphine they gave me has made this night a swell of wrenching dry heaves and acrid yellow bile, a sticky film of sweat permanently clinging to my body, bangs stuck down on my warm red face. I tell myself to hang in there until tomorrow. After the surgery it’ll all be ok.” This creative nonfiction piece delves into the trials of emergency surgery, highlighting the importance of friendships which have come to replace family during college years, when friends are close as siblings and family becomes distant.
Heavy Metals Decrease the Locomotor Activities of Freshwater Clams (*Musculium* spp.)
Cody Schoonover  
Joanna Joyner-Matos, Biology

Bivalves in the genus *Musculium* are widespread in aquatic habitats that are susceptible to pollution. Heavy metals can have sub-lethal effects, reducing functional activities that are crucial for survival (e.g., burrowing). We studied the effects of metal-containing sediment from the Coeur D’Alene (CDA) drainage (0%, 12.5%, 25%, 50% and 100% mixtures with play sand; 45 day exposure) on the climbing and burial activities of freshwater clams (*M. securis* and *M. lacustre*) that are present in less polluted portions of the CDA drainage. Climbing activity of clams in all treatments significantly decreased over time (*P* ≤ 0.003); climbing tended to be highest in the control clams (*P* > 0.05). In contrast, the proportion of clams that buried declined over time (*P* < 0.09) but did not differ consistently between treatments. Metal-contaminated sediments appeared to reduce the locomotive activity of freshwater clams, which can have significant consequences for survival.

From Theology to Atheism: The Ethics of Our Beliefs
Sean Scoggin  
Kevin Decker, Philosophy

It has been argued and believed that what sets us apart from all other forms of life is our ability to reason. It is this ability that allows for the formulation of beliefs, and it is through our use of reason that we attempt to answer questions of morality. However, what does it really mean to lead an ethical life, and how does the formulation of beliefs apply to morality? Often the answers to such questions reside in the views held by the religious. But what of those claiming to hold no religious belief? Better said, is it possible to lead a moral life without the aid of religion? The purpose of this presentation is to look at arguments from both sides, religious and secular, with regards to the formulation of beliefs and the role morality plays. In it I will argue that there is a synthesis stemming from both arguments, and through referencing philosophical works by the likes of W. K. Clifford, Charles S. Peirce and William James I will show the necessity for a pragmatic approach with regards to the formulation of our beliefs.

Validation of the Attribution-Optimism Scale with High School Students
Carissa Senkler, Melissa Riddle, Allison Paparella  
Mahlon Dalley, Psychology

High school students from a Northwest High School were asked to complete anonymously a questionnaire that included demographics, questions about grades, and different measurements that calculated levels of attribution, optimism, and happiness. Data was collected as part of a Thesis several years ago. Using this archival data, the reliability of the Attribution-Optimism Scale (Dalley, n.d.) was determined for these high school students. Also, the concurrent validity of the Attribution-Optimism Scale was evaluated by comparing the results of this measurement to other similar tests such as the Attributional-Style Questionnaire and the Life Orientation Test. Discriminative validity was also measured by determining the correlation between the Attribution-Optimism Scale with self-reported answers about grades and number of friends. The results of this research shed light on whether or not the Attribution-Optimism Scale is an appropriate measurement for adolescents as it is for adults.
Do Morning People Have It Easier in Life?

Nicole Sestrap
Amani El-Alayli, Psychology

People can often be characterized as a morning person or night person; depending on when they do their best functioning, otherwise known as circadian preference. Previous research has found morningness to be associated with greater well-being and can contribute to lower anxiety (Adan et al., 2012). However, few studies have explored what influences such differences. This study intends to present reasons why morning people are typically found to have lower stress levels compared to night people. Participants were 70 undergraduate students. They were given an anonymous self-report questionnaire which assessed their circadian preference and asked questions involving how much they liked their sleep rhythm and what the extent of their daily stress level is. Correlational and regression analyses found that the more of a morning person someone was, the more the person liked their circadian preference, which then contributed to lower daily stress levels. This research could help to demonstrate the potential impact circadian preference can have on people’s mental and physical health.

The Effects of Fertilizer and Calcium Carbonate on the Mobilization of Arsenic in Groundwater

Martee Shafer
Carmen Nezat, Geology

Arsenic’s ability to become leached into groundwater has placed millions of people at risk for developing life-threatening diseases all over the world. Locally, within Spokane County, isolated private wells have shown elevated levels above EPA drinking water standards of 10 ppb. Exposure to arsenic in drinking water causes many diseases such as cancer, cardiovascular disease, and keratoses. The arsenic in groundwater is commonly leached from natural sources in rock formations but may be enhanced by the addition of fertilizer and calcium carbonate to large crop fields. To determine if they are contributing to the contaminated groundwater, basalt, granite, and sedimentary deposit rock samples were leached with fertilizer or calcium carbonate solution for one week. Of the rock and mineral samples, pyrite released the most amount of arsenic when treated with ultrapure water. It is possible that if pyrite (FeS2) is present in the rock or soil of the Spokane region, then arsenic may be leached into the groundwater. This, however, may not be the only source of arsenic.

Personality and Helping Behaviors

Shannon Sheills, Alicia Schimanski, Erika Vela
Theresa Martin, Psychology

Helping attitudes are influenced by many factors but personality plays a big part in who will step forward when there in an emergency situation. Altruism and helping attitudes have long been known to by synonymous with each other but this study set out to find out how Machiavellianism and internal and external locus of control (loc) influence helping behaviors and scores for altruistic attitudes. Results showed that the higher the score internal loc, the higher helping behaviors people exhibit. Helping behavior was also influenced by scored much higher for helping attitude and higher internal loc. Helping attitude scores decreased when scores for Mach IV and external loc increased. Results were consistent to the prior research on Machiavellianism and locus of control.
Danield Saint Daniel
Kendra Sherrill
Tom Mullin, Film

The short film Daniel Saint Daniel is a dark coming of age story. A young boy named Daniel is asked by his neighborhood crush to kill her boyfriend. To prove himself truly as a “man,” Daniel decides to go along with it.

Stream Microbial Communities along an Agricultural Gradient
Cristine Schucker
Camille McNeely, Biology
Robin O’Quinn, Biology

Although sediment microbes play a key role in nitrogen (N) cycling, understanding how microbial communities vary in response to N additions within many watersheds is unknown. Agriculture contributes N into streams, predominantly as ammonia, which is transformed through nitrification into nitrate by microbes that produce the AmoA protein. Latah Creek watershed drains 430,000 acres, of which half is agricultural. Because the tributaries reside in mixed use drainages, samples from these stream sediments can capture microbial communities at different spatial gradients of land use. My research aims to answer: To what extent does agriculture in a drainage affect microbial community composition, and how does it affect the abundance of nitrifying bacteria? Water and sediment was collected from ten locations along the watershed. Two PCR techniques will characterize the sediment/pore-water DNA. T-RFLP on 16S rRNA isolates hypervariable regions in this sequence and identifies different community constituents. qPCR on amoA will measure gene abundance to quantify functionally similar microbes.

3D Campus Tour
Andrew Sheridan, Nick Hillstrom, Jessica Ferry, Chris Colegrove
Brian Kamp, Computer Science

This project is a virtual campus tour of Eastern Washington University using the Unreal Game Engine. It was created for the Admissions office in hope to send out to future students, and also for current tours to use as an alternate method for walking around the campus. This is intended to be used also to send offf campus and give tours to potential students outside of the immediate geographical area whose interests may fit EWU’s available curriculum.

Migrant Seasonal Head Start
Carina Silva
Martin Garcia-Meraz, Chicano Education

Yakima County has a high percentage of migrant seasonal workers. Children often times travel along with the parents moving from place to place losing important class material during the transitions from school to school. Utilizing data generated by these programs along with longitudinal studies and government reports, this research paper explores the topic of migrant seasonal head start programs in the Yakima regions. Migrant Seasonal Head Start programs are unique and have their own set of challenges compared to regular head start programs. This paper also looks at previous attempts to provide children with high quality early childhood education programs. Finally, a critical analysis of educational policies impacting the progress of migrant families is also conducted.
Assessing the Role of Teacher Unions in the U.S.
Kyra Sims
Kelley Cullen, Economics

Teacher Unions in the U.S. area controversial issue. Is their existence economically efficient? This research shows that in a world without teacher unions, the students would be better prepared for the work force, whether that included college or not. The teachers would be better paid, and no longer be bound by the rules of the union. Ineffective teachers could be removed from the system faster and more inexpensively. In a literary review an economic analysis, of the teachers unions on teachers wages and number of teachers employed, I explain and provide evidence to support the poor economic value of teachers unions and in fact hinderance on students success in the U.S. today.

Thymoquinone Deceases Oxidative DNA Damage (8-OHdG) in DMBA-treated Female Sprague Dawley Rats
Abrar Sindi
Karen Carlberg, Biology

Tamoxifen (TAM) is used widely for treatment and prevention of breast cancer. The aim of this research was to determine the effect of thymoquinone (TQ), an ingredient of Nigella Sativa seeds, on decreasing 8-OHdG, which is caused by TAM, as well as on the antioxidant Glutathione (GSH) in DMBA treated Sprague Dawley rats. Five groups of 10 rats (Controls, DMBA, TAM, TQ, and TAM+TQ) were treated for 12 weeks. 8-OHdG was significantly higher in TAM group compared with TQ group (P = 0.006), in blood samples. TQ significantly decreased 8-OHdG by itself, but did not significantly reduce the effect of TAM. On the other hand, GSH did not differ among treatments. I conclude that this dose of TQ does not reverse TAM induced 8-OHdG, but it does protect DNA by itself.

“How Do I Know What I Think?”
Joe Slocum
Rachel Toor, English - Creative Writing

My essay explores the area between experience and memory through sensory cues. My exploration takes place when sensory detail brings back a vivid memory, what many would describe as a flashback, and analyzes the validity of that memory. We know the human memory is flawed, but given certain stimuli we can feel “transported” back to a memory that feels real. If we have trouble remembering things we want to remember, why does a song or scent in the air take us back to a birthday party in third grade? My goal is to find what my memories say about me, and the collection of experiences that add up to a life.

Olympias and Alexander III of Macedonia Alleged Involvement in the Assassination of Phillip II of Macedonia
Rebeka Smithson
Georgia Bazemore, History

This essay will discuss the assassination of Phillip II of Macedonia by Pausanias of Orestis at Aegae in the summer of 336 B.C. and explore the circumstantial evidence that Olympias was involved and, therefore, Alexander III of Macedonia and Alexander II of Epirus, as well. Understanding who was involved with the assassination plot against Phillip II is important, because if Alexander was indeed involved with the plot, it then sets the stage for all of Alexander’s later relationships. This essay will examine all primary sources of the actual event, then use secondary sources to make the case that it was impossible for the teenaged Pausanias to kill Phillip II on his own without the aid of Alexander I of Epirus and Alexander III of Macedonia, discuss the motives of Pausanias of Orestis and the inaccuracies, and discuss the case that Olympias was the mastermind of the conspiracy and, thus, Alexander III of Macedonia and Alexander I of Epirus had preknowledge of the event if not complete involvement in the assassination.
Biome 1: What Happens after They Are Built?
Joseph Snodgrass
Greg duMonthier, Art

This conceptual piece was meant to explore organics and architecture, specifically, the effects of time and the architectural evolution over thousands of years. At its most specific, it captures temporal instances in architectural variations and environment. Elementally, there is strong value and texture usage as well as deliberate use of lines. Instrumental to the concept is the use of form as well as its implied usage. A push at personal boundaries of compositional rules was also a goal.

Geologic Reconnaissance of Tower Mt./Iller Creek Conservation Area
Lucas Snyder
Chad Pritchard, Geology

Few prominent large scale geologic structures are observable around the City of Spokane. Mt. Spokane, Mica Peak, Beacon Hill, and Tower Mt. are examples of some of these large scale geologic features that protrude through Neogene rocks and surficial deposits. Our investigation focuses on the intrusive and basement rocks that make up Tower Mt., which is part of the Priest River complex. Little is known on these large plutonic structures, and this investigation is an attempt to understand; 1) why these large intrusive rocks stand out against the eroded landscape of Tower Mt. and 2) what caused these deep intrusive bodies to have been uplifted. To address these questions we made field observations, and collected samples of these rocks from several locations atop Tower Mt.

The Mother-Son Dyad and Filial Piety in Tang Dynasty Poetry by Meng Jiao
Siyao Song
LaVona Reeves, English

The Tang Dynasty (June 18, 618 - June 1, 907) was an imperial dynasty that was known for its artistic renaissance and political stability. It was considered the “golden age of Chinese literature and art. There are over 48,900 poems penned by some 2,200 Tang authors that have survived until modern times” (2013). Students of the era were required to compose poetry for the Imperial Exams, so it was competitive in those days. Poets were ranked high in the society, and it was common for them to be invited to imperial events. “A Journeyer's Song” by Jiao Meng is a poem that most Chinese of today are required to memorize. It exemplifies filial piety--a commitment to care for the ancestors--both living and dead. It is a prime example of the mother-son dyad and deep bonding that cuts across many cultures today. The poet says we can never repay our parents--just as the “young grass” can never repay the “spring sun's kindly rays” (Wu, p. 74). Rural women like this mother did weaving and rearing of silk worms while sending sons off to war and waiting for their safe return, a mother's duty.
Bats and Insects: Abundance and Diversity at Turnbull National Wildlife Refuge
Sarah Stankavich
Margaret O’Connell, Biology

Foraging animals face decisions about when and where to forage based in part on factors such as prey availability, which can fluctuate temporally as well as spatially. For temperate insectivorous bats, wetlands are important forage habitats because they contain high abundances of insects. To determine what abiotic and biotic factors affect bat foraging activity over wetlands, I surveyed 12 wetland sites at Turnbull National Wildlife Refuge 3 times during summer 2012. I measured vegetation abundance, water temperature and depth, presence/absence of fish, hydroperiod, and insect abundance. Bat feeding activity was measured using ultrasonic recording devices. Results pertaining to bat activity and insect abundance are reflected in this poster. Eight bat species were detected overall with an average of 6.4 species per site (range 5-8). The nightly species count ranged from 0 to 8 with an average of 4.5 species present at a site each night. Feeding buzzes were recorded at all 12 sites during at least one sampling period. I have identified 1,336 insects to date. The majority belong to the order Diptera (78%) with 6 other orders at < 10% each.

Deformed Trilobites as Indicators of Past Geologic and Tectonic Events
Nicole Stewart
Chad Pritchard, Geology

Deformed trilobites found in limestone from Metaline Falls, Washington were analyzed to decipher the past geologic and tectonic history of the area, specifically regarding the Kootenay Arc. Strain ratios on trilobites were calculated using the methods illustrated by Ramsay and Huber (1983) for the Mohr construction. Trilobites are good markers for indicating strain since they have bilateral symmetry. Rocks subjected to strain can skew the bilateral symmetry, thus recording the strain history of the rocks given the trilobites are not destroyed in the tectonic processes associated with the strain. The overall orientation of maximum strain for the Kootenay arc was then deduced using the strain analysis information gathered from assessing the trilobites. Strain ratios calculated ranged from 1:1.2 to 1:1.4. The general orientation of maximum extension was to the northeast, though this direction may be an alteration byproduct of tectonism endured since the accretion of the Kootenay arc.

Gender Play: The Gender Ideologies Presented in 28 Days Later
Logan Stoodley
Pete Porter, Film

When studying the gender ideologies presented in a film, one generally uses the sex of the character as the primary factor in determining whether or not they present a male or female gender ideology. But what if we instead determine their gender ideology solely on the actions they undertake in the film? Using this approach to examine Danny Boyle’s 28 Days Later one finds that the ideologies presented by the characters aren’t necessarily the ones we expect. This is because one can argue that a male character best exemplifies a traditionally female ideology, and a female character typifies a traditionally male ideology.

The Chorus
Logan Stoodley
Tom Mullin, Film

When Billy has trouble asking out a girl, his psychiatrist prescribes a Greek Chorus to help him overcome his troubles.
“Watch This Show”
Logan Stoodley, James Olson, Jacob Moe
Tom Mullin, Film

“Watch This Show” is a pilot for a web series. Unlike a short film that has a definite start, middle and end, this project was designed to explore story telling that doesn’t have necessarily have a resolution at the end, yet sets up characters and a story that can be explored in a episodic format. “Watch This Show” is about Joseph Ericsson, who happens to have a video go viral on YouTube. After he starts making money from advertising revenue, Joseph decides that he should turn this from a hobby to a career, and drags his friends Erin and Dominique along with him. Chaos ensues.

Assuming Gender: Breaking Away from Sexism
William Stotts
Elizabeth Kissling, Women’s and Gender Studies

I will be discussing the how heterosexist societal, binary concepts of sex and gender which is ingrained into the American populous, impair individuals to respectfully recognize and accept gender expression, that does not always match one’s physical sex. Continuing with discussion on American mainstream culture’s, binary perceptions of gender and sex vs. the gender and sex identities that are radically different in other cultures, and how they identities are not considered “weird,” as in the American culture. I will be presenting a short film, that I created giving an example, of what it means to “assume” a person’s gender based on physical appearances, and addressing how to address a stranger in a personal environment, whom you do not know, nor are you completely sure the gender identity of that person.

My Choice as Queer and Feminist: Activism or Conformity?
William Stotts
Mimi Marinucci, Women’s and Gender Studies

This is a presentation on defining one’s self identity(ies). There are multiple intersecting components to every individual’s identity, that one must ultimately choose to identity as themselves. Encompassing discussion on an individual’s self identified gender, sexual orientation, moral and political views, with specific attention on one’s choice to identify as an activist. The second component of this presentation focuses on a person’s choice to do activism and one’s choice to identity as an activist vs. being labeled an activist and what it means to do activism.

Crafting a Special Section in a Newspaper
Al Stover
Jamie Neely, Journalism

This year The Easterner has put out issues with special sections dedicated to events like Homecoming and topics like campus clubs. Some newspapers will have a set number of pages, between two to eight, for a special section dedicated to a topic. Although these issues turn out beautiful, there is actually a lot of work that comes into creating a special section. These sections are put together by a motley crew of writers, editors, illustrators, designers and photographers. My presentation would not only show the different sections The Easterner has done this year, but also describe the process it takes to create a special section.
The Anesthetic Efficacy of AQUI-S® 20E on Rainbow Trout (*Oncorhynchus mykiss*)

Aaron Stroud  
*Allan Scholz, Biology*

Anesthetic drugs are commonly used to sedate fish, for various purposes. For this the U.S. Food and Drug Administration (FDA) authorizes the use of Finquel and MS-222. Due to the carcinogenicity of these drugs there is a mandatory 21-day holding period after their use, which limits their utility. AQUI-S® 20E is a 10% eugenol based product considered effective at anesthetizing fish, non-carcinogenic, and safe for immediate release. This study was conducted to determine if AQUI-S® 20E (250 mg/L) is as effective as MS-222 (50 mg/L) for sedating fish to stage IV anesthesia before surgery. A masked surgeon performed a laparotomy on 60 rainbow trout using MS-222 or AQUI-S® 20E. Sedation time, recovery time and one-month mortality rates were monitored. Results indicate both drugs sedate fish in an equal amount of time, but fish exposed to MS-222 recover in 4.2 ± 2.9min, whereas fish exposed to AQUI-S® 20E recover in 7.1 ± 2.3min (*p*>0.001). One-month survival rates for each drug are in progress.

Belonging Among and Belonging To: The Destructive Power of Possession in Toni Morrison’s *Beloved*

Christopher Stuck  
*Judy Logan, English*

Critics have argued for the importance of reading *Beloved*’s structure as inspired by music, specifically jazz, as attempting to replicate the methods of oral storytelling, and as being hinged upon the importance of slave song, rather than following, replicating, or being predicated upon literary tradition. Critics have also pointed to the importance of community, romance, individual agency, and the self-assertion of humanity to the characters and their personal triumphs, especially in regard to the “decolonization” of the former slaves in a world still dominated by their oppressors. While these are valid and accurate arguments about the text, each is argued as exclusive to the others, even when closely-related concepts such as jazz and slave song or community and romance are used. These arguments interact and enrich each other when placed in regard to the unifying concept of possession, both in the sense of haunting and in the sense of ownership. *Beloved* is a tale of the destructive nature of possessing and being possessed and the saving natures of independence and dissemination.

“Jealousy’s Revenge”

Carmen Swannack  
*Joanna King-Yost, English - Creative Writing*

“Jealousy’s Revenge” is a narrative that I wrote about a moment in my life working on the family farm. In my narrative I wanted to use my own experience to convey a hard truth and leave readers with something to think about and possibly even apply to their own lives.
Forensic DNA Typing: Comparison and Selection of the Best Performing Commercial Kit
Andrew Tayne
Peter Bilous, Chemistry and Biochemistry

In response to the difficulties experienced by Forensic Scientists attempting to identify human remains found in the wreckage of the World Trade Center 2001, major advances in DNA testing methods occurred that allowed for identifications to be made from highly degraded or low quantity DNA samples. One of the new DNA typing kits that resulted from these advances, AmpFSTR® MiniFiler™, targets smaller and therefore less susceptible regions of DNA than are routinely analyzed by forensic laboratories. The standard approach used for DNA typing of Short Tandem Repeat (STR) genetic markers are typically COfiler and Profiler Plus, neither of which work well with degraded DNA. Each of these three kits was validated for use in the lab. The validation study focused on the ruggedness, robustness, sensitivity, range of linearity and limit of detection for each kit. Following the successful validation of each kit, preliminary analyses of DNase degraded DNA samples were performed using all three kits to compare their efficacy in yielding profiles under suboptimal conditions similar to what could be found at a crime scene.

The Job Search in Japan: Customs and Techniques
Miu Teramoto
LaVona Reeves, English

In Japan, all college students have to start job hunting in December of the junior year. Every December through January major companies like Mitsubishi host job fairs several days a week. Students usually sign up, buy a new black suit, and dye their hair back to black to make a good impression at the target companies’ meetings where they learn about their missions, visions, productivity, and opportunities for career building. When we decide which company we want to work at, we write a resume called an entry sheet and take an achievement test called SPI. If we pass both, we are invited to interview up to three times, and some companies up to ten times. First, we receive notice of an informal decision to hire us if we are still being considered, or we get a rejection email. A few candidates are hired in March for the following April, but most are told in May. In 2012, 81% of students got a job before their graduation. However, this means that 19% of them still had not found a job by the expected graduation date, which leads them to stay in college one more year and delay graduation.

Reflections on Teaching English in an Intensive, Short-term Language Program for Chinese
Diane Thames
LaVona Reeves, English

In the summer of 2012, 29 students came from China with a special three-week teaching program for intensive English language instruction and community field trips. Since they were middle and high school students, they had been studying English from four to 13 years in their home country. A mixed methodology of retrospective diary study, case study, and critical ethnography helped me to refine my teaching for this population and to prepare others to teach English to Chinese adolescents in the United States. The purpose of the present study, therefore, was to (1) describe the experience teaching in the program; (2) describe the experience of hosting two students in my home with my four children for the three weeks; (3) document classroom teaching, management, and materials; (4) explain students' behaviors, expectations, attitudes, and motivation; (5) reflect on my communication style and how I adjusted it for them; and (6) disclose the “hidden curriculum” for future ESL teachers.
Leadership Communication Strategies Applied to the Field of Technical Communication
Rhiannon Thompson
Teena Carnegie, English - Technical Communication

Successful leadership relies heavily on effective communication and often emphasizes audience awareness and responding to an audience’s preferences or needs. The communication strategies that promote successful leadership are also transferable to the field of technical communications. Forbes “10 Communication Secrets of Great Leaders” provides 10 communication strategies that can be applied to technical communications as a profession, resulting in enhanced management of career responsibilities and furthering an individual’s ability to perform career related tasks. By discussing these comparative communication strategies among a group of Technical Communications majors, this project will further explore how each of these 10 strategies correlates with the goals, obligations, and required duties throughout the field. As a result, these peers will have a heightened awareness of the role that leadership plays in maintaining success in their career field by expanding on their understanding of effective communication.

Nietzsche’s Beyond Good and Evil Aphorism 146: An Analytical Interpretation
Vladimir Titkov
Thomas Hawley, Government

In Beyond Good and Evil, philosopher Friedrich Nietzsche wrote a series of aphoristic “Epigrams and Interludes.” Famously ambiguous, these aphorisms are commonly misinterpreted by popular culture. I provide an accurate interpretation of aphorism 146, which talks of a “fight with monsters” and a “look long into an abyss.” Perhaps the least understood in Nietzschean lore, aphorism 146 serves as a metaphor for Nietzsche’s concept of Apollonian and Dionysian dichotomy. Specifically, the framework of aphorism 146 resonates within Nietzsche’s theory of the Ancient Greeks overcoming of Nihilism and Affirmation of Life, versus Nihilist Modernity’s failure to overcome Nihilism and achieve an Affirmation of Life.

A Philosophical Inquiry into the Omniscient Properties of God
Alex Torres
Kevin Decker, Philosophy

God is typically described as an all-powerful and all-knowing being. There are sections in the bible that would support this claim and yet there are also other sections that would suggest otherwise. Using philosophical inquiry to determine what the root meaning of these readings, I had hoped to come to a logical conclusion as to whether God does possess these omniscient properties or not. To fuel the dialectic I had discussions with men who are active in the Catholic church to obtain a more religious approach to the question. I also obtained philosophical writings on similar topics to build a logical approach to the question. My goal in this work is not to prove or disprove the powers of God, but mostly to synthesize philosophy and religion in even the smallest measure.

Daniel Saint Daniel
Bryce Thomson
Tom Mullin, Film

Last quarter our class had to make a short film using the same script. The exercise caused us to focus on our own interpretation of the script. This is my interpretation of Daniel St. Daniel. The story is about a man named Daniel who is asked by his girlfriend, Adrian, to kill her other boyfriend.
Building Small Wood Boat Using Plywood
Yodit Turan
Martin Weiser, Engineering and Design
Awlad Hossain, Engineering and Design

The purpose of my project was to design and construct a small wood boat, 4’ x 6’ in dimension, from plywood that can carry persons of an average weight, 70-80 kg. The overall complete set of plans for the construction of wood boat varies from one designer to another. Four different samples of plywood (OSB 1/2in, AC ¹⁄₄ in, x ¹⁄₂ in and CDX ¾ in thickness) were tested using Tinius Olsen Material Testing Machine. The ultimate strength dictates the load carrying capability, where the modulus of elasticity determines the flexibility or stiffness of the boat frame. The AC plywood was found to be the most rigid plywood. The design and analysis of the boat ensures that the boat must float in its lines and its center of gravity will not be shifted by adding or removing the superstructure. The construction was started by measuring; cut pieces of the panels and hulls by assembling the sides in order to make sure all the AC plywood pieces were symmetric enough. Glue it together and put some weight down to keep pressure on the joints. The construction part is not accomplished yet, it is still in progress.

Global Water Pollution and Conservation
Abdulgader Turkistani
LaVona Reeves, English
Mary Parker, English as a Second Language

People around the world are experiencing the shortage of clean drinking water, and more than 3,000,000 die each year from this and from conditions related to water pollution. It is necessary, therefore, for all nations to engage in best practices for conservation. These include education, research, and construction of wells. It has been argued that developed nations such as the United States, Canada, and England engage in wasteful behaviors that ultimately affect the survival of those living in developing and third-world countries. With more education about conservation and pollution, it is believed that negative conditions can be mitigated so long as the most conspicuous consumers—as nations—commit to these practices and help other nations at the same time to find sources of clean, potable water.

Stratigraphy of the Columbia River Basalt Group in the West Plains Area of Eastern Washington
Austin Ulakovich
Chad Pritchard, Geology

Determining the presence of formations, members, and submembers of the Columbia River Basalt Group (CRBG) in the eastern Washington is important in understanding potential groundwater pathways in CRBG aquifers and geology of the area. For this study we analyzed samples from selected water wells and outcrops along Charles Road in northern Spokane County. Chemical discrimination of CRBG from water wells and the Cheney Water Well #5 has identified that we did not observe the presence of the Four Mound sub member of the Sentinel Bluffs Member, as mapped by the Washington Department of Natural Resources. Instead, we proposed that this sub-member is part of the Wapshilla Ridge Member and that possible mass wasting confused the stratigraphy along the left bank of the Spokane River. A shallow aquifer is generally found in the lower parts of the Priest Rapids Member and occasionally in the interbed between the Wanapum and Grande Ronde Formations.
Governance and Global Warming: How Should They Be Connected?
Anna Vamvakias
Carmen Apaza, Public Administration

This presentation will describe the connection between quality of governance of a country and its vulnerability to local global warming effects. A comparison of the local global warming effects and governance across three countries will be made: Vietnam, Greece, and Finland. All three countries have extensive coastlines so that specific changes to these coastal areas can be compared. The quality of governance will be compared using the World Bank rating parameters for each country. Additionally, vulnerability to global warming effects will examined through the presence of existing changes and mitigation, as well as the existence of disaster preparedness plans in each country.

Sequencing and Analysis of Viral Genomes Passaged in Drosophila Lineages
Bethany Vance
Luis Matos, Biology

The *Drosophila*/*sigma* virus model system was developed to further our understanding of pathogen evolution. In a previous study using this system, sigma rhabdovirus evolved on *D. melanogaster* (native host) was shifted into and evolved on *D. simulans* (novel host) for 16 generations. Here we tested the generality that a pathogen shifted onto a novel host will exhibit genetic differences that correlate to the pathogen’s fitness and virulence on that host. We did this by obtaining complete genome sequences for ancestral and evolved viruses. All genomes evolved on the native host and two of the genomes evolved on the novel host were very similar to the ancestral genome; three genomes evolved on the novel host were very different from the ancestral virus. This suggests a bottleneck occurred soon after infection by injection that facilitated either the major ancestral virus variant or a minor variant to take hold and flourish in the novel host. Thus, pathogen evolution following a host shift is more stochastic than previously postulated.

Two Audition Pieces
Paden Vance
Jeff Sanders, Theatre

A cutting of the song “Brush Up Your Shakespeare” from the musical *Kiss Me Kate*, by Samuel and Bella Spewack, followed by a monologue from *The Marriage of Bette and Boo* by Christopher Durang.

“The Invention of Memory”
Andrew Vanden Bossche
Rachel Toor, English - Creative Writing

A short nonfiction essay on the topic of how we experience memory. Can we trust our own memories? To what extent? Are our memories the truth? Perhaps objective memory is impossible. If this is the case, what kind of truth can we remember.
Advancing the Use of Silica-Encased Microelectrodes for Monitoring Dopamine Activity in the Brain

Thomas Vanderholm, Eric Marr, Britt Yazel, Dana Case, David Daberkow
David Daberkow, Biology

Fast-scan cyclic voltammetry (FSCV) at carbon fiber microelectrodes has been an indispensable tool in monitoring neuronal signaling. Past glass housing of the sensor has limited the device to acute implantation and short-term dopamine (DA) monitoring. Recent development of a biocompatible electrode with a polyimide fused silica casing has increased the capacity for monitoring DA long-term in research animals and patients. We measured potential differences in sensitivity between glass and silica electrodes. Both electrodes were acutely implanted in the striatum of Sprague Dawley rats (n=6). DA signals were recorded using FSCV and subsequently modeled by kinetic analysis to determine parameters of DA release and uptake. Comparisons were made between $V_{\text{max}}$ and $K_m$ (parameters for uptake) and $[\text{DA}]_p$ (DA release per stimulus pulse). Signals recorded with the silica-encased electrode produced a significantly greater $V_{\text{max}}$ ($p=.02$) and $[\text{DA}]_p$ ($p=.01$) with no difference in $K_m$. Results support the use of kinetic analysis of DA signals recorded with silica-encased FSCV electrodes.

A Time Series Approach to Forecasting Future Unemployment Rates

William VanderVeen
Christian Hansen, Mathematics

A Time Series Approach to Forecasting Future Unemployment Rates
William VanderVeen, Undergraduate
The unemployment rate is one of the premier indicators of the current state of the economy. In this sense it is considered a lagging economic indicator as it allows one to know the current state of the economy but not necessarily allows one to judge where it may be heading. Other indicators known as leading indicators are more useful in forecasting the future state of the economy. By using time series analysis and historical unemployment rates along with historical leading indicators, one can construct a model to forecast future unemployment rates to help predict where the economy may be headed.

Development of an Apparatus to Measure Heat Transport in Metals

Thomas VandeVanter
Martin Weiser, Engineering and Design

The ability of a metal to transport heat is a key property for applications as diverse as cookware, window frames, and jet engines. I built a simple experiment to demonstrate and measure the thermal conductivity and thermal diffusivity of two different diameters of 5 different metals including aluminum, brass, copper, low carbon steel, and stainless steel. By mounting the samples between a heating block and chiller block, I took the temperature difference across the samples which showed how the heat transfers through each sample. As expected the copper transferred heat the best while the stainless steel transferred the worst. This apparatus will be used as a lab experiments in the Thermodynamics and Heat Transfer courses in the MET and ME respectively.
Multi-Lithium Polymer Battery Charger for an Autonomous Drone System
Jaycee Vasdev
Arindam Das, Engineering and Design
Jabulani Nyathi, Engineering and Design

This project will revolve around the idea of a civilian Unmanned Aerial Vehicle, more specifically an unmanned DRONE, and a charging station. Using an autopilot chip you are able to control sensors, accelerometers, GPS, and the path the plane takes making it autonomous. The problem that I will try to solve is when you are flying a plane or DRONE that is using different components to make it unmanned, the input power that is provided by a battery can last from 30 minutes to 2 hours depending on the battery and components. When the battery gets low you would recharge the battery by bringing the plane back to the ground, shutting it off, and charging it using some kind of charging system. My solution to this problem is to have a custom made charging station that will charge the plane automatically without any contact from human hands. There will be a sensor on the DRONE that will tell the system that when the battery is low it has to land and find the charging station and charge until it is 100%. After the plane is done charging it will be ready to take off, and resume the current path.

Social Services and the Aging Population in Cuba
Lucia Vazquez
Martin Meraz-Garcia, Chicano Education

After the Cuban Revolution, the newly formed government created a health care system that would have free, high-quality health care for all Cuban citizens and would eliminate political corruption, poverty, social & economic injustice and inequality. Therefore, Cuba invests nearly a quarter of its gross domestic product in health care and education. With the rapid growth of the aging population, Cuba has developed programs that accommodate to the countries’ needs. This work explores the importance of health care as a human right rather than profit driven enterprise and the critical role Cuban citizens play in the development of these programs. Additionally, this study discusses preliminary findings on the literature that compares and contrasts the services and resources available for the elderly in Cuba and the United States. These findings are complemented by field observation conducted in Cuba which included a visit to the Convento de Belen, a community and social service facility that provides services to the elderly.

Her Blue Eyes Wet with Victory: May Welland Archer’s Calculating Perceptiveness in Wharton’s The Age of Innocence
Mindi Vetter
Judy Logan, English

In The Age of Innocence, Edith Wharton creates the Old New York society of the 1870s—a society defined by Victorian ideals. The story unfolds through Newland Archer’s eyes, but it is May Welland, his fiancé and then wife, who plays the most important role in its outcome. Though May continually acts like the child-woman the nineteenth century adored, behind her Victorian disguise, as her eyes constantly reveal, she is actually a perceptive woman who skillfully manipulates everything Newland encounters. Her knowledge of her society allows her to know exactly how Newland will react in certain situations, which is why she invites her cousin Ellen Olenska to the opera and why she allows Newland to believe she fears his attachment to an old flame. She even controls Newland’s behavior after her death by telling their son Dallas that she knew all along what Newland had given up for her, which ultimately influences Newland’s actions at the very end of the novel. Under her Victorian disguise, May is able to innocently stand at the center of Newland’s world and shrewdly control his every move.
Promotion, Implementation, and Evaluation of the ECHO Taste Test
Jessica Vigil, Victoria Borgman, Halla Daoui, Lalida Gentry, Tonya Jones, Marlina Mazyck
Robin Pickering, Physical Education, Health and Recreation

ECHO (Every Child Has Opportunities) is a before and after school program through the Parks and Recreation department in Cheney. ECHO set up a taste test program at both Betz and Windsor Elementary. The ECHO Taste Test was designed to get the ECHO children excited about fruits and vegetables, promote healthy food choices, and create a fun learning environment. The ECHO children tasted various fruits and vegetables from Europe, Asia, and the Mediterranean regions. By comparing pre- and post-event survey data it was concluded that the ECHO taste test positively impacted the attitudes of the children in regards to trying new fruits and vegetables. As a service learning project for the HLED 450 course, this project was promoted, implemented, and evaluated under the direction of Dane Standish, Obesity Prevention Coordinator, of the Let’s Move Cheney Initiative. The project allowed for a direct application of the knowledge gained throughout the Community Health program. This service learning project extended beyond the classroom and made a positive impact on the Cheney community.

Where’d My Tuition Dollars Go? An Examination of Public Funding of Higher Education
Ethan Vodde
Kevin Pirch, Government

Ten years ago, students attending public, 4-year institutions in the state of Washington paid approximately 30% of the costs of their education; the state provided funding for the remaining 70%. Today, the ratios are reversed, with students paying nearly 70% of their educational costs. This presentation will outline Washington State’s higher education budget over the past few years and, by contrasting individual legislators and certain metrics provided by the Washington Student Achievement Council, attempt to correlate past appropriations to the universities with the arbitrary standard of student performance held by legislators and the legislators’ own political agendas in consideration of their respective districts.

22-Year-Old Female Collegiate Volleyball Player with a Left Hallux Fracture
Abigail Waldo, Medea Bernsten, Elishia Andrada, Jessalyn Coleman
Garth Babcock, Physical Education, Health and Recreation

Fracture to the big toe or hallux is a very uncommon injury in athletes, especially volleyball players. Because of the low incidence of this injury the authors felt that sharing the challenges and findings related to dealing with such an injury could be beneficial. The purpose of this case study, therefor was to describe the mechanism of injury, the injury, and the rehabilitation of a 22-year-old female collegiate volleyball player. The injury took place at an unrelated volleyball game that was on a sand court. An x-ray was performed, confirming the suspected fracture of the left hallux. The athlete was referred for orthopedic assessment and surgical consult. A post open reduction with internal fixation surgery was performed followed by rehabilitation and return to play.
An Econometric Inquiry of the Declining Sex Ratio in India
Benita Walker
Kelley Cullen, Economics

Data from the 2001 and 2011 Indian National Census suggests the sex ratios of children are increasing in favor of males. With the cultural preference for males, increased availability of abortions and technologies allow for early detection of sex makes it easier for households to selectively abort female fetuses. Because there are wide differences in ratios by state, an econometric investigation is undertaken to identify socioeconomic and demographic factors that influence the differences in the sex ratio. If one can identify the key variables associated with lower sex ratios for females, better policies can be designed to correct the decline. Using data from the most recent comprehensive census in 2010, this research compares different states in an attempt to identify key variables that relate to the decline. An Ordinary Least Squares (OLS) model was produced to statistically measure the impact of major explanatory factors such as population, electricity, and abortion rates on the state sex ratio.

Experimental Rug
Nicole Wallace
Lisa Nappa, Art

This ceramic piece was created experimentally by pressing recycled packing materials into clay. I try to find as much potential in reusing interesting, yet practical industrial materials. By working with the ingredients of chance and foresight, I am trying to design something unexpected for the viewer, but also giving them a hint of the familiar.

Washington State Dental Hygienist’s Membership Trends of New Graduates
Rachael Warner, Debora Wheeler, Stacia Bruner, Alexis Richmond
Lisa Bilich, Dental Hygiene

Membership trends of Washington State Dental Hygienists’ Association has been in a general decline from 2006-2012. Since graduates from 2008-2012 comprise 20% of licensed hygienists in the state of Washington, and 30% of WSDHA, it was decided to survey this sub-group. Invitations to participate in a member or non-member online survey was emailed to 836 graduates of 2008-2012. Eighty-nine responded: 52 non-members and 37 members. The majority of both groups indicated that they are aware of the membership benefits and believe the association is beneficial to the profession. However, half of non-members indicated that they do not understand or understand only a little about what the WSDHA is and what it does. In response to a question about student membership experience, members were 77% more likely to say they had a positive experience ($z=3.305, p=0.0005$). The primary reason cited for non-membership, at 63%, was finances.

The Flair Process: Integrating Evidence into Practice
Alison Warren, Marla Cook
Edward Byrnes, Social Work

In social work practice, it is necessary to have a working understanding of evidence based practices. The FLAIR process guides practitioners in locating and critically analyzing research to identify which evidence based practice(s) will be most effective for their clients. This process begins with formulating a question for practice, locating evidence, assessing the quality of the evidence, implementing the chosen intervention, and then reviewing the outcome. The FLAIR process was applied to a case study of a woman in her fifties who was experiencing symptoms of depression and was a survivor of long-term spousal abuse, her goal was to reduce her depressive symptoms and achieve a better quality of life. Through using the FLAIR process, we determined the best intervention would be a combination of dialectical behavior therapy, cognitive behavioral therapy, and case management.
Human Powered Paper Vehicle Team Re-Cycle 2013
Lucas Warren, Thomas VandeVanter, Nicholas King, Yodit Turan
Awlad Hossain, Engineering and Design

The Human Powered Paper Vehicle competition (HPPV) is an annual design and engineering challenge hosted at EWU. This presentation will outline the concept design, refinement, construction and competition of the ReCycle group’s vehicle. The vehicle features a bicycle similar frame cut from a solid lamination. For the drive train, instead of the traditional pedals to sprocket to chain to wheel set up, we cut out the sprockets and chain altogether and went with a direct pedal to rear axle drive. This design is to save on weight and mechanical loss. Finally, we will be concluding whether the design integrity and efficiency was adequate as well as proposing improvements.

Does the Menstrual Cycle Increase Risky Behavior?
Timothy Weber, Holly-Ann Musgrave, Jessica Kauffman
Charalambos Cleanthous, Psychology

Sexually risky behavior includes activities that put one’s physical health and psychological well-being at risk (Kirby, 2007; Cleanthous & Sain, 2012). Condoms are an effective way of increasing safer sex practices. We hypothesized that there would be a decrease in condom use and that there would be as many, if not more, sex acts during one’s menstrual cycle. A confirmation of the hypothesis would suggest that the sexual activity during one’s menstrual cycle could inadvertently put one at greater risk for contracting a sexually transmitted infection (STI) or becoming pregnant. The hypothesis was tested in a course on risky behavior. The hypothesis was confirmed.

I Like Your UFO
Nathan Westlund, Derek Westlund, TBD
Benjamin Luca Robertson, Music

This piece, “I Like Your UFO” was inspired by a conversation about life beyond Earth. It is composed in a series of 6 short movements that tell a story about a group of extraterrestrials visiting Earth. The piece is composed for cello, didgeridoo and a cast iron frying pan. The didgeridoo drones on a bass E and therefore the entire piece is centered on the note E. There is no key, just a tonal center. The didgeridoo player uses spoken word while playing to send a subliminal musical message. For example, the player speaks “we come in peace” and the listener hears the instruments interpretation of the phrase as a musical event. The frying pan is used in a variety of ways; being struck like a drum, scraped with various implements, and other sounds. The cello strays from traditional technique and uses a vast array of extended technique and unique sounds throughout the composition.

The Solar Cookoff
Jenni Whelchel, Joshua Murray
Rodger Hauge, Education

Renewable, clean energy is the focus of our investigation. What if we could harness the sun to power our cooking devices? We as a society would be able to have a cleaner environment and more efficient economy for your kids and their kids to come. Our investigation is looking at one thing that most Americans use within their homes to feed their families, their ovens. We will look into the efficiency of solar power by looking at heat graphs of a company produced sun oven and a homemade solar cooker verses the amount of energy that a standard oven consumes along with looking at the time it takes to cook certain types of food.
Nietzsche: The Abuse and Misuse of His Philosophy in Second and Third Reich Germany
Betsy White
Thomas Hawley, Government

Fredrick Nietzsche (October 15, 1844 – August 25, 1900) was a German philosopher whose writings covered vast topics such as religion, morality, philosophy, and science. He exhibited a love for symbolism, sarcasm, and aphorisms. Historically Nietzsche’s philosophy has been abused and misused more than any other philosophers. His most controversial work involving the subject of the ‘death of God’, the ‘übermensch’ and ‘blond beastie’, the ‘slave revolt’ in morals and ‘the will to power’ were what made his writings especially vulnerable to individuals who wanted to misuse and abuse his work. It is often horrifically mistaken that Nietzsche was anti-Semitic. When studying Nietzsche it is just as important to make note of who is interpreting the text as to where to text originates from. At no point should it ever be confused that Nietzsche was anti-Semitic.

Nietzsche deplored anti-Semitism vehemently; he felt that anti-Semitism was the lowest level of European culture.

Same-Sex Marriage
Betsy White
Thomas Hawley, Government

The Constitution is where laws and legislation derive from. Since the foundation of this document, courts have been interpreting what the original framers meant when they sat down and wrote this document. Over the years laws and legislation have been made and overturned that directly violate many of the Constitution’s basic fundamental rights. Possibly the hottest topic right now is same-sex marriage and how to define that union. States want to determine for themselves what the precise shapes their marriage laws should take. The constitution grants individuals freedom from government and gives rules the government must follow. Due to States, profoundly disagreeing about the scope of what a marriage is a tensions been created. The constitution and case laws has dictated a penumbra that requires a change in same-sex marriage. What is generally supreme in a democracy is the popular will. Laws change. What the popular will was before is no longer the case today.

Psychopathy and Moral Reasoning: Is There a Distinction Between Primary and Secondary Psychopathic Traits?
Michelle Whitlow, Megan Korst, Brittany Myers
William Williams, Psychology
Kurt Stellwagen, Psychology

The present research explored the moral judgments of individuals possessing primary versus secondary traits of psychopathy. While both types of psychopathy involve antisocial (e.g., criminal) behavior, the personality structure of the two types differ. More specifically, primaries are emotionally “cold-blooded” and lack anxiety while secondaries are emotionally “hot-blooded” and anxious. Moral reasoning was assessed via dilemmas that involved the willingness to take emotionally aversive actions requiring a “utilitarian” attitude towards people. The present study was designed as an extension of past research on moral reasoning and psychopathy performed by Glen et al. (2010) that found that a utilitarian style of responding was associated with an overall (total) psychopathy score. We hypothesized that because primaries (by definition) are more emotionally “cold” than secondaries, the utilitarian response style would be more prominent amongst primaries. Results of a regression procedure (utilizing 221 EWU students who completed packets of survey instruments) confirmed this hypothesis.
Exercise Dosage and Urinary Incontinence Status in Young, Nulliparous Women
Ashley Wilkens
Patricia Nelson, Physical Therapy

Urinary incontinence (UI) is caused by obesity, pregnancy, and advancing age; however UI has been found to affect 38% of healthy women who have never been pregnant (nulliparous). In these women, the mechanism causing UI is suspected to be pelvic floor muscle (PFM) dysfunction. Research suggests exercise intensity as well as exercise dosage may have an effect on UI status, but this relationship remains under studied. Forty-nine healthy, nulliparous women age 18-30 participated in this study. Subjects completed survey’s regarding health, UI status, and exercise habits while ingesting 500ml of water. Each then had physical examination of posture, PFM and transversus abdominus (TrA) muscle activation patterns, and pelvic control. In addition, musculoskeletal imaging of PFM activity to standardized cues was collected. The metabolic equivalents of tasks (METs) were determined using the exercise habits of each subject. The MET data was analyzed to determine if there was a relationship between exercise dosage and UI status.

Improved Awareness through Leadership and Service
Shelby Wilkerson, Nathan Huff
Molly Orheim, Academic Success Center

This presentation will focus on the awareness piece discovered through service learning and leadership development during a trip to Moab, Utah. While in Utah our group worked on various service projects while also honing in on leadership skills. We want to stress the importance of personal awareness through service learning, as well as the connection between service learning and leadership. With this new knowledge that leadership is service we are enabled to implement leadership skills daily.

Cherry Blossoms
Brianna Williamson
Sara Goff, Theatre
Shana Joslyn, Theatre

This painting depicts a background of pink cherry blossoms made with techniques found in technical theatre, including sponging, rag rolling, and freehand strokes.

“Quinn and the Very Long Fall”
Rebecca Williams
Aileen Keown Vaux, Creative Writing

Submitted for the Northwest Boulevard presentation, this short story is about Quinn, a young woman confronting her homosexuality after years of repression, and Jane, who is finally gaining the upper hand over her chronic depression. The story addresses the burdens that follow these two women, the different paths they take to cope, and their relationship.
Creating the Past: A Popular Exposure to Reconstruction in Archaeology
Cory Winters
*John Dorwin, Anthropology*

The presence of experimental archaeology in academic inquiry has had a heightened relevance in recent years. The world of university curriculum projects and its feature in documentary films provide ample demonstrations of its new found importance. As archaeologists such as Peter Stone have pointed out, contemporary attempts at reconstruction are not recreations of the past by any means, but their own creations made meaningful by those who choose to construct them today. Despite this revelation, academia has still chosen to integrate this method into its framework of archaeology. What benefits are yielded by imitating past activities and operations as a histori-cultural study? What information does the public glean from it, and in what context? What are contemporary issues, supporting and critical, associated with experimental archaeology? This study will not only examine the influence of academic attempts at reconstructing the past, but will also provide examples of projects past and present to determine their goals, contributions, and potential concerns for the world of archaeology, both academic and popular.

NGDP Targeting and Monetary Policy at the Zero Lower Bound
Samuel Wolkenhauer
*Kelley Cullen, Economics*

A commonly debated problem facing most developed economies is the resurgent problem of the “liquidity trap,” when nominal interest rates reach near zero. Economists are unable to reach a consensus as to how to take action through monetary policy when this condition takes hold. I construct a mathematical model to describe the relationship between Nominal Gross Domestic Product (NGDP) and unemployment rates and show that central banks still have strong policy tools to move economies into recovery, even without traction through interest rates. I then survey empirical data to show that aggressive inflationary action can and does translate into real output gains, and propose a monetary policy of NGDP targeting for central banks facing depressed economic conditions.

Tango Rear Seat Frame Analysis
Bryan Woodbury, Nick Messing
*Awlad Hossain, Engineering and Design*

The Tango electric car has tandem racing-style seats with aircraft pilot harnesses. These dual-shoulder 4-point harnesses are attached to stainless steel seat frames which are attached to the car’s chassis. All seat belt forces are transmitted to the seat frame. The seat frames must withstand the enormous forces incurred in car accidents (i.e., front and rear impacts) without buckling. Traditionally, testing car parts like this has focused on physical crash tests with a production-ready car or sometimes smaller-scale tests with subcomponents attached to a sled which is accelerated and suddenly stopped. This testing is extremely expensive and could be replaced by numerical simulation using Finite Element Analysis (FEA) methods. The Tango has been designed with a very high safety factor based on racing standards which results in extra weight and cost. Extra weight increases the center-of-mass height and reduces energy efficiency. With FEA Structural Analysis, we intend to demonstrate the safety of the design, find improvements, and look for opportunities for weight reduction.
The Search for Biodegradable, Nitrogen-Releasing Hydrogels. Crosslinking of Poly(4-alkyl-4-azaheptamethylene-D-aldaramides)
Alec Wynd
Travis Denton, Chemistry and Biochemistry

With the rising world population, dependence upon large scale agriculture continuously rises. Yields for particular food bearing crops depend heavily upon the farmer’s ability to provide adequate water and nutrients throughout the duration of crop growth. The goal of this project is to synthesize a hydrogelation agent, which readily absorbs water and can be broken down by soil microbes resulting in a slow release of water and nitrogen. The compound could potentially be coated on seeds to provide a steady source of moisture during the germination phase, and a slow steady release of nitrogen during the initial stages of growth. A compound with these properties could be directly applied to soil in attempts to increase water retention and decrease irrigation needs. The water soluble poly(4-methyl-4-azaheptamethylene-D-glucaramide) will be cross linked with multiple bis-alkylating agents and the ability of the new materials to absorb water will be assessed. The results of these experiments will be discussed.

William James: The Tricky Problem of Truth
Lily Yapuncich
Kevin Decker, Philosophy

Philosophers have been involved in a long discussion on the elusive idea of truth. Both sensory illusions and abstractions can offer a distorted picture of reality. If the senses and reason can fail, then absolute truths are indeed difficult to find. American pragmatists offered some enlightenment with the pragmatic maxim. Rather than seeking an unalterable truth, the pragmatists encouraged a notion of progressive truth. This allows for the discovery of new facts to be incorporate into truth, which is a critical component of modern science. Theories are open to revision and refinement in light of further evidence. Moreover, one of William James’ legacies was to incorporate his understanding of psychology into his philosophy in regard to truth. Sometimes a degree of self-delusion is important in life, if the delusion will yield practical results. Many people resist James’ philosophy because it seems permissive. Many fear it will result in relativism, where a scholar cannot critique someone who says the earth is flat. I think this undermines the usefulness of his contribution.

Used Car Pricing: The Application of Linear Regressions to Predict Price
Charles Zahara, Karl Johnson, Ryne Rohla
Christian Hansen, Mathematics

As part of our Math 386 project we examined data from used Honda Accords for sale in Washington State to determine if we could create a model that would predict their selling price, given some desired features such as year, mileage, transmission, etc. We collected data from 112 vehicles and applied multiple linear regression techniques to produce a model with minimal complexity. We successfully produced a model that was statistically accurate when tested against additional used car data. At the same time we found that our model was no more accurate than existing pricing methods, such as Kelley Blue Book. We did recognize that the Blue Book price is often under the asking price, likely to leave room for negotiations and profit, and our model attempts to predict the actual asking price which could be beneficial under certain conditions. One distinct disadvantage we faced was time and resources, limiting the information we could collect about each vehicle. We suspect with additional time and resources it would be possible to produce better models with smaller prediction intervals.
Homelessness is a concerning problem among veterans. Thirty-three percent of all homeless males in America are veterans (www.va.gov). National Coalition for Homeless estimates that there are over 180,000 of homeless veterans per night. The Federal government has three programs that address homelessness among veterans; Healthcare for Homeless Veterans (HCHV) program, Homeless Providers Grant and Per Diem Program (G & PD), and Domiciliary Care for Homeless Veterans Program (DCHV). The purpose of this presentation is to present the results of a policy analysis that examined the programs provided by the US Department of Veteran Affairs (VA). The results of this policy analysis indicated that these programs are effective in reducing homelessness among the veteran population but are inhibited due to lack of funding. The recommendation to increase funding for homeless veterans outreach programs to decrease homeless amongst veterans will be discussed.
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