

Eastern Oregon University

# Spring Symposium 2024

## 25th Annual



Wednesday, May 15

Online at [eou.edu/symposium](http://eou.edu/symposium)

# EOU Spring Symposium 2024

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## Brief Schedule

8:00 - 9:00 AM	Registration	Loso Hall Lobby
9:00 - 10:00 AM	Keynote	McKenzie Theater
10:00 - 10:50 AM	45th Parallel	McKenzie Theater,
10:00 - 11: 50 AM	Teaching Portfolios	Huber Auditorium
10:10 - 11:40 AM	OTP Posters	Badgley Hall
10:15 AM - 1:15 PM	Poster Sessions	Loso Hall Lobby
10:30 AM - 1:30 PM	Talks	Loso 116 and 117
11:00 AM - 1:00 PM	Open Art Studio	Studios Behind Gilbert Center
12:00 - 12:50 PM	Choral Conducting	LH 123
3:00 - 5:00 PM	Open Rehearsal	McKenzie Theater

# EOU Spring Symposium 2024

## **Keynote Presentation**

9 - 9:50 AM, McKenzie Theater, Loso Hall

Welcome: Dr. Kelly Ryan, EOU President

Speaker Introduction: Dr. James Dyer

Keynote: **Ellie Justice**

“Drowning Cats and Blind Puppies: Comparing the Lack of Equality in Shakespeare’s Othello to Cap and Trade Environmental Systems”

Faculty Sponsors: Jennifer Slinkard and James Dyer

Streaming link:

<https://youtube.com/live/9x3jNcLtkOA?feature=share>

Abstract: An exploration of the relationship between the humanities and natural resources/agricultural studies. The presentation demonstrates the importance of integrating the sciences with the humanities, serving as an example of conflating seemingly unrelated material. The analysis of Othello, with a lens highlighting cap and trade, demonstrates the continual manipulation and disregard for marginalized communities within literature and the real world.

Iago’s evil nature within the play reflects the current gambits utilized within environmental systems like cap and trade, such as the use of asymmetrical information, ideological hegemony, and the lack of justice (explored in the presentation). Various scholarly sources analyze real-world examples of cap-and-trade environmental systems. This presentation argues that using natural resources and agriculture as a lens to examine literature allows for a different perspective. In turn, utilizing interdisciplinary lenses such as agriculture and natural resource sciences provide opportunities for the discord of difficult topics to move into a space where literature can create an impact that creates, and influences change in the outside world.

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## **Demonstrations and Performances**

10:00 - 10:50 AM

45th Parallel

McKenzie Theater

Presenters: **Jill Morris, Nick Vece, Jakob Graffunder,** and **Ethan Cornia**

Faculty Sponsor: Greg Johnson, Conductor

Musicians: Diego Jones Bedolla, Mick Brogoitti, Hunter Brown, Andrew Carter, Ethan Cornia, Jayden Dawson, Tristan Eggert, Jakob Graffunder, Brooks Greenwell, Carson Greenwell, Maria Gomez, Madison Hjort, Emma Jones, Jadon Martinez, Jessica McDonald, Jill Morris, Hannah Pulliam, Jack Seydel, Nick Vece, Abby Whitnah, and Matt Wirth

Abstract: In the interest of furthering musical understanding, the student performing ensemble 45th Parallel has asked its members to consider composing and/or arranging new works. This has led to a burgeoning student program in addition to the normal faculty-directed creative work, and one deserving of additional performance opportunities. Four members in particular have explored a diverse catalog of genre including contemporary popular music, mid-century vocalese, Afro-Cuban and Brazilian styles, British Invasion rock, 70s-era funk, and vocal swing to create personal expressions of musicality and to manage the myriad logistical requirements involved with writing for a 20-piece ensemble with eccentric instrumentation and variable skill levels and then preparing that work for public performance.

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## Demonstrations and Performances

11:00 AM - 1:00 PM    Open Art Studio    Studios behind the  
Gilbert Center

Presenters: **Tess Cahill, Jason Hogge, and Cira Mesubed**

Faculty Sponsor: Cory Peeke, Gallery Director

Abstract: Senior Art majors will be working in their studio spaces providing visitors with the ability to see how each artist produces their work as well as engage directly with the artists within the environment in which their works are created. Each artist's work delves into their experiences of existing in a liminal space. Liminal is described as a state of being in between or in a transitional stage and is frequently associated with transformative experiences. Tess Cahill explores this theme through works which focus on the rendering of form and space contrasted with flat, enigmatic backdrops incorporating recognizable yet imperceptible structures that create an intriguing visual dance. Jason Hogge investigates liminal themes through the use of perspective, illusion, and mechanical elements, Hogge invites his audience to engage with the work by adapting their perspective and encouraging physical interaction. Cira Mesubed explores liminal space through visual elements of coalesced colors and entangled bodies. Mesubed's work depicts human subjects in ambiguous, compromised states with an aim to capture the plurality that is existence and identity. Each of these artists' works provide attendees an opportunity for both aesthetic as well as philosophical engagement.

10:00 - 10:50 AM    Choral Methods Conducting    Loso 123  
Demonstration

Presenters: **Hannah Johnson, Leah Yarbrough, and Trevor Winder**

Faculty Sponsor: Peter Wordelman

Abstract: In the interest of furthering musical understanding, the student Hannah Johnson, Leah Yarbrough, Trevor Winder will present a conducting performance along with the EOU Chamber Choir at 12:00 noon in Loso 123. The presentation will feature songs from around the world and will be performed in multiple languages. Each conductor will present two different pieces and these will also be performed on the May 30th concert.

(4:09) All of Me

(2:55) Two Japanese Proverbs

(4:00) Hlononofatsa



# EOU Spring Symposium 2024

## Oregon Teacher Pathways (OTP) Posters

Faculty Sponsor: Tawnya Lubbes

10:10 - 10:40 AM

Wallowa School District

**Anastasia Butzien:** “The Effects of PTSD on Early Childhood Development”

**Emilie McDaniel:** “Is ADHD Over-Diagnosed by Gender or Race and What Strategies Are the Most Effective Using Drug Therapy and Best Teaching Practices?”

Simmons Gallery, Badgley Hall

Teacher: Colby Knifong

10:40 - 11:10 AM

McLoughlin High School

**Alvaro Alvarado:** “Why Is It Essential to Recognize and Incorporate the Important Contributions of the Traditionally Underrepresented Population in US and World History Studies in High School?”

**Lauren Nelson:** “What Types of Support Systems are Available and Successful for Elementary Students Who Have or Are Developing Anxiety?”

**Brittyn Chaney:** “Why Is the Practice of Trauma-Informed Teaching Important in Elementary Schools?”

**Kristian Ledezma Meza:** “How Can Educators Help Elementary Students Navigate Through the Negative Effects of ACEs in Order to Have Positive Social and Academic Success?”

**Lluvia Rodriguez Ambriz:** “What Types of Support Systems Are Best for Teen Parents, in Public Schools, to Successfully Complete High School and Plan for the Future?”

**Keirin Madrigal-Lara:** “What Can High School Educators Do to Help and Support Teens Who Struggle with Mental Health Problems?”

**Marlene Evangelista Ledezma:** “Why Should High School Start Times Be Changed to Later Times?”

Simmons Gallery, Badgley Hall

Teacher: Marianne Smith

# EOU Spring Symposium 2024

## Oregon Teacher Pathways (OTP) Posters

Faculty Sponsor: Tawnya Lubbes

10:40 - 11:10 AM

Umatilla High School

Simmons Gallery, Badgley Hall

Teacher: Chris Early

**Braelyn Cragun:** “Does Arming a School Staff Enhance the Security of a Building?”

**Brooke Gerard:** “How Can Schools Reduce Chronic Absenteeism?”

**Isaiah Gonzalez:** “How Can Growth Mindset Affect a Student?”

**Zoe Rufner:** “Do Dress Codes Discriminate Against Female Students?”

**Jayden Vela:** “How Child Abuse at Home Affects Students’ Academic Performance at School”

**Rory Viesca:** “How Trauma Affects Students and Their Education”

11:10 - 11:40 AM

Ontario High School

Simmons Gallery, Badgley Hall

Teacher: Rodney Williams

**Frennylyn Brown:** “School Dress Codes Should Be Eliminated”

**Philip Frazier:** “Main Reasons for Teachers Leaving the Profession”

**Brigid Keary:** “Causes of Depression in Elementary Students”



# EOU Spring Symposium 2024

## **Oregon Teacher Pathways (OTP) Posters**

Faculty Sponsor: Tawnya Lubbes

10:10 - 10:40 AM  
Pendleton High School

Simmons Gallery, Badgley Hall  
Teachers: Sonia Cooley and Greg  
Whitten

**Nicole Somnis:** “How Does Homework Affect Students Outside of School?”

**Avery Krigbaum:** “How Has the College Acceptance Rate Been Affected Since Many Colleges No Longer Require ACT or SAT Scores?”

**Ella Sams-Keosky:** “How Does the Success Rate Differ Between Public Schools and Homeschooling?”

**Adrienne Demianew:** “What Types of TV Programs Have Negative Effects on Children’s Overall Behavior?”

**Lexie Willman:** “How Can School Dress Codes Positively and Negatively Affect the School Environment?”

**Lillian Noble:** “How Does a Family’s Financial Status Affect a Child’s Education?”

**Kacie Rondo:** “Do Adolescents’ Perspectives of School in General Change When There Are Mental Health Issues Involved?”

**Siddalee Baker:** “What Are the Mental and Social Reasons That Lead to High School Vaping?”

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**Poster Presentations** (10:15 - 11:15 AM) Loso Hall Lobby

**MJ Heather:** “Talley’s Folly – From Page to Stage”

Faculty Sponsor: Heather Tomlinson

Abstract: A poster highlighting the various elements of planning a production from a production management perspective. This is in addition to the performance later in the afternoon.

**Daniel Soupir:** “Obstacle Navigation and Time on Task Found to Increase Cost of Transport During Modified Readiness Test for Wildland Firefighters”

Research Collaborators: Jacqueline Morgan and Darren Dutto

Faculty Sponsor: Jacqueline Morgan

Abstract: As tactical athletes, Wildland firefighters (WFF) often find themselves navigating uneven, variable terrain carrying packs 15-40% their body weight, for prolonged periods. Secondary to their occupation’s potential workload and walking volume, injury is an inherent risk among WFF including, tibial stress fractures, chronic exertional compartment syndrome, etc. Previous studies have shown increased risk of injury due to high impact forces, and these impact forces are exacerbated by walking under heavy load. Scarcity of studies exist on obstacle negotiation and impacts under load carriage. Wearable technology, such as inertial measurement units (IMU’s), may enhance our biomechanical understanding of high loads during fieldwork as large tibial accelerations are associated with high loading rates in tactical athletes. A paucity of reporting and challenges of replicating authentic fieldwork makes this work requisite for improving occupational risk of WFF. Our study examined the effects of load carriage and obstacle negotiation on impact accelerations during two 1.5-mile hikes. Twelve WFF wore a 45-lb pack with bilateral tibial IMUs while traversing a course with and without obstacles. Preliminary results suggest increases in tibial accelerations as velocities increased during the course and greater asymmetries in impacts during the second half.

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**Anya Schooler:** “Effects of 5 Days Post-Exercise Hot Water Immersion on Lactate Threshold in Wildland Firefighters Wearing Personal Protective Equipment During Exercise”

Research Collaborator: Lara Insko

Faculty Sponsor: Kyle Pfaffenbach

Abstract: Heat adaptation interventions are commonly used to reduce the decline in performance caused by hot conditions because they may induce beneficial exercise performance and physiological and perceptual adaptations. However, wildland firefighters (WLFFs) have not historically undergone heat adaptation training in preparation for relocation to hot climates. The purpose of this study is to examine whether post-exercise hot water immersion (HWI) will lead to heat adaptation and improve lactate threshold in WLFFs wearing PPE. This study is highly relevant for WLFF who are often sent from a cool environment (i.e. Oregon) to early season fires in hot climates (i.e. Arizona and California). To establish whether adaptations from post exercise HWI induce beneficial heat adaptations, four career WLFFs completed two pre-experimental lactate threshold tests (one in gym clothes and the other in PPE) followed by a five-day heat adaptation protocol involving a 40-min treadmill run at 85% of LT heart rate followed by a 25-minute hot water bath (40 °C). Finally subjects underwent a post experimental lactate threshold test wearing PPE. Results indicate that heart rate during the post experimental LT test wearing PPE is an average of 9.3 BPM lower than in the pre-experimental LT test.

**Bryant Hayden:** “Rubik’s Cube Solving Robot”

Faculty Sponsor: Steve Sheehy

Abstract: The purpose of the Rubik’s cube solving robot is to solve one of the world’s most iconic puzzles robotically and autonomously. Through the integration of computer aided design, 3D printing, electronics, computer vision, and advanced algorithms the robot will be able to visualize and subsequently solve a scrambled 3x3 Rubik’s cube without any input from the user.

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**Olivia Arave, Bethany Brock, and Sabrina Curland:** “Investigation of  $\alpha$ -tubulin Missense Mutations”

Faculty Sponsor: Brianna Holeman

Abstract: Microtubules have many diverse and essential functions as part of the eukaryotic cytoskeleton. Their primary functions include cell structure and mitotic division. Microtubules consist of repeating heterodimers formed by alpha and beta tubulin subunits. When tubulin is mutated, affected microtubules can lead to altered mitotic spindles that disrupt cell division. This is associated with diseases such as cancerous neoplasms and tubulinopathies. To investigate these mutations further, the National Cancer Institution was used to identify several missense mutations previously found on the alpha tubulin monomer TUBA1A in various human cancer cells. Mutations were screened using various parameters such as potential lethality and conservation of residues from humans to yeast. Using a previously obtained crystal structure of alpha-tubulin, mutations were further screened based on location within the folded protein. Future work will focus on putting these mutations in yeast to act as a conduit to asking questions about the mutations (i.e. lethality, microtubule formation, potential changes in response to anti-microtubule agents, etc.).

**Gabriel Streblow, Ramsey Hering, and Tanner Nett:** “Influence of Sodium and Magnesium Substitution Into Calcium Manganese Oxide”

Faculty Sponsor: Colby Heideman

Abstract: Calcium manganese oxide ( $\text{CaMnO}_3$ ) samples were synthesized utilizing the SOL GEL technique. Manganese nitrate and calcium nitrate were used as the metal precursors, and citric acid and ethylene glycol in water for the formation of the gel. Sodium and magnesium were both substituted for calcium in varying amounts to explore the phase width of these compounds. The samples were heated for various times at increasing temperatures in a box furnace. X-ray diffraction (XRD) and scanning electron microscopy (SEM) were conducted on the samples between annealing steps to follow the structural evolution occurring in terms of both the crystal structure as well as the microstructure of the samples, both as loose powders and in pressed pellets. The electrical properties of the samples were also measured to explore the influence of the synthetic conditions and structure on these properties.

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### **Taylor Hunt and Annaquot Hayes:** “Evaluation of Walking Minutes and STEP Test”

Faculty Sponsor: Kelly McNeil

Abstract: Research suggests that walking is a simple way to decrease the risk of chronic diseases and improve quality of life for all ages, with significant positive impacts noted for those aged 55 and over. According to the CDC, walking is shown to favorably influence obesity, type 2 diabetes, heart disease, and some mental health conditions. The Walk for L.I.F.E program was implemented over a twelve-week time period on Tuesdays and Thursdays from 6 am to 8 am in the EOU Feild house. Fifty-six participants (age 47.8 +/- 22.9) attended the walking program and reported the amount of time walked for each session. A STEP test was conducted on the first day they participated and then on the last day of the program. Data collected through the Walk for L.I.F.E program in the first six weeks indicated that the average walk time from participants was 46.44 minutes. In addition, participants' average step length and velocity were measured pre-and post-walking programs. Results of the test will provide information on the number of minutes participants walked during the program as well as any improvements in step length and walking velocity.

### **Samantha Spriet:** “Effects of Models and Simulations in a Secondary Biology Classroom”

Faculty Sponsor: Christina Thew

Abstract: Students in rural Eastern Oregon often have a difficult time displaying Bloom's Taxonomy of empowered learning when it comes to engaging in higher order thinking and learning. Many students in this area were massively impacted by the COVID-19 pandemic which has resulted in a decrease in the level of instruction in order to meet students' learning needs. In this unit, students were expected to demonstrate their understanding of the process of photosynthesis and cellular respiration through simulations and building models. Models and simulations have proven to help students understand more difficult concepts because they have the ability to outline and manipulate these concepts in a way that works best for their learning experience. These methods of instruction have shown student improvement from the beginning of the unit compared to the end.

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### **Darby McDevitt:** “Post Evaluation of 2024 Stress Less Event – Students’ Stress Levels and Popular Coping Strategies”

Faculty Sponsor: Kelly McNeil

Abstract: College students are exposed to a considerable amount of stressors throughout their educational experience. The aim of the 2024 Stress Less Event was to reduce students’ stress levels during a particularly stressful time in their lives. The event took place the week before finals and was to act as an outlet for students’ stress. It was an opportunity to connect students with their surrounding campus and community resources they have available to them to help cope with stress. The Stress Less Event had almost 40 activities and vendors, as well as 675 people attending the event. Out of those attendees, 201 participants filled out the post-evaluation event survey. The survey response rate was 29.8%. The poster presentation will exhibit the results from the Stress Less Evaluation Survey and how the event influenced the participants. This survey collected information regarding how the event affected participants’ stress levels, what coping strategies they found most effective, and what resources they were most likely to use to cope with stress in the future. Conducting a post-evaluation for this event was a useful way to collect information from the target population on stress-coping strategies. It also is a vital process that will aid in future program improvement.

### **Zoe Jones:** “Simulation and Manipulation in the Mathematics Classroom”

Faculty Sponsor: Christina Thew

Abstract: Research shows that through the appropriate application of simulations and manipulatives in the classroom can enhance student learning by providing an opportunity for critical thinking, collaboration, and problem solving. Bringing manipulatives into the classroom can serve as a way to create more concrete models for mathematical concepts and allow them to be more attainable for all students. Simulations encourage students to build critical thinking skills and develop deeper understandings of how to solve problems while working together with their peers. This presentation will show how using manipulatives and simulations in a mathematics classroom can promote a deeper understanding with geometry topics. There will be connections to anonymous student data that was collected throughout the entirety of the geometry unit that supports student growth.

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## **Maddie Morgan, Lucas Shepard, and Spencer Justice:** “Short-Eared Owl Survey in the Grande Ronde Valley”

Faculty Sponsor: Laura Mahrt

Abstract: Short-Eared Owls (*Asio flammeus*) are a nomadic species that lives in open habitats like marshes, prairies, grasslands and farm fields. In Oregon, they are listed as a species of concern, due to the loss of their open habitat needed for foraging and ground nesting. We conducted surveys as part of the Western *Asio flammeus* Landscape Study (WAfLS). This project is a citizen-science project designed to gather information to better evaluate the population status of the Short-eared Owl in the western United States. Our survey routes occurred along two transects, Ladd Marsh and Alicel Road. These sites were surveyed previously in 2018 and 2019. Each survey began 90 minutes before civil twilight along 2 five mile long transects. We performed observation periods for 5 minutes at every 0.5 miles for a total of 11 survey points. At each observation point, the number of raptors, Long-billed Curlews, and other owl species were noted. We also counted the number of livestock and accessed each observation point for vegetation type. During the 2024 survey, 2 short-eared owls were observed on the Alicel route, with no sightings at Ladd Marsh. There were no sightings of short-eared owls in 2018 and 2019 along the transect.

## **Avalon Bloodgood:** “4th Grade Music Literacy”

Faculty Sponsor: Christina Thew

Abstract: When training to perform music, students must have a basic understanding of music theory in order to play any instrument. However, as fun as playing instruments is, learning to read the common language of musicians (sheet music) can be a tedious task. The purpose of this project is to teach 4th grade students how to utilize sheet music to play the piano. In doing so, I hope to teach them the usefulness of being fluent in reading sheet music. This project employs multiple teaching methods including: Singing/music, Competition, Cooperative learning, and Metacognition. The data reflects one 4th grade class as they work their way through multiple pieces of sheet music and learn to play them on the piano. Through this project, students are given the basic skills for sight reading and decoding musical notation. The significance of this project is to empower young students to be able to independently engage with music.

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## **Katie Clark:** “Craft and Structure: A Movie in My Pillow”

Faculty Sponsor: Angela Vossenkuhl

Abstract: Keating Elementary, a small rural school in Baker City, Oregon, consists of 27 students. Despite its small size and resources, it promotes inclusivity and student leadership. Only the fifth-grade students (6) will be analyzed for the PTP. Students worked towards proficiency in three ELA standards. Students focus on vocabulary, figurative language, theme, and elements of poetry. Students experience diverse instructional strategies to promote understanding and engagement. Methods that were used consisted of think-pair-share, questioning the author, debates, visual arts, pre-reading plans, notice/wonder, etc. These lessons utilize a mixed-methods approach, incorporating both qualitative and quantitative elements to assess student learning and comprehension effectively. The implementation of the PTP has impacted my students' growth in poetry craft and structure standards. Through focused instruction and differentiated lessons, the PTP fostered a student-centered environment, driving deep engagement and understanding. Real-life application further enhanced learning experiences, promoting critical thinking and information retention. The PTP's guidance facilitated effective assessment and targeted feedback, empowering me to adapt and improve teaching strategies. Overall, the PTP created a dynamic and enriching learning journey for my students in poetry comprehension and for me as an educator.

## **Jillian Samp:** “Professional Teaching Portfolio: Second Grade”

Faculty Sponsor: Angela Vossenkuhl

Abstract: The city of Cove, Oregon is known for being a rural community built around the agricultural industry. It is located on the valley's Eastern slope, nestled between the Wallowa Mountains and adjacent ridges. In the center of town, you can find Cove School. The total number of students that attend Cove School K-12 is 306 and the Elementary/Middle school has 140 students. Throughout my lessons, I wanted students to be able to read with sufficient accuracy and fluency to support comprehension. The students were asked to read and comprehend an informational text. At the beginning of each lesson, I would review the previous material which allowed students to activate prior knowledge and make note of those inferences during our lessons. During the unit, we pointed out vocabulary, the importance of rereading, text features, and cause and effect. The results from these methods will be completed by April 18th, 2024. I wanted to teach how to comprehend informational text because it helps promote comprehension and many more skills. Overall the process of completing PTP has set me and not only my current students and future students up for success.



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## **Dally Evans:** “Professional Teaching Portfolio: Third Grade”

Faculty Sponsor: Angela Vossenkuhl

Abstract: Research was conducted on how different instructional strategies and tools can be supplemented into the classroom to provide students with the support needed for success. Students in an elementary classroom, with varying academic levels and facing different educational challenges, were analyzed through this research. Using the “I Do, We Do, You Do” instructional model provided students with the scaffolding needed to independently complete the formative assessment successfully. The results from the research indicated student growth from the diagnostic exam (pre-assessment) to their formative assessment scores taken at the end of each lesson where substantial growth was shown. In the lesson analyzed, data showed a 22.2% increase in the number of students who exceeded the standard on their formative assessment compared to their diagnostic exam. There were 5.6% more students meeting the standard and a 5.5% increase in the number of students progressing towards meeting the standard. Lastly, the data showed a 22.2% decrease in the amount of students not meeting the standard. This data is significant in that it shows the growth students can make when they are met where they currently are academically and provided the support they need to succeed.

## **Janea Young:** “7th Grade Volleyball Unit”

Faculty Sponsor: Christina Thew

Abstract: The goal of my PTP was to introduce a volleyball unit to a class of 7th graders focusing on the use of the Social Cognitive Theory (SCT). The reason for the use of this model was to demonstrate, observe and participate in positive interactions and environments to increase the skill base of proper fundamentals and mechanics of volleyball. Contextually, students were intentionally grouped, given direct modeling and instruction along with lesson scaffolding to build from basic to more advanced skills. With the use of scaffolding and positive reinforcement, the fundamentals increased due to self, peer and teacher feedback. The pre-assessment showed an average of 25% of skill base knowledge for passing and setting and after the unit was complete, the average skill improved to around 65%. Hitting started with 6% and increased to 73% of success within the duration of the unit. I feel the increase was due to positive feedback and reinforcement with one another. These interactions produced more confidence and, therefore, more engagement. By changing the environment to include positive reinforcements, it changed the mindset to respond to the challenges many of the students had prior to the unit.

# EOU Spring Symposium 2024

**Poster Presentations** (11:15 AM - 12:15 PM) Loso Hall Lobby

**Daniel Soupir:** “Preferential Motor Patterns of Wildland Firefighters Highlights the Selection of Movement Variability When Interacting with Obstacles Under Heavy Load”

Research Collaborators: Jacqueline Morgan and Darren Dutto

Faculty Sponsor: Jacqueline Morgan

Abstract: Wildland firefighting is an occupation that requires physiological adaptation to variable environments, consisting of uneven terrain, large obstacle negotiation, and the requirements of carrying a heavy (~45lb) pack. Success in this occupation requires the firefighter to be physiologically efficient, due to long working shifts and task variability. External load carriage and obstacle navigation have been shown to individually result in increases in energetic cost, potentially limiting work capacity and duration. During locomotion, biological systems tend to self-select movement patterns and velocities that minimize these energetic costs, which may become less favorable in the occupational working environment. Energy efficiency is measured using metabolic cost of transport, therefore the purpose of this study was to compare the cost of transport between with-obstacle and without-obstacle walking while under external load. 13 wildland firefighters were recruited and performed two trials: 1.5 miles pack-walk free of and including 96 obstacles. Oxygen consumption and time were recorded to determine velocity and cost of transport during the two trials. Results included statistically significant increases in velocities and cost of transport between the first and last laps under both conditions. Additionally, the overall velocities decreased and cost of transport increased during obstacle negotiation compared with non-obstacle trials.

# EOU Spring Symposium 2024

## **Jessica McDonald:** “Intervention Plan for Increasing Safe Sex Practice Among Students on a Rural College Campus”

Faculty Sponsor: Kelly McNeil

Abstract: Sexually transmitted diseases are a major public health concern among college-aged individuals, with young adults aged 15 to 24 accounting for half of all new STD diagnoses in the United States. In 2018, STDs accounted for 57% of all reportable diseases in Union County, Oregon, with chlamydia being the most frequent and constituting 91% of all reported STDs. Because of the high risk among college-aged individuals acquiring STDs, a community-wide needs assessment was conducted in 2023 and data was used for the development of an intervention. Findings highlighted limited knowledge on STD transmission, misconceptions, and the stigma surrounding testing. The purpose of this program is to have EOU students practice safe sex, understand when to get tested, and gain confidence in the understanding of the negative effects of STDs. The intervention plan comprises educational campaigns, peer-led workshops, access to testing, and collaboration with campus health services. The program’s goal is to enhance knowledge, improve attitudes, promote safer practices, and reduce STD incidence. Implementation seeks to create a campus culture prioritizing sexual health and fostering open communication. The evaluation process encompasses redistributing the community-wide survey upon program completion and assessing the implementation, effectiveness, efficiency, and attribution of the intervention.

## **Bruce Morehead and Simon Johnson:** “Preliminary Faunal Analysis of the Woodward Mammoth”

Faculty Sponsor: Rory Becker

Abstract: The Woodward Mammoth was excavated near Prineville, OR in 2019. The remains have been in the process of removing sediment since that time. The sediment is now fully removed and the preliminary work on analyzing the elements has begun. No cultural materials have been found in association with this specimen. Basic research questions related to the assemblage include species determination, age at time of death, stature, and sex. Basic methodologies include Number of Individual Specimens (NISP) and Minimum Number of Individuals (MNI). Additional methodology includes research into the use of liquid chromatography to detect testosterone levels in tusk samples to determine sex of the individual.

## EOU Spring Symposium 2024

**Savannah Potter, John Hurley, Elizabeth Zamora, Gabriel Streblow, and Olivia Arave:** “The EOU Chemistry Club: Fostering Professional Development, Outreach, and Community Building Through Chemistry”

Faculty Sponsor: Anna Cavinato

Abstract: The EOU Chemistry Club has a long tradition of excellence in chemistry at the national level. This past year the club made strides in its professional development, outreach, and sense of community. For the 14th year in a row, the club received an ‘Outstanding’ award for activities held in 2021-22. In addition, the club helped organize the first ‘Investigators of Science’ which was recognized with a ChemLuminary Award to the Richland Local Section for the ‘Most Creative National Chemistry Week Celebration Using the Yearly Theme’. The club also provided multiple professional development opportunities for its members and attended events in conjunction with the ACS Richland Local Section. Eleven of our members attended the ACS Spring national meeting in Indianapolis where they presented research posters, a club poster and participated in networking events. The club was very active in reaching out to the community, having a booth at the local farmers market, participating in community events and conducting hands-on activities in schools connected to NCW and CCEW. Our club members also helped build a sense of community within the chemistry department with events such as the EOU Chemistry-Biochemistry research recruitment fair.

**Michelle West, Alan Humphrey, and Blake Leitch:** “Possible and Impossible Permuted Sums”

Research Collaborators: Claire Bever and Mary Qazizada

Faculty Sponsor: Amy Yielding

Abstract: This year’s Eastern Oregon University research group further extended the work previously explored by our peers in the novel area of permuted sums. A permuted sum is defined as the result of adding an n-digit number to its permuted result. Normally, this creates a possible sum, but occasionally there are permuted sums that are impossible to create with any number. Our work has led to many interesting results for which we present in the form of a talk and a poster. With this poster, we introduce the concept of permuted sums, demonstrate a family of impossible permuted sums, and discuss which permuted sums can be deconstructed into smaller permuted sums.

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## **Riley Kelm:** “Riley’s Professional Teaching Portfolio”

Faculty Sponsor: Angela Vossenkuhl

Abstract: This professional teaching portfolio utilizes innovative technology and interactive learning methodologies. By fostering a dynamic environment conducive to curiosity and exploration, I empower students to actively engage with the material, cultivating critical thinking skills and fostering a lifelong passion for learning. Through personalized assessments and adaptive feedback mechanisms, we tailor the educational experience to each learner’s unique needs, ensuring inclusivity and accessibility for all. Embracing diversity and cultural richness, my portfolio integrates global perspectives to broaden students’ horizons and foster empathy and understanding. By nurturing a growth mindset and instilling a sense of ownership over their learning, my portfolio equips students with the tools and resilience needed to thrive in an ever-evolving world. Together, we aspire to cultivate a generation of empowered learners poised to tackle the challenges of tomorrow with confidence and ingenuity. This professional teaching portfolio shows the effectiveness of my teaching abilities and researched backed practices. This portfolio focuses on an ELA unit with the topic of comparing and contrasting.

## **Joe Daugherty:** “Intro to Pickleball”

Faculty Sponsor: Angela Vossenkuhl

Abstract: This poster presents a high school physical education unit focused on pickleball, designed to meet specific state standards and objectives. The unit is structured around four lessons, integrating various aspects of pickleball gameplay to enhance students’ competency and understanding of this lifelong physical activity. The unit aligns with State Standard 1 (PE.1.HS.1) by promoting competency in net/wall games, one of the designated categories for lifetime activities. Through engaging lesson plans, students develop fundamental skills in forehand groundstrokes, volley hits, and strategic gameplay, fostering proficiency in pickleball. This unit also addresses State Standard 2 (PE.2.HS.1) by emphasizing the identification and definition of terminology associated with net/wall games. Vocabulary such as groundstroke, volley, and trajectory are introduced and reinforced throughout the lessons, which foster understanding of pickleball concepts. Each lesson is made to provide a balance of skill development, gameplay, and assessment. Formative assessments, including skill rubrics and peer evaluations, are implemented to gauge student progress and provide feedback for improvement. By implementing this pickleball unit, physical education instructors can effectively meet state standards and objectives while engaging students in a dynamic and enjoyable learning experience.

# EOU Spring Symposium 2024

**Katie Brown and Osman Osman:** “Evaluation of Stress Levels and Self-Efficacy Before and After the Implementation of a Community-Wide Walking Program”

Faculty Sponsor: Kelly McNeil

Abstract: Research has shown a positive correlation between physical activity, stress levels, and self-efficacy. However, 21% of Union County residents are physically inactive. The purpose of this study was to examine the effects of a walking program on stress and self-efficacy of older adults within Union County. The eleven-week walking program met twice a week for two hours to increase physical inactivity. Fifty-six participants (age 47.8 +/- 22.9) attended the walking program. Validated pre-post test survey design was used to measure self-efficacy. Participants ranked stress levels on a scale from one to five before and after walking. The validated survey of physical activity and self efficacy asked participants to rank their confidence to perform physical activity in different conditions from not confident to extremely confident. Self-reported pre-post stress levels statistically significantly decreased ( $p < 0.001$ ) in the target population before and after walking. The results of this program indicate that the implementation of a walking program within the community can reduce stress levels. Community walking programs can be an effective way to provide positive outcomes for community members.

**Nayeli Flores Roque:** “Ingroup Attack vs. Support and Emotion Regulation”

Research Collaborators: Anthony Stenson

Faculty Sponsor: Anthony Stenson

Abstract: Past research has mainly focused on masculinity and has not focused on gender effects on emotion regulation. The purpose of this study was to investigate the effect that disruptions to individuals' sense of self within their gender ingroup have on individuals' mood and emotion regulation. Additionally, we investigated whether gender is related to the ability to regulate emotions. Eastern Oregon University students ( $N = 59$ ) were randomly assigned to one of two conditions, ingroup support or ingroup attack, and then asked to complete a battery of tasks measuring their mood and emotion regulation ability. Results showed that individuals in the ingroup attack condition experienced a significantly greater negative mood state than the ingroup support condition. There were no significant differences between these conditions on the emotion regulation task suggesting that this process is not affected by ingroup attacks/support. Finally, there were no significant differences in emotion regulation based on gender.

# EOU Spring Symposium 2024

## **Nathen Marker:** “Ontario Middle School - History”

Faculty Sponsor: Christina Thew

**Abstract:** The purpose of the research was to find out how well the students retained information that relates to the American Revolution. This was done through the use of worksheets that can either multiple choice or short sentence answers. Based on the students’ answers I can judge how well they retain the information that was presented to them.

My methods for collecting the data from the students, and then presenting information to the students, varied. For presenting the information I used a few methods with Google Slides. I would lecture the students or have them go through the slides on their own so they can take detailed notes or answer questions. Also used was a Google Site, we all went through that lesson together to make sure we all understood it. My method for collecting data would be a Google Form with multiple choice questions or a printed out paper that had short answer questions.

The results of these data collections showed that most students preferred the multiple choice answers. It also showed that some students did understand the short answers they just struggled with grammar. This is very valuable to know the students strengths and weaknesses for the final test.

## **Cameron Snider:** “Habitat Qualities that Determine Hummingbird Territories”

Research Collaborator: Dylan Parker

Faculty Sponsor: Brian Myers

**Abstract:** *Selasphorus sasin* and *Selasphorus rufus* are two hummingbird species that breed and form a hybrid zone from northern California to southern Oregon. These breeding ranges include many food sources such as many flowering plants, insects, and hummingbird feeders put out by people. Insects provide hummingbirds with protein, while nectar from plants and hummingbird feeders provide necessary carbohydrates. These species will readily feed on either invasive or native species of plants, and male *S. sasin* and *S. rufus* individuals establish territories based on the availability of these resources. Little is known about whether hummingbirds prefer native or invasive plants across the hybrid zone, and perhaps more importantly, the level of resource density that makes a territory desirable. We visited seven populations along the Oregon coast, and for each territory, we identified territory size, the number of competing males and visiting females that visited the territory, plant diversity, plant density, and whether plant species were native or invasive. In our study, we attempted to unravel the vegetative characteristics that contribute to territory quality in *S. sasin* and *S. rufus*.

## EOU Spring Symposium 2024

**Jocelyn Palmer and Cynthia Bauer:** “Eastern Oregon Walk For Life Program: Assessing the Participants’ Functional Mobility and Balance”

Research Collaborators: Anna Hayes, Dalton Jones, Katie Brown, Osman Osman, Taylor Hunt, Kiauna Mack, and Cooper Lund  
Faculty Sponsor: Kelly McNeil

Abstract: Physical fitness plays a significant part in an individual’s health and overall well-being. Primarily focusing on Union County, it has been evident that there is a significant decrease in physical activity. 15.8 % of individuals reported physical inactivity of 157 respondents (Oregon Health Authority). With this information, the implementation of the Walk For Life program was conducted in the Eastern Oregon University field house. Participants were assessed on their functional mobility and balance. Methods used to assess these measures were the Straight Leg Raise, Flex 90/90 Hamstring Flexibility Test, Modified Thomas Test, and Balance Error Scoring System (BESS). The program provided both stretching and balance exercises to help improve participants’ overall walking performance and promote functional mobility. With these techniques, the program assessed their improvement over eleven weeks using a variety of different measurements. The results of these measurements provided information regarding the participant’s functional mobility before and after the 11-week program. The Walk For Life program will implement regular stretching and balance activities for individuals to participate in before, after, or during the program to help improve individual’s health and overall well-being.

**Gabriel Streblow and Alara Campbell:** “Photochemical Reduction of Cytochrome c’Heme Complexes”

Faculty Sponsor: Colin Andrew

Abstract: Heme proteins constitute one of the most important classes of redox active biological molecules in nature, catalyzing key electron transfer processes and metabolic reactions. The ability to carry out controlled changes in the Fe redox state of heme proteins in situ provides a useful means of characterizing their chemical and spectroscopic properties. Deazaflavins are photochemically-activated redox agents that can be used to accomplish in situ reduction of transition metal complexes. In this study, we examine the ability of deazaflavins to reduce the heme Fe active sites of bacterial cytochromes c’, as a means of studying their heme coordination chemistry.



# EOU Spring Symposium 2024

## **Garrett Beckman:** "Development of Gross Motor Skills in Rural Middle School Students"

Faculty Sponsor: Christina Thew

Abstract: Students in schools across rural America lack many of the same educational opportunities as students in urbanized parts of the country. Physical education classes in these rural schools face many unique challenges to providing equal opportunities for students compared to that of larger schools. This presentation examines the overall development and growth of three major locomotor skills of kicking, catching, and throwing in rural middle school students. The overall development level and the growth seen during a 4-day kickball unit were the main factors examined during these lessons based on pre-assessments, formative assessments, and a final summative assessment. The differences in gender, athletes vs. non-athletes, and knowledge of the rules of kickball gameplay were also examined. During the 4-day unit, different instructional strategies were used to help increase student understanding and skill level including academic vocabulary and language, direct instruction, hands on learning, and mastery learning. This presentation shows the results of the assessments completed during the unit and overall student development and growth in the three locomotor skills examined, data will be completed by April 26th. The topic of this unit is important, as it allows for the overall locomotor development of rural students to be examined in depth.

## **Koedi Birmingham:** "Introduction to Coil: Coil Pots"

Faculty Sponsor: Christina Thew

Abstract: For my PTP, I am focusing on my intro to ceramics course and one of the more challenging units my ceramic students complete, coil pots. I chose this unit due to the importance of hand building techniques when starting ceramics in order to build skills, build understanding when working with clay, and when creating future projects. I am teaching a new group of students in the second half of the year and using what I learned with my first group of students to change/experiment with new ideas in this unit. I used direct instruction, note taking, modeling, hands-on learning, feedback, group discussions, and self-reflections to guide learning throughout the unit. I have learned through this unit that giving students more time to practice the given skills before starting the final project, helped me provide more feedback and resulted in better work/understanding. Students came out with much stronger understanding and skills with the given changes in the unit the second time around.

# EOU Spring Symposium 2024

## **Taryn Leigh:** “A Private School Education”

Faculty Sponsor: Angela Vossenkuhl

Abstract: Grande Ronde Christian Academy is a small private school in the rural community of La Grande, Oregon. It is the only elementary school in La Grande that offers K-12 Christian education. Seven second-grade students were a part of this project; half of the students receive tuition assistance. The students were taught a four-lesson unit on plural nouns. One student did not participate in this project because he receives first-grade English Language Arts instruction. Instructional strategies such as nonlinguistic representation, group work, direct instruction, gallery walk, and t-charts were used to teach the content. The learning objectives for the unit were that students would be able to form plural nouns by rewriting them to add “s” or “es.” Five of the six students that participated in this unit met the learning objectives. All students who do not receive tuition assistance met the objective; one of the students who receives tuition assistance did not meet the objective. This project improved students’ growth because of the research-based strategies used and the amount of reflection included in planning and teaching the lesson. This project contributed to the educator’s growth because of the thorough procedures that required strong planning and assessment.

## **Anani Medina:** “Diving into Informational Texts”

Faculty Sponsor: Angela Vossenkuhl

Abstract: Highland Hills Elementary School, part of Hermiston School District in Oregon, serves 470 students. The school emphasizes collaboration between staff, parents, and teachers, and offers a variety of family involvement opportunities. The classroom dynamics include diverse student needs, requiring tailored teaching approaches. The unit taught had a focus on learning to engage with informational texts. Lessons in the unit covered asking questions, identifying central ideas and key details, recognizing different points of view, and comparing texts on the same topic. Scholarly sourced and research-based instructional strategies included modeling, collaboration, hands-on activities, the use of graphic organizers, class discussions, and assessments. The results of this ELA unit will highlight two students and their journey with academic needs during the lessons. The lessons presented in this Professional Teaching Portfolio align state standards with the fundamental concepts related to comprehending informational text. The experience of teaching this unit has shown me as a future educator, in order to improve my teaching, there must be an emphasis on the importance of self-reflection after each lesson.

# EOU Spring Symposium 2024

**BoDean Tayer:** “Second Grade Informative Writing Learning Analysis”

Faculty Sponsor: Christina Thew

Abstract: The Professional Teaching Portfolio is centered around the cycle of planning, teaching, and reflecting on these specific learning goals in the setting of a second grade classroom located in a rural Oregon school district. ELA and Math Instruction are important subjects in the elementary classroom. In order for students to succeed in the intermediate elementary grades they must have mastered writing an information paragraph in addition to showing mastery of base ten operations. Universal Design for learning will benefit the wide range of academic abilities in the classroom setting. Universal Design for Learning guidelines were strategically incorporated into the lesson design so that each lesson is centered around the “why”, “how”, and “what” of student learning. The reflection process solidified how important it is to have routines and common assessments built into the second grade writing process. Writing is a complex task for 7 and 8 year old students. Many of them are working towards mastery of reading, while also writing the letters that correlate to the sounds. Through the reflective process I discovered that it could have been beneficial to extend the amount of time spent building background knowledge prior to the lesson. When teaching math concepts, data showed that by giving students a chance to fully visualize the way that addition and subtraction can work together as inverse operations through the use of manipulatives ,there will be success rates in student achievement of the reteach assessment.

# EOU Spring Symposium 2024

**Poster Presentations** (12:15 - 1:15 PM) Loso Hall Lobby

**Maddie Brazer:** “Assessment of the Willowa River to Determine River Quality with Macroinvertebrate Populations”

Faculty Sponsor: Laura Mahrt

Abstract: Performing riparian surveys can help in determining the ability of the environment to provide for the inhabitants with proper nutrition, biological equilibrium, reproductive needs, and shelter. Agriculture impacts the quality of water by introducing excessive phosphorus, nitrogen, oocytes, etc. found in crop fertilizers and animal manure carried by runoff and irrigation into rivers. Road construction impacts water quality by introducing deposition of sediment into the water that can smother aquatic habitats and clog waterways. To assess societal impacts on river quality, I surveyed 200 meter reach along the Willowa River at the Lower Diamond Bridge located in Willowa, Oregon. River qualities were measured and macroinvertebrates were sampled in riffles and pools. Shannon’s Index indicated a relatively high biological diversity at 0.72. The average HBI of the river was 4.60 which indicated a relatively low pollution level in the water, and it suggested little to no contribution from agriculture, the biomass facility, or road construction to water pollution. However, the lack of currentless space and high sun exposure initially indicated poor to moderate river quality. Surveying sensitive, resident fish species could further investigate the quality of the river and narrow in on future conservation efforts.

**Gabriel Streblow:** “Resin Selectivity of Lithium vs Competing Ions”

Faculty Sponsor: Anna Cavinato

Abstract: Recycling and reuse of lithium has been a major topic of concern with the increasing amount of LIBs from EVs and other technologies relying on lithium. Ion exchange was used in this report to test the selectivity of Li compared to that of other ions found in process water after a battery has been recycled. Four different resins, IRC 120, TP 208, TP 260 and MTS 9500 were used to identify the selectivity of Li<sup>+</sup> vs Al<sup>3+</sup>/Cu<sup>2+</sup>/Ni<sup>2+</sup>/P<sup>2-</sup>/Ca<sup>2+</sup>/Mg<sup>2+</sup>/K<sup>+</sup>/Na<sup>+</sup>/Co<sup>2+</sup>. 15 mM standard solutions were used for identification of selectivity of Li vs each ion. Two surrogate solutions of recycled process water with varying concentrations of ions were then tested.

# EOU Spring Symposium 2024

**Jessica Zander:** “The Population Dynamics of the Columbia Spotted Frogs in Northeastern Oregon”

Faculty Sponsor: Laura Mahrt

Abstract: Columbia Spotted Frogs (*Rana luteiventris*) are dispersed throughout the Pacific Northwest with areas experiencing declines in numbers. Major factors contributing to their loss include: modification to habitat, chytrid fungus, climate change, and introduction of non-native aquatic species. Declining populations has led to this species to be listed as a sensitive species in Oregon. The frogs like to lay eggs in cold, quiet waters. Approximately 50 years ago, McCoy Creek was channelized. From 1997-2002, McCoy Creek was under active restoration to restore the creek’s original path. The old channel was dammed and a series of new ponds were established. During the 2003 breeding season, the frogs began exploiting 5 of the 12 new man-made ponds. Since completion of the restoration project, Spotted Frogs have utilized 13 of the 14 ponds (man-made and original to the site). With a cooler spring and variable weather patterns, data collection is ongoing.

**Maddie Morgan, Colby Stoller:** “DNA Extraction from Scales of Salmon Species”

Research Collaborator: Bri Holeman

Faculty Sponsor: Bri Holeman

Abstract: The chinook salmon and steelhead are anadromous fish that travel from freshwater as a smolt to the ocean. Once the fish reach the ocean, they live there for an average of two to four years before returning to the spawning grounds where they were born. In order to study genetic variation in this fish, DNA must be extracted from tissue samples, most commonly fin clips or scale samples. In this project, DNA was extracted from scales of chinook salmon and steelhead, utilizing previously identified phenol-chloroform extraction techniques. From these techniques, consistent yields were obtained with concentrations ranging from 200 to 2000 ng/ $\mu$ l. The extracted DNA was proven to be sufficient for downstream genetic applications through PCR amplification and subsequent DNA barcoding. Future studies will aim to apply these techniques that have shown consistent results on fresh scale samples to older samples to investigate genetic variations in chinook salmon and steelhead over the past decades.

# EOU Spring Symposium 2024

**Dylan Parker:** “Effect of Human Disturbance on Allen’s x Rufous Hybrid Population Density”

Research Collaborators: Cameron Snider, Brian Myers

Faculty Sponsor: Brian Myers

Abstract: The Allen’s and rufous hummingbirds (*Selasphorus sasin* and *Selasphorus rufus*) form a stable hybrid zone along the west coast from northern California to southern Oregon. These hummingbirds require edge habitat which naturally form along rivers or meadows, but human disturbance via urbanization, campgrounds, and day use areas also provide ideal edge habitat. In their natural environments, Allen’s and rufous hummingbirds have fine-scale differences in the niche they occupy, and the disturbance of natural habitats homogenizes these differences. As a result, disturbed habitat tends to be suitable for both parental species, promoting hybridization. Within the hybrid zone, population densities of hybrids may be associated with human activity. We evaluated this hypothesis by conducting line transects to estimate the densities of hybrid populations, and compared estimated densities to human population densities of the surrounding area using data provided by the United States Census Bureau. Next steps in this project will incorporate sampling of parental populations and additional hybrid populations in areas with varying degrees of human activity.

**Savannah Potter and John Hurley:** “Development of a Paper-Based Microfluidic Assay for Rapid Detection of Oxytetracycline”

Faculty Sponsor: Anna Cavinato

Abstract: Antibiotics, such as oxytetracycline (OTC), are used extensively in salmonid farming to prevent pancreas disease, heart and skeletal inflammation, and bacterial kidney disease<sup>1</sup>. Current methods for measuring OTC are invasive and require advanced instrumentation such as liquid chromatography<sup>1</sup>. Paper-based microfluidic devices ( $\mu$ PADs) provide inexpensive onsite testing that can be used for the rapid colorimetric detection of OTC. The objective of our research was to develop an ideal platform for the field testing of OTC in fish tissue and freshwater matrices after antibiotic administration.

# EOU Spring Symposium 2024

## **Makaiyla Waddell:** “Third Grade Literacy Unit”

Faculty Sponsor: Angela Vossenkuhl

Abstract: During the 2023-2024 school year, I joined Island City Elementary (ICE) in a third grade classroom as a student teacher. ICE, established in 1951 in La Grande, Oregon, reflects the predominantly white demographic of the town, with only 4% of students being multiracial. The class I am in consists of 25 students with diverse backgrounds, including 6 on IEPs, 3 ELL students, and various economic and home circumstances. These are all factors and influences that need to be considered as the teacher, as they impact a child’s ability to learn, and as a teacher impact your ability to properly assess or even teach a child.

To design my unit, I gathered data from class assessments and my knowledge of each student. I implemented a four-lesson ELA unit, continually adjusting based on student needs and performance. This topic was chosen to align with the curriculum and support student success in their first year of state testing.

## **Bianca Rodriguez:** “The Fable Juanita and the Beanstalk”

Faculty Sponsor: Angela Vossenkuhl

Abstract: A 3rd-grade classroom at Gib Olinger Elementary School implemented a comprehensive approach to teaching summarization skills through a fairy tale fable. In the first lesson, students were introduced to new vocabulary words through a read-aloud session. The second lesson focused on comprehension, teaching students to answer questions by referring back to the text for key details. This skill is crucial for summarization, as it requires students to identify and extract relevant information from the story. The third lesson involved practicing summarization by re-reading the story and paraphrasing key details and events in order. This step-by-step approach allows students to gradually develop their summarization skills. The fourth lesson added another layer of complexity by exploring the point of view of the story and summarizing it accordingly. Understanding the perspective from which the story is told helps students gain insight into the characters’ motivations and experiences, enriching their understanding of the narrative. The assessments conducted throughout each lesson provided valuable feedback on the student’s progress, showing that they were slowly increasing their knowledge of how to summarize the story and provide key details. Overall this unit seems like a well-rounded and effective curriculum for teaching summarization to 3rd-grade students..

## EOU Spring Symposium 2024

**Olivia Arave, John Hurley, Gracie Hoover, and Elizabeth Zamora:**

“Fabrication and Testing of ssDNA Aptamer-Based Electrochemical Sensor for the Detection of Renibacterium Salmoninarum”

Faculty Sponsor: Anna Cavinato

Abstract: We describe the development of an aptamer-based electrochemical sensor for detection of p57 or Major Soluble Antigen (MSA). This extracellular protein is found on the surface of Renibacterium salmoninarum (Rs) bacterium, responsible for causing bacterial kidney disease (BKD) in salmonids.

Fabrication of the biosensor was accomplished by screen printing the electrode with a mix of graphite and carbon ink and painting Ag/AgCl paste to create the reference electrode. A high-affinity aptamer was then immobilized onto the electrode using EDC-NHS coupling. Electrode reproducibility was tested across multiple batches before and after surface modification using cyclic voltammetry. The red-ox properties were also characterized using different scan rates. The quantitative detection of the protein was based on the hindrance of the redox reaction of potassium ferrocyanide on the electrode surface due to the aptamer binding of the target protein. A rapid sensor for onsite detection of Rs in water or in infected salmonids could be applied as an early warning for disease outbreaks and as an epidemiological tracking tool, significantly improving aquaculture management.

**Mikayla Bredfield:** “Exploring Legal Frameworks: Empowering Consumers and Workers in Business Law Education”

Faculty Sponsor: Christina Thew

Abstract: This presentation delves into the legal frameworks safeguarding consumer and worker rights within businesses. It focuses on explaining the significance of business laws in protecting stakeholders and fostering ethical business practices. The study employs interactive instructional strategies, including case studies, discussions, and role-play scenarios, to explore labor laws, consumer rights, intellectual property, and OSHA regulations. These methods facilitate active engagement and a deep understanding of legal concepts.

I selected this topic to equip students with practical knowledge crucial for navigating the complex landscape of business law. By empowering them with insights into legal frameworks, I aim to foster a deeper understanding of ethical business practices and empower future professionals to uphold consumer and worker rights.



## EOU Spring Symposium 2024

**Kenzie Sorrell:** “Pages of Promise: Unveiling 4th Grade Writing Talents”

Faculty Sponsor: Angela Vossenkuhl

Abstract: At the beginning of the academic year, the fourth grade class at Cove Elementary demonstrated varying levels of writing an organized essay. To accommodate and ensure all students were meeting the grade level standards, I prepared a writing unit focusing on organization. A balanced approach to instruction blends explicit teaching with opportunities for independent exploration, creativity and practice. Explicit instruction involves modeling writing processes, providing clear guidelines, and offering constructive feedback. Additionally, scaffolding techniques, such as graphic organizers and writing prompts, assist students in organizing their thoughts and structuring their compositions effectively. All of my students met the requirements for their final draft. The PTP has helped my students by requiring me to tailor instruction to meet individual needs which ensures that all students have the opportunity to thrive and reach their full potential as writers. As an educator, this process has required me to employ a range of strategies to support and nurture young writers. By creating a supportive learning environment, incorporating diverse writing forms, differentiating instruction, and fostering a growth mindset, I can empower students to become confident, skilled, and expressive writers ready to tackle the challenges of the future.

# EOU Spring Symposium 2024

## **Talks** (Loso 116)

Room Hosts: Jennifer Slinkard (10:30 - 11:30 AM)

Cori Brewster (12:00 - 1:30 PM)

Zoom Link:

<https://eou.zoom.us/j/98619970829?pwd=eWhzNkFPUXd6UFBOenpQMnhsMlI2UT09>

Meeting ID: 986 1997 0829

Passcode: 735137

## **Talks** (Loso 117)

Room Host: Amy Yielding (10:30 - 11:30 AM)

Zoom Link:

<https://eou.zoom.us/j/95697428944?pwd=ZGdLWWhZQ082bnBwbTVRRRVJGL2Q3dz09>

Meeting ID: 956 9742 8944

Passcode: 645204

10:30 - 10:50 AM (Loso 116)

**Renee Blincoe:** “Ecofeminism on Golding’s Lord of the Flies: Using Various Modes of Analysis in High School Language Arts Classes”  
Faculty Sponsor: Jennifer Slinkard

Abstract: “Ecofeminism on Golding’s Lord of the Flies: Using Various Modes of Analysis in High School Language Arts Classes” demonstrates how lenses can be applied to common novels, plays, and poems taught in high school English classes. This presentation focuses primarily on analyzing William Golding’s Lord of the Flies (LOTF) through the lens of ecofeminism, though other modes of analysis and common high school reads are discussed throughout the presentation. Ecofeminism, a mode of analysis which describes the destruction of nature and the treatment of women as a result of male domination, is a lens that can be used when analyzing LOTF to draw parallels between interactions within the novel, such as the treatment from the boys to the pigs and the island, and the struggles that women and nature face in the real world. This presentation emphasizes that ecofeminism is not the only lens appropriate for analyzing texts in high school, nor the lens best suited for every student. Instead, I argue that encouraging various lenses, such as class, Freudian, gender theory, and more, into the high school academic setting allows students to explore their own Language Arts interests.

## EOU Spring Symposium 2024

11:00 - 11:20 AM (Loso 116)

**Delilah Deckert:** “Ecofeminism on Golding’s *Lord of the Flies*: Using Various Modes of Analysis in High School Language Arts Classes”

Faculty Sponsor: Jennifer Slinkard

Abstract: My presentation *Queering Normative Genres* discusses ways in which representation in media can be a tool for increasing the visibility of marginalized groups, but there are times in which representation can fall short or fall into stereotypes, harmful or not. With a focus on the depictions of LGBTQ characters I look into the two main categories that LGBTQ characters in mainstream media fall into, those being sad or sanitized. The reason for this is because widespread depictions of queer characters are often not made with an queer audience in mind.

In response to this I’ve joined the growing rise in authors creating works being made for and by queer individuals for a queer audience. My own writing, a short story called *There are no Wolves in Vegas*, and my capstone project *Estradiol Vampirate*, focus on bringing queer themes and characters to the realms of genre fiction that LGBTQ characters often get left out of. This is in conversation with a growing rise in LGBTQ fiction and in response to the longstanding under-representation that queer characters have had in mainstream fiction.

12:00 - 12:20 PM (Loso 116)

**Julie Anne Loong:** “In the Middle of the Sea Is Where My Home Is”

Faculty Sponsor: Cori Brewster

Abstract: Saipan is the capital of an island chain known as the Commonwealth of the Northern Mariana Islands, a US territory situated in the North Pacific Ocean thousands of miles away from the contiguous states. The island’s population of less than 50,000 people is made of the indigenous Chamorro and Carolinian peoples, and Asian immigrants. On this island, I am a second-generation Filipino immigrant.

“In the Middle of the Sea is Where My Home Is” is a work of creative nonfiction which provides my first hand account of living in a US territory as a second-generation immigrant, the difficulties I faced with identity and racism, and the subsequent effects on mental health. As I interweave descriptions of witnessing poverty in both the Philippines and Saipan, the project also narrates the experiences of other Filipino immigrants: my childhood friend, her parents, and my mom. The dialogue and storytelling aim to provide a platform for immigrants whose unique voices share stories that reassure all immigrants they are not alone in their mental, emotional, social, and financial struggles.

## EOU Spring Symposium 2024

12:30 - 12:50 PM (Loso 116)

**Calvin Langdon:** "I Would Die 4 U: Self-Uncertainty and Prototypicality Threat on Extreme Intergroup Behavior"

Research Collaborators: Olivia Kuljian and Zachary Hohman

Faculty Sponsor: Olivia Kuljian

Abstract: The rate of extremism appears to be accelerating daily across the world, charged by uncertainty and aspirations for group membership. Extreme group behavior may be the result of a desire to define social identity and prove oneself as a valid member of one's group (the ingroup). Feeling marginal in a valued group (non-prototypical) is uncomfortable, promotes uncertainty, and motivates people to bolster group membership (e.g., Goldman & Hogg, 2016; Hohman et al., 2017). As a response to feeling non-prototypical and self-uncertain, previous research (e.g., Hohman et al., 2017) suggests that people may participate in pro-ingroup behavior to demonstrate themselves as appreciated group members and strengthen social identity. The present research expands previous work by investigating how prototypicality threat contributes to self-uncertainty and motivates extreme intergroup behavior. Specifically, the present work investigates participants' (N = 371) willingness to engage in violent actions towards outgroup members or sacrifice oneself for the benefit of the ingroup. Results demonstrate that threats to one's standing within a group and resulting self-uncertainty influence intentions for violent and sacrificial behavioral intentions. Future research will continue exploring the consequences of prototypicality threat and uncertainty for self-definition and behavior in intergroup contexts.

# EOU Spring Symposium 2024

1:00 - 1:20 PM (Loso 116)

**Carson Greenwell:** “Learning Through Layers”

Faculty Sponsor: Angela Vossenkuhl

Abstract: The purpose of my learning style and content implemented is to handle the typical tasks of a teacher while in an environment that is turbulent by nature. Education at the elementary level has remained fundamental in securing foundational skills for the youth of this country and help prepare their trajectory of becoming productive members of society. Each generation inherits obstacles that hinder progress but discerning a direction for students in the age of information is a challenge that demands responsive instruction and an audience to receive and nourish growth in whatever capacity it can exist.

The significance of each piece of content administered at this age is crucial to the better development of a person in today's world overall. These basics can and will be applied throughout their lives. In the spirit of preservation, attention is kept to how we remember and why we do, people don't remember subjects that were based on the merit of memorization. In order to instill greatness we have to look at what inspires ourselves and others throughout history and remind the students why their being in school matters. Students have to be able to apply their new knowledge outside of a classroom, making it real and essential is how we get there for them.

# EOU Spring Symposium 2024

10:30 - 10:50 AM (Loso 117)

**Alan Humphreys** and **Claire Bever**: “Possible and Impossible Permuted Sums”

Research Collaborators: Blake Leitch, Mary Qazizada, and Michelle West

Faculty Sponsor: Amy Yielding

Abstract: “This year’s Eastern Oregon University research group further extended the work previously explored by our peers in the novel area of permuted sums. A permuted sum is defined as the result of adding an n-digit number to its permuted result. Normally, this creates a possible sum, but occasionally there are permuted sums that are impossible to create with any number. Our work has led to many interesting results for which we present in the form of two talks. In this talk we introduce the concept of permuted sums, demonstrate a family of impossible permuted sums, and discuss which permuted sums can be deconstructed into smaller permuted sums.”

10:30 - 10:50 AM (Loso 117)

**Mary Qazizada**: “Discovering Permuted Sums”

Research Collaborators: Blake Leitch, Alan Humphreys, Claire Bever, and Michelle West

Faculty Sponsor: Amy Yielding

Abstract: This year’s Eastern Oregon Summer Research group further extended research completed by the 2023 group into the novel area of permuted sums. In this context, a permuted sum is a summand of a n-digit initial number with a number formed from permuting the digits of the initial number under some  $\sigma \in S_n$ . Our group’s work has led to many interesting results for which we present in the form of two talks. In this presentation, we introduce the basics of permuted sums, delve into initial results, and classify previously unknown families of permuted sums.

# EOU Spring Symposium 2024

**Professional Teaching Portfolios** Huber Auditorium, Badgley Hall

10:00 - 11:50 AM

Room Host: Angela Vossenkuhl

Pre-recorded PTPs will be screened. Portfolio presentations may also be viewed individually at: <https://flip.com/b67bf5a4>

Faculty Sponsor: Angela Vossenkuhl

**Adyson Shaw:** “Identifying and Using Context Clues”

**Alyx Burgos:** “Exploring Central Ideas in First Grade”

**Riley Brown:** “Adapting to a New Home”

**Amber Hoover:** “The 5 W’s”

**Alanna Jepma:** “Teaching Reading to Diverse Kindergartners”

**Robyn Burns:** “Informative Writing and the Revolutionary War”

**Lindsey Donohue:** “Empowering Equity: Examining Strategies for Kindergarten Student Growth in a Multilingual Classroom”

**Ryan Potratz:** “Teaching Under an Emergency”

**Makenzie Schwartz:** “Pushing Through One Word Answers Using R.A.C.E.”

**Tatiana Tkacheva:** “Comparing and Contrasting Firsthand and Secondhand Accounts of a Historical Event”

**Oliva Warner:** “Second Grade in Pilot Rock”

**Tabitha Kopf:** “Kopf’s Cool Kids Take on 5th Grade Learning”

**Logan Nedrow:** “Systematic and Explicit Comprehension Instruction”

**Calli Wynn:** “Kindergarten Students’ Lessons on How to Identify Story Elements and to Compare and Contrast”

**Amber Phillip:** “Retelling Story and Theme”

**Anna Lemon:** “Teaching Retelling the Story and Theme to ELL Students”

**Brianna Micka:** “Teaching in Wallowa”

**Ella Anderson:** “The best animal is..... opinion writing from the pencils of 2nd graders”

**Ashley Johnson:** “Pathways to Success through Experience”

**Steven Leonard:** “Teaching Retell With A Children’s Book”

**Drew Ivester:** “Comparing and Contrasting Story Elements”

**Ashton Haughton:** “Analysis of Math Reteaching Methods”

# EOU Spring Symposium 2024

## Professional Teaching Portfolios

Faculty Sponsor: Christina Thew

**Kaleb Rainsberry:** “Physical Education Methods of Instruction”

**Alex Hernandez:** “Dribbling, Volleying and Striking”

**Ashley Rhoton:** “Shakespeare’s Sonnets Mini-Unit”

**Sophie Phelps:** “Soil Science Unit”

**Nicole C. Ryan:** “Enhancing Physical Fitness: Understanding Warm-Up and Cool-Down Techniques”

**Courtney Dohman:** “Teaching HS Introductory to Floor Hockey”

**Ollie Baker:** “The Good, The Badminton, and The Ugly: Freshman Intro to Badminton”

**Noah Johnson:** “Future of Physical Education”

**Tai Rogers:** “Teaching with an Alternative Mindset”

**Lonnie Slapinski:** “Professional Teaching Portfolio”

**Elijah Azurin and Clarissa Azurin:** “Technology and 6th Grade Secondary Music”

**Karina Diaz Lara:** “Literary devices in Music and Poetry”

**Beth Aschenbrenner:** “La Clase PTP Poster”

**Daniel Puerta:** “Early China Unit”

**Andrew Rygg:** “Physical Education in Rural Oregon”

**Erik Nelson:** “Music Education”

**Stephanie Saraz:** “Floor Hockey Skills”

**Matt Hess:** “Contrasting Small and Large Agribusiness as Career Paths”

**Grace Schwendiman:** “Teaching Multiplying and Factoring Polynomials”

**Adam Kopf:** “General Up with Mr. Kopf!”

**Toby Mathews:** “Basketball Fundamentals: Building Skills for Life”

**Anthony Fonseca:** “2nd Grade Springs Charter School (RSC)”

**Regan Jones:** “Secondary Art Education: Understanding Printmaking”

**Mike Tassini:** “Teaching US History in Diversifying Environments”

**Micah Grogan:** “Fostering Inclusivity and Literacy in Global Studies”

**Zachary Martin:** “5th Grade Entry-Level Basketball”

**Jalaina Jacobsen:** “Teaching Experience Showcase”

**Scott Wardwell:** “Education in Rural Communities”



# EOU Spring Symposium 2024

Thank you to EOU faculty sponsors: Colin Andrew, Rory Becker, Cori Brewster, Anna Cavinato, James Dyer, Colby Heideman, Brianna Holeman, Greg Johnson, Olivia Kuljian, Tawnya Lubbes, Laura Mahrt, Kelly McNeil, Jacqueline Morgan, Brian Myers, Cory Peeke, Kyle Pfaffenbach, Steve Sheehy, Jennifer Slinkard, Anthony Stenson, Christine Thew, Heather Tomlinson, Angela Vossenkuhl, Peter Wordelman, and Amy Yielding.

Thank you to the OTP faculty sponsors: Elizabeth Becker, Sonia Cooley, Chris Early, Colby Knifong, Marianne Smith, Greg Whitten, and Rodney Williams

Thank you to Cori Brewster, Jennifer Slinkard, and Amy Yielding for serving as room hosts for the talks.

Thank you to Nate Prouty, Spenser Justice, Elizabeth Zamora, and students of the Winter 2024 Beginning Ceramics course for the signature Spring Symposium mugs.

Thank you to the Provost's office, EOU Event and Conference Services, AV services, and University Advancement for your work and support -- especially Angie Adams, Michael Dakota, Davon Dunajski, and Kris Martens.

2024 Coordinating Committee: Steve Tanner, Kevin Roy, Tawnya Lubbes, Jacqueline Morgan, and Kevin Walker

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