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And to all the students, faculty, mentors, and volunteers who have continually worked hard to make the Graduate Symposium a success.

If you would like to contribute to the Symposium Foundation, envelopes are available at the Symposium Office located in 115 Showalter Hall.
Please make checks payable to: EWU Foundation for Student Research & Creative Works Symposium
Graduate Symposium Committee:

The mission of the EWU Graduate Research & Creative Works Symposium is to promote student research, scholarship, and creative activity done in partnership with faculty as a vital component of high education. Student, faculty, and administrators are invited to hear and discuss graduate creative and scholarly work. For the 2015, we held a graduate-only conference in collaboration with the National Conference on Undergraduate Research, which was being hosted by EWU.

2015 Graduate Symposium Committee Members

Molly Ayers, Director, Office of Community Engagement, Undergraduate Studies & Student Success
Helen Bergland, Faculty Support & Student Learning Assessment Academic Program Manager, Office of Academic Planning
Melinda Breen, Associate Professor, Visual Communication Design, Engineering
Kelly Cullen, Assistant Professor and Department Advisor, Economics
Cynthia Dukich, Assistant Director, McNair Scholar Program
Greg duMonthier, Department Chair, Associate Professor, Art
David Early, Director, Recreation Facilities
Anthony Flinn, Professor, English
Gail Forsgreen, Assistant Director, EWU Writers’ Center
Cassidy France, ASEWU Academic Affairs Representative
Ruth Galm, Executive Director, Office of Grant & Research Development
Christina Torres Garcia, Director, McNair Scholar Program
Sara Goff, Associate Professor, Theatre
N.M. Awlad Hossain, Associate Professor, Engineering & Design
Jeff Johnson, Symposium Assistant Coordinator, Student Research & Creative Works Symposium, Undergraduate Studies & Student Success
Sarah Keller, Professor, Anthropology
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Travis Masingale, Assistant Professor, Visual Communication Design
Jonathan Middleton, Professor of Theory and Composition, Music
Suzanne Milton, Dean of Libraries
Colin Ormsby, Vice Provost, Graduate Education, Research, Academic Planning & Education
Justin Otto, Social Sciences Librarian, Faculty Chair
Kristina Pfleeger, Responder, EWU Writers’ Center
Lindsey Porter, Symposium Coordinator, Student Research & Creative Works Symposium, Undergraduate Studies & Student Success
Pete Porter, Chair and Associate Professor, Theatre & Film
Chris Robbins, Project Manager NCUR 2015, Undergraduate Studies & Student Success
Julia Smith, Associate Professor, Anthropology
Jeffrey Stafford, Professor, Communication
Justin Young, Assistant Professor, English, Director of English Composition Program and Writers’ Center
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.

TRiO McNair programs prepare eligible participants for successful doctoral studies by providing opportunities for research or other scholarly activities including summer research internships, tutoring, academic counseling, seminars, educational activities designed for doctoral preparation, and activities designed to assist participants in securing admission to and financial assistance for doctoral enrollment.

Since 1995, eighteen EWU McNair Scholars have earned doctorates, 103 have earned master’s degrees, and 69 are currently enrolled in graduate school. Of those 69, 35 are in PhD programs.

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. Today, nineteen students will be presenting their research during this event.
Inspiring the scholars of the future
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. 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 (now retired) 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.

Since the first EWU McNair grant was funded in 1995, McNair has worked closely with Eastern faculty to build a research center community where students thrive. Our quest is to continue this partnership with EWU McNair Faculty Mentors, staff, and administrators and continue the transformation of our students.

Christina Torres García, MBA, PhD.
Inspirational Quote

Learning
is not a
spectator sport.

The author of this quote remains in anonymity but the message is clear: Learning requires engagement. The pursuit of knowledge is that of an accumulating effort composed of hard work, determination, and passion to expand our understanding.

Plenary Speaker
Special Events Pavilion, Reese Court
9:15 – 10:45 a.m.

Patrick Combs

Patrick Combs is an on-fire, authentic, soulful entrepreneur with a love for performing, speaking and helping. His career challenges categorization. For the past twenty years Patrick has keynoted on the topic of success more than 1,500 times to major companies and top universities. Patrick's speaking topics include: Selling, Teamwork, Success, Overcoming Obstacles, Persistence, Personal Growth, Courage, Passion, Productivity, and Entrepreneuring. He has presented on over 500 campuses nationwide, where he teaches students exactly how to get the most out of college, tap into their passions, and land a great job.

Combs graduated from San Francisco State University, a B student, after paying his way through college managing a rock band. He earned a prestigious job at Levi Strauss & Co. as one of their youngest managers ever, but at 26 he walked away from his high paying job to try and help student's succeed. While writing his first book, and launching himself as a speaker, he went $50,000 in debt in pursuit of his ambitions. To make ends meet, he tested videogames for Electronic Arts. By 28 he was a published author, a fixture on the speaking circuit, and sponsored by a Fortune 100 company to tour the 75 biggest schools in America.

His first book, Major in Success, has sold 100,000 copies, is published in two languages and used as a college text at more than 100 universities. He donates 100% of his royalties to charities.
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Eastern Washington University
Graduate Research & Creative Works Symposium
Event Day Schedule

Thursday, April 16, 2015
11:00 a.m. – 4:40 p.m.

Monroe Hall

9:15 – 10:45 a.m.  NCUR Plenary Speaker #1: Patrick Combs
                  Special Events Pavilion, Reece Court

11:00 a.m.        Presenter Check-In Begins
                  Monroe Hall West Entrance

11:00 a.m. – 12:00 p.m.  Lunch & Refreshments
                         Monroe Hall, Room 109

12:00 – 2:00 p.m.  Poster Presentations
                   Monroe Hall, Room 205 (2nd floor lounge)

2:00 – 4:40 PM    Oral & Creative Works Presentations
                   Monroe Hall, Rooms 102, 107c, and 114
                   **Session 1:** Physical Therapy, Occupational Therapy, Public
                   Health & Music
                   Monroe Hall, Room 102
                   **Session 2:** Biology & English - TESL
                   Monroe Hall, Room 107c
                   **Session 3:** Education (Creative Works), Anthropology,
                   Public Administration, Communication, History, & Interdisciplinary Studies
                   Monroe Hall, Room 114
Monroe Hall: 1st Floor Map

- Oral Presentation Rooms
- Event Registration
- Elevator
- Lunch & Refreshments
Monroe Hall: 2nd Floor Map

Elevator
Poster Presentations
# Poster Session

**Monroe Hall, 2nd Floor Lounge (205)**  
**12:00 - 2:00 p.m.**

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<th>Author(s)</th>
<th>Title</th>
<th>Mentor(s)</th>
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<tr>
<td>1</td>
<td>Biology</td>
<td>Erin Cubley</td>
<td>Initial response of riparian vegetation following dam removal on the Elwha River, Washington</td>
<td>Rebecca Brown</td>
</tr>
<tr>
<td>2</td>
<td>Biology</td>
<td>M. Taylor McCroskey</td>
<td>Starr Road Habitat Project: A baseline survey determining abundance and habitat utilization of juvenile redband trout and smallmouth bass in the Starr Road reach, as well as the rate of predation on juvenile redband trout by smallmouth bass</td>
<td>Camille McNeely</td>
</tr>
<tr>
<td>3</td>
<td>Biology</td>
<td>Ryan Reihart</td>
<td>White sturgeon (<em>Acipenser transmontanus</em>) larvae feeding ecology and prey availability in the upper Columbia River, Washington, USA</td>
<td>Camille McNeely</td>
</tr>
<tr>
<td>4</td>
<td>Communication Disorders</td>
<td>Jared O'Connor</td>
<td>Effect of SPEAK OUT! ® Voice Therapy on the Voice Handicap Index for Individuals with Parkinson’s Disease</td>
<td>Roberta Jackson</td>
</tr>
<tr>
<td>5</td>
<td>Communication</td>
<td>Jay Gunter</td>
<td>It’s Only a Movie - Or Is It?</td>
<td>Molly Johnson</td>
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<tr>
<td>6</td>
<td>Computer Science</td>
<td>Nasmah Alnaimi</td>
<td>Educational Communication System (ECS)</td>
<td>Carol Taylor</td>
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<tr>
<td>7</td>
<td>Education</td>
<td>Tracey Waring</td>
<td>A Guide to Branding for Small Non-Profits</td>
<td>Molly Johnson</td>
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<tr>
<td>9</td>
<td>English</td>
<td>Sally Arel</td>
<td>Text: Distinctive, effective, and unlimited methods to connect with audiences</td>
<td>Molly Johnson</td>
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<tr>
<td>10</td>
<td>English</td>
<td>Dominick Giguere</td>
<td>The Rhetorical Website: An Analysis of Information Design’s Role in the Rhetorical Process and of Visual Design’s Role in Web Design</td>
<td>Molly Johnson</td>
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<tr>
<td>11</td>
<td>English</td>
<td>Christopher Grim</td>
<td>Graphing Spokane: Creating Effective Graphs for Windermere Real Estate</td>
<td>Molly Johnson</td>
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<tr>
<td>12</td>
<td>English</td>
<td>Maxine Holden</td>
<td>Narrative and the Construction of Meaning</td>
<td>Molly Johnson</td>
</tr>
<tr>
<td>#</td>
<td>Program</td>
<td>Author(s)</td>
<td>Title</td>
<td>Mentor(s)</td>
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<tr>
<td>13</td>
<td>English</td>
<td>Elizabeth Matresse</td>
<td>Homage or Umbrage? Medievalesque Typography and Its Modern Day Implications</td>
<td>Molly Johnson</td>
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<tr>
<td>14</td>
<td>English</td>
<td>Bradley Plummer</td>
<td>Mapping Gluten-Free Dining Locations in the Inland Northwest</td>
<td>Molly Johnson</td>
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<td>15</td>
<td>Occupational Therapy</td>
<td>Tyler Burton, Shannon Rohr, Navid Nadernejad, Josie Jarvis</td>
<td>Occupational Therapy Intervention for Executive Dysfunction in Adolescents: A Pilot Study</td>
<td>Donna Mann, Roberta Snover</td>
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<tr>
<td>16</td>
<td>Physical Education, Health &amp; Recreation</td>
<td>Megan Chavez</td>
<td>Effects of a Nutritional Intervention on Dietary Intake in Female Collegiate Athletes</td>
<td>Christi Brewer</td>
</tr>
<tr>
<td>17</td>
<td>Physical Education, Health &amp; Recreation</td>
<td>Emily Travis</td>
<td>Different Warm-Up Protocols on Immediate Golf Drive Performance in Recreational Golfers</td>
<td>Wendy Repovich</td>
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<tr>
<td>18</td>
<td>Physical Therapy</td>
<td>Bailey Koster</td>
<td>Comparison of Heart Rate and Oxygen Saturation Measurements at Rest Obtained with 10 Fingertip Pulse Oximeter Models</td>
<td>Megan Chatellier</td>
</tr>
<tr>
<td>19</td>
<td>Psychology</td>
<td>Joshua Bell</td>
<td>Thieves of Thankfulness: Inhibitors of Gratitude</td>
<td>Philip Watkins</td>
</tr>
<tr>
<td>20</td>
<td>Psychology</td>
<td>Nick Lauderdale</td>
<td>How does executive functioning relate to your ability to estimate time?</td>
<td>Jonathan Anderson</td>
</tr>
<tr>
<td>21</td>
<td>Psychology</td>
<td>Duncan McCurrach, Andrew Budde, Stephanie Rae, Amy Frers</td>
<td>Because I'm Happy: A Positive Interpretation Bias in Happy People</td>
<td>Philip Watkins</td>
</tr>
<tr>
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<td>Public Health</td>
<td>Benjamin Sinclair, Amber Mulhern</td>
<td>Emergency Preparedness in Spokane</td>
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</tr>
<tr>
<td>23</td>
<td>Social Work</td>
<td>Michelle Elder, Adriana Diaz, Krystina Felix</td>
<td>Spokane Fire Department Community Assistance Response (CARES) Team: Creating a Client Satisfaction Survey</td>
<td>Amanda Reedy</td>
</tr>
<tr>
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<td>Social Work</td>
<td>Jared Stone, Angela De La Barrera, Amanda Nguyen, Karina Anderson</td>
<td>Domestic Violence Perpetrator Treatment</td>
<td>Amanda Reedy</td>
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<tr>
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<td>Genevieve Keesecker, Christine Myers, Hayden Richardson, Martee Shafer</td>
<td>Whitman Neighborhood Community Development Plan</td>
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<td>Amy Thompson, Suzette Buckles, Damon Hunter, Andrew Kienast, Eugene Purnell III, Deanah Watson</td>
<td>Community Provile and Land Use Study Colfax, WA</td>
<td>Gregg Dohrn</td>
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## Oral Session 1: Physical Therapy, Occupational Therapy, Public Health, & Music

Room 102, 2:00-4:40 p.m.

<table>
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<th>Mentor(s)</th>
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<tbody>
<tr>
<td>2:00</td>
<td>Physical Therapy</td>
<td>Erika Ellis</td>
<td>What's best? Cueing strategies for transverse abdominis activation in supine</td>
<td>Patricia Nelson</td>
</tr>
<tr>
<td>2:40</td>
<td>Physical Therapy</td>
<td>Dana Oie</td>
<td>Inter-Rater Reliability of Specific Cues for Transverse Abdominis Activation as Measured by Musculoskeletal Ultrasound Imaging</td>
<td>Patricia Nelson</td>
</tr>
<tr>
<td>3:00</td>
<td>Physical Therapy</td>
<td>Elizabeth Seidl, Ryan Houser</td>
<td>Physical Risk Factors and Related Musculoskeletal Disorders Among Bricklayers</td>
<td>Dan Anton</td>
</tr>
<tr>
<td>3:20</td>
<td>Physical Therapy</td>
<td>Kaya Mills, Nick Kelly</td>
<td>Meeting Apprentice Bricklayers' Safety Education Needs Based on Focus Groups Using Adobe Captivate</td>
<td>Dan Anton</td>
</tr>
<tr>
<td>3:40</td>
<td>Occupational Therapy</td>
<td>Kaela Dewan, Laurie Wylie, Kari Miller, Leana McCann, Amanda Turner</td>
<td>Exploring the Lived Experiences of Caregivers for Persons with Autism in Rural Eastern Washington Communities</td>
<td>Roberta Snover</td>
</tr>
<tr>
<td>4:00</td>
<td>Public Health</td>
<td>Hannah Houser, Katie Del Monte</td>
<td>Cheney Washington Vulnerability Risk Assessment</td>
<td>Frank Houghton</td>
</tr>
<tr>
<td>4:20</td>
<td>Music</td>
<td>Charles Green</td>
<td>Teaching Music Technology to Digital Natives</td>
<td>Sheila Woodward</td>
</tr>
</tbody>
</table>
### Oral Session 2: Biology & English - TESL

**Room 107c, 2:00-4:40 p.m.**

<table>
<thead>
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<th>Author(s)</th>
<th>Title</th>
<th>Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00</td>
<td>Biology</td>
<td>Katherine Farrell</td>
<td>Distribution and Movement of Elk (<em>Cervus elaphus canadensis</em>): Response to a New Hunting Program on Turnbull National Wildlife Refuge</td>
<td>Margaret O’Connell</td>
</tr>
<tr>
<td>2:20</td>
<td>Biology</td>
<td>Derek Entz</td>
<td>Tracking the Seasonal Movements of Lake Trout and Bull Trout in the Priest Lake System, Northern Idaho</td>
<td>Paul Spruell</td>
</tr>
<tr>
<td>2:40</td>
<td>Biology</td>
<td>Jarrett Schuster</td>
<td>Vegetation Colonization within Drained Impoundments Following Dam Removal on the Elwha River, Washington</td>
<td>Rebecca Brown</td>
</tr>
<tr>
<td>3:00</td>
<td>Biology</td>
<td>Tim Moran</td>
<td>Phenotypic characterization of woody growth among juvenile peach trees</td>
<td>Robin O’Quinn</td>
</tr>
<tr>
<td>3:20</td>
<td>Biology</td>
<td>Wyatt Plastino</td>
<td>Examination of Lake Spokane Groundwater Nutrient Loading by Septic Influence</td>
<td>Suzanne Schwab</td>
</tr>
<tr>
<td>3:40</td>
<td>English</td>
<td>Brandy Bippes</td>
<td>Innovative &amp; Integrated Curriculum for Innovative &amp; Integrative Students of ESL, Composition, &amp; Technical Communication</td>
<td>Lynn Briggs, LaVona Reeves</td>
</tr>
<tr>
<td>4:00</td>
<td>English</td>
<td>AnnaMarie Rockstrom, Ben Whitmore</td>
<td>Teaching ESL Reading for Academic Literacy</td>
<td>LaVona Reeves</td>
</tr>
<tr>
<td>4:20</td>
<td>English</td>
<td>Andrew Copley</td>
<td>Post-process composition and the ESL student</td>
<td>Justin Young</td>
</tr>
</tbody>
</table>
# Oral Session 3: Education (Creative Works), Anthropology, Public Administration, Communication, History, & Interdisciplinary Studies

Room 114, 2:00-4:40 p.m.

<table>
<thead>
<tr>
<th>Time</th>
<th>Program</th>
<th>Author(s)</th>
<th>Title</th>
<th>Mentor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:00</td>
<td>Education (Creative Work)</td>
<td>Fira Hedlund</td>
<td>Identity</td>
<td>Deirdre Almeida</td>
</tr>
<tr>
<td>2:20</td>
<td>Anthropology</td>
<td>Amara Fiegel</td>
<td>Single Mothers and Welfare: A Theoretical Perspective</td>
<td>Julia Smith</td>
</tr>
<tr>
<td>2:40</td>
<td>Public Administration</td>
<td>Betsy White</td>
<td>Policy analysis: Transgender youth in the classroom</td>
<td>Ning Li</td>
</tr>
<tr>
<td>3:00</td>
<td>Communication</td>
<td>Maria Elena Calderon Sandoval</td>
<td>Construction of Identity through Sociocultural Theory for Undocumented Students at Eastern Washington University</td>
<td>Jeffrey Stafford, Martin Meraz Garcia</td>
</tr>
<tr>
<td>3:20</td>
<td>Communication</td>
<td>Hannah Seagrave</td>
<td>Textese Community Values</td>
<td>Jeffrey Stafford</td>
</tr>
<tr>
<td>3:40</td>
<td>History</td>
<td>David Collins</td>
<td>Warfare versus words: a juxtaposition of radical ideology and the utilization of space during the Mexican revolution</td>
<td>Joseph Lenti</td>
</tr>
<tr>
<td>4:00</td>
<td>History</td>
<td>Russell Mottram</td>
<td>On War Commemoration: The Shaping of Public Consciousness Surrounding USS Turner Joy</td>
<td>Robert Dean, Larry Cebula</td>
</tr>
<tr>
<td>4:20</td>
<td>Interdisciplinary</td>
<td>Lindsey Porter</td>
<td>Pre-1900s Chinese Mining in Northeastern Washington State</td>
<td>John Dorwin</td>
</tr>
</tbody>
</table>
ABSTRACTS

CREATIVE WORKS PRESENTATION ABSTRACTS

Identity
Fira Hedlund
Deirdre Almeida, American Indian Studies

A challenge to systems of heterosexist and racist oppression in the form of a slam poem that explores the orientation, racial, and gender identity of the speaker.

ORAL PRESENTATION ABSTRACTS

What's best? Cueing strategies for transverse abdominis activation in standing
Kirsten Bethancourt
Patricia Nelson, Physical Therapy

With 60-80% of people experiencing low back pain (LBP) during their lifetime, evolution in the treatment of LBP is critical. Treatment that improves transverse abdominis (TrA) muscle activation timing is effective in preventing recurrence of LBP; however there are no ‘best cues’ to achieve this training identified in research studies. To identify best cues, 26 male and female subjects with no reported back pain in the last 12 months participated in this study. Real-time B-Mode ultrasound imaging was used to visualize and capture TrA thickness at rest and with activation to each of 5 different cues while subjects were standing. Digital calipers were then used to measure TrA muscle thickness for each verbal cue. Ratio and percent change of TrA thickness for each verbal cue was calculated to identify the optimal verbal cue for each subject and compared across subjects. The aim of this study was to determine which verbal cues best activate the TrA muscle as measured by standing ultrasound imaging.

Innovative & Integrated Curriculum for Innovative & Integrated Students of ESL, Composition, & Technical Communication
Brandy Bippes
Lynn Briggs, English; LaVona Reeves, English

A journey through professionalism to academia, combined with exploration in student success and retention has inspired development of an "Innovated & Integrated Curriculum for Innovative and Integrated Students of ESL, Composition, & Technical Communication." This curriculum proposes to support student multivocity through meaningful cross-curricular integrative approaches to authentic issues. Key components of the curriculum include a computer-based flipped classroom with a risk-free simulated service learning project as students learn to write in academic genres. A postmodern exploration in primary research, theory, and application.
Construction of Identity through Sociocultural Theory for Undocumented Students at Eastern Washington University
Maria Elena Calderon Sandoval
Jeff Stafford, Communication Studies; Martin Meraz Garcia, Chicano Education

Sociocultural communication theory is fundamental when trying to understand identity construction for undocumented students as a result of their interactions with policies and higher education institutions. Legislation impacting undocumented students includes House Bill 1079, Deferred Action for Childhood Arrivals, and the Real Hope Act. The purpose of this study is to determine what factors continue to prevent undocumented students from succeeding in higher education institutes in Washington State, despite the progressive legislation in place. Methodology utilized for this research includes the snowball sampling technique with Institutional Review Board approval. Ten interviews with undocumented students at Eastern Washington University will be conducted and individually analyzed for meta-themes about their experiences, events, and feelings in higher education. Drawing on data from these interviews and peer reviewed scholarly sources, recommendations will be made on how EWU can help undocumented students succeed in higher education.

Warfare versus words: a juxtaposition of radical ideology and the utilization of space during the Mexican revolution
David Collins
Joseph Lenti, History

This research project critically interrogates two different methods for the utilization of space during the Mexican revolution. Emiliano Zapata Salazar was the leader of a group of mostly peasants who took up arms and fought against the regime of Porfirio Díaz who were known as the Zapatistas. Ricardo Flores Magón fought against the regime with the pen through his newspaper Regeneración from the United States, where he was living in exile and was the head of a group called the Magonistas and a political party called the Partido Liberal Mexicano (Mexican Liberal Party) or PLM. In addition to examining the different ways the two men utilized space, this project will also consider the influence of these leaders on present-day social movements in Mexico, specifically the Zapatistas, which began on January 1, 1994 in the state of Chiapas.

Post-process composition and the ESL student
Andrew Copley
Justin Young, English

Many researchers within the field of composition have suggested a shift towards a post-process oriented pedagogy. This approach exposes as well as questions many of the fundamental assumptions behind the process movement. Although a considerable debate continues about how the post-process movement itself should be applied, it is clear that many of these post-process scholars see the process movement as a bygone era of Composition Studies. Nevertheless, process writing is still commonplace in the EWU composition curriculum, so we have not abandoned, at least in practice, this method of teaching writing. In my research I consider how the development of these theories relates to ESL students in mainstream composition courses, and how both movements offer unique insights into helping ESL students thrive in these courses at EWU. Within this framework, I look into the gap between pedagogical theory and actual practice in relation to teaching writing. I also consider two important linguistic theories that connect with and further the critiques of the process movement in composition.
Exploring the Lived Experiences of Caregivers for Persons with Autism in Rural Eastern Washington Communities
Kaela Dewan, Laurie Wylie, Kari Miller, Leana McCann, Amanda Turner
Roberta Snover, Occupational Therapy

Care providers of individuals diagnosed with an Autism Spectrum Disorder in rural communities present unique challenges due to the nature of the environment. Rural environments combined with caregiving roles and routines have embedded barriers that include reduced accessibility to services, and caregiver burden. The current literature is limited and supports the need for further research to enhance health care professionals’ understanding of the lived experiences among this subpopulation. The purpose of this study is to embrace the importance of personal narratives of caregivers of children on the autism spectrum in rural Eastern Washington.

What's best? Cueing strategies for transverse abdominis activation in supine
Erika Ellis
Patty Nelson, Physical Therapy

Between 60-80% of people will experience symptoms of low back pain (LBP) at some point in their lifetime. With aging and use, there is an increase in motion within spinal segments termed lumbar spine instability. Rehabilitation to improve spine stability is effective for patients with LBP. Rehabilitation programs that focus on restoring transverse abdominis (TrA) muscle control and coordination, along with other core muscles are more effective than general spine exercise. This study examines optimal verbal cuing for supine TrA activation in 26 healthy subjects. Real-time B-Mode ultrasound imaging was used to visualize activation of the TrA at rest and during five verbal activation cues. TrA muscle thickness was measured using digital calipers and percent change calculated for each cuing strategy. The purpose of this study was to identify which of the five cues best activated of the TrA across the subjects for possible future clinical applications in patients with LBP.

Tracking the Seasonal Movements of Lake Trout and Bull Trout in the Priest Lake System, Northern Idaho
Derek Entz
Paul Spruell, Biology

The Priest Lake system includes Priest Lake and Upper Priest Lake (UPL) connected via a channel known as the Thorofare. Non-native lake trout (Salvelinus namaycush) predate on and compete with bull trout (Salvelinus confluentus) which could lead to the extirpation of bull trout from the Priest Lake system. Currently, the Idaho Department of Fish and Game are attempting to suppress lake trout in UPL; understanding seasonal movements of both species will increase the efficacy of this effort. To gather data on seasonal movements, lake trout will be tagged with acoustic tags in each lake along with bull trout in UPL annually for two years. Fish will be tracked using passive and non-passive tracking techniques in both lakes. Movement between the lakes will be analyzed using ANOVA to test for periods of increased movement as a function of seasonality. To analyze the spatial distributions of lake trout and bull trout the dynamic Brownian bridge movement model will be used to estimate the expected movement paths of tagged fish and identify areas of preferentially use by both species.
Distribution and Movement of Elk (*Cervus elaphus canadensis*): Response to a New Hunting Program on Turnbull National Wildlife Refuge

Katherine Farrell  
*Margaret O'Connell, Biology*

Hunting is a basic part of elk management, especially where natural predators are absent and elk over-browse their habitat. These factors led to the establishment of a hunt on Turnbull National Wildlife Refuge (TNWR) in September 2010 to reduce numbers and disperse elk out of over-browsed areas. Elsewhere, elk responded to novel hunts by temporary flight or relocation. To examine elk response to the TNWR hunt, 34 elk were radio-tracked from April 2010 through 2013. A total of 1,994 elk observations was grouped by location (refuge hunt or non-hunt, or off refuge), season (pre-, post-, or hunt), and year. I compared seasonal and annual changes in location probability, and changes in distance and direction, or movement behavior. Compared to the 2010 hunt season, elk had a greater probability of being off refuge during 2010 post-hunt and 2013 pre-hunt seasons, and of being in refuge non-hunt areas during 2012 pre-hunt. I observed more behavior shifts during the hunt season. My findings suggest that hunting disrupts elk movements and elk may be responding to hunting through relocation.

Single Mothers and Welfare: A Theoretical Perspective

Amara Fiegel  
*Julia Smith, Anthropology*

From the birth of government funded welfare in 1935 through current discussions of welfare reforms, the media and politicians have used rhetoric to make poor single mothers the “other.” This paper will apply Galtung’s model of the rhetorical and enacted route from cultural violence to structural violence ending in direct violence to this case. To explore the in the creation and “reform” of the welfare system, I will use discourse from various sources such as addresses to congress, public policy, media sources and women’s personal accounts as well as analyze directly the policies that were created in response to this discourse. This will demonstrate how demonizing welfare and its recipients shifts focus from the real problems that create poverty and inequality.

Teaching Music Technology to Digital Natives

Charles Green  
*Sheila Woodward, Music*

While research investigating music technology programs in U.S. public schools has increased over recent years, the existence of such programs has not been widespread. Today’s students are digital natives. They have been born into environments with widespread technology use and have grown up using technology. A widespread perception exists that public school music programs insufficiently incorporate this important aspect of student culture and daily life into the music curriculum, in a way that might be relevant for students. This difference between music curriculum and student identity conceivably results in fewer students participating in school music programs that potentially might do so. Implementing music technology programs in public schools connects digital native students with accessible opportunities to participate in music. This literature review aims to highlight some issues regarding music technology in U.S. public schools in hopes of encouraging music educators and school administrators to consider implementing such programs.
Cheney Washington Vulnerability Risk Assessment
Hannah Houser, Katie Del Monte
Frank Houghton, Master of Public Health

The City of Cheney is a township 17 miles southwest of Spokane. With a population of 11,310, the quality of life is unmatched because of the small town atmosphere and family-friendly environment. As the home to Eastern Washington University, Betz Elementary, Salnave Elementary, Cheney Middle School, as well as Cheney High School, several elderly homes, and many large apartment complexes, Cheney hosts countless areas of socially vulnerable populations. In order to classify and assess vulnerabilities for the City of Cheney, physical and social vulnerabilities were addressed, potential hazards were addressed, and re-accounts of history were established. Four high risk and recently occurring disasters were than further analyzed for potential interventions. These four events consisted of train derailment, wild fire, ice storms, and earth quakes. The social and physical vulnerability, as well as the potential risks and hazards that Cheney faces, are all of importance in addressing the vulnerability of the town.

Meeting Apprentice Bricklayers’ Safety Education Needs Based on Focus Groups Using Adobe Captivate®
Kaya Mills, Nick Kelly
Dan Anton, Physical Therapy

Bricklaying is a trade with a high prevalence of work-related musculoskeletal disorders (MSDs). One way to prevent MSDs is by training apprentices about ergonomic solutions. However, there is currently a lack of engaging educational materials designed for bricklayers. In an effort to meet the unique learning needs of apprentice bricklayers, safety education materials are being developed via eLearning based on qualitative data gathered during focus groups. These eLearning materials are designed for bricklayers who are in their apprenticeship years. Among many interesting findings from the focus group, one issue was clear: educational materials needed to be engaging and interactive to obtain apprentice buy-in. Adobe Captivate® is an eLearning material design program with superior capabilities for multimedia integration and learner interaction. The purpose of this presentation is to describe the process of using information gained in focus groups to create eLearning materials targeted at bricklayer apprentices using Adobe Captivate®.

Phenotypic characterization of woody growth among juvenile peach trees
Tim Moran
Robin O’Quinn, Biology

The National Clonal Germplasm Repository (NCGR) is a genebank dedicated to the preservation, analysis, and distribution of agricultural crop species. The NCGR repropagated the peach (Prunus spp.) tree collection, presenting a unique opportunity to establish baseline phenotypic data on the vegetative morphology of 373 accessions consisting of cultivated varieties, breeder’s genestocks, and wild-type species. The goal of this project is to characterize accession phenotypes to assist researchers in developing commercially desirable cultivars, and adding information to the Germplasm Resources Information Network. Tree height, crown widths, nectary presence/type, growth habit, branch length and weights were measured in summer 2014. Preliminary results show significant differences in height and canopy volumes among trees based on 6 growth habit types. I predict that differences in branch lengths and weights and accession geographical/genealogical origin will explain a substantial amount of the variation among groups.
On War Commemoration: The Shaping of Public Consciousness Surrounding USS Turner Joy
Russell Mottram
Robert Dean, History; Larry Cebula, History

USS Turner Joy (DD-951) was one of two battleships involved with the Gulf of Tonkin incident, August 1964, which led to the “escalation” of US forces in the Vietnam War. Between 1990 and 1992 the ship was transformed into a public museum and moored along the marina in Bremerton, Washington. Through an examination of Navy heritage by way of the cultural memory mechanism of names, and an analysis of the transformation of the ship into a public museum at the so-called “end” of the Cold War, my study argues that USS Turner Joy museum and memorial reproduces a culture of militarism, namely, the use of military power to expand US hegemony around the globe, and also, functions in a way that shapes collective memory about the US’ war in Vietnam, and more broadly, the global Cold War.

Inter-Rater Reliability of Specific Cues for Transverse Abdominis Activation as Measured by Musculoskeletal Ultrasound Imaging
Dana Oie
Patricia Nelson, Physical Therapy

Low back pain (LBP) results in a greater degree of global disability than any other condition. Correct activation of the transverse abdominis (TrA) is crucial for lumbar stabilization and a key component in recovery from LBP. Musculoskeletal ultrasound imaging (USI) is used as an effective visual aid to help patients retrain TrA activation; however it has not been used to provide quantitative measures of TrA activation for patients recovering from LBP. A reliable method for determining TrA activation will be critical to further research on TrA retraining methods. The objective of this study was to evaluate inter-rater reliability of novice USI practitioners for measuring TrA activation. TrA activation to 5 different verbal cues was measured using two different methods by each of three investigators. Method A included specific parameters to ensure decreased variability between investigators. Method B allowed the investigators to self-select the site of measurement for best TrA activation. The measurement method for most reliable results will be presented.

Examination of Lake Spokane Groundwater Nutrient Loading by Septic Influence
Wyatt Plastino
Suzanne Schwab, Biology

Lake Spokane has a history of degraded water quality. Segments of the Spokane River and Lake Spokane have been listed on the Washington State Department of Ecology’s 303(d) list of impaired water bodies. Remediation efforts have resulted in a significant reduction of point-source inputs of phosphorus to the Spokane River from municipal and industrial sources. Consequently, nonpoint sources are becoming a more important target in managing the nutrient budget of Lake Spokane. The community of Suncrest, along eastern Lake Spokane is a potentially important nonpoint source of phosphorous. Suncrest contains 1,380 residences, all relying on septic systems for waste water disposal. In my study I will examine the onsite septic influence of the Suncrest area as a nonpoint source of contamination to groundwater. I will be testing the null hypothesis that there is no significant variation in groundwater nutrient content between areas where septic systems are abundant to less developed areas. I will install piezometers for seasonal monitoring of groundwater nutrient content. Groundwater samples will be analyzed for total and orthophosphate, nitrate, nitrite, ammonium, chloride and dissolved oxygen.
Pre-1900s Chinese Mining in Northeastern Washington State
Lindsey Porter
John Dorwin, Anthropology

The pre-1900s mining industry in northeastern Washington State is poorly documented, especially in the archaeological record. Chinese laborers began immigrating to the Pacific Northwest during the mid-1850s California Gold Rush. Shortly after their arrival, Congress passed a series of laws aimed at restricting Chinese rights and immigration into the US, encouraging some to move north to Washington Territory. The remnants of their camps and mining locations are rarely mentioned in the historical and archaeological record. This paper will discuss the pre-1900s Chinese mining industry in northeastern Washington State. Focus will be placed on archaeological sites and artifacts, along with archival records, indicative of their mining, homestead, or camp locations to aid in developing a more accurate record of early Chinese mining in northeastern Washington.

Teaching ESL Reading for Academic Literacy
AnnaMarie Rockstrom, Ben Whitmore
LaVona Reeves, English

The purpose of this research paper is to see if by teaching Arabic students the sounds and the spellings each letter makes in English, how the sounds are made, and some of the spelling rules that govern how words are spelled and put together, if we can make them more successful with reading, writing, comprehending, and speaking English. The specifics objectives include: How does implementing an explicit, systematic phonics, phonetics, and morphological principles intervention program into a Level 1 ESL classroom for Arabic speakers: (1) affect their ability to pronounce English words specifically targeting all consonant, short and long vowel sounds correctly; (2) affect their ability to spell English words specifically targeting all consonant, short and long vowel sounds correctly; (3) affect their writing ability in short paragraphs on specific topics; (4) affect their fluency rate in English; and, (5) affect their reading comprehension of short passages? This is a research paper in progress.

Vegetation Colonization within Drained Impoundments Following Dam Removal on the Elwha River, Washington
Jarrett Schuster
Rebecca Brown, Biology

Our research aims to assess vegetation recovery within drained impoundments following removal of two dams on the Elwha River, Washington. We tested how environmental factors affect species richness, species cover, and woody species height, and how these factors differ among the two reservoirs. We recorded vascular plant species richness, species cover, and woody species height within 67 100 m^2 plots in 2013 and 60 100 m^2 plots in 2014 along 20 transects within Mills and Aldwell reservoirs. We collected soil samples in each plot to assess percent organic matter, nutrients, and percent sand, silt, clay; we also conducted a Wolman pebble count in each plot. We found Aldwell reservoir had finer textured sediments (p≤0.0001), higher total species richness (p=0.03), and higher total, native, and exotic species cover (p=0.02, p=0.02, and p=0.04, respectively). Woody species height was greater in Aldwell reservoir in both 2013 and 2014 (p=0.02 and p=0.02, respectively). These results indicate that vegetation recovery rates following dam removal will vary with different environmental conditions.
Textese Community Values
Hannah Seagrave
Jeffrey Stafford, Communication Studies

With the advent of the cell phone, text messaging as a mobile communication has infiltrated social interactions across the globe. Yet, recent research indicates a lack of scholarship regarding cultural values promoted through this worldwide phenomenon. This lack of inclusion leaves the study of current cultural and social norms impoverished in understanding the influence of text messaging as a communication catalyst for change in cultural values. The purpose of this study was to perform exploratory analysis on the qualitative and quantitative data collected from a new instrument measuring the promotion of cultural values through text messaging in current research, specifically examining the relationships between Textese community values and American cultural values. Overall findings suggest special attention should be given to this area of texting in future research as cultural and intrinsic values often underlie sociolinguistic and psychosocial behaviors, providing insight into what truly drives the results of current research studies pertaining to the global text messaging trend.

Physical Risk Factors and Related Musculoskeletal Disorders Among Bricklayers
Elizabeth Seidl, Ryan Houser
Dan Anton, Physical Therapy

Work-related musculoskeletal disorders (MSDs) commonly occur in the masonry trade. These MSDs can lead to missed workdays, long-term impairments, or unanticipated early retirement from the profession. Several ergonomic risk factors have been identified that can predispose bricklayers to common occupational MSDs. These include: awkward postures, prolonged postures, heavy lifting, repetitive activities, direct pressure, and forceful exertions. Being able to identify risk factors at the worksite is a key component in preventing work-related MSDs. The purpose of this project is to identify each risk factor in context with the work that bricklayers do, and use these examples as a component of an ergonomics training program aimed at preventing MSDs in bricklayers.

Policy analysis: Transgender youth in the classroom
Betsy White
Ning Li, Master of Public Administration

Within the elementary school setting, topics of gender diversity and sexual orientation are considered off limits. Within the junior high and high school setting, these topics are still not adequately being addressed as many schools teach abstinence only programs that do not address LGBT issues. Transgender youth are the most vulnerable adolescent population, in fact, they are considered one of the most marginalized and oppressed populations overall. Transgender people are among the most misunderstood and overlooked groups in our society. Their very existence defies the customary gender dichotomy. As concerns for the well-being of transgender students in school become more evident, it is imperative that policy makers and school administrators work together in developing trans- affirming classroom settings.
Educational Communication System (ECS)
Nasmah Alnaimi
Carol Taylor, Computer Science

The characteristics of school organizations and their reactions to change are critical to success in educational reform. Organizational change is necessary to the health of an organization and the well-being of its members. Organizational change, in order to be effective and sustainable, may need to use technology, and it must accommodate the need to simplify complexity in schools. Organizing school bus information, such as between the school and the bus stops or on field trips, and activities outside of school such as sporting events or other events will ensure that parents know their kids are safe and where they are expected to be. Additionally, this will reduce errors that may occur when there is misinformation between the student and parent or between the school and students or parents.

Marc Anderson
Molly Johnson, English

My poster analyzed the history of the Seattle Seahawks logo through the framework of visual identity, brand association, and cultural context. I originally questioned how the logos of professional sports teams reflect the attitudes of their front offices and fan-bases, as well as the cultural context of the region each team is located in. I decided to analyze the Seattle Seahawks logo because 1) I am a fan of the team, 2) the colors of the logo, as well as the incorporation of the Seahawk, appeared to reflect the regional culture of the Pacific Northwest, and 3) the logo’s changes correlated with changes in the coaching staff and front office. I analyzed each logo (1976-2001, 2002-2011, and 2012-Present) through four categories of visual design and branding: organizational attributes, typeface, cultural context, and first impression/heft.

Text: Distinctive, effective, and unlimited methods to connect with audiences
Sally Arel
Molly Johnson, English

Unique, non-text typography as visual rhetoric creates powerful, multi-dimensional messages. Text focuses on the user experience and builds on existing cultural references. It includes hand-lettering, visual puns, calligrams, and other mediums such as modification, arrangement of items, or the creation of an item to represent a spelled word. Text adds organic and fun elements to design, and results in greater elaboration and a more favorable audience attitude. Designers quickly and enthusiastically connect with their audience with this use of visual rhetoric in a way that traditional, mechanical, type fonts do not.
Thieves of Thankfulness: Inhibitors of Gratitude
Joshua Bell
*Phil*ip Watkins, Psychology

Gratitude is a virtue revealed to be connected to a constellation of benefits both personally and socially. It is an other-focused emotion that facilitates quality relationships and fosters well-being. Gratitude research has primarily been concerned with these benefits, while next to none has looked into the situations or traits that might stifle a grateful experience. This study examined four of these traits: cynicism, materialism/envy, indebtedness, and narcissism. These potential inhibitors were measured with trait gratitude at time 1. Two months later, everything was measured again. A partial correlational analysis of the data was computed between inhibitors at time 1 and time 2 trait gratitude while controlling for time 1 trait gratitude. The results revealed a pair of significant negative relationships with trait gratitude from the potential inhibitors: narcissism and cynicism. A bivariate correlational analysis between cynicism and narcissism showed a significant positive relationship. It seems that higher levels of cynicism and narcissism predict lower trait gratitude.

Occupational Therapy Intervention for Executive Dysfunction in Adolescents: A Pilot Study
Tyler Burton, Shannon Rohr, Navid Nadernejad, Josie Jarvis
*Donna Mann, Occupational Therapy; Roberta Snover, Occupational Therapy*

The aim of this study was to explore the effectiveness of Occupational Therapy strategies to improve school role performance in high-school students with executive functioning (EF) difficulties at risk for not graduating from high school. Using a mixed-methods approach, a pilot study was conducted with a single participant using a case study design. The Brief Rating Inventory of Executive Functioning was used to determine level of executive functioning and GPA below 2.0 was used to determine non-successful academic performance. Occupational therapy intervention directed at student role performance was provided one time weekly for 10 weeks following a 2 hour intake process and completed with a 2 hour exit process examining objective outcomes (grade performance) and qualitative outcomes (lived experience of the student and parent). Intervention employed Goal Attainment Scaling and Goal Management Training strategies to both accommodate for EF weaknesses and to work towards remediation in EF.

Effects of a Nutritional Intervention on Dietary Intake in Female Collegiate Athletes
Megan Chavez
*Christi Brewer, Physical Education, Health & Recreation*

Athletes recognize that training, rest, skill level, and nutrition are keys to optimal performance. Research has reported a lack of nutritional knowledge, and nutritional deficiencies in athletes. Thus the purpose of this project was (1) identify changes in nutrient intake that may occur with nutritional sessions lead by a Registered Dietician and (2) examine athlete’s relative macronutrient intake (g/kg) and determine if it was sufficient. Athletes were asked to track their nutritional intake with an application, My Fitness Pal™, and print their reports each week for review. No significant difference found in nutritional intake within groups and between groups throughout data collection. None of the participants (n=21) met their sport-specific carbohydrate recommendation (g/kg). Similarly, fewer than 22% met their sport-specific protein recommendation (g/kg). This research supports the need for increased resources that aid athletes in their nutritional intake.
Initial response of riparian vegetation following dam removal on the Elwha River, Washington
Erin Cubley
Rebecca Brown, Biology

Riparian zones, the interface between aquatic and terrestrial environments, provide essential ecological services and functions. Dams alter riparian zones by disrupting flow regimes, reducing sediment and seeds. This can impact vegetation diversity and composition. Recently, dam removal has become more prevalent, but the impacts of removals on riparian zones are unknown. The largest dam removals to date are the Elwha and the Glines Canyon dams on the Elwha River, WA. My objective was to determine the response of riparian vegetation in the first two years following dam removal. Prior to removal, vegetation communities were distinct above and below the dams and native species richness was lower below the dams. I predicted that following removal, community composition in the downstream reaches would be more similar to that of the upstream reach and native diversity would increase downstream. My data suggests that community composition is still distinct and native diversity continues to be higher above the dams. Vegetation may take years or even decades to respond to dam removal.

Spokane Fire Department Community Assistance Response (CARES) Team: Creating a Client Satisfaction Survey
Michelle Elder, Adriana Diaz, Krystina Felix
Amanda Reedy, Social Work

The CARES Team consists of EWU social work students (from the BSW and MSW programs) and WSU nursing students, who work in collaboration with the Spokane Fire Department. The CARES Team members work with clients that have been referred by Spokane City and Spokane Valley firefighters. If the firefighters respond to a call where a client seems to need additional help they send a referral to the CARES Team. The CARES Team offers brokering services, in which they connect clients with resources in the community. Currently the CARES Team measures client outcomes with pre- and post-911 calls. This method does not give the CARES Team enough information regarding program effectiveness (specifically from the perspective of the client). CARES Team members have decided to create a CARES Customer Satisfaction Survey to help aid in program development and understand the CARES clients’ prospective on whether or not CARES services were helpful or not. This research poster will examine the methods of this evaluation.

The Rhetorical Website: An Analysis of Information Design’s Role in the Rhetorical Process and of Visual Design’s Role in Web Design
Dominick Giguere
Molly Johnson, English

Through an exploration of the rhetorical situation, information design is determined to be an extension of the rhetorical process in certain applications. To determine the degree and frequency in which this extension occurs, web media design is considered. Web use and websites are analyzed for the presence of rhetoric, design and differing degrees of design to determine how information design may apply as an extension of the rhetorical process. It is determined that the degree of information design which separates corporate product websites from general corporate websites, and which separates commercial websites from informational websites, is the degree of investment and application of visual design and visual art to enhance information and rhetoric to convince consumers to use and stay on the website, to purchase the product or engage the corporation, and to choose to purchase the product or engage the corporation on that website.
Graphing Spokane: Creating Effective Graphs for Windermere Real Estate
Christopher Grim
*Molly Johnson, English*

The attempt of this project was to explore and apply information design techniques to real estate sales data. The data itself was presented amongst dozens of documents and was requested by the client to be condensed into as few documents as possible while remaining accessible to the user. The end results proved to be successful for the client where all the information was presented amongst five documents. This information included month to month trends based by region, price, quantity of homes available, and quantity of homes sold. By using a color coordinator and symmetric graph the information is clear and concise without the use of knowing specific numbers. For the real estate salesman these documents assist them in understanding sales trends over a two year period. In return the salesmen can better assist buyers for when to sell, buy, or list their home capitalizing on better returns or a faster sale whatever the need of the buyer may be.

It’s Only A Movie—or Is It?
Jay Gunter
*Molly Johnson, Addiction Studies*

A dare is typically seen as a face-to-face invitation for a young person to test his or her courage. But can something as innocuous as a newspaper ad also be an invitation to a ritual of strength and resolve? In an in-depth examination of words, phrases and typographical elements found in five newspaper horror movie advertisements using Discourse Analysis methodology, this study set out to prove that horror film print ads could in fact be seen as non-face-to-face dares that called young people to test their bravery by partaking of a horror film experience. This study came to the conclusion that horror movie print ads could indeed be seen as nonverbal dares, and also concluded that examining the nature of ritual strength testing found in horror movie advertising is merely one small example of how Discourse Analysis can be used to elevate the meanest of cultural artifacts to a plane of greater understanding and usability.

Narrative and the Construction of Meaning
Maxine Holden
*Molly Johnson, English*

Narrative as a basis for understanding will be examined through the theoretical lenses of Narrative Methodology, Narrative Epistemology, and their application in design, while the concept of bridging will be examined as an innate process whereby ideas are linked to form a cohesive interpretation. Bridging will be discussed in terms of the epistemological and psychological implications thereof, explaining how narratives inform our understanding and enable us to share experiences and construct knowledge from not only personal experiences, but the experiences of others.
Whitman Neighborhood Community Development Plan
Genevieve Keeseecker, Christine Myers, Hayden Richardson, Martee Shafer
Dick Winchell, Urban & Regional Planning

The Urban and Regional Planning Graduate cohort partnered with the Whitman Neighborhood Council to plan using the Community Development (CD) model. The CD model examines the community and individuals within the built and natural environments. The cohort researched Spokane’s neighborhood planning structure and reviewed neighborhood plans. An inventory and analysis of the existing land use and building conditions in the Whitman neighborhood produced large-scale maps helpful in developing alternatives for the Council to review. The community prioritized traffic calming projects near Rochester Heights Park. Through the City’s Traffic Calming Program, grants for arterial and residential projects were submitted. We requested crossings for the elders at Magnolia Care to access the park, and funds for sidewalk connectivity for students and young families. The next steps will use this information further engaging the public and stakeholders in the community development process to prioritize alternatives, create a work plan, and research funding opportunities.

Comparison of Heart Rate and Oxygen Saturation Measurements at Rest Obtained with 10 Fingertip Pulse Oximeter Models
Bailey Koster
Megan Chatellier, Physical Therapy

Purpose/Hypothesis: Pulse oximeters are used to evaluate a subject’s oxygen levels and heart rate (HR). Types of pulse oximeters available have increased and yet sporadic scientific information is available on their performance. The purpose of this study was to evaluate consistency and accuracy of SpO2 and HR measurements while subjects were at rest in 10 commonly used finger pulse oximeters.

Subjects/Materials/Methods: Subjects (n=32) rested for 10 minutes then 2 sets of 5 different oximeter models were assigned to a hand with the identical model placed on the opposite hand. Simultaneous HR measurements were obtained with a 3-lead electrocardiogram (ECG). After 30 seconds, oximeters were rotated to test each finger. This process was repeated with a second set of oximeters.

Results: Descriptive statistics and paired t-tests were generated to determine differences between co-oximeters for SpO2 and HR measurements and between oximeters and ECG for HR. No significant difference was found between SpO2 measurements. Select models were more prone to error after 30 seconds than others.

How does executive functioning relate to our ability to estimate time?
Nick Lauderdale
Jonathan Anderson, Psychology

Past research has linked the ability to accurately estimate time with executive functioning abilities. The purpose of the present study was to analyze the relation between time estimation accuracy and a self-report measure of executive functioning, the Dysexecutive Questionnaire (DEX).

In the present study, 74 individuals (Mage = 22.00, SD = 5.44; range = 18-49) completed the DEX and an experimental task requiring participants to estimate time. The DEX is considered an ecologically valid self-report measure designed to assess cognition, emotion, and behavior related to executive functioning. A prospective verbal time estimation paradigm was used to investigate time estimates for sixteen filled intervals of 10, 25, 45, and 60 seconds. Surprisingly, Spearman correlations revealed no correlation between the DEX total score and time estimation accuracy at any interval. A correlation emerged between accuracy of time intervals 25 s and longer and item four (i.e., “I have difficulty thinking ahead or planning for the future”) of the DEX, rs =-.23 to -.41, ps < .05. This item relates to the ability of planning, a function of executive functioning, to which the ability to estimate time is fundamental.
Homage or Umbrage? Medievalesque Typography and Its Modern Day Implications
Elizabeth Matresse
*Molly Johnson, English*

Blackletter typeface evolved from Gothic handwriting. Gothic handwriting is thought to have originated in Germany, although by the 12th century it was used throughout Europe. Johannes Gutenberg created his printing press and moveable type in the 1450s when handwritten works were still highly prized and very valuable. In order for his printed works to compete with written ones, he mimicked the Gothic style of handwriting in his typeface. Gutenberg’s typeface, later called Blackletter, was so convincing that he was able to sell his printed works as handwritten texts. Modern attempts at recreating Blackletter tend to sacrifice either the readability or the medieval aesthetic of the type, preventing modern audiences from experiencing a more genuine depiction of the original typeface. Today Blackletter is most often used for ornamental or trademark purposes, most notably in the nameplates of newspapers where it is meant to evoke ideas of tradition and authority. Without even reading the title of the paper, we can all recognize The New York Times by its nameplate.

Starr Road Habitat Project: A baseline survey determining abundance and habitat utilization of juvenile redband trout and smallmouth bass in the Starr Road reach, as well as the rate of predation on juvenile redband trout by smallmouth bass

*M. Taylor McCroskey, Camille McNeely, Biology*

Redband trout (*Oncorhynchus mykiss var. gairdneri*) in the upper Spokane River, WA, have been in decline since the early 1990’s. Declining habitat quality and predation by non-native fishes have been hypothesized to explain this decline. Non-native smallmouth bass (*Micropterus dolomieu*), in particular, may be reducing populations through predation on juvenile redband trout. Washington Department of Fish and Wildlife (WDFW) has identified the reach near Starr Road (Otis Orchards, WA) as one of the major spawning beds for redband trout in the upper Spokane River. In August 2015, WDFW plans to install five large woody debris structures into the Spokane River near Starr Road to improve habitat for juvenile trout. This study will document smallmouth bass and juvenile redband trout abundance and habitat use at the Starr Road site and two similar reaches before the structures are installed. Snorkeling surveys will be used to determine abundance and habitat use. In addition, predation on juvenile redband trout by smallmouth bass will be documented in the upper Spokane River using angling surveys and electroshocking, followed by gut content analysis. This baseline study will provide essential data to determine if the structures have any impact on the juvenile redband trout abundance and habitat use.

Because I'm Happy: A Positive Interpretation Bias in Happy People

*Duncan McCurrach, Andrew Budde, Stephanie Rae, Amy Frers, Philip Watkins, Psychology*

Happiness is what many of us strive for in our lives. Therefore, a considerable amount of research in positive psychology has been aimed at identifying the positive correlates of well-being. Given this focus, the dearth of research investigating cognitive biases in happy people is surprising. Happy people may have a positive interpretation bias, which includes a tendency to interpret ambiguous situations in a positive manner. We tested this hypothesis using data from part of an ongoing treatment study. In the study, participants read ambiguous scenarios and were asked to envision themselves as the central character. Afterwards, participants judged how closely positive and negative statements were in meaning to the original vignettes. In addition, participants completed the SWLS (Diener, Emmons, Larsen, Griffin, 1985) as a measure of subjective well-being. Results showed that scores on the SWLS were positively correlated with positive interpretations of the scenarios. This suggests that a positive interpretation bias may be a characteristic of happy people.
Effect of SPEAK OUT!® Voice Therapy on the Voice Handicap Index for Individuals with Parkinson’s Disease
Jared O’Connor
Robert Jackson, Communication Disorders

Parkinson’s disease is a degenerative disorder of the central nervous system that often results in motor deficits effecting voluntary movements including speech. Previously, Lee Silverman Voice Treatment (LSVT) therapy has been the only effective choice for treating voice disorders resulting from Parkinson’s disease. The purpose of this study was to determine if SPEAK OUT® therapy is an effective low cost therapy alternative to Lee Silverman Voice Treatment (LSVT). Specifically, this study utilized the Voice Handicap Index (VHI) to determine the impact that a voice disorders has upon the quality of life for individuals with Parkinson’s disease before and after SPEAK OUT® therapy. During the study, 10 participants underwent SPEAK OUT® intensive voice therapy for 4 weeks at the Spokane canvas from January 2013, until September 2014. It was found that the participants experienced substantial improvements in their VHI scores post SPEAK OUT® therapy. Additionally, analysis of predictive factors found that individuals who had higher VHI pre-therapy improved their score the greatest.

Mapping Gluten-Free Dining Locations in the Inland Northwest
Bradley Plummer
Molly Johnson, English

The difficulty of finding gluten-free dining locations in the Inland Northwest, combined with the need for individuals with celiac disease, wheat allergy, or gluten intolerance to be able to find these restaurants, created the exigence for a document that provides gluten-free dieters with the information they need to find suitable restaurants in the Inland Northwest that serve gluten-free food options. I addressed this rhetorical situation by designing an infographic map that compiles all the relevant and necessary information that people with gluten-free dietary preferences need to quickly find a dining location. My 2015 Graduate Symposium presentation poster details the research behind the design of my infographic map, which incorporates elements of gestalt processing, Eric Kumpf’s visual metadiscourse, and carefully-chosen typefaces to achieve a design that balances functionality and aesthetics.

White sturgeon (Acipenser transmontanus) larvae feeding ecology and prey availability in the upper Columbia River, Washington, USA
Ryan Reihart
Camille McNeely, Biology

White sturgeon (Acipenser transmontanus) in the upper Columbia River have been in decline for over 60 years and are listed as critically endangered by the IUCN. Annual spawning produces dispersing larvae; however, recruitment into the juvenile age class does not occur. One hypothesis for recruitment failure is that larvae may not find adequate prey. Little is known about the diet and prey availability for white sturgeon larvae, especially in Lake Roosevelt (LR). To assess prey availability, the Spokane Tribe of Indians collected benthic drift samples from littoral and mid-channel habitats annually at 5 locations in LR between 2007 and 2011. I will compare littoral and mid-channel invertebrate abundance and diversity. Initial results indicate the most abundant invertebrates were small crustaceans (Cladocera and Copopoda). To determine the diet, 200-300 larvae will be collected in the summer of 2015. Stomach contents will be compared to available prey. These data will be used to evaluate whether prey scarcity is a likely cause of white sturgeon recruitment failure in LR.
Emergency Preparedness in Spokane
Benjamin Sinclair, Amber Mulhern
Frank Houghton, Master of Public Health

The American Red Cross, among other agencies, recommends that individuals have an emergency preparedness kit, which consists of three days supplies, for each member of their family. A survey was administered in several Spokane neighborhoods of varying socioeconomic status. The survey asked a variety of demographic questions and also about specific items that the American Red Cross says should be in an emergency preparedness kit. The goal of the survey was to discover the level of preparedness of residents in Spokane and also to see if factors could be identified that influence that level of preparedness. The data was input into SPSS and analyzed using quantitative statistical methods. The primary finding was that most people have some parts of a preparedness kit, but only 4 of the 291 people surveyed had all of the items that are recommended by the American Red Cross. Significant correlation was also found between education levels and having an emergency preparedness kit (p=.016). However the strength of the correlation was very small having an adjusted R squared value of only .017.

Domestic Violence Perpetrator Treatment
Jared Stone, Angela De La Barrera, Amanda Nguyen, Karina Anderson
Amanda Reedy, Social Work

ACES Community Health Services is a community-based outpatient mental health clinic that provides various mental health and behavioral interventions; as well as support services. One specific service that this agency provides focuses on behavioral changes and education for individuals who have committed domestic violence crimes or who have self-identified as wanting to make changes to their current relationships. We identified factors which needed clarification prior to creating an evaluation of the program. Our informational need was to determine the effectiveness of the program in reducing and eliminating domestic violence behaviors. This poster presentation features resources, a logic model, the methodology, real world constraints, data analysis, and a dissemination of a potential program evaluation.

Community Profile and Land Use Study Colfax, WA
Amy Thompson, Suzette Buckles, Damon Hunter, Andrew Kienast, Eugene Purnell III, Deanah Watson
Gregg Dohrn, Urban & Regional Planning

Abstract
Our team conducted an inventory of existing conditions in Colfax, Washington in order to better inform future planning decisions. The study’s goals were to develop a community profile, provide a survey of downtown land use, present findings, and provide recommendations. The community profile presents characteristics such as population growth and top employment sectors. The downtown land use study used national standards for the classification of nearly 300 buildings based upon activity, structure, function, ownership, and site. Supporting data on vacancies, mixed use, and building condition concluded that 60 percent of the buildings downtown are in good condition, most are privately owned, and few are vacant. It is recommended that the City increase its capacity for data analysis, promote historic preservation, and use a critical bridge replacement as an opportunity to redesign Main Street.
Different Warm-Up Protocols on Immediate Golf Drive Performance in Recreational Golfers
Emily Travis
Wendy Repovich, Physical Education, Health & Recreation

It has been recommended that golfers perform a warm-up routine before playing. Currently, the optimal warm-up routine to improve performance of a maximal golf drive is not clear. The purpose of this study was to assess the effects of three different warm-up protocols in recreational golfers on immediate golf performance of a maximal golf drive by measuring maximum club head speed (MCHS), maximal driving distance (MDD), and smash factor (SF). Golf performance factors were evaluated for 17 adult recreational golf participants after they performed three different warm-up protocols, (1) no warm-up, (2) active-dynamic warm-up, and (3) functional resistance warm-up, on three, non-consecutive days. Three, one-way repeated measures ANOVA were calculated comparing the golf performance factors between the three different warm-up protocols. No significant difference was found in MCHS, MDD, or SF between the three warm-up protocols. Future research is needed in order to accurately assess and find an optimal warm-up protocol for recreational golfers.

A Guide to Branding for Small Non-Profits
Tracey Waring
Molly Johnson, English

The evolution of branding has moved from a company’s consistent use of a graphic image to a business philosophy over the past 20 years. Today, branding is known as corporate identity, which encompasses an array of areas from logo design to communication strategies. While large non-profits understand the importance of regularly evaluating and maintaining their brand, many smaller non-profits neglect this important step when planning the start-up or long-range goals. Non-profits without a strong community identity often falter or fail as they struggle for survival. Using a meta-analysis of current best practices and informal interviews with board members of local non-profits, a guide was created to help small non-profits develop a branding/communication strategy for long-term success.
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